

APPENDIX E: PUBLIC SITE WALKTHROUGH RATING CRITERIA & FIELD ASSESSMENT FORMS



WETLAND MITIGATION RATING CRITERIA & FIELD SITE ASSESSMENT FORMS

Instructions

Mitigation Site Number

First four letters of the 8-digit federal HUC watershed name followed by 4 digits. For example, CHOP0001 would represent site 1 of the Choptank watershed.

Estimated Mitigation Needs

Provide the acres of mitigation needed to satisfy the impacts using current replacement ratios or other agency agreed upon ratios for your

Soils Criteria

Estimate percentage from soil map or GIS. Describe any feature or field observation that may verify that the mapping is correct or incorrect. This criteria should be considered when evaluating the Depth of Excavation citeria.

Vegetation

Decribe the vegetation that characterizes the area being considered as potential mitigation. Decribe the dominant species, any invasive species that seem problematic, density of trees and shrubs, maturity of trees, etc. Record a photo to document typical condition.

Hydrology

Determine and describe any hydrologic connectivity that may exist. This criteria should be considered when evaluating the Depth of Excavation criteria

Land Use

Describe how the land is currently being utilized. Make any note if that use is intended to change in the near future.

100 Year Floodplain

Note whether the site is located within a floodplain and how frequently it may be flooded. Absence of a floodplain will score low but does preclude a site from consideration when other factors are considered.

Habitat Value

Describe the surrounding area. Is it large enough to provide significant habitat value? Could the area benefit from a wetland creation?

Geomorphic Position

Describe where the site is within the landscape. Consider whether its position is conducive to creating and sustaining a wetland.

Ease of Access

Judge how easy/difficult it would be for construction access. Consider whether existing paths already exist or whether significant clearing would be needed. Record a photo of the likely access or the deterence to it.

Estimate cut to wetland hydrology

Estimate how much depth of excavation may be needed to reach requisite hydrology for a successful wetland creation/restoration, etc. Evaluator should consider time of year of evaluation, existing soils, surfacewater contributions, and/or other site conditions which provide evidence of the depth of excavation needed to create a wetland.

Utilities Present

Look for and note any utilities that may be in the immediate area and which could affect optimizing the site for wetland creation or serve as an obsticle to construction activity.

	Wei	tland Mitigati	on Field Site Assessment Form	
		P	Proiect Details	
Project Name:	I-495/I-270 Managed Lanes	Study	Mitigation Site Number: MPAO0008	
Estimated Mitigation	Needs (ac):	, TBD		
0	· · ·		-	
Date:	4/3/2019		Consultant Firm/Investigator(s): KJH, BM	
		Site	Location Details	
County:	Prince George's	Cross Roads	Sellman Road and E Line Road	
Basin (HUC 8):	Middle Potomoac-Catoctin		MDE Watershed (8 digit): 02070010	
Proximity to Impacted	d Wetland (mi.):	0.3	5 Lat/Long: 39.026019	-76.930444
			Site Data	
Parcol Sizo (ac):	502		Botontial Creation Area (ac): 0.0	
Parcer Size (ac).	302	76.020444		
Lat/Long:	39.026019	-76.930444	Potential Preservation Area (ac): 6.8	
Land Use:	Agricultural and Forested		Adjacent Land Use: Agricultural and Fores	sted
iviapped Solis:	water	40		
Property Address:	Spellman Road, Beltsville, N	/ID		
Property Owner(s):	BARC			
		<u>Addition</u>	al Field Observations	
RTE species present? ((explain below)	TBD	Evidence of disturbance? (explain below)	
Is site currently a wetl	land?	Yes	Was site formerly a wetland?	
Condition: See photos			Condition: Site consists of open water man made pond with fring	e wetland
		Mitis	ation Site Rating	
Criteria		Score	ICriteria	Score
Soils		10	Vegetation	5
10 - Greater than 50%	hydric soil	10	10 - Herbaceous cover	5
5 - 10% to 50% hydric	soil		5 - Scrub-shrub cover	
1 - Less than 10% hvdr	ic soil		1 - Mostly forested	
Describe:			Describe:	
Water - permanently inundated with fringe wetland			Surrounded by scrub shrub - river birch, bradford pear, red maple	and sycamore
·····, ·				, ,
Hydrology		10	Land Use	10
10 - Abuts wetland or s	stream	-	10 - Agricultural or Open Space	-
5 - Adjacent to wetland	d or stream		5 - Mariginal Pasture	
1 - No connection to w	vetland or stream		1 - Old field	
Describe:			Describe:	
Majority of site is oper	n water surrounded by PEM frir	nge.	Surrounded by agricultural land and scrub shrub.	
100-Year Floodplain	I	1	Habitat Value	1
10 - Yes (active eviden	ce of flooding)	-	10 - Contiguous to wetland/upland forest > 100 ac	-
5-Yes (mapped but no	eveidence of active flooding)		5 - Contiguous to wetland/upland forest 25-100 ac	
1 - No	5,		1 - Contiguous to wetland/upland forest < 25 ac	
Describe:			Describe:	
No evidence of floodin	ng. Berm surrounds pond.		Western side = active agricultural fiels. Eastern side = narrow hed	gerow.
Geomorphic Position		10	Ease of Access	1
10 - Low or concave to	pography		10 - Yes (with existing direct vehicular access to notential site)	
5 - Flat topography	pography		5- ves (open but no existing vehicular access)	
1 - High topography/st	teep slopes		1 - No (no vehicular access, clearing needed)	
Describe:			Describe:	
Manmade pond			Clearing of scrub-shrub required.	
Estimated cut to wetla	and hydrology	10	Utilities Present	5
10 - Less than 2'			10 - No utilities on site	
5-between 3' - 5'			5 - Utilities but not within creation area	
1 - greater than 5'			1 - Utilities within potential creation area	
Describe:			Describe:	
Open water 4"-2' deen).		Powerlines adjacent to site	
			Total Score out of 100	63





	W	/etland Mitigati	on Field Site Assessment Form	
		F	Proiect Details	
Project Name:	I-495/I-270 Managed Lar	ies Study	Mitigation Site Number: MPAO0032	
Estimated Mitigation	Needs (ac):	TBD		
Ū			-	
Date:	8/14/2019		Consultant Firm/Investigator(s): RKK; KJH/AJN	
		Site	Location Details	
County:	Montgomery	Cross Roads	Mahaska Drive and Oskaloosa Drive	
Basin (HUC 8):	Middle Potomac-Anacos	tia-Occoquan	MDE Watershed (8 digit): 02140206	
Proximity to Impacted	l Wetland (mi.):	1.8	3 Lat/Long: 39.115265	-77.145699
			Site Data	
Parcel Size (ac):	12.2, 5.7, 80.4, 9.7		Potential Creation Area (ac): 1.6	
Lat/Long:	39.11553546	-77.14594816	Potential Preservation Area (ac): 2.1	
Land Use:	Forest		Adiacent Land Use: Low to high density re	sidential
Mapped Soils:	Hatboro silt loam & Baile	silt loam		
Property Address:	Crabbs Branch Way			
Property Owner(s):	Maryland National Park 8	& Planning Commis	sion	
		Addition	al Field Observations	
DTC analias procent?	(ovaloin holow)		Idi Field Observations	
the species present? (explain below)			Evidence of disturbance? (explain below)	
			was site formerly a wetland?	
Condition: Entire site i	Condition: Entire site in Crabbs Branch 100-year FEMA floodplain		Condition: High quality seep wetland at north western end of site.	
dominated by reed car	nary wetlands with scattered	trees.		
		N/i+i	action Site Bating	
Criteria		Score	ICriteria	Score
Soils		10	Vegetation	10
10 Greater than 50%	hydric soil	10	10 Horbasoous covor	10
5 - 10% to 50% hydric	soil		5 - Scrub-shrub cover	
1 - Less than 10% hydr	ic soil		1 - Mostly forested	
Describe:			Describe:	
Entire site located in m	nanned hydric soils Hydric so	hils verified in the	Majority of site is reed capary floodplain with scattered trees	
field	apped flyane solis. Flyane se	Jis vernied in the	Wajonty of site is recu canary hoodplain with scattered trees.	
neiu.				
				_
Hydrology		10	Land Use	5
10 - Abuts wetland or	stream		10 - Agricultural or Open Space	
5 - Adjacent to wetlan	d or stream		5 - Mariginal Pasture	
1 - NO CONNECTION TO W	/etiand or stream		1 - Old field	
Describe:	a thur a the state . Extended a second	e a de tra la catherena	Describe:	
Perennial channel flow	Is through site. Existing wetla	ands in northern	Site located in Crabbs Branch SVP. Mostly reed canary grass.	
and southern floodpla	in			
				
100-Year Floodplain		5	Habitat Value	10
10 - Yes (active eviden	ce of flooding)		10 - Contiguous to wetland/upland forest > 100 ac	
5-res (mapped but no	evidence of active flooding)		5 - Contiguous to wetland/upland forest 25-100 ac	
I - NU Describes			1 - Contiguous to wettand/upiand totest < 25 ac	
Describe:	- MA manned floodalain. No.	ovidonce of	Describe:	
Located in 100-year FE	INA mapped floodplain. No e	evidence of	Adjacent to 110 acres of contiguous upland forest.	
flooding.				
Geomorphic Position		10	Ease of Access	5
		10	10. Vec (with existing direct vehicular access to notential site)	3
10 - LOW OF CONCAVE LO	pography		5- ves (open but no existing vehicular access)	
1 - High tonography/st	teen slones		1 - No (no vehicular access, clearing needed)	
Describe:			Describe:	
Entire site is low topos	araphy in floodplain		Site is onen but no existing access. Potential access from maintain	ed HOA roads
			Site is open, but no existing access. Forential access from maintain	
Estimated cut to wet!	and bydrology	5	litilities Precent	1
10 Loss than 2'	and hydrology	5	10. No utilities on site	1
5-between 3' - 5'			5 - 11 tilities but not within creation area	
1 - greater than 5'			1 - Utilities within potential creation area	
			Describe:	
Crown deurstein die in				
Groundwater estimate	at 3.5 below surface in no	n-wetland areas.	sewerline runs throughout floodplain.	
			Total Coore out of 400	71
			Total Score out of 100	/1



<u>Site Photos</u>



	We	tland Mitigatio	on Field Site Assessment Form		
		Р	Proiect Details		
Project Name:	I-495/I-270 Managed Lane	s Study	Mitigation Site Number: MPOC0001		
Estimated Mitigation	Needs (ac):	TBD			
Ŭ			-		
Date:	3/27/2019		Consultant Firm/Investigator(s): RK&K/KJH, DB		
		Site	Location Details		
County:	Montgomery	Cross Roads	River Rd. & Hunting Quarter Rd.		
Basin (HUC 8):	Middle Potomac-Catoctin		MDF Watershed (8 digit): 02140202		
Proximity to Impacted	d Wetland (mi.):	14	4 Lat/Long: 39.079584	-77.392588	
, ,	x <i>i</i>		Site Data		
Deres (cs)	2.655		Detertial Creation Area (as): 7.20		
Parcer Size (ac).	2,033	77 202500	Potential Creation Area (ac): 7:50		
Lat/Long:	39.079584	-77.392588	Potential Preservation Area (ac): 0.0		
Land Use:	Agriculture		Adjacent Land Use: Forest, Wetlands		
wapped Solis:	Huntington silt loam, 0 to 3 %, oc	casionally flooded, Lin	dside silt loam, 0 to 3 %, occasionally flooded, Melvin silt loam, 0 to 2 %, occasionall	/ flooded	
Property Address:	0-0000 River Rd.				
Property Owner(s):	Maryland Department of N	latural Resources			
		<u>Addition</u>	al Field Observations		
RTE species present?	(explain below)	TBD	Evidence of disturbance? (explain below)	Yes	
Is site currently a wet	land?	Partially	Was site formerly a wetland?	Possibly	
Condition: Site is locat	ted in the McKee Beshers Wild	life Management	Condition: Site surrounded by hedgerows that are maintained by	DNR for wildlife	
Area. Site consists of a	active farm field that is partially	v open	purposes. Hedgerow to southeast of site consists of PFO wetland.	Large PFO just	
water/saturated in the	e Potomac River 100 YR floodp	lain.	north of site managed for wood duck habitat.		
		Mitig	gation Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Soils		10	Vegetation	10	
10 - Greater than 50%	hydric soil		10 - Herbaceous cover		
5 - 10% to 50% hydric soil			5 - Scrub-shrub cover		
1 - Less than 10% hydric soll					
Describe:	d and have been at the instance of the		Describe:		
100% of site is mapped	d as hydric solis. No hydric soli	indicators	Active farm field - Remnant soy beans throughout site. No wet ve	g observed.	
observed during site w	valk, likely due to active farmin	g of field.			
Hydrology		10	Land Use	10	
10 - Abuts wetland or	stream		10 - Agricultural or Open Space		
5 - Adjacent to wetlan	d or stream		5 - Marginal Pasture		
1 - No connection to w	vetland or stream		1 - Old field		
Describe:			Describe:		
PFO wetland abutting	southeast corner of site. Exten	sive open water	Active farm field - Remnant soy beans throughout site. No wet ve	g observed.	
areas within site.					
100-Year Floodplain		5	Habitat Value	10	
10 - Yes (active eviden	ice of flooding)		10 - Contiguous to wetland/upland forest > 100 ac		
5-Yes (mapped but no	o evidence of active flooding)		5 - Contiguous to wetland/upland forest 25-100 ac		
1 - NO			1 - Contiguous to wetland/upland forest < 25 ac		
Describe:			Describe:		
Entire site is located in	Potomac River 100 YR FEMA 1	loodplain. No	Site located in McKee Besher Wildlife Management Area (>100 ac	res of forest).	
evidence of flooding w	vithin site.				
Geomorphic Position		10	Ease of Assess	10	
Geomorphic Position		10		10	
10 - Low or concave to	pography		10 - Yes (with <u>existing</u> direct vehicular access to potential site)		
5 - Flat topography	toon clones		5- yes (open but no existing venicular access)		
1 - High topography/si	teep slopes		1 - NO (NO VENICUIAL ACCESS, Clearing needed)		
Site consists of low /fl-	t topography with gradual and	n water	Existing maintained access just east of site that connects to Uset	ng Quartar Dd	
site consists of low/fla	at topography with gradual ope	in water	Existing maintained access just east of site that connects to Hunti	ng Quarter KO.	
aepressions.		10		10	
Estimated cut to wetla	anu nyurology	10	Ounces Present	10	
TO - Less than 2			10 - NO UTILITIES ON SITE		
J-Delween 3 - 5 1 - greater than 5'			1 - Utilities within notential creation area		
Describe:					
Groundwater observe	d 14" below ground surface in	non-saturated	No evidence of utilities observed within or adjacent to the site.		
areas.					
			T	05	
			I otal Score out of 100	95	





	We	tland Mitigatic	on Field Site Assessment Form	
		P	roiect Details	
Project Name:	I-495/I-270 Managed Lane	s Study	Mitigation Site Number: MPOC0002	
Estimated Mitigation	Needs (ac):			
Estimated witigation			-	
Date:	3/27/2019		Consultant Firm/Investigator(s): RK&K/KJH, DB	
	-, ,	Sito	Location Details	
Country	Montgomon	Cross Boads	Diver Dd. & Dennyfield Lock Dd	
County.	wongomery	Closs Rodus.		
Basin (HUC 8):	Middle Potomac-Catoctin		MDE Watershed (8 digit): 02140202	77 200221
Proximity to impacted	i wetland (ml.):	9	Lat/Long: 39.057434	-77.298221
			<u>Site Data</u>	
Parcel Size (ac):	2,655		Potential Creation Area (ac): 0.0	
Lat/Long:	39.057434	-77.298221	Potential Preservation Area (ac): 12.2	
Land Use:	Wildlife Management		Adiacent Land Use: Forest. River	
Mapped Soils:	Melvin silt loam 0 to 2 % occasio	nally flooded. Hunting	zton silt loam 0 to 3 % occasionally flooded. Water	
Property Address	0-0000 River Rd			
Property Owner(s)	Maryland Department of N	atural Resources		
rioperty owner(s).				
		Additiona	al Field Observations	
RTE species present? ((explain below)	TBD	Evidence of disturbance? (explain below)	Yes
Is site currently a wet	land?	Partially	Was site formerly a wetland?	Possibly
Condition: Site is locat	ed in the Dierssen Wildlife Ma	nagement Area.	Condition: Site is surrounded by the C&O canal/path to the north	and the Potomac
Site consists of two man-made impoundments managed for		ged for	River to the south. Site is located in Potomac River 100 YR floodpl	ain and consists
waterfowl Sinhons co	nnecting site and C&O canal ar	e not functioning	of open water and reed capary wetlands	
wateriowi. Sipilolis co		e not ranctioning.	or open water and reed canary wettands.	
		Mitig	ation Site Rating	
Criteria		Score	Criteria	Score
Soils		10	Vegetation	10
10 - Greater than 50%	hydric soil	-	10 - Herbaceous cover	_
5 - 10% to 50% hydric	soil		5 - Scrub-shrub cover	
1 - Less than 10% hvdr	ic soil		1 - Mostly forested	
Describe:				
100% of site is manned as hydric soils. Hydric soil indicators observed		icators observed	Site dominated by reed capary grass with sparse cattail and black	willow
throughout impounder	a as nyune sons. Hyune son ma		Site dominated by reed canary grass with sparse cattain and black	willow.
throughout impoundin	ients during site walk.			
Hydrology		10	Land Use	5
10 - Abuts wetland or	stream		10 - Agricultural or Open Space	
5 - Adjacent to wetland	d or stream		5 - Marginal Pasture	
1 - No connection to w	vetland or stream		1 - Old field	
Describe:			Describe:	
Impoundments consist	t of open water and reed canar	y wetlands that	Site managed for waterfowl. Dominated by reed canary grass with	n sparse cattail
drain to the Potomac F	River.	,	and black willow.	
100-Vear Floodalain		5	Habitat Value	10
100-Teal Tiooupiain	se of flooding)	J	10 Contiguous to wotland/unland foract > 100 ac	10
E Voc (manned but no	ce of nooung)		E Contiguous to wetland/upland forest 25 100 ac	
5-res (mapped but no	evidence of active hooding)		5 - Contiguous to wetland/upland forest < 25-100 ac	
Describe:			Describe:	
Entire site is located in	Potomac River 100 YR FEMA f	loodplain. No	Site located in Dierssen Wildlife Management Area (40 acres) that	t connects to
evidence of flooding w	vithin site.		other forested parkland along the Potomac (>100 acres of forest).	
Geomorphic Position		10	Ease of Access	1
Geomorphic Position		10	Ease of Access	T
10 - Low or concave to	pography		10 - Yes (with <u>existing</u> direct vehicular access to potential site)	
5 - Flat topography			5- yes (open but no existing vehicular access)	
1 - High topography/st	eep slopes		1 - No (no vehicular access, clearing needed)	
Describe:			Describe:	
Site consists of concav	e manmade impoundment.		Access is very limited. Would need to go through 10' wide C&O ca	anal trail that
			would require crossing two foot bridges. One bridge needs replac	ement.
Estimated cut to wetla	and hydrology	10	Utilities Present	10
10 - Less than 2'			10 - No utilities on site	
5-between 3' - 5'			5 - Utilities but not within creation area	
1 - greater than 5'			1 - Utilities within potential creation area	
Describe:			Describe:	
Groundwater obsorver	d 0-3" below ground surface th	roughout site	No evidence of utilities observed within or adjacent to the site	
	a o o below ground surface th	i ougnout site.	No evidence of utilities observed within of adjatent to the site.	
			Total Score out of 100	Q1
				01











	We	tland Mitigatic	on Field Site Assessment Form	
		P	roiect Details	
Project Name:	I-495/I-270 Managed Lanes	Study	Mitigation Site Number: WSS-150069	
Estimated Mitigation N	leeds (ac):	TBD		
J. J			-	
Date:	11/12/2018		Consultant Firm/Investigator(s): RK&K/KJH, CAS	
		Site	Location Details	
County:	Montgomery	Cross Roads:	Schaeffer Rd. & White Ground Rd.	
Basin (HUC 8):	Middle Potomac-Catoctin		MDE Watershed (8 digit): 02140208	
Proximity to Impacted	Wetland (mi.):	6.7	Lat/Long: 39.15145062	-77.3353438
			Site Data	
Parcel Size (ac):	4 parcels - 12.0, 11.5, 12.0	& 12.0	Potential Creation Area (ac): 0.0	
Lat/Long:	39.15145062	-77.3353438	Potential Preservation Area (ac): 0.4	
Land Use:	Forest		Adjacent Land Use: Agriculture & Forest	
Mapped Soils:	Hatboro silt loam. 0 to 3 pe	rcent slopes		
Property Address:	0-000 Schaeffer Rd.			
Property Owner(s):	Maryland National Capital	Park & Planning Co	ommission	
	· · ·	Addition	al Field Observations	
RTF species present? (a	explain below)	TRD	Evidence of disturbance? (evolain below)	No
Is site currently a wetla	and?	Vos		
Condition: Majority of a	site consists of a BSS wotland	located in the	Condition: Site vegetation is a mix of natives and invasives. A 1.2	liwido noronnial
Little Senece Creek 100	VB floodplain. There is an upl	and island in the	channel flows along the western edge of the site boundary	
Little Selleta Creek 100	a dominated by red coder		channel nows along the western edge of the site boundary.	
center of the site that is	s dominated by red cedar.			
		Mitig	ation Site Rating	
Criteria		Score	Criteria	Score
Soils		10	Vegetation	5
10 - Greater than 50% h	hydric soil		10 - Herbaceous cover	.8
5 - 10% to 50% hydric s	oil		5 - Scrub-shrub cover	
1 - Less than 10% hydrid	c soil		1 - Mostly forested	
Describe:	Describe:		Describe:	
Entire site is located in	mapped hydric soils. Hydric so	oils were verified	Majority of site is PSS wetland dominated by persimmon, button	bush, black
in the field.			willow, river birch, sycamore, arthraxon, soft rush, swamp rose, a	and sensitive fern.
			Upland areas within site dominated by Eastern red cedar sapling	S.
Hydrology		10	Land Lise	1
10 - Abuts wetland or st	tream	10	10 - Agricultural or Open Space	
5 - Adiacent to wetland	l or stream		5 - Marginal Pasture	
1 - No connection to we	etland or stream		1 - Old field	
Describe:			Describe:	
Majority of site is wetla	and located between two pere	nnial channels. 0-	Site is located in Little Seneca Stream Valley Park and consists of	floodplain with
2 inches of surface wate	er observed throughout wetla	nd during site	dense herbaceous vegetation and scattered tree and shrub sapling	ngs.
investigation.	-	-		-
100-Year Floodplain		5	Habitat Value	10
10 - Yes (active evidenc	e of flooding)		10 - Contiguous to wetland/upland forest > 100 ac	•
5-Yes (mapped but no	evidence of active flooding)		5 - Contiguous to wetland/upland forest 25-100 ac	
1 - No			1 - Contiguous to wetland/upland forest < 25 ac	
Describe:			Describe:	
Site located within 100-	-year FEMA floodplain. No act	ive evidence of	Site connects to Seneca Creek State Park (>100 acres of forest).	
flooding observed durir	ng site visit.			
Coomorphic Desition		10		1
Geomorphic Position		10		L
10 - Low or concave top	oography		10 - Yes (with <u>existing</u> direct vehicular access to potential site)	
5 - Flat topography			5- yes (open but no existing venicular access)	
1 - High topography/ste	eep slopes		1 - NO (NO VENICUIAL ACCESS, Clearing Needed)	
Low topography Site lo	ested in 100 VB FEMA floods	ain	Site is is accessible from Schooffer Rd, however access within the	site would
Low topography. Site to	cated in 100-TK FEMA hoodp	dill.	Site is is accessible from schaener ku, nowever access within the	site would
Estimated cut to water	nd hydrology	10	Itilities Present	10
10 - Less than 2'	na nyarology	10	10 - No utilities on site	10
5-hetween 2' - 5'			5 - Itilities but not within creation area	
1 - greater than 5'			1 - Utilities within potential creation area	
Describe:			Describe:	
Majority of site is also	dy wotland 0.2 inchas of surf	o water	No ovidence of utilities absorved within as adjacent to the site	
observed through and a	uy wettand. U-2 inches of surfa	ace water	ind evidence of utilities observed within or adjacent to the site.	
observed throughout m	iost of site in November.			
			Total Score out of 100	72











	We	tland Mitigatic	on Field Site Assessment Form		
		Ρ	roject Details		
Project Name:	I-495/I-270 Managed Lanes	s Study	Mitigation Site Number: WSS-150087		
Estimated Mitigation	Needs (ac):	TBD			
			-		
Date:	12/10/2018		Consultant Firm/Investigator(s): RK&K/KJH, CAS		
		<u>Site</u>	Location Details		
County:	Montgomery	Cross Roads:	River Rd. & Hunting Quarter Rd.		
Basin (HUC 8):	Middle Potomac-Catoctin		MDE Watershed (8 digit): 02140202		
Proximity to Impacted	d Wetland (mi.):	14	Lat/Long: 39.07594861	-77.41050967	
			<u>Site Data</u>		
Parcel Size (ac):	2,655		Potential Creation Area (ac): 5.8		
Lat/Long:	39.07594861	-77.41050967	Potential Preservation Area (ac): 0.7		
Land Use:	Agriculture		Adjacent Land Use: Forest, Wetlands		
Mapped Soils:	Lindside silt loam, 0 to 3 pe	ercent slopes, occa	asionally flooded, Melvin silt loam, 0 to 2 percent slopes, occasional	ly floodec	
Property Address:	0-0000 River Rd.				
Property Owner(s):	Maryland Department of N	atural Resources			
		Addition	al Field Observations		
RTF species present?	(explain below)	TBD	Evidence of disturbance? (explain below)	No	
Is site currently a wet	land?	Partially		Possibly	
Condition: Site is locat	ted in the McKee Beshers Wild	life Management	Condition: Site surrounded by PEO wetlands. Couple of wetlands	drain through	
Condition. Site is local	equations of dry old field in the D		condition. Site surrounded by PFO wetlands. Couple of wetlands of		
Area. Majority of site o	consists of ary old field in the P	otomac River 100	site. Some areas within site appear to have been used for agricult	ure in the past.	
YR floodplain.					
		Mitig	ation Site Rating		
Criteria		Score	Criteria	Score	
Soils		10	Vegetation	10	
10 - Greater than 50%	hydric soil		10 - Herbaceous cover		
5 - 10% to 50% hydric	soil		5 - Scrub-shrub cover		
1 - Less than 10% hydr	ric soil		1 - Mostly forested		
Describe:			Describe:		
60% of site is mapped as predominately hydric soils. Majority of site is		Majority of site is	Majority of site is dominated by teasel, reed canary grass, golden	rod, and	
dry field, however a co	ouple of wetlands drain throug	h the site.	dogbane. Narrow strip of trees runs through the center of the site	. Scattered tree	
, ,			saplings and shrubs were observed in the southern field.		
Undrology		10		1	
Tydrology	stroom	10	Land Use	L	
10 - Abuls weiland of 5 - Adjacent to wetland	d or stream		5 - Marginal Pacture		
1 - No connection to w	vetland or stream		1 - Old field		
Describe:			Describe:		
Site is surrounded by F	PFO wetlands and a couple of F	PFM wetlands	Site is located in the McKee Beshers Wildlife Management Area ar	nd consists mostly	
drain through the site			of old field	ia consists mostly	
drain through the site.					
100-Year Floodplain		10	Habitat Value	10	
10 - Yes (active eviden	ce of flooding)	10	10 - Contiguous to wetland/unland forest > 100 ac	10	
5-Yes (mapped but no	evidence of active flooding)		5 - Contiguous to wetland/upland forest 25-100 ac		
1 - No			1 - Contiguous to wetland/upland forest < 25 ac		
Describe:			Describe:		
Entire site is located in	n Potomac River 100 YR FEMA f	loodplain. Active	Site located in McKee Besher Wildlife Management Area (>100 ac	res of forest).	
evidence (debris) of flo	ooding at the southern bounda	ry of the site.		····,	
(.,			
Geomorphic Position		10	Ease of Access	10	
10 - Low or concave to	pography		10 - Yes (with existing direct vehicular access to potential site)		
5 - Flat topography	1 3 1 7		5- yes (open but no existing vehicular access)		
1 - High topography/st	teep slopes		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Site consists of low top	pography surrounded by wetla	nds.	Existing maintained access along edge of adjacent farm fields that	connects to	
			Hunting Quarter Rd.		
Estimated cut to wetla	and hydrology	10	Utilities Present	10	
10 - Less than 2'			10 - No utilities on site		
5-between 3' - 5'			5 - Utilities but not within creation area		
1 - greater than 5'			1 - Utilities within potential creation area		
Describe:			Describe:		
Groundwater observe	d 6" - 2' below ground surface.		No evidence of utilities observed within or adiacent to the site.		
			Total Score out of 100	91	





	We	tland Mitigatio	on Field Site Assessment Form	
		<u>P</u> 1	roject Details	
Project Name:	I-495/I-270 Managed Lane	s Study	Mitigation Site Number: WSS-150133	
Estimated Mitigation Ne Date: 11/12/18	eeds (ac):	TBD	Consultant Firm/Investigator(s): RK&K/KJH, CAS	
		Site	Location Details	
County:	Montgomery	Cross Roads:	Great Seneca Hwy & Mateny Rd.	
Basin (HUC 8):	Middle Potomac-Catoctin		MDE Watershed (8 digit): 02140208	
Proximity to Impacted V	Vetland (mi.):	3.25	Lat/Long: 39.14076147	-77.27203494
			Site Data	
Parcel Size (ac):	1,411.40		Potential Creation Area (ac): 0.9	
Lat/Long:	39.14076147	-77.27203494	Potential Preservation Area (ac): 0.5	
Land Use:	Agriculture		Adjacent Land Use: Institutional & Forest	
Mapped Soils:	Glenelg silt loam, 3 to 9 pe	rcent slopes; Baile	silt loam, 0 to 3 percent slopes; & Glenville silt loam, 3 to 8 percer	it slopes
Property Address:	11900 Clopper Rd.	latural Posourcos		
Property Owner(s).			al Field Observations	
	veloie holow)	Additiona	al Field Observations	Vac
RIE species present? (e)	kplain below)	Bartially	Evidence of disturbance? (explain below)	res
Condition: Wostorn port	ion of site consists of existin	g DEM (2.1 acros)	Condition: Contor portion of site (1.8 acros) consists of dry upland	d on a hillslong
with scattered trees that	t receives drainage from uns	tream sewage	dominated by autumn olive. Eastern portion of site (0.9 acres) co	nsists of low area
treatment plant	receives dramage nom ups	tream sewage	dominated by addition onvel Eastern portion of site (0.5 acres) co dominated by reed capary that may partially be wetland	
dominated by reed canary that may partially be welland.				
		Mitig	ation Site Rating	
		Score	<u>Criteria</u>	<u>Score</u>
Solis	udric coil	5	vegetation	10
5 - 10% to $50%$ hydric so	il		5 - Scrub-shrub cover	
1 - Less than 10% hydric	soil		1 - Mostly forested	
Describe:			Describe:	
46% of site is mapped as	predominately hydric soils.	This area consits	Majority of PEM wetland is dominated by stilt grass, arthraxon an	d reed canary
of existing PEM wetland			grass with scattered black willow, pin oak & autumn olive. Upland	l area is
			dominated by autumn olive.	
Hydrology		10	Land Use	5
10 - Abuts wetland or sti	ream		10 - Agricultural or Open Space	
5 - Adjacent to wetland	or stream		5 - Marginal Pasture	
1 - No connection to wer	tland or stream		1 - Old field Describe:	
Portions of site are exist	ing PEM wetland. Source of l	avdrology is	Site is located in Seneca Creek State Park and consists mostly of P	FM wetland and
upstream sewage treatm	nent plant. Fastern portion o	f site appears to	upland scrub shrub dominated by invasives. Not accessible to pub	lic.
abut wetland just south	of site.			
100-Year Floodplain		5	Habitat Value	1
10 - Yes (active evidence	of flooding)		10 - Contiguous to wetland/upland forest > 100 ac	
5-Yes (mapped but no e	vidence of active flooding)		5 - Contiguous to wetland/upland forest 25-100 ac	
1 - NO			1 - Contiguous to wetland/upland forest < 25 ac	
Describe: Western portion of site i	s located in 100 VR FEMA flo	odalain No	Describe: Powerlines run between the site and Seneca Creek State Park	
evidence of active floodi	ing		rowenines fun between the site and seneta creek state fark.	
Geomorphic Position		5	Ease of Access	5
10 - Low or concave topo	ography		10 - Yes (with <u>existing</u> direct vehicular access to potential site)	
5 - Flat topography			5- yes (open but no existing vehicular access)	
1 - High topography/stee	ep slopes		1 - NO (NO VENICUlar access, clearing needed)	
Eastern and western nor	tion of site consist of concav	e tonogranhy	Existing access road from Seneca Creek Hwy to powerlines. Access	s to rest of site
Center portion of site co	nsists of high tonography w/	gradual slones	will require access under nowerlines or scrub/shrub clearing	3 to rest of site
Estimated cut to wetlan	d hydrology	5	Utilities Present	1
10 - Less than 2'	, ,,		10 - No utilities on site	<u></u>
5-between 3' - 5'			5 - Utilities but not within creation area	
1 - greater than 5'			1 - Utilities within potential creation area	
Describe:			Describe:	
Eastern and western por	tion of site would require 0-	2' cut to	Gas line and overhead powerlines run along southern border of s	ite.
groundwater, however o	enter portion of site would I	ikely require		
greater than 3' cut to gro	oundwater.			
			Total Score out of 100	E2



<u>Site Photos</u>



Wetland Mitigation Field Site Assessment Form				
		P	roject Details	
Project Name:	I-495/I-270 Managed Lane:	s Study	Mitigation Site Number: WSS-150147A	
Estimated Mitigation N	eeds (ac):	TBD		
Date:	11/29/2018		Consultant Firm/Investigator(s): RK&K/KJH, SLY	
		Site	Location Details	
County:	Montgomery	Cross Roads:	: Watkins Rd. & Woodfield Rd.	
Basin (HUC 8):	Middle Potomac-Catoctin		MDE Watershed (8 digit): 02140208	
Proximity to Impacted V	Wetland (mi.):	6.9	Lat/Long: 39.23278219	-77.18832166
			<u>Site Data</u>	
Parcel Size (ac):	2 Parcels - 42.0 & 24.4		Potential Creation Area (ac): 3.98, 3.09	
Lat/Long:	39.23278219	-77.18832166	Potential Preservation Area (ac): 0.9	
Land Use:	Agriculture		Adjacent Land Use: Forest & Low Density	Residential
Mapped Soils:	Hatboro silt loam, 0 to 3 pe	ercent slopes, freq	quently flooded	
Property Address:	0-0000 Woodfield Rd. & W	atkins Rd. Gaither	rsburg 20882-0000	
Property Owner(s):	Maryland National Capital	Park & Planning Co	Commission	
		Addition	al Field Observations	
RTE species present? (e	explain below)	TBD	Evidence of disturbance? (explain below)	No
Is site currently a wetla	and?	Partially	 Was site formerly a wetland?	Likely
Condition: Entire site is	located in the 100 YB floodnl	ain to Magruder	Condition: The entire eastern side and portions of the western side	e of the
Branch There are two la	arge PEM wetlands dominate	d by cattail and	floodplain are dry and dominated by reed capary grass. There are	scattered black
reed capary grass in the	western floodplain	u by cattair and	willow black walnut and pin oak trees within the site	
reeu canary grass in the	western noouplain.		whilew, black wanter, and philoak trees within the site.	
		Mitig	gation Site Rating	
<u>Criteria</u>		Score	Criteria	<u>Score</u>
Soils		10	Vegetation	10
10 - Greater than 50% h	ydric soil		10 - Herbaceous cover	
5 - 10% to 50% hydric soil			5 - Scrub-shrub cover	
1 - Less than 10% hydric soil			1 - Mostly forested	
Describe:			Describe:	
Entire site is located in r	mapped hydric soils. Two larg	e PEM wetlands	Majority of the site is dominated by reed canary grass with scatter	ed black willow,
were identified in the w	estern floodplain.		black walnut and pin oak. Large PEM in northwestern corner of sit	e is dominated
			by cattail. Inclusions of false nettle and common milkweed observ	ed in floodplain.
Hydrology		10	Land Use	5
10 - Abuts wetland or st	tream		10 - Agricultural or Open Space	
5 - Adjacent to wetland	or stream		5 - Marginal Pasture	
1 - No connection to we	tland or stream		1 - Old field	
Describe:			Describe:	
Existing PEM wetlands in	n site's western floodplain. Pe	erennial channel	Site is located in Lower Magruder Branch Park and consists of reed	d canary
(Magruder Branch) flow	<i>is</i> through site.		dominated floodplain with scattered black willow and black walnu	t.
100-Year Floodplain		10	Habitat Value	10
10 - Yes (active evidence	e of flooding)		10 - Contiguous to wetland/upland forest > 100 ac	
5-Yes (mapped but no e	evidence of active flooding)		5 - Contiguous to wetland/upland forest 25-100 ac	
1 - No			1 - Contiguous to wetland/upland forest < 25 ac	
Describe:			Describe:	
Majority of site is locate	ed in Magruder Branch 100 Y	R FEMA	Site connects downstream to Great Seneca Creek Park (>100 acres	s of forest).
floodplain. Active evider	nce of flooding (matted dowr	ι veg & water		
staining).				
Geomorphic Position		10	Ease of Access	5
10 - Low or concave top	ography		10 - Yes (with existing direct vehicular access to potential site)	
5 - Flat topography			5- yes (open but no existing vehicular access)	
1 - High topography/ste	ep slopes		1 - No (no vehicular access, clearing needed)	
Describe:			Describe:	
Site consists of low topo	ography surrounded by uplan	d slopes. Entire	Site is open, but no existing vehicular access. Potential access direct	ctly off Watkins
site within 100YR floodp	plain.		Road.	
Estimated cut to wetlar	nd hydrology	5	Utilities Present	10
10 - Less than 2'			10 - No utilities on site	
5-between 3' - 5'			5 - Utilities but not within creation area	
1 - greater than 5'			1 - Utilities within potential creation area	
Describe:			Describe:	
Groundwater observed	2.5' below ground surface in	non-wetland	No utilities observed within site, however overhead powerlines alo	ong watkins road
floodplain areas.			just outside site boundaries.	
			Total Score out of 100	85





	Wetland Mitigation Field Site Assessment Form				
		Pi	roject Details		
Project Name:	I-495/I-270 Managed Lanes	s Study	Mitigation Site Number: WSS-150147B		
Estimated Mitigation N	leeds (ac):	TBD			
	-		-		
Date:	11/12/2018		Consultant Firm/Investigator(s): RK&K/KJH, CAS		
		<u>Site</u>	Location Details		
County:	Montgomery	Cross Roads:	Watkins Rd. & Woodfield Rd.		
Basin (HUC 8):	Middle Potomac-Catoctin		MDE Watershed (8 digit): 02140208		
Proximity to Impacted	Wetland (mi.):	6.9	Lat/Long: 39.23521278	-//.18//852/	
			<u>Site Data</u>		
Parcel Size (ac):	2 Parcels - 24.7 & 16.3		Potential Creation Area (ac): 1.49		
Lat/Long:	39.23521278	-77.18778527	Potential Preservation Area (ac): 0.9, 0.2		
Land Use:	Forest & Agriculture		Adjacent Land Use: Low Density Residentia	al	
Mapped Soils:	Hatboro silt loam, 0 to 3 pe	ercent slopes, freq	uently flooded		
Property Address:	0-0000 Watkins Rd. & 0-00	00 Woodfield Rd.			
Property Owner(s):	Maryland National Capital	Park & Planning Co	ommission		
		<u>Additiona</u>	al Field Observations		
RTE species present? (explain below) TBD			Evidence of disturbance? (explain below)	No	
Is site currently a wetla	and?	Partially	Was site formerly a wetland?	Likely	
Condition: Entire site is	located in the 100 YR floodpl	ain to Magruder	Condition: Drier portions of floodplain are dominated by reed cana	ary grass or	
Branch. Large portions	of floodplain consist of PEM w	vetland	golden rod. Seep wetlands along toe of valley slopes at edge of floo	odplain. High	
dominated by reed can	ary grass.		quality PSS wetland along southeastern side of site.		
		N/i+i~	intion Site Dating		
Criteria		Score	Criteria	Score	
Soils		10	Vegetation	10	
10 - Greater than 50% h	avdric soil	10	10 - Herbaceous cover	10	
5 - 10% to 50% hydric s	oil		5 - Scrub-shrub cover		
1 - Less than 10% hydrid	c soil		1 - Mostly forested		
Describe:			Describe:		
Entire site is located in	mapped hydric soils. Large po	rtions of the site	Majority of site is dominated by reed canary grass, with scattered b	olack willow.	
were verified as hydric	soils in the field.		Large area in northeastern corner of site dominated by Canada gol	denrod.	
Hydrology		10	Land Use	5	
10 - Abuts wetland or st	tream	20	10 - Agricultural or Open Space		
5 - Adjacent to wetland	or stream		5 - Marginal Pasture		
1 - No connection to we	etland or stream		1 - Old field		
Describe:			Describe:		
Existing PEM and PSS w	vetlands within and abutting s	ite. Perennial	Site is located in Lower Magruder Branch Park and consists of reed	canary	
channel (Magruder Bran	nch) flow through site.		dominated floodplain with scattered black willow.		
100-Year Floodplain		10	Habitat Value	10	
10 - Yes (active evidenc	e of flooding)		10 - Contiguous to wetland/upland forest > 100 ac		
5-Yes (mapped but no	evidence of active flooding)		5 - Contiguous to wetland/upland forest 25-100 ac		
1 - No			1 - Contiguous to wetland/upland forest < 25 ac		
Describe:			Describe:		
Entire site is located in	Magruder Branch 100 YR FEM	IA floodplain.	Site connects upstream to Lower Magruder Branch Park (>100 acre	es of forest).	
Active evidence of floor	ding at upstream end of site (r	matted down veg			
& sediment deposition)		10	Free of Assess		
Geomorphic Position		10	Lase of Access	5	
10 - Low or concave top	oography		10 - Yes (with <u>existing</u> direct vehicular access to potential site)		
5 - Flat topography	an clones		5- yes (open but no existing venicular access)		
1 - High topography/ste	sep slopes		1 - No (no veniculai access, clearing needed)		
Site consists of low tone	ography surrounded by uplan	d slones Entire	Site is onen, hut no existing vehicular access. Potential access direc	tly off Watkins	
site within 100VR flood	nlain	a stopes. Little	Road	ity on watkins	
Estimated cut to wetla	nd hydrology	5	Utilities Present	10	
10 - Less than 2'	01	-	10 - No utilities on site		
5-between 3' - 5'			5 - Utilities but not within creation area		
1 - greater than 5'			1 - Utilities within potential creation area		
Describe:			Describe:		
Groundwater observed	2-3' below ground surface in	non-wetland	No utilities observed within site.		
floodplain areas.	0	-			
			I		
			Total Score out of 100	85	







STREAM MITIGATION RATING CRITERIA & FIELD SITE ASSESSMENT FORMS

Stream Mitigation Field Site Assessment Rating Criteria

Mitigation Rating Instructions

Estimated bank erosion within reach

Determine what percent of bank erosion exist within the reach being assessed. Record a photo that represents the condition.

Degree of Channel Incision

On average, what is the depth of bank height or incision of channel within its valley, i.e., distance from channel invert to top of bank.

Floodplain Access

Estimate how frequent floodplain is being accessed. Factors to consider include: rack lines, flattened grasses or forbs, bank height or gauge data . If easily available. Knowledge of any recent high flows in the area. Any landowner observations may be helpful.

Opportunity for Floodplain Development

Determine whether site conditions allow for the development/creation of a floodplain that can be frequently accessed. Consider any obstacles to creating a floodplain such as existing structures/infrastructure, improved properties or land use.

Drainage Area Evaluation

Using the drainage area calculated and recorded in the <u>Site Data</u> section of the form, provide a score which corresponds with the calculated drainage area.

Vegetation

Describe the existing vegetation cover that exists along the channel and within the area on which construction would take place to perform the mitigation. Describe any difficulty the vegetation may play in accessing and constructing the restoration. Record a photo to show typical condition.

Land Use

Characterize the land use along the stream reach and/or floodplain area. Describe condition.

Opportunity for Ecological Lift

Consider what opportunities for ecological lift may exist, such as, sediment reduction, temperature regulation, floodplain connectivity, fish passage, habitat for fish and/or benthics, and water chemistry (quality). Equally consider whether the lift can be realistically achieved and sustained. Consider what obstacles that would need to be overcome to achieve lift. Are the obstacles within SHA's control?

Ease of Access

Consider how easy/difficult it may be to access stream to perform construction or restoration effort. Does considerable clearing or access road construction need to be performed?

Utilities Present

Do utilities exist within or nearby the stream and do they present an issue that may effect construction, access, or reforestation efforts. Describe what utilities are seen such as overhead wires vs. under ground utilities such as sewer lines, gas lines or cables.

	Str	eam Mitigation	Field Site Assessment Form	
		Pro	ject Details	
Project Name:	I-495/I-270 Managed Lan	nes Study	Mitigation Site Number: MO-00029	
Projects Estimated Strea	am Mitigation Needs (LF):	TBD	-	
Date of Field Assessment	11/16/2018		Consultant Firm/Investigator(s): CRI/MD_SI	
	Site	Location Details	s-taken from desktop review	
County:	Montgomery	Cross Roads:	Old Spring Rd & Beach Dr	
Basin (HUC 8):	Middle Potomac-Anacost	tia-Occoquan	MDE Watershed (8 digit): 2140206	
Proximity to Impacted S	tream (mi.):	0.04	Lat/Long: 39.013798	-77.075727
			Site Data	
Parcel Size (ac):	5 parcels - 9.5, 72.6, 6.5,	1.7, 4.1	Potential Restoration Reach (LF): 4,948	
Site Opportunities:	<u>X</u> Channel Restoration	Livestock Exclusion	Riparian Buffer PlantingHabitat Enhancement	Fish Passage
Stream Order: Drainage Area to Beach	2nd	Stream Hydrology:	Perennial Stream Use:	
Land Use:	Forest. Other Developed	Lands	Mapped Soils:	lt loam
Property Address:	Middle Parcel - Kensingto	on Parkway, Kensing	ton, MD 20895	
Property Owner(s):	Maryland National Capita	al Park & Planning C	ommission	
		General F	ield Observations	
Is there evidence that the	ne stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the c	onfines of the
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limit	ts? Explain
Explain:			Explain:	
Yes, previous stabilizatio	n evident. Several road cro	ossing over the	Yes, stream on MNCPPC property. Roadways on either side of	f the site make for
reach. Exposed sewer cr	ossing in stream, may be a	a fish passage	good access to the study reach.	
concern. Manhole riser i	n center of stream.			
		Mitigat	tion Site Pating	
Criteria		Score	ICriteria	Score
Estimated Bank erosion	within reach	5	Vegetation	10
10 - Greater than 50%	Within reach	5	10 - Herbaceous cover (non-wetland)	10
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
Approximately 15% of st	ream banks are eroded.		Stream is surrounded by mowed lawn.	
	-	_		
Degree of Channel Incisi	ion	5	Land Use	1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space	
5 - Bank Height between 1 - Bank Height less than	a and to reet		5 - Marginal Pasture 1 - Old field/ Developed/Forested	
Describe:				
Banks are ~4-6 ft. tall.			Stream flows parallel to residential road in neighborhood.	
Existing Eloodalain Acco		10	Opportunity for Ecological Lift	5
10 - No evidence of out of	of bank flooding	10	10 - Conditions exist for several aspects of lift to be achieved	and sustained
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sust	ain
Describe:			Describe:	
In general, channel is inc	ised ~4-6 feet. Channel is	more incised	Site is between two roadways, thus limited potential buffer. S	Several crossings
downstream of Beach Di	r.		make bed elevation poor, little room for floodplain connectio	'n.
Opportunity for Floodpl	ain Development	1	Ease of Access	10
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site)
1 - Little to no space for	floodnlain development		1 - No (no vehicular access, clearing needed)	
Describe:			Describe:	
Potential for 3 times stream width, would require clearing. Contained		Directly off Kensington Pkwy. & Kingston Rd.		
by two roads Kensingtor	Pkwy. & Kingston Rd.	0		
, 0	, 0			
Drainage Area Evaluatio	n	5	l Itilities Present	1
10 -D.A. less than 1 sq. n	ni.		10 - No utilities on site	<u> </u>
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration area	
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area	
Describe:			Describe:	
Drainage area - 1.71 squ	are miles.		Several exposed crossings in stream.	
· · · · ·			-	
			Total Score out of 100	53





	Str	eam Mitigation	Field Site Assessment Form	
		Pro	ject Details	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MO-00034	
Projects Estimated Stream	am Mitigation Needs (LF)	TBD		
			·	
Date of Field Assessment:	11/16/2018		Consultant Firm/Investigator(s): CRI/MD, SJ	
	Site	Location Details	s-taken from desktop review	
County:	Montgomery	Cross Roads:	Campbell Pl. & Campbell Dr.	
Basin (HUC 8): Provimity to Impacted 9	Middle Potomac-Anacost	na-Occoquan	MDE Watershed (8 digit): 2140206	20 01/726 77 050106
Froximity to impacted a	stream (mi.).	0		9.014720 -77.059190
	2 manuale 121000	<u>-</u>	Site Data	000
Parcel Size (ac):	3 parcels - 1.2, 1.0, 0.0	the start Suducion	Potential Restoration Reach (LF):	882
Site Opportunities.		LIVESTOCK Exclusion	Kiparian Butter PlantingHabitat El	ThancementFISTI Passage
Drainage Area to Reach	(sa mi.)	0.68		
Land Use:	Forest. Transportation	0.00	Mapped Soils: Glenelg silt	t loam Brinklow-Blocktown
Property Address:	Main Parcel - Campbell D	rive, Silver Spring, N	AD 20910	hannony silt loams
Property Owner(s):	Maryland National Capita	al Park & Planning C	ommission	
		General F	ield Observations	
Is there evidence that t	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done w	ithin the confines of the
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the p	parcel limits? Explain
Explain:	0, 10,	,	Explain:	•
Yes, exposed manhole ri	iser on left bank.		No. Will require access through neighborhood at Ca	ampbell Dr at the top of the
			steep, forested valley.	
		Mitigat	tion Site Rating	
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	Score
Estimated Bank erosion	within reach	5	Vegetation	1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
Banks and bed controlle	d by bedrock and large bo	ulders.	Stream is surrounded by mature forest.	
	-	_		
Degree of Channel Incis	ion	5	Land Use	1
10 - Bank Height greater	r than 10 feet		10 - Agricultural or Open Space	
5 - Bank Height betweer	1 3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less than	1 3 Teet		1 - Old field/ Developed/Forested	
Describe:			Describe: Stream is surrounded by residential and commercia	
Daliks ale 5-5 it. tall.				al uses.
Existing Floodplain Acce	ess	10	Opportunity for Ecological Lift	1
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be	e achieved and sustained
5- Yes (Infrequent out o	f bank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of freq	uent flooding)		 Conditions are such that Lift is difficult to achiev 	e and sustain
Describe:			Describe:	
No evidence of out of ba	ank flooding. Stream is a "\	/" channel.	Stable "V" channel, no floodplain reconnection. Bee	drock would make
			construction difficult.	
Opportunity for Floodp	lain Development	1	Ease of Access	1
10 - Existing space for fig	oodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to por	tential site)
5 - Existing space for floo	floodolain 3 to 10 times strea	m width	5- yes (open but no existing venicular access)	
1 - Little to no space for			1 - NO (NO VENICULAI ACCESS, Cleaning needed)	
Describe: Stroom is a "V" channel	confined vallov controlled	by bodrock	Describe: Steen confined forested valley. Only access is three	ugh noighborhood adiacont
Stream is a v Channel,	commed valley controlled	by bedrock.	steep, commed forested valley. Only access is thro	ngn neighbornood adjacent
			to housing.	
Drainage Area Evaluation	on	10	Utilities Present	1
10 -D.A. less than 1 sq. r	ni.		10 - No utilities on site	
5- D. A. between 1 & 3 s	iq. mi.		5 - Utilities but not within restoration area	
1 - D. A. greater than 3 s	sq. mi.		1 - Utilities within potential restoration area	
Describe:			Describe:	
Drainage area - 0.68 squ	iare miles.		Sewer line adjacent to stream channel.	
			Total Score ou	IT OT 100 36





	Str	eam Mitigation	Field Site Assessment Form	
		Pro	ject Details	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MO-00038	
Projects Estimated Strean	n Mitigation Needs (LF):	TBD		
Data of Field Associations	11/11/2010		Concultant Firm (Investigator(c))	
Date of Field Assessment:	11/14/2010 Site	Location Details	staken from deskton review	
County:	Montgomery	Cross Roads:	Lavhill Rd. & Chapel Hill Rd.	
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 2140205	
Proximity to Impacted S	tream (mi.):	6.9	Lat/Long: 39.11603	5 -77.040559
		ç	Site Data	
Parcel Size (ac):	4 parcels - 11.4, 4.7, 4.4,	4.9	Potential Restoration Reach (LF): 2,91	2
Site Opportunities:	X_Channel Restoration	Livestock Exclusion	XRiparian Buffer PlantingXHabitat Enhancemen	ntFish Passage
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Use	:: <u>IV</u>
Drainage Area to Reach	(sq. ml.) Medium Density Residen	3.39 tial Forest	Manned Soils:	
Property Address:	Middle Parcel - Chapel Hi	Il Road, Silver Spring	MD 20906	rinklow-Blocktown
Property Owner(s):	Maryland National Capita	al Park & Planning Co	ommission	silf loams
	· ·	General F	ield Observations	
Is there evidence that th	e stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the	confines of the
of human action, like gra	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel lim	nits? Explain
Explain:			Explain:	
Yes; Restoration in 1,100	linear ft. of downstream	section. Three	Yes; Can be done in parcel, could extend upstream within pr	roperty access.
sewer crossings present	upstream of road crossing			
		D A! +! = = 4	line Cite Detine	
Criteria		Score	lon Site Kating	Score
Estimated Bank erosion	within roach	5012	Vegetation	1
10 Groater than 50%	within reach	5	10 Herbacoous cover (non wetland)	I
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
Approximately 40% of ba	anks eroded. Large stretch	es of moderate-to-	Mostly mature forest, areas where restoration has taken pla	ace are mostly
severe erosion on outsid	e meanders, from 4-8 ft. t	all.	herbaceous cover on banks.	,
Degree of Channel Incisi	on	5	Land Use	1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space	
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested	
Describe: Banks are ~4 ft, tall on av	vorago. Somo in channol h	onchos aro	Describe: Mactly foracted, within residential areas oncreashing on up	stroom and
forming	rerage. Some mechanner b	enclies are	mostry forested, within residential areas encroaching on up.	stream end.
iorning.				
Existing Floodplain Acce	SS	10	Opportunity for Ecological Lift	5
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	d and sustained
5- Yes (Infrequent out of 1 Vos (ovidence of frequent	Dank now)		 Conditions are such that Lift is difficult to achieve and such 	stain
Describe:			Describe:	stain
Evidence of high water m	nuch lower from ton of ha	nk	Large unstream sediment source, habitat enhancement uns	tream floodolain
	iden lower from top of ba	IK.	reconnection is low increase rinarian cover unstable geom	ornhology
			reconnection is low, increase riparian cover, unstable geom	orphology.
Opportunity for Floodpla	ain Development	1	Ease of Access	1
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential sit	:e)
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)	
1 - Little to no space for f	floodplain development		1 - No (no vehicular access, clearing needed)	
Describe:			Describe:	
Floodplain development	limited by mature forest a	and residential	Some access to sections of stream from Chapel Hill Road, bu	it clearing needed
properties at upstream e	end of reach.		for haul roads and upstream access.	
Drainage Area Evaluatio	n ·	1	Utilities Present	1
IU-D.A. less than 1 sq. m	11. a mi		LU - NO UTILITIES ON SITE	
$J - D$. A. Detween $I \otimes J \otimes G$	4. 1111. a. mi		 - ounces but not within restoration area 1 - Utilities within notantial restoration area 	
Describe	<u>4· '''''</u>			
				hanka
orainage area - 3.39 squa	are miles.		inree sewer crossings, in-stream manholes observed along	Danks.
			Total Score out of 100) 31





Stream Mitigation Field Site Assessment Form					
		Pro	oject Details		
Project Name:	I-495/I-270 Managed Lan	nes Study	Mitigation Site Number: MO-00042		
Projects Estimated Stream	n Mitigation Needs (LF):	TBD			
			-		
Date of Field Assessment:	11/14/2018		Consultant Firm/Investigator(s): CRI/MD, DS		
	<u>Site</u>	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Adrian St. & Turkey Branch Pkwy.		
Basin (HUC 8): Browinsity to Immosted C	Middle Potomac-Anacost	tia-Occoquan	MDE Watershed (8 digit): 2140206	77.004100	
Proximity to impacted S	tream (mi.):	2.48	Lat/Long: 39.067483	-77.084188	
			Site Data		
Parcel Size (ac):	4 parcels - 5.7, 13.2, 9.0,	35.0	Potential Restoration Reach (LF): 6,936		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer PlantingXHabitat Enhancement	Fish Passage	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use: 1		
Drainage Area to Reach	(Sq. mi.)	3.66	Manual Saila		
Land Use:	weatum Density Residen	tial, Forest	Glenelg-Urban land co	mplex, Hatboro	
Property Address:	Middle Parcel - Turkey Br	ranch Parkway, Silve	er Spring, MD 20906 silt loam, Baile	silt loam	
Property Owner(s):	Maryland DNR				
		General F	ield Observations		
Is there evidence that the	ne stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the co	nfines of the	
of human action, like gra	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limits	? Explain	
Explain:			Explain:		
Yes; Evidence of stream	restoration throughout, se	everal sewer	Yes; the stream is contained with in the parcel and the parcel of	an be accessed	
crossings.			directly from ROW		
		Mitiga	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	Criteria	<u>Score</u>	
Estimated Bank erosion	within reach	10	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Approximately 60% of ba	anks are eroded, ranging fi	rom 5-15 ft. tall.	Forested park, less than 100 ft. buffer on right bank in downstr	eam section.	
Moderate-to-severe eros	sion present.				
Degree of Channel Incisi	ion	5	Land Use	1	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Banks are ~7 ft. tall on av	verage.		Immediate land use is forested park, drainage area is highly im	pervious.	
Existing Floodplain Acce	SS	5	Opportunity for Ecological Lift	5	
10 - No evidence of out of	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved a	nd sustained	
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and susta	in	
Describe:			Describe:		
A few low benches prese	ent throughout site provid	e relief during	Increase geomorphic stability, bank stability; however, urban w	vatershed will	
storm flows.			make improvements to biological water quality difficult.		
Opportunity for Floodpl	ain Development	5	Ease of Access	1	
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site)		
5 - Existing space for floc	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Over widened channel could be narrowed and low benches installed			Clearing will be required to access entire reach, areas off of Tu	rkey Branch	
to provide out-of-bank flows in some areas.			Pkwy. could be used for access.		
Drainage Area Evaluatio	n	1	Utilities Present	1	
10 -D.A. less than 1 sq. m	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 so	q. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	q. mi		1 - Utilities within potential restoration area		
Describe:			Describe:		
Drainage area - 3.66 sou	are miles.		Several sewer line crossings, overhead power lines present in s	ections.	
<u> </u>			- 0.,	-	
			Total Score out of 100	35	





St	ream Mitigation	Field Site Assessment Form		
	Pro	bject Details		
Project Name: I-495/I-270 Manag	ed Lanes Study	Mitigation Site Number: MPAO0001		
Projects Estimated Stream Mitigation Needs (LF	: TBD	-		
Date of Field Assessment: 4/3/2019)	Consultant Firm/Investigator(s): RK&K/KJH. BDM		
Site	Location Details	s-taken from desktop review		
County: Prince George's	Cross Roads:	: 495 & Cherry Hill Road		
Basin (HUC 8): Middle Potomac-Anacos	itia-Occoquan	MDE Watershed (8 digit): 0214	10205	
Proximity to Impacted Stream (mi.):	0	Lat/Long: 39.01852	26 -76.949208	
	<u>-</u>	Site Data		
Parcel Size (ac): 363		Potential Restoration Reach (LF): 1,20	<u>)2</u>	
Site Opportunities:X_Channel Restoration	Livestock Exclusion	XRiparian Buffer PlantingAbitat Enhanceme XRiparial Stroom List	entXFish Passage	
Drainage Area to Reach (sg. mi.)			e. <u>1</u>	
Land Use: Agriculture and Forested	1,	Mapped Soils: Russett-Christiana d	complex	
Property Address: Orchard Loop Road, Coll	ege Park, MD		<u> </u>	
Property Owner(s): BARC				
	General F	ield Observations		
Is there evidence that the stream has been distu	rbed by some kind	Can the stream restoration be reasonably done within the	e confines of the	
of human action, like grading, dumping, livestocl	د, culvert, etc?	parcel or does it require connections beyond the parcel limits? Explain		
Explain:		Explain:		
Concrete-lined channel in upstream reach. Tires d	umped in culvert in	Yes - entire stream within BARC property.		
downstream reach. Riprap further downstream. C	oncrete poured			
onto banks near sewer line.	5 A't'	tion City Dation		
Critoria	<u>iviitiga</u>	tion Site Rating	Scoro	
Estimated Pank erosion within reach	5016	Vegetation		
10 Groater than 50%	5	10 Herbacoous cover (non-wetland)	5	
5 - 10% to 50%		10 - Herbaceous cover (non-wetland) 5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%		1 - Mostly forested and/or wetland		
Describe:		Describe:		
Downstream reach relatively stable with vegetation	on on banks.	Downstream - scrub/shrub		
Upstream reach has moderate to severe bank ero	sion and is unstable.	Midstream - agricultural field		
		Upstream - mid-successional forest		
Degree of Channel Incision	5	Land Use	5	
10 - Bank Height greater than 10 feet		10 - Agricultural or Open Space	-	
5 - Bank Height between 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than 3 feet		1 - Old field/ Developed/Forested		
Describe:		Describe:		
3 to 8 feet tall, on average 6 to 8 feet tall.		Agricultural and forested		
Existing Floodplain Access	10	Opportunity for Ecological Lift	5	
10 - No evidence of out of bank flooding		10 - Conditions exist for several aspects of lift to be achieved and sustained		
5- Yes (Infrequent out of bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:		Describe:		
No evidence of floodplain connection; channel de	eply incised.	No floodplain potential, no water quality potential. In the upstream reach,		
		potential exists for channel stabilization and instream habi	tat uplift.	
Opportunity for Floodplain Development	1	Ease of Access	5	
10 - Existing space for floodplain greater than 10 t	imes stream width	10 - Yes (with existing direct vehicular access to potential s	ite)	
5 - Existing space for floodplain 3 to 10 times stream	am width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:		Describe:		
Downstream = adjacent agricultural fields in use b	y BARC	Downstream = existing access through agricultural field		
Upstream = steep slopes and narrow valley		Upstream = forested and steep slopes		
Drainage Area Evaluation	10	Utilities Present	1	
10 -D.A. less than 1 sq. mi.		10 - No utilities on site		
5- D. A. between 1 & 3 sq. mi.		5 - Utilities but not within restoration area		
ц - D. A. greater than 3 sq. ml.		1 - Utilities within potential restoration area		
Describe:		Describe:		
0.17 square miles		Exposed sewer crossing. Gas line and power lines run para	lel to stream.	
		Total Score out of 10	JO 52	





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	ed Lanes Study	Mitigation Site Number: MPAO00	102	
Projects Estimated Strea	am Mitigation Needs (LF):	TBD	-		
Date of Field Assessment:	4/3/2019		Consultant Firm/Investigator(s): RK&K/KI	H. BDM	
	Site	Location Details	s-taken from desktop review		
County:	Prince George's	Cross Roads:	495 & Cherry Hill R	oad	
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit):	02140205	
Proximity to Impacted S	tream (mi.):	0.13	Lat/Long:	39.014569 -76.943005	
		<u>.</u>	Site Data		
Parcel Size (ac):	363		Potential Restoration Reach (LF):	4,795	
Site Opportunities:	X_Channel Restoration	Livestock Exclusion	XRiparian Buffer PlantingHabita	at EnhancementFish Passage	
Stream Order:	2nd	Stream Hydrology:	Perennial	Stream Use:	
Land Use:	Agriculture	17.5	Mapped Soils:		
Property Address:	S Farm Dr and National A	gricultural Research	n Rd, College Park, MD		
Property Owner(s):	BARC	0	, , ,		
		General F	ield Observations		
Is there evidence that th	ne stream has been distur	bed by some kind	Can the stream restoration be reasonably done	e within the confines of the	
of human action, like gra	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the	ne parcel limits? Explain	
Explain:			Explain:		
Localized rip-rap areas al	long stream banks. Two co	oncrete sewer	Yes. All on BARC property.		
crossings across channel					
		Mitigat	tion Site Pating		
Criteria		Score		Score	
Estimated Bank erosion	within reach	1	Vegetation	5	
10 - Greater than 50%		_	10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Majority of banks are sta	abilized by sycamore roots	& rip-rap. 3	Majority of reach consists of narrow sycamore h	iedgerow.	
localized severe bank ero	osion areas				
Degree of Channel Incisi	ion	10	Land Use	10	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:	51000				
8-12' tall			Agricultural fields and narrow strip of sycamore	hedgerow around stream	
			· · · ·	5	
Fuisting Floodulain Asso		10	On a suburity for Foological Lift	1	
Existing Floodplain Acce	ss of bank flooding	10	Opportunity for Ecological Lift	L be achieved and sustained	
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects	be demeved and sustained	
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:	•		Describe:		
No evidence of flooding.	Manmade berm surround	l channel to	Limited potential for tree plantings in buffer. No potential for floodplain or		
prevent flooding onto ag	ricultural fields.		water quality improvements. Minimal potential for bank stabilization. No		
			habitat potential.		
Opportunity for Floodal	ain Develonment	1	Fase of Access	10	
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to	potential site)	
5 - Existing space for floc	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development			1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Adjacent areas are used for USDA agricultural purposes.			Existing open access along channel.		
Drainage Area Evaluatio	n	1	Utilities Present	1	
10 -D.A. less than 1 sq. m	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 sq. mi.			5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. mi.			1 - Utilities within potential restoration area		
Describe:			Describe:		
17.5 square miles			2 sewer line crossings. Stormwater pipes. Overh	ead powerlines.	
			Total Score	out of 100 50	



Site Photos



Stream Mitigation Field Site Assessment Form					
		Pro	oject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: MPAO0003		
Projects Estimated Stre	am Mitigation Needs (LF):	TBD			
Data of Field Assessments	4/2/2010		Consultant Firm (Investigator(a))		
Date of Field Assessment:	4/3/2019	Location Dotaile	taken from deskton review		
County:	Prince George's	Cross Boads:	195 & Cherry Hill Road		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDF Watershed (8 digit): 020700	010	
Proximity to Impacted S	Stream (mi.):	0.5	Lat/Long: 39.012977	-76.945156	
, ,			Site Data		
Parcel Size (ac):	363	<u>1</u>	Potential Restoration Reach (LF): 1.987		
Site Opportunities:	X Channel Restoration	Livestock Exclusion	X Riparian Buffer Planting X Habitat Enhancement	X Fish Passage	
Stream Order:		Stream Hydrology:	Perennial Stream Use:		
Drainage Area to Reach	(sq. mi.)	0.11			
Land Use:	Agriculture and Forested		Mapped Soils: Russett-Christiana cor	nplex	
Property Address:	National Agricultural Rese	earch Rd, College Pa	ark, MD		
Property Owner(s):	BARC				
		General F	ield Observations	G C U	
is there evidence that t	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the c	onfines of the	
of human action, like gr	ading, dumping, livestock,	culvert, etc?	parcel or does it require connections beyond the parcel limits? Explain		
Explain:			Explain:		
3 culverts along reach. A	Areas with issues ~ 500LF		Yes - entire stream within BARC property.		
		D.A.itimor	tion Site Deting		
Critoria		<u>iviitiga</u>	tion Site Rating	Score	
Estimated Pank erection	within roach	1	Vegetation	1	
10 Groater than 50%	within reach	L	10 Herbacoous cover (non wetland)	1	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe		
Majority of site consists	on incised channel with ba	nks stabilized by	Midstream - scrub-shrub. Upstream and downstream - forest	ed	
vegetation. Downstream	n and upstream segments a	are only unstable			
areas		,			
Degree of Channel Incis	ion	5	Land Use	5	
10 - Bank Height greater	r than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height betweer	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	າ 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
0-10' tall banks. Downst	ream - 10' tall. Midstream -	- 4-6' tall.	Midstream - Agricultural. Upstream and downstream - forest	ed.	
Upstream - 0-8' tall.					
Existing Floodplain Acce	ess	10	Opportunity for Ecological Lift	5	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5- Yes (Infrequent out o	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sust	ain	
Describe:			Describe:		
Deeply incised channel.	No evidence of floodplain a	access in	No floodplain potential, no water quality potential. Some bank stabilization,		
downstream and midstr	eam. Very minor evidence	in upstream.	fish passage instream habitat, and invasive treatment potent	ial	
				-	
Opportunity for Floodp	lain Development	1 	Ease of Access	5	
10 - Existing space for flo	odplain greater than 10 th	mes stream width	5 yes (open but no existing vehicular access to potential site)	
1 - Little to no space for	floodplain development		1 - No (no vehicular access clearing needed)		
Lescribe:			Describe:		
Upstream - steep slopes, Downstream - steen slopes, Midstream -			Midstream - agricultural field		
active agricultural field.			Unstream and downstream - forested and steen slopes		
			opsitean and downstream "forested and steep slopes		
Drainage Area Evaluatio	on	10	Utilities Present	1	
10 -D.A. less than 1 sq. r	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 sq. mi.			5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. mi.			1 - Utilities within potential restoration area		
Describe:			Describe:		
0.11 square miles			Powerlines north of culvert. Sewer line at downstream end. V	Naterline in	
			midstream.		
			Total Score out of 100	44	




	Str	eam Mitigation	Field Site Assessment Form		
		Pro	pject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number:	VPAO0004A	
Projects Estimated Stre	am Mitigation Needs (LF):	TBD	-		
Date of Field Assessment:	4/9/2019		Consultant Firm/Investigator(s):	K&K/KJH. BDM	
	Site	Location Details	s-taken from desktop review		
County:	Prince George's	Cross Roads:	Sellman Road	& E Line Road	
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit):	02070010)
Proximity to Impacted	Stream (mi.):	0.22	Lat/Long:	39.026726	-76.929588
			Site Data		
Parcel Size (ac):	502		Potential Restoration Reach (LF):	4,212	
Site Opportunities:	Channel Restoration	Livestock Exclusion	Riparian Buffer Planting	XHabitat Enhancement	Fish Passage
Stream Order:	2nd	Stream Hydrology:	Perennial	Stream Use:	
I and Lise.	Agriculture	10	Manned Soils:	`F	
Property Address:	Sellman Road, Beltsville.	MD		, ,	
Property Owner(s):	BARC				
		General F	ield Observations		
Is there evidence that t	he stream has been distur	bed by some kind	Can the stream restoration be reasonal	bly done within the con	fines of the
of human action, like g	rading, dumping, livestock	, culvert, etc?	parcel or does it require connections be	eyond the parcel limits?	Explain
Explain:			Explain:		
Bridge. Rip-rap in chanr	el and along banks downst	ream of bridge.	Yes - entire stream within BARC propert	y.	
		<u>Mitiga</u>	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>		<u>Score</u>
Estimated Bank erosior	ו within reach	1	Vegetation		5
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10% Describe:			1 - Mostly forested and/or wetland		
Very minor erosion. Majority of banks are stabilized by vegetation			Surrounded by this strip of early to mid	successional trees. Pive	r birch and
very minor erosion. Ma	JUILLY OF DATIKS are stabilize	u by vegetation,	Bradford Door	-successional tiees. Rive	
especially river birch tre	e roots.		Bradioru Pear		
Degree of Channel Incis	sion	5	Land Use		10
10 - Bank Height greate	r than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height betwee	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less tha	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
6-10' tall banks. Adjacer	nt floodplain berm		Adjacent BARC agricultural fields. Thin s	trip of trees around char	nnel.
Existing Floodplain Acc	ess	10	Opportunity for Ecological Lift		1
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects	of lift to be achieved an	d sustained
5- Yes (Infrequent out o	of bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of free	juent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
No evidence of flooding	;. Manmade berm surround	is channel.	Limited potential for habitat improvement. No potential for floodplain		
			development, bank stabilization, or wat	er quality improvement.	
		1	5 ()		1
Opportunity for Floodp	lain Development	L mos stroom width	Ease of Access	ccoss to notontial sita)	T
5 - Existing space for flo	odulain 3 to 10 times strea	mes stream width	5- yes (open but no existing vehicular ac		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing nee	ded)	
Describe:			Describe:		
Surrounded by active B	ARC agricultural fields.		Majority of channel surrounded by thin	strip of trees	
-,	0				
Drainage Area Evaluatio	on	1	l Itilities Present		1
10 -D.A. less than 1 so	mi.	÷	10 - No utilities on site		±
5- D. A. between 1 & 3	sq. mi.		5 - Utilities but not within restoration ar	еа	
1 - D. A. greater than 3	, sq. mi.		1 - Utilities within potential restoration	area	
Describe:	<u> </u>		Describe:		
10 square miles			1 sewer crossing, waste water effluent	Several powerline crossi	ngs. Sewer and
			powerlines run parallel to stream.		J
			Total	Score out of 100	36
			1018	30010 001 01 100	50



Site Photos



	Str	eam Mitigation	Field Site Assessment Form	
		Pro	pject Details	
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number:	MPAO0004B
Projects Estimated Stro	eam Mitigation Needs (LF):	TBD	_	
Data of Field Assessment			Concultant Firm (Investigator(s))	
Date of Field Assessment	: 4/9/2019	Location Details	staken from deskton review	
County:	Prince George's	Cross Boads	Sellman Boad	& Eline Road
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDF Watershed (8 digit):	02070010
Proximity to Impacted	Stream (mi.):	0.03	Lat/Long:	39.021452 -76.931587
			Site Data	
Parcel Size (ac):	502	-	Potential Restoration Reach (LF):	1.124
Site Opportunities:	X Channel Restoration	Livestock Exclusion	X Riparian Buffer Planting	Habitat Enhancement Fish Passage
Stream Order:	2nd	Stream Hydrology:	Perennial	Stream Use:
Drainage Area to Reac	h (sq. mi.)	10.2		
Land Use:	Forested		Mapped Soils:	CF
Property Address:	South of Yuma St, Beltsvi	lle, MD		
Property Owner(s):	BARC			
		General F	ield Observations	
Is there evidence that	the stream has been distur	bed by some kind	Can the stream restoration be reasona	bly done within the confines of the
of human action, like g	grading, dumping, livestock,	culvert, etc?	parcel or does it require connections b	eyond the parcel limits? Explain
Explain:			Explain:	
Downstream culvert.			Yes - entire stream within BARC proper	ty.
• ·· ·		<u>Mitiga</u>	tion Site Rating	
<u>Criteria</u>		Score	Criteria	Score
Estimated Bank erosio	n within reach	5	Vegetation	1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%			5 - Scrub-snrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:	astly minor arosion Localize	d modorato	Describe: Mostly mid successional forest (river bi	irch susamara tulin nanlar) Small
20% Dank erosion - m	OSTIV ITITIOL ELOSION. LOCALZE	eu mouerate-	Nostly mid-successional forest (nver bi	rch, sycamore, tunp popiar). Sman
severe erosion.			section of agricultural field.	
Degree of Channel Inci	ision	Ę	Land Lise	1
10 Bank Hoight groat	sion ar than 10 foot	5	10 Agricultural or Open Space	1
5 - Bank Height hetwee	n 3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less tha	an 3 feet		1 - Old field/ Developed/Forested	
Describe:			Describe:	
Bank height 3-6'. Most	ly stable with roots.		Forested - mid successional. Small secti	ion of agricultural land.
0	,			5
		F		
Existing Floodplain Acc	:ess t of book flooding	5	Opportunity for Ecological Lift	
10 - No evidence of our	t of bank flooding		10 - Conditions exist for several aspects	s of lift to be achieved and sustained
5- Yes (initequent out o	guent flooding)		5 - Lift liftlieu to one of few aspects 1 - Conditions are such that Lift is difficult	ult to achieve and sustain
1 - Tes (evidence of the	quent nooung)		Describer	
Describe: Old rack lines and sand	denosition on banks and fly	odalain	Limited notential for floodplain, stability	y instream babitat, and water quality
			Ennited potential for hoodplain, stabilit	y, instream nabitat, and water quality
Opportunity for Flood	plain Development	5	Ease of Access	1
10 - Existing space for f	loodplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular a	access to potential site)
5 - Existing space for flo	podplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular a	ccess)
1 - Little to no space fo	r floodplain development		1 - No (no vehicular access, clearing nee	eded)
Describe:			Describe:	
Limited potential down	stream and in eastern flood	plain	Surrounded by forest	
Drainage Area Evaluat	ion	1	Utilities Present	1
10 -D.A. less than 1 sq.	mi.		10 - No utilities on site	
5- D. A. between 1 & 3	sq. mi.		5 - Utilities but not within restoration a	rea
1 - D. A. greater than 3	sq. mi.		1 - Utilities within potential restoration	area
Describe:			Describe:	
10.2 square miles			Sewer line runs parallel to stream	
-				
			- Tota	Score out of 100 26







	Strea	am Mitigation Fiel	d Site Assessment Form		
		Project	t Details		
Project Name:	I-495/I-270 Mana	ged Lanes Study	Mitigation Site Number: MPAO0005		
Projects Estimated Stream Mitig	;ation Needs (LF):	TBD	-		
Date of Field Assessment:	6/12/201	Q	Consultant Firm/Investigator(s):		
	Site L(ocation Details-tal	ken from desktop review	10, 05	
County:	Prince George's	Cross Roads:	Sunnyside Ave. & Edmonston Rd.		
Basin (HUC 8):	Middle Potomac-Anacc	ostia-Occoquan	MDE Watershed (8 digit): 214	0205	
Proximity to Impacted Stream (n	ni 0.36		Lat/Long: 39.02183	37 -76.903277	
		Site	Data		
Parcel Size (ac):	247		Potential Restoration Reach (LF): 5,77	73	
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer Planting	entFish Passage	
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Us	e:	
Drainage Area to Reach (sq. mi.)	9.75 Eprost		Mannad Sailes Zekiah and Issue sai	ile	
Lanu Ose: Property Address:	GSA Office Comm Pub !	Building 18th & F St. I	NW Washington DC 20405	15	
Property Owner(s):	BARC, USDA	Dulluing. 10th C - 3th			
		General Field	1 Observations		
Is there evidence that the stream	n has been disturbed by s	some kind of human	Can the stream restoration be reasonably done within the	confines of the	
action, like grading, dumping, liv	estock, culvert, etc? Expl	lain	parcel or does it require connections beyond the parcel lir	nits? Explain	
Explain:			Explain:		
Road crossing (Sunnyside Ave, Po	wder Mill Rd), extensive	powerline refuse	Yes, the stream is within 2 BARC parcels		
		Mitigation	Site Rating	Sec.ro	
<u>Criteria</u>	<u> </u>	Score	<u>Criteria</u>	Score	
Estimated Bank erosion within re	each	1	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50% 1 Less than 10%			5 - SCrub-snrub cover (non-weildnu) 1 Mostly forested and/or wetland		
Little erosion present select loca	tions making up around 5	w of the total site	Describe:	some adjacent	
Little crosion present, select issue		1/0 OF the total site	wetlands present	some aujacent	
Degree of Channel Incision		1	Land Lisa	1	
10 - Bank Height greater than 10	feet		10 - Agricultural or Open Space		
5 - Bank Height between 3 and 10	n feet		5 - Marginal Pasture		
1 - Bank Height less than 3 feet			1 - Old field/ Developed/Forested		
Describe:			Describe:		
Banks are very low throughout th	ne majority of the site. Bra	aids of the stream are	Stream corridor is forest		
present					
Evisting Flandplain Accord		1	Commentation for Ecological Lift		
EXISting Floodplain Access	looding		Opportunity for Ecological Lift Opportunity for Ecological Lift	J and sustained	
5- Ves (Infrequent out of bank flo	000111g		5 - Lift limited to one or few aspects	u dhu sustanieu	
1 - Yes (evidence of frequent floo	nding)		1 - Conditions are such that Lift is difficult to achieve and su	ıstain	
Describe	0116/		Describe:		
Banks are generally low, allowing	access to the floodplain	with multiple	Habitat improvements possible, most lift aspects are relatively stable		
channels and braids throughout.				-,	
Opportunity for Floodplain Deve	lopment	10) Ease of Access	1	
10 - Existing space for floodplain g	greater than 10 times stre	eam width	10 - Yes (with <u>existing</u> direct vehicular access to potential si	ite)	
5 - Existing space for floodplain 3	to 10 times stream width	1	5- yes (open but no existing vehicular access)		
	n development		1 - NO (no venicular access, clearing needed)		
Describe:	sin is already 10 times stre	an width in most of	Describe:	seess at top of site fro	
Space exists and existing nooupla	III IS difeduy 10 times suc	alli wiuti in most of	POSSIBLY decess from summyside Ave. for findule of reach. Ac	Cess at top of site in	
the reach					
Drainage Area Evaluation		1	Utilities Present	5	
10 -D.A. less than 1 sq. mi.			10 - No utilities on site		
5- D. A. between 1 & 3 sq. mi.			5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. mi.			1 - Utilities within potential restoration area		
Describe:			Describe:		
DA = 9.75			One visible utility adjacent to the stream		
			Total Course out of 44		
			lotal Score out of 10	JU 27	





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	<u>pject Details</u>		
Project Name:	I-495/270 Manage	d Lanes Study	Mitigation Site Number: MPA	00006	
Projects Estimated Stre	am Mitigation Needs (LF)	TBD	-		
Data of Field Accoremonts	6/12/2010		Consultant Firm (Invostigator(s))		
Date of Field Assessment.	0/12/2019 Site	Location Details	staken from deskton review	CRI/WD, D3	
County:	Prince George's	Cross Roads	MD-201 (Edmonst	on Boad)	
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit):	2140205	
Proximity to Impacted	Stream (mi.):	0.16	Lat/Long:	39.014942 -76.898731	
			Site Data		
Parcel Size (ac):	116.74	-	Potential Restoration Reach (LF):	1.407	
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer Planting	abitat EnhancementFish Passage	
Stream Order:	4th	Stream Hydrology:	Perennial	Stream Use:	
Drainage Area to Reach	n (sq. mi.)	23.9			
Land Use:	Forest		Mapped Soils: Zekia	h and Issue	
Property Address:	5601 Sunnyside Ave, Belt	sville MD 20405			
Property Owner(s):	Beitsville Agricultural Res	earch Center, USDA			
		<u>General F</u>	leid Observations		
is there evidence that t	ne stream nas been distur	bed by some kind	can the stream restoration be reasonably d	one within the confines of the	
of human action, like grading, dumping, livestock, cuivert, etc?			parcel or does it require connections beyon	d the parcel limits? Explain	
Explain:	t Educanatan Daad musuidin	a shaaa siisstiaa	Explain:		
Road crossing/cuivert a	Road crossing/culvert at Edmonston Road providing channelization.		res, the stream reach is comprised complete	By within BARC property.	
		Mitiga	tion Site Bating		
Criteria		Score	Criteria	Score	
Estimated Bank erosion	n within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Upstream of the braided	d area has consistent 3' erc	ded banks	Stream corridor is forested (young/mature d	leciduous).	
downstream of Edmons	ton Rd. Throughout braide	d reach, erosion			
located on alternating o	outer meanders.				
Degree of Channel Incis	sion	5	Land Use	1	
10 - Bank Height greate	r than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height betweer	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less thai	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Overall channel incision	for the entire site is about	4 feet.	Forested, young/mature deciduous tree impacts.		
Existing Floodplain Acc	226	5	Opportunity for Ecological Lift	5	
10 - No evidence of out	of bank flooding	5	10 - Conditions exist for several aspects of life	ft to be achieved and sustained	
5- Yes (Infrequent out o	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
Infrequent out-of-bank	flow evident by rack lines a	nd deposition,	Lateral stability, habitat enhancement, floodplain reconnection, bedform		
especially within braide	d area.		diversity.		
Opportunity for Floodp	lain Development	10	Ease of Access	1	
10 - Existing space for fl	oodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access	s to potential site)	
5 - Existing space for no	odpiain 3 to 10 times strea	m width	5- yes (open but no existing venicular access		
1 - Little to no space for Describe:			1 - No (no venicular access, clearing needed)	<u> </u>	
Describe. Space for floodplain evi	sts hut tree impacts may li	mit	No existing access field on left hank outside	of rinarian is a notential access	
	sts, but tree impacts may in	init.	no existing access, new officer bank outside	adad	
Drainage Area Evaluatio	on	1	Utilities Present	10	
10 -D.A. less than 1 sq. r	mi.	-	10 - No utilities on site	_	
5- D. A. between 1 & 3 s	sq. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	sq. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
DA = 23.9 mi ²			No utilities were visible		
			<u>Total Scc</u>	ore out of 100 44	



Site Photos



Sti	ream Mitigation	Field Site Assessment Form		
	Pro	<u>ject Details</u>		
Project Name: I-495/I-270 Manag	ed Lanes Study	Mitigation Site Number: MPAO0007		
Projects Estimated Stream Mitigation Needs (LF)	: TBD	-		
Date of Field Assessment: 6/12/2019		Consultant Firm/Investigator(s):	CRI/MD_DS	
Site	Location Details	s-taken from desktop review	0,, 20	
County: Prince George's	Cross Roads:	Powder Mill Rd. & Beaver Dar	n Rd.	
Basin (HUC 8): Middle Potomac-Anacos	tia-Occoquan	MDE Watershed (8 digit):	2140205	
Proximity to Impacted Stream (mi.):	1.67	Lat/Long: 39.0280)99 -76.869391	
	<u>9</u>	Site Data		
Parcel Size (ac): 2,241		Potential Restoration Reach (LF):	3,859	
Site Opportunities:X_Channel Restoration	Livestock Exclusion	Riparian Buffer Planting _X_Habitat Ent	iancementXFish Passage	
Drainage Area to Reach (sg. mi.)	0.66			
	0.00	Russett-Chr	istiana complex; Christiana-	
Land Use: Forested		Mapped Soils: Downer c	omplex; Zekiah and Issue	
Property Address: Beaver Dam Rd and Bio (Control Rd Beltsville,	MD 20705		
Property Owner(s): Beltsville Agricultural Res	search Center, USDA			
Is there evidence that the stream has been distur	General F	ield Observations	hin the confines of the	
of human action like grading dumping livestech	y culvert etc?	call the stream restoration be reasonably done with	arcol limite? Evolain	
Evolution action, like grading, dumping, livestock	, cuivert, etc:	Explain:		
A 1.4' fish blockage at Powder Mill Road culvert. L	and use historically	Yes, stream segment is all on BARC property.		
agriculture causing years of downcutting. Utilities	evident (inactive			
and active). Footbridge present				
	Mitigat	tion Site Rating		
<u>Criteria</u>	Score	Criteria	Score	
Estimated Bank erosion within reach	10	Vegetation	1	
10 - Greater than 50%	-	10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%		5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%		1 - Mostly forested and/or wetland		
Describe:		Describe:		
Opper 2/3 of site is 100% eroded due to downcutt	ing, lower 1/3	Forested stream corridor, mix of mostly young and r	nature deciduous trees.	
alternating erosion average 4 .				
Degree of Channel Incision	5	Land Use	1	
10 - Bank Height greater than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than 3 feet		1 - Old field/ Developed/Forested		
Describe:	the lower 1/3	Describe: Mostly forested within stream corridor		
average ~4' high		wostly forested within stream corridor.		
Existing Floodplain Access	5	Opportunity for Ecological Lift	C chioved and sustained	
5- Yes (Infrequent out of bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:		Describe:		
Some areas of floodplain access within old down c	ut channel at upper	Opportunities for floodplain access, vertical and late	ral stability, habitat	
2/3 of site. Lower 1/3 features more frequent acce	ess to floodplain.	creation.		
Opportunity for Floodplain Development	10	Ease of Access	5	
10 - Existing space for floodplain greater than 10 t	imes stream width	10 - Yes (with <u>existing</u> direct vehicular access to pote	ential site)	
5 - Existing space for floodplain 3 to 10 times strea	am width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)		
Describe: Space exists but mature forest may limit expansive	o floodalain	Describe:	ways and Dowdor	
development		Mill/Reaver Dam Rd. Clearing needed to access othe	vays and FOWDER	
development.		will/Beaver Dam Ru. Clearing needed to access othe	portions of the reach.	
Drainage Area Evaluation	10	Utilities Present	1	
10 -D.A. less than 1 sq. mi.		10 - No utilities on site		
5- D. A. between 1 & 3 sq. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. ml.		1 - Other within potential restoration area		
Describe:		Describe:		
DA = 0.66mi ²		Remnant utilities present as well as active sewer cro	ssing and manholes.	
		Total Score out	; of 100 53	





	Str	eam Mitigation	Field Site Assessment Form	
		Pro	ject Details	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MPAO0009	
Projects Estimated Stream	m Mitigation Needs (LF):	TBD		
			-	
Date of Field Assessment:	7/30/2019		Consultant Firm/Investigator(s): CRI/DS, SN	
	<u>Site</u>	Location Details	s-taken from desktop review	
County:	Montgomery	Cross Roads:	Sligo Creek Parkway and Piney Branch Road	
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 2140205	
Proximity to Impacted S	Stream (mi.):	1.01	Lat/Long: 38.996538	-77.009364
		9	Site Data	
Parcel Size (ac):	3 parcels - 15.7, 3.1, 28.5		Potential Restoration Reach (LF): 2,668	
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer PlantingHabitat Enhancement	_XFish Passage
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:	I
Drainage Area to Reach	(sq. mi.)	6.12		
Land Use:	Parkland		Mapped Soils: Codorus silt loam, 0 to	3 percent slopes,
Property Address:	8639 Sligo Creek Parkway	, Takoma Park MD	occasionally	flooded
Property Owner(s):	MNCPPC			
		General F	ield Observations	
Is there evidence that the the the the the the the the the th	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the c	onfines of the
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limit	ts? Explain
Explain:		,	Explain:	· ·
Riprap along 70-80% of l	banks: restoration at upstr	eam footbridge	No: There is no clear start/stop location or need.	
		Mitigat	tion Site Rating	
Criteria		Score	Criteria	Score
Estimated Bank erosion	within reach	5	Vegetation	1
10 - Greater than 50%		5	10 - Herbaceous cover (non-wetland)	-
5 - 10% to $50%$			5 - Scrub-shrub cover (non-wetland)	
3 - 10% 10 - 30%			1 Mostly forested and (or wetland	
1 - LESS LIIdii 1070			1 - MOSLIY IOLESLEU dilu/or welianu	
20-30% eroded			Forest	
Degree of Channel Incis	ion	5	Land Use	1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space	
5 - Bank Height betweer	n 3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less thar	n 3 feet		1 - Old field/ Developed/Forested	
Describe:			Describe:	
~5'			Forest	
Existing Floodplain Acce	ess	5	Opportunity for Ecological Lift	1
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sust	ain
Describe:			Describe:	
Certain sections have so	ft sediment on upper bank	'S	Lots of riprap, not a lot of existing instabilities.	
	te seament on apper bank			
Onnortunity for Floodal	ain Davalanmant	5	Face of Accord	5
Opportunity for Floodpi	ain Development		Ease of Access	5
10 - Existing space for fice	booplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct venicular access to potential site)
5 - Existing space for floo	depiain 3 to 10 times strea	m width	5- yes (open but no existing venicular access)	
1 - Little to no space for	fioodplain development		1 - No (no venicular access, clearing needed)	
Describe:			Describe:	
Space available. Constric	cted by adjacent roadway t	to the east and	Next to multiple trails with parking and roads.	
path/development to th	e west.			
Drainago Aroa Evaluatio		1	Litilities Brosent	1
10 DA loss than 1 can		T	10 No utilities on site	1
10 -D.A. less than 1 sq. n	ni.		10 - No utilities on site	
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration area	
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area	
Describe:			Describe:	
6.12 sq. mi			Multiple sewer crossings and outfalls.	
			. .	
			Total Score out of 100	30



Site Photos



	Stre	eam Mitigation	Field Site Assessment Form	
		Pro	oject Details	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MPAO0010	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD		
Date of Field Assessment:	//30/2019	Deservices Destroits	Consultant Firm/Investigator(s): CRI/DS, SN	
Country	<u>Site</u>	Location Details	s-taken from desktop review	
County: Basin (HLIC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watersbed (8 digit): 21/0205	
Proximity to Impacted	Stream (mi.):	0.26	Lat/Long: 39.01079	-77.02182
· .,			Site Data	
Parcel Size (ac):	16 ac: ROW along Burnet	: Ave	Potential Restoration Reach (LF): 64	4
Site Opportunities:	X Channel Restoration	Livestock Exclusion	Riparian Buffer Planting Habitat Enhanceme	nt Fish Passage
Stream Order:	 1st	Stream Hydrology	: Perennial Stream Use	e:
Drainage Area to Reach	ı (sq. mi.)	0.29		
Land Use:	Parkland		Mapped Soils: Codorus silt loam; Brin	klow-Blocktown
Property Address:	9406 Bruce Drive, Silver S	pring MD	channery silt loam; Gle	nelg silt loam
Property Owner(s):	MINCPPC			
	ha atuanus haa haan diatuul	<u>General F</u>	<u>-ield Observations</u>	confines of the
is there evidence that t	ne stream nas been disturc	bed by some kind	can the stream restoration be reasonably done within the	contines of the
of numan action, like gi	rading, dumping, livestock,	cuivert, etc?	parcel or does it require connections beyond the parcel in	hits? Explain
Explain: Culvert under read 4 at	hoad of stroam ripran thr	aughout the	Explain: No: downstroom is confluence with Slige Creek, unstroom is	s culvort
cuivert under road, 4 at	nead of stream, hprap this	Jugilout the	No, downstream is confidence with sligo creek, upstream is	s cuivert.
Stredifi.				
		Mitiga	tion Site Rating	
<u>Criteria</u>		Score	Criteria	Score
Estimated Bank erosion	n within reach	1	Vegetation	5
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
~10%, mostly riprap.			Mix between scrub/shrub and small buffer of forest.	
			Level Her	
10 Pank Height greate	r than 10 feat	5	Land Use	1
5 - Bank Height between	n 3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less that	n 3 feet		1 - Old field/ Developed/Forested	
Describe:			Describe:	
Average 3ft with some s	small areas of 5' and some v	with lower	Roadway, forest, scrub-shrub.	
floodplain bench.				
Eviating Floodaloin Acc		5	Onnortunity for Foological Lift	5
10 - No evidence of out	ess of bank flooding	5	Opportunity for Ecological Lift	J benictsus bne b
5- Yes (Infrequent out o	f bank flow)		5 - Lift limited to one or few aspects	a ana sustanica
1 - Yes (evidence of freq	(uent flooding)		1 - Conditions are such that Lift is difficult to achieve and su	ıstain
Describe:			Describe:	
Low bench in upstream	section.		Right bank is along road, but uplift lateral stability and habi	tat.
Opportunity for Floodp	lain Development	5	Ease of Access	10
10 - Existing space for fl	oodplain greater than 10 tir	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential si	te)
5 - Existing space for flo	odplain 3 to 10 times stream	n width	5- yes (open but no existing vehicular access)	
1 - Little to no space for	noodplain development		1 - No (no venicular access, clearing needed)	
Describe:	by adjacent readway. Opp	ortunity oxists to	Describe:	on field on the
the west	by aujacent roadway. Oppo	Dituility exists to	Along roduway and at MINCPPC entrance, with adjacent ope	
11C WESL.			עטייוזנו כמווו ווצווג אמווג.	
Drainage Area Evaluatio	on	10	Utilities Present	1
IU-D.A. less than 1 sq. r	ni.		10 - NO UTILITIES ON SITE	
J-D.A. Delweell I & 3 S 1 - D A greater than ? (sa mi		1 - Utilities within notential restoration area	
	·····			
			1: 1 cowor crossing at MANCADC entrement	
u.29 sy. miles			T, T SEWEL CLOSSING AL MINCEPPC ENTLANCE	
			Total Score out of 10	0 48



Site Photos



	Str	eam Mitigation	Field Site Assessment Form	
		Pro	ject Details	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MPAO0011	
Projects Estimated Stream	n Mitigation Needs (LF):	TBD	-	
Date of Field Assessment [.]	7/25/2019		Consultant Firm/Investigator(s): CRI/SL MD	
Bute of field Assessment.	Site	Location Details	s-taken from desktop review	
County:	Montgomery	Cross Roads:	University Blvd and Sligo Creek Parkway	
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 2140205	
Proximity to Impacted S	stream (mi.):	1.24	Lat/Long: 39.035736	-77.030943
			Site Data	
Parcel Size (ac):	2 parcels - 9.2, 1.2		Potential Restoration Reach (LF): 546	
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer PlantingX_Habitat Enhancement	_XFish Passage
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:	
Drainage Area to Reach	(sq. mi.)	0.87	Manned Soils:	
Property Address:	1167 University Blvd Silve	r Spring MD	frequently fl	percent slopes,
Property Owner(s):	MNCPPC		i requentiy ii	looueu
		General F	ield Observations	
Is there evidence that th	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the co	onfines of the
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limit	s? Explain
Explain:			Explain:	
Yes, riprap and culvert			Yes. Entirely on one parcel.	
			, ,	
		<u>Mitigat</u>	tion Site Rating	
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>
Estimated Bank erosion	within reach	5	Vegetation	1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
~40%			Forested park	
Degree of Channel Incis	ion	E	Land Lico	1
10 Bank Hoight groater	than 10 foot	5	Land Use	L
5 - Bank Height hetweer	1111 10 leel		5 - Marginal Pacture	
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested	
Describe:			Describe	
~4.5 feet			Forested park	
n internetin Anna			 A state for producted 11fts 	5
Existing Floodplain Acce	:SS of bank flooding	5	Opportunity for Ecological LITT	C bend sustained
LO - NO evidence of out	of Dank Hooding		10 - Conditions exist for several aspects of firt to be achieved a	and sustained
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and susta	ain
Describe:			Describe	
Gets out on bars, but no	t out of overall channel.		Fish passage. lateral migration, floodplain access, bedform div	versitv.
			· ····································	,
Opportunity for Floodpl	ain Development	5	Ease of Access	5
10 - Existing space for flo	oodplain greater than 10 tir	mes stream width	10 - Yes (with existing direct vehicular access to potential site)	
5 - Existing space for floo	odplain 3 to 10 times stream	m width	5- yes (open but no existing vehicular access)	
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)	
Describe:			Describe:	
Confined by trail and roa	adway.		Some clearing required.	
Drainage Area Evaluatio	on	10	Utilities Present	1
10 -D.A. less than 1 sq. n	ni.		10 - No utilities on site	
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration area	
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area	
Describe:			Describe:	
0.87 sq. miles				
			Total Cases and af 400	40
			LOTAL SCORE OUT OF 1001	43



Site Photos





	Stre	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: MPAO0012		
Projects Estimated Strea	m Mitigation Needs (LF):	TBD			
	- 105 10010				
Date of Field Assessment:	7/25/2019		Consultant Firm/Investigator(s): RKK KJH&AJN		
•	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross koads:	Kedland Koad and Crabbs Branch way	00	
Basin (nuc oj. Provimity to Impacted St	Wildele Polomat-Anacost	a-Occoquan 1 75	INDE Watersneu (o uigit): 021402	-77 1 <u>4594816</u>	
		1.7.5		-77.14554610	
	00 5	2	Site Data		
Parcel Size (ac):	96.5		Potential Restoration Reach (LF): 7,657		
Site Opportunities:	X_Channel Restoration	Livestock Exclusion	XRiparian Buffer PlantingXHabitat Enhancement	Fish Passage	
Drainage Area to Reach	(sa mi)		Stream Ose.	IV	
Land Use:	Forested Parkland	1.05	Manned Soils: Hathoro silt loam		
Property Address:	Redland Road and Derwoo	od Road			
Property Owner(s):	M-NCPPC				
		General E	ield Observations		
Is there evidence that th	e stream has been disturb	ed by some kind	<u>Teld Observations</u> ICan the stream restoration be reasonably done within the co	onfines of the	
of human action like are	ding dumping livesteck	culvort atc?	can the stream restoration be reasonably done within the co	c2 Evalain	
of numan action, like grading, dumping, livestock, cuivert, etc?			parcel of does it require connections beyond the parcel limit	Si Exhigin	
Explain:			Explain:		
res, np-rap bank stabilization.			res, all on MINCPPC property. MINCPPC recommendation.		
		Mitigat	tion Site Pating		
Criteria		Score	ICriteria	Score	
Estimated Bank erosion	within reach	10	Vegetation	10	
10 Greater than E0%	within feach	10	10 Herbaceous cover (non wetland)	10	
10 - Greater than 50%			5 Scrub shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
			Describe:		
Describe. Severe erosion throughout reach. Torturous meanders		Mostly harbacoous Scattored trees on US forested and			
Severe erosion througho	ut reach. Torturous meand	iers.	Mostly herbaceous. Scattered trees on 05 forested end.		
Desmos of Channel Insisi		r	Land Lies	r	
Degree of Channel Incisio	on them 10 fact	5	Land Use	5	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 reet		5 - Marginal Pasture		
	3 1661		1 - Old field/ Developed/Forested		
Describe:	a of El Doonly indicad		Describe:		
Bank neight 3-8°. Average	e of 5°. Deeply incised.		Park floodplain dominated by reed canary grass.		
Existing Floodplain Acces	ss	10	Opportunity for Ecological Lift	10	
10 - No evidence of out c	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved a	and sustained	
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and susta	ain	
Describe:			Describe:		
No evidence of out of ba	nk flooding.		Opportunities exist for sediment reduction, floodplain connectivity, aquatic		
			habitat, riparian buffer plantings, and water quality.	,,,	
Opportunity for Floodpla	ain Development	10	Ease of Access	5	
10 - Existing space for flo	odplain greater than 10 tir	nes stream width	10 - Yes (with existing direct vehicular access to potential site)		
5 - Existing space for floo	odplain 3 to 10 times strear	n width	5- yes (open but no existing vehicular access)		
1 - Little to no space for f	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:	· · ·		Describe:		
Greater than 100' wide fl	loodplain on both sides of	channel.	Reed-canary floodplain with scattered trees.		
			, ,		
				4	
Drainage Area Evaluation	n	5	Utilities Present	1	
10 -D.A. less than 1 sq. m	וו.		10 - No utilities on site		
5- D. A. between 1 & 3 sc	ą. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 so	q. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
1.89 square miles			Sewer line present throughout reach.		
			Total Score out of 100	71	





	Stro	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: N	ЛРАО0013	
Projects Estimated Stream Mit	igation Needs (LF):		-		
Date of Field Assessment:	7/17/2019		Consultant Firm/Investigator(s):	SK&K-KIH AIN	
	Site	Location Details	s-taken from deskton review		
County: Monta	gomerv	Cross Roads:	Lavhill Road and	d Flint Hill Road	
Basin (HUC 8): Middl	e Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit):	02140205	
Proximity to Impacted Stream	(mi.):	6.55	Lat/Long:	39.110435 -77.032964	
			Site Data		
Parcel Size (ac): 286		-	Potential Restoration Reach (LF):	1,014	
Site Opportunities:x_c	hannel Restoration	Livestock Exclusion	Riparian Buffer Planting	Habitat EnhancementX_Fish Passage	
Stream Order: 3rd		Stream Hydrology:	Perennial	Stream Use: IV	
Drainage Area to Reach (sq. mi	l.) ha al	4.87			
Land Use: Forest	.ed I Road		Mapped Solis:	latboro silt loam	
Property Address. Laying	PPC				
		General F	ield Observations		
Is there evidence that the strea	am has been distur	bed by some kind	ICan the stream restoration be reasonab	bly done within the confines of the	
of human action. like grading.	dumping, livestock.	culvert. etc?	parcel or does it require connections be	evond the parcel limits? Explain	
Explain:	<u> </u>		Explain:		
Old stone toes, cross vanes, and riffle grade control.			All on MNCPPC property. MNCPPC recor	mmendation.	
	0				
		Mitigat	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Estimated Bank erosion within	reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
Describe:	racian Mastly stabl	0	Describe: Ecrosted parkland, Mid successional: rev	d manla, sysamora, tulin polar	
Localized moderate to severe en		e	Poresteu parkianu. Miu-successional, rec	u maple, sycamore, tunp polar.	
Degree of Channel Incision	I	5	Land Use	1	
10 - Bank Height greater than 1	0 feet	-	10 - Agricultural or Open Space		
5 - Bank Height between 3 and	10 feet		5 - Marginal Pasture		
1 - Bank Height less than 3 feet			1 - Old field/ Developed/Forested		
Describe:			Describe:		
Most banks 5' tall			Forested/ golf course		
Existing Floodplain Access		10	Opportunity for Ecological Lift	5	
10 - No evidence of out of bank	flooding		10 - Conditions exist for several aspects	of lift to be achieved and sustained	
5- Yes (Infrequent out of bank f	low)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequent flo	oding)		1 - Conditions are such that Lift is difficu	It to achieve and sustain	
Describe:			Describe:		
No evidence observed			Limited opportunity for sediment reduct	tion and floodplain development	
	· · ·	r	F ()	1	
Opportunity for Floodplain Dev	/elopment	5 mas stroom width	Lase of Access	L	
5 - Existing space for floodplain	3 to 10 times stream	nes stream width	5- ves (open but no existing vehicular ac	ress)	
1 - Little to no space for floodpl	ain development	ii widtii	1 - No (no vehicular access, clearing need	ded)	
Describe:			Describe:	<u> </u>	
Western and northern floodplai	in limited by golf co	urse. Some	Mostly dense forest. Small upstream seg	gment adjacent to golf course is open.	
potential in eastern floodplain.	, 0		, , , , ,		
Drainage Area Evaluation	I	1	Litilities Present	1	
10 -D.A. less than 1 sq. mi.		-	10 - No utilities on site	<u> </u>	
5- D. A. between 1 & 3 sq. mi.			5 - Utilities but not within restoration are	еа	
1 - D. A. greater than 3 sq. mi.			1 - Utilities within potential restoration a	area	
Describe:			Describe:		
4.87 square miles			Sewerlines present throughout floodplai	in	
			Total	Score out of 100 35	



Site Photos



	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: MPAO0014		
Projects Estimated Stre	am Mitigation Needs (LF)	TBD	-		
Date of Field Assessment:	7/25/2019		Consultant Firm/Investigator(s): RKK KIH&AIN		
Date of field Assessment.	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Bonifant Road and Notley Road		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 02140	205	
Proximity to Impacted S	Stream (mi.):	4.86	Lat/Long: 39.092946	-77.016077	
			Site Data		
Parcel Size (ac):	29	-	Potential Restoration Reach (LF): 5,967		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	XRiparian Buffer PlantingX_Habitat Enhancement	XFish Passage	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:	IV	
Drainage Area to Reach	ı (sq. mi.)	1.05			
Land Use:	Forested Parkland		Mapped Soils: Hatboro silt loam		
Property Address:	Old Stone Road. Stonewa	II Drive			
Property Owner(s).	WINCFPC & South Stollega				
la thara avidance that t	ha atuaana haa haan diatuul	<u>General F</u>	ield Observations	antines of the	
is there evidence that t	ne stream nas been distur	bed by some kind	Can the stream restoration be reasonably done within the c	ontines of the	
of numan action, like gr	rading, dumping, livestock,	cuivert, etc?	parcel or does it require connections beyond the parcel limit	ts? Explain	
Explain:			Explain:		
res, rip-rap and exposed	a sewer line.		work would require access to M-NCPPC and South Stonegate	3 HOA properties.	
		Mitigat	tion Site Rating		
Criteria		Score	Criteria	Score	
Estimated Bank erosion	n within reach	10	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Severe erosion through	Severe erosion throughout		Disturbed forested land. Lots of dead ash and invasives.		
_					
Degree of Channel Incis	sion	5	Land Use	1	
10 - Bank Height greater	r than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height betweer	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Bank Height 3-8', Avera	ge of 6'		Forested parkland		
Existing Floodplain Acco	229	10	Opportunity for Ecological Lift	10	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5- Yes (Infrequent out o	of bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	juent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe		
No evidence. Deeply inc	cised channel.		Opportunities for sediment reduction, floodplain connectivity, fish passage,		
. ,			water quality, invasive treatment, and aquatic habitat.		
Opportunity for Floodp	lain Development	5	Ease of Access	5	
10 - Existing space for fl	oodplain greater than 10 tir	mes stream width	10 - Yes (with existing direct vehicular access to potential site	;)	
5 - Existing space for flo	odplain 3 to 10 times stream	n width	5- yes (open but no existing vehicular access)		
 Little to no space for 	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Limited in western flood	plain due to valley slope		Access through old restoration access route that is currently	covered with	
			invasives. Requires small tree impacts.		
Drainage Area Evaluatio	on	10	Utilities Present	1	
10 -D.A. less than 1 sg. r	mi.		10 - No utilities on site		
5- D. A. between 1 & 3 s	sq. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	sq. mi.		1 - Utilities within potential restoration area		
Describe:		-	Describe:		
1.05 square miles			Sewer line throughout reach		
			Total Score out of 100	5.8	
				50	





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	oject Details		
Project Name: I-4	495/I-270 Manage	ed Lanes Study	Mitigation Site Number: MPAO0015		
Projects Estimated Stream Mitig	gation Needs (LF):				
	- / - / - / /				
Date of Field Assessment:	//1//2019	La cation Dataila	Consultant Firm/Investigator(s): RK&K KJH, AJN		
Country Manta	Site	Location Details	s-taken from desktop review		
County: Montgo	omery	Cross Roads:	I WINDFOOK PKWy and Veirs Mill Rd.	2206	
Basin (HUC 8): Middle	Potomac-Anacost	a-Occoquan	Lat/Long: 29.07154	J206 6 _77 110/77	
Proximity to impacted stream (i		2.45		-/7.110477	
		<u> </u>	Site Data	2	
Parcel Size (ac): 24			Potential Restoration Reach (LF): /2		
Site Opportunities:xch	annel Restoration	Livestock Exclusion	Riparian Buffer PlantingHabitat Enhancemer	it _X_Fish Passage	
Drainage Area to Beach (sg. mi)			Stream Ose		
Land Use: Eoreste	l he	55.6	Manned Soils: Hathoro silt loam		
Property Address: Veirs M	Aill Road				
Property Owner(s): M-NCP	PC				
		Gonoral E	ield Observations		
Is there evidence that the stream	m has been distur	bed by some kind	ICan the stream restoration be reasonably done within the	confines of the	
of human action like grading d	umping livesteck	sulvort oto?	can the stream restoration be reasonably done within the	site? Explain	
Si numan action, nice grading, dumping, nvestock, cuivert, etc.			parcel of does it require connections beyond the parcel in		
EXplain:			EXPLAIN:		
Failed culvert and impricated wall. Sewer crossing.			res, all MINCPPC land. MINCPPC recommendation.		
		Mitigat	tion Site Pating		
Criteria		Score	ICriteria	Score	
Estimated Bank erosion within r	raach	1	Vogotation	1	
10 Creator than 50%	each	T	10 Herbasseus sever (non wetland)	Ţ	
$\frac{10}{10\%} = \frac{10\%}{10\%}$			E Scrub shrub cover (non-wetland)		
5 - 10% to 50% 1 - Less than 10%			1 - Mostly forested and/or wetland		
1 - Less than 10%					
Describe.	-flacelized cou		Describe.		
Minor erosion throughout. 5 area	as of localized seve	ere erosion.	Mid successional forest; tuilp popiar, cottonwood, red mapi	e	
Degree of Channel Incision		5	I and Lico	1	
10 . Bank Height greater than 10	faat	5	10 Agricultural or Open Space	Ŧ	
5 Rank Height hetween 3 and 1	n faat		5 Marginal Dacture		
1 Rank Height Less than 3 feet	UTEEL		J - Malginai Fascule 1 Old field/ Developed/Forested		
Describe			Describe		
2 10' tall banks			Ecrosted parkland		
			l orested parkiand		
				-	
Existing Floodplain Access		1	Opportunity for Ecological Lift	1	
10 - No evidence of out of bank f	flooding		10 - Conditions exist for several aspects of lift to be achieved	d and sustained	
5- Yes (Infrequent out of bank flo	ow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequent floc	oding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
Debris-racks and scour on northe	ern floodplain		Opportunity for sediment reduction. Good existing in-stream	n habitat. Limited	
			potential for floodplain development.		
Opportunity for Floodplain Deve	elopment	5	Ease of Access	5	
10 - Existing space for floodplain	greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential sit	e)	
5 - Existing space for floodplain 3	3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodpla	in development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
No potential in southern floodpla	ain - valley slope. I	imited potential in	Existing sewerline access with small tree plantings		
northern FP.					
Drainage Area Evaluation		1	Utilities Present	1	
10 -D.A. less than 1 sq. mi.		_	10 - No utilities on site		
5- D. A. between 1 & 3 sg. mi.			5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. mi.			1 - Utilities within potential restoration area		
Describe:			Describe:		
25.9 square miles			Convertings (converteressing		
55.8 square filles			Sewernines/sewer crossing		
				-1	
			Total Score out of 100	<u>)</u> 22	





St	ream Mitigation	Field Site Assessment Form	
	Pro	ject Details	
Project Name: I-495/I-270 Manag	ed Lanes Study	Mitigation Site Number: MPAO0016	
Projects Estimated Stream Mitigation Needs (LF): TBD	-	
Date of Field Assessment: 7/17/2010	ڊ د	Consultant Firm/Investigator(s): RKK KIH&AIN	
Site	e Location Details	s-taken from desktop review	
County: Montgomery	Cross Roads:	Imperial Drive and Woodman Ave	
Basin (HUC 8): Middle Potomac-Anaco	stia-Occoquan	MDE Watershed (8 digit): 021402	205
Proximity to Impacted Stream (mi.):	0.3	Lat/Long: 39.020457	-77.03309
		Site Data	
Parcel Size (ac): 5.2		Potential Restoration Reach (LF): 177	
Site Opportunities:X_Channel Restoration	Livestock Exclusion	XRiparian Buffer PlantingHabitat Enhancement	_XFish Passage
Stream Order: 1st	_Stream Hydrology:	Perennial Stream Use:	
Drainage Area to Reach (sq. mi.)	1.32	Manual Cailes	
Land Use: Forested Parkland	<u>Avo</u>	Mapped Solis: Hatboro silt loam	
Property Owner(s): M-NCPPC	Ave.		
	Ganaral E	ield Observations	
Is there evidence that the stream has been distu	rbed by some kind	ICan the stream restoration be reasonably done within the c	onfines of the
of human action like grading dumning livestoc	k culvert etc?	parcel or does it require connections beyond the parcel limit	ts? Fynlain
Evalain:		Evaluin:	
Old ford at US end of site. Combine with MPAOO)31	Yes M-NCPPC Recommendation	
	Mitigat	tion Site Rating	
<u>Criteria</u>	Score	Criteria	<u>Score</u>
Estimated Bank erosion within reach	5	Vegetation	1
10 - Greater than 50%	-	10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%		5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%		1 - Mostly forested and/or wetland	
Describe:		Describe:	
Localized minor to moderate erosion		Mid successional upland forest. Extensive invasives.	
Degree of Channel Incision	5	Land Use	1
10 - Bank Height greater than 10 feet		10 - Agricultural or Open Space	
5 - Bank Height between 3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less than 3 teet		1 - Old field/ Developed/Forested	
Describe:		Describe:	
4-8 tali danks.		Forested parkiand	
Existing Floodplain Access	10	Opportunity for Ecological Lift	5
10 - No evidence of out of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained
5- Yes (Infrequent out of bank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of frequent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain	
Describe:		Describe:	
No evidence of flooding.		Opportunities for sediment reduction and riparian buffer plantings.	
	1	Free of Assess	E
Opportunity for Floodplain Development	⊥ timos stroam width	Ease of Access 10 - Ves (with existing direct vehicular access to potential site	5
5 - Existing space for floodplain 3 to 10 times stre	am width	5- ves (open but no existing vehicular access))
3 - Existing space for floodplain 3 to 10 times stream width 1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)	
		Describe	
l imited by adjacent trail and sligo creek		Forest with patchy open invasive areas. Potential access along trail	
.,,			8
Drainage Area Evaluation	T	Litilities Dresent	1
Drainage Area Evaluation	5	Utilities Present	Ţ
10 - D.A. less than 1 sq. mi.		10 - NO utilities of site	
D-D.A. between I & 3 sq. ml.		5 - Utilities but not within restoration area	
Describe:		Describe:	
1.32 square miles		Sewerline in floodplain	
		Total Score out of 100	39



Site Photos





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	MPAO0017	
Projects Estimated Stream	m Mitigation Needs (LF):	TBD			
Data of Field Assessments	7/25/2010		Concultant Firm (Investigator(c))		
Date of Field Assessment:	7/25/2019 Site	Location Details	staken from deskton review	CRI/D3, 3N	
County:	Montgomery	Cross Roads	Bruce Drive and Burnett Ave		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit):	2140205	
Proximity to Impacted S	Stream (mi.):	0.3	Lat/Long:	39.009773	-77.021112
			Site Data		
Parcel Size (ac):	16		Potential Restoration Reach (LF):	283	
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer Planting	_X_Habitat Enhancement	Fish Passage
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	
Drainage Area to Reach	(sq. mi.)	0.0864			
Land Use:	Parkland		Mapped Soils:	Codorus silt loam, 0-3	percent slopes,
Property Address:	9406 Bruce Drive Silver	pring MD		occasionally fl	ooded
Property Owner(s).	WINCPPC				
ls thoro ovidonco that t	ha stroom has boon distur	<u>General F</u>	ield Observations	ably dono within the co	nfinos of the
of human action like or	ie stredin nas been uistun		can the stream restoration be reasona	ibly done within the co	Times of the
or numan action, like gr	ading, dumping, investock,	, cuivert, etcr	parcel or does it require connections beyond the parcel limits? Explain		
Explain: Culvert Need to clean c	ulvort ASAD		Explain:	Creek and originates at	nerched culvert
Cuivert. Need to clean c	uiven ASAF.		No - Downstream cuivert goes to silgo	CIEEK and Originates at	percheu cuivert
		Mitiga	tion Site Rating		
Criteria		Score	Criteria		Score
Estimated Bank erosion	within reach	1	Vegetation		5
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Just at perched culvert o	outfall, maybe some previo	usly at	Small buffer with trees but only ~10', th	nen open grass/yard.	
downstream end					
Degree of Channel Insis	ion (F	Land Has	r	10
10 Pank Height greater	than 10 feet	5	Land Use		10
5 - Bank Height hetweer	1 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	1 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Limited access to downs	stream end		Marginal forest with cleared park area	- potential to be restore	٤d.
			-		
Fuinting Flag dutate Arra		-		r	F
10 No ovidence of out	255 of bank flooding	5	Opportunity for Ecological Lift	s of lift to be achieved a	o bd custainad
5- Yes (Infrequent out of	f hank flow)		5 - Lift limited to one or few aspects	s of fift to be achieved a	nu sustaineu
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
5' at upstream end, 2' at	t downstream end, ~3' or le	ess on average	Buffer, vertical lateral at perched pipe		
•		-			
Opportunity for Floodp	lain Development	10	Ease of Access		5
10 - Existing space for flo	oodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular a	access to potential site)	
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular a	ccess)	
1 - Little to no space for floodplain development			1 - No (no vehicular access, clearing nee	eded)	
Describe:		Describe:			
Open field along right bank		Adjacent to road and open field			
Drainage Area Evaluatio	on	10	Utilities Present		5
10 -D.A. less than 1 sq. r	ni.		10 - No utilities on site		
5- D. A. Detween 1 & 3 s	ų. mi.		5 - Utilities but not within restoration a	ied	
1 - D. A. greater trian 3 S	<u>y. iiii.</u>		1 - otinites within potential restoration	aica	
0.0864 sq. mi			Sewer line parallel		
			Tota	I Score out of 100	61





	Str	eam Mitigation	Field Site Assessment Form			
		Pro	ject Details			
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	MPAO0018		
Projects Estimated Stream	n Mitigation Needs (LF):	TBD	-			
Data of Field Associations	7/24/2010		Consultant Firm (Investigator(s))			
Date of Field Assessment:	7/24/2019 Sito	Location Dotails	taken from deskton review	CRI/IVID, SN		
County:	Montgomery	Cross Roads	2000 Shorefield Rd Silver Spring MD			
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit):	2140205		
Proximity to Impacted S	tream (mi.):		Lat/Long:	39.055863	-77.040362	
			Site Data			
Parcel Size (ac):	2 parcels - 16.9, 18		Potential Restoration Reach (LF):	530		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer Planting	Habitat Enhancement	Fish Passage	
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use: IV		
Drainage Area to Reach	(sq. mi.)	0.39				
Land Use:	Forest	Carrier AAD	Mapped Soils:	Glenelg silt loam, 8 to 15	percent slopes	
Property Address:	2000 Shorefield Rd Silver	Spring MD				
Property Owner(s).	WINCFF C	Cananal				
ls there evidence that th	na straam has baan distur	<u>General F</u>	IEIG UDSERVATIONS	ably done within the conf	fines of the	
of human action like gr	ading dumping livestock	culvert etc?	parcel or does it require connections	Can the stream restoration be reasonably done within the contines of the		
Evolain:	aunig, auniping, investock,	culvert, etc:	Evolution	Jeyona the parcer mints:		
Yes: Stabilization used D	S of culvert across trail		Yes: Enhemeral channel located entire	lv in MNCPPC Park can't e	extend	
		Mitigat	tion Site Rating			
<u>Criteria</u>		Score	Criteria		<u>Score</u>	
Estimated Bank erosion	within reach	10	Vegetation		1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)			
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)			
1 - Less than 10%			1 - Mostly forested and/or wetland			
Describe:			Describe:			
Approximately 70% of ba	anks are eroded, ranging fi	om 4-7 ft. tall	Mature Forest			
downstream, and 4' tall	upstream.					
Degree of Channel Incid	ion	F	Land Lico	I	1	
10 - Bank Height greater	than 10 feet	5	10 - Agricultural or Open Space		1	
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture			
1 - Bank Height less than	1 3 feet		1 - Old field/ Developed/Forested			
Describe:			Describe:			
Upstream banks are 4 ft	. tall, and downstream		Forested parkland			
Existing Eloodalain Acco		10	Opportunity for Ecological Lift		1	
10 - No evidence of out	of bank flooding	10	10 - Conditions exist for several aspect	s of lift to be achieved and	d sustained	
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects		Justanica	
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain			
Describe:			Describe:			
Very incised ephemeral	channel. Lots of bedrock a	nd sand deposition.	Ephemeral, vertical stability, stable headcut preventing sediment transport to			
			pond downstream.			
			-			
Opportunity for Floodpl	ain Development	5	Ease of Access		10	
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct venicular a	access to potential site)		
1 - Little to no space for	floodnlain development	in width	1 - No (no vehicular access clearing ne	access)		
Lescribe		Le rio (no veniculai access, cleaning needed)				
Jescribe. 3-10 but would require tree impacts		Paved park trail parallel to channel, easy to cut across floodplain				
			<i>s, ce eacaeaa<i>eaaaaaaaaaa<i>aaa</i></i></i>			
Drainage Area Evoluctio	n	10	Litilities Procent	I	10	
10 -D A less than 1 sq. n	ni	10	10 - No utilities on site		10	
5- D. A. between 1 & 3 s	 a. mi.		5 - Utilities but not within restoration a	area		
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration	n area		
Describe:	<u>.</u>		Describe:			
Drainage area - 0.39 sou	are miles.		None observed			
			Tota	al Score out of 100	63	



Site Photos



	Str	eam Mitigation	Field Site Assessment Form		
		Pro	vject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MPAO0019		
Projects Estimated Stream	m Mitigation Needs (LF):	TBD	-		
Data of Field Assessment:	7/25/2010		Consultant Firm/Investigator(s): CRI/SI MD		
Date of field Assessment.	Site	Location Details	s-taken from deskton review		
County:	Montgomery	Cross Roads:	10721 Columbia Pike Silver Spring MD		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 2140205		
Proximity to Impacted S	Stream (mi.):	0.88	Lat/Long: 39.034176	-77.010231	
			Site Data		
Parcel Size (ac):	2 parcels - 2.7, 34		Potential Restoration Reach (LF): 3,616		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer PlantingX_Habitat Enhancement	_XFish Passage	
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Use:	IV	
Drainage Area to Reach	(sq. mi.)	26.9	Monnod Coiles		
Land Use: Property Address:	10721 Columbia Pike Silv	or Spring MD	Iviapped Solis: Blocktown channery	Silt Ioam, 25-45%	
Property Owner(s):	MNCPPC		siopes, very rocky;	Galla silt loam	
		General F	ield Observations		
Is there evidence that t	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the c	onfines of the	
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limits? Explain		
Explain:			Explain:	•	
Yes, dam and riprap			Yes. All within 1 parcel		
Cultura da		Mitigat	tion Site Rating	6	
		Score		<u>Score</u>	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
~15% alternating means	ler		Mature forest		
Degree of Channel Incis	ion	5	Land Use	1	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height betweer	າ 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	າ 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
~4' lower towards dam			Mature forest		
Existing Floodplain Acce	ess	1	Opportunity for Ecological Lift	10	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5-Yes (Infrequent out or	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sust	ain	
Describe:			Describe:		
Sand deposits			Provide access to aquatic species, change ecology, still-flow, release trapped		
			sediment, bank stabilization		
Opportunity for Floodn	lain Develonment	5	Fase of Arcess	5	
10 - Existing space for flo	oodplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site)	
5 - Existing space for flo	odplain 3 to 10 times stream	m width	5- yes (open but no existing vehicular access)	,	
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)			
Describe:		Describe:			
Tree impacts expected		Some clearing required			
Drainage Area Evaluatio	on	1	Utilities Present	1	
10 -D.A. less than 1 sq. r	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
26.9 sq. mi			Sewer line		
			Tatal Carrier and a Capa	25	
			I OTAL SCORE OUT OF 100		



Site Photos





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MPAO0020		
Projects Estimated Stream	m Mitigation Needs (LF):	TBD	-		
Date of Field Assessment:	7/24/2019		Consultant Firm/Investigator(s): CRI/SN_MD	1	
Date of field Assessment.	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Randolph Rd and Kemp Mill Rd		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 2140205		
Proximity to Impacted S	Stream (mi.):	3.21	Lat/Long:	39.065186 -77.028844	
			Site Data		
Parcel Size (ac):	2 parcels - 2.7, 34		Potential Restoration Reach (LF):	448	
Site Opportunities:	X_Channel Restoration	Livestock Exclusion	Riparian Buffer PlantingX_Habitat Er	nhancement _X_Fish Passage	
Stream Order:	3rd	Stream Hydrology:	Perennial Sti	ream Use: IV	
Land Use:	Forest	21.2	Mapped Soils: Hathore silt	loam 0-2% clones frequently	
Property Address:	932 Randolph RD Silver S	pring MD		flooded	
Property Owner(s):	MNCPPC	F 0		nooucu	
		General F	ield Observations		
Is there evidence that t	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done w	ithin the confines of the	
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the	parcel limits? Explain	
Explain:			Explain:		
Road crossing (Randolph	n Rd); USGS Gage - weir an	d house; Old mill	Very limited length, can't extend downstream furth	ner - previous restoration	
race - Kemp Mill					
		Mitiga	tion Site Bating		
Criteria		Score	Criteria	Score	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
40% slumped banks with	n deposition; 60% stabilizat	tion	Mature forest with some wetland		
Degree of Channel Insis	ion			1	
10 - Bank Height greater	than 10 feet	5	10 - Agricultural or Open Space	1	
5 - Bank Height hetweer	1 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Averaging 8-10ft			Mature forest - utility easements and access road		
Existing Floodplain Acce	200	5	Opportunity for Ecological Lift	5	
10 - No evidence of out	of bank flooding	U	10 - Conditions exist for several aspects of lift to be	achieved and sustained	
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
Loose fine sediment evid	dent on top terrace		Fish passage at USGS Gage - partial blockage; habitat; vertical incision; some		
			riparian floodplain access; lateral migration with la	rge drainage area	
				10	
Opportunity for Floodp	lain Development	5 mag stroom width	Lase of Access	10 toptial site)	
5 - Existing space for flor	odulain 3 to 10 times strea	m width	5- ves (open but no existing vehicular access)		
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)			
Describe:		Describe:			
Not guite 10x width, confined by steep valley and roadway		roadway	Utility access road to a stream crossing		
		, ,			
Drainage Area Evaluatio	on	1	Utilities Present	5	
10 -D.A. less than 1 sq. r	ni.		10 - No utilities on site	•	
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
21.2 sq. mi			Overhead powerline at downstream road crossing		
			<u> </u>	+ of 100	
			Total Score ou	1 T OT 1UU 43	





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	pject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MPAO0021		
Projects Estimated Strea	m Mitigation Needs (LF):	TBD			
			-		
Date of Field Assessment:	7/24/2019		Consultant Firm/Investigator(s): CRI/SN, MD		
. .	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Randolph Rd and Kemp Mill Rd		
Basin (HUC 8): Provimity to Impacted	Nilddle Potomac-Anacost	la-Occoquan	MDE watersned (8 digit): 2140205	-77 028844	
	Stream (mi.).	1.58		-77.020044	
Dereel Size (ee):	2 parcels 64 2 10 1 2 6		Site Data		
Parcel Size (ac):	3 parcels - 64.3, 10.1, 3.6	Livesteel, Fusion	Potential Restoration Reach (LF): 4,832	Fish Desses	
Site Opportunities.	X_Channel Restoration	Livestock Exclusion	Peroppial Stream Lice:	FISH Passage	
Drainage Area to Reach	(sq. mi.)	0.55		10	
Land Use:	Forest	0.00	Mapped Soils: Blocktown channery silt	t loam, verv rocky.	
Property Address:	200 Lamberton Drive Silv	er Spring MD	Glenelg silt	loam	
Property Owner(s):	MNCPPC & Mo. County				
		General F	ield Observations		
Is there evidence that t	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the co	onfines of the	
of human action, like g	rading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limit	s? Explain	
Explain:			Explain:		
Utility crossings and rip	rap armor		Majority of site is located on M-NCPPC parkland, except for u	pstream segment	
			within Mo. County ROW.		
		Mitiga	tion Site Rating		
<u>Criteria</u>		Score	Criteria	Score	
Estimated Bank erosion	i within reach	10	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Greater than 50%			Mature forest		
Degree of Channel Incid	ion	10	Land Lise	1	
10 - Bank Height greate	r than 10 feet	10	10 - Agricultural or Open Space		
5 - Bank Height betwee	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less that	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Some areas slightly low	er than 10		Mature forest		
Eviating Flagshalain Ass		10	One output its for Foological Lift	E	
Existing Floodplain Acco	ess of bank flooding	10	Opportunity for Ecological Lift	ond sustained	
5- Ves (Infrequent out o	of bank flow)		5 - Lift limited to one or few scherts	and sustained	
1 - Yes (evidence of free	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:	Juent nooung/		Describe		
No evidence of out of b	ank flow		Lateral migration, geomorphic stability, habitat enhancement, bedform		
			diversity		
			arveisity		
Opportunity for Floodp	lain Development	1	Ease of Access	5	
10 - Existing space for fl	oodplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site)	
5 - Existing space for flo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)			
Describe:		Describe:			
Steep valley, confined by utility and mature forest buffer		Several access points off trails, some tree clearing required at	roadways		
			(Bromley St, Lovejoy St, Lamberton Dr)		
Drainage Area Evaluatio	on	10	Utilities Present	1	
10 -D.A. less than 1 sq. r	mi.	<u> </u>	10 - No utilities on site		
5- D. A. between 1 & 3 s	sq. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	sq. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
0.55 sq. mi			Utilities throughout reach		
			l č		
			Total Score out of 100	54	


Site Photos





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MPAO0022		
Projects Estimated Stream	m Mitigation Needs (LF):	TBD			
	_ /_ /		-		
Date of Field Assessment:	7/24/2019		Consultant Firm/Investigator(s): CRI/SN, MD		
. .	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	1399 Lamberton Drive Silver Spring MD		
Provimity to Impacted S	Stream (mi):	1a-Occoquan	Lat/Long: 39.0/1527	-77 036395	
Froximity to impacted a	stream (mi.).	1.47		-77.030393	
Dereol Size (as):	7 parcels (totaling 62 7ac) and DOW	Site Data		
Parcel Size (ac):	7 parcels (totaling 63.7ac) and ROW	Potential Restoration Reach (LF): 3,218	- Fish Dessee	
Site Opportunities. Stream Order		Livestock Exclusion	Perennial Stream Use	FISH Passage	
Drainage Area to Reach	(sq. mi.)	0.69	Stream Osc.		
Land Use:	Forest	0.00	Mapped Soils: Hatboro silt loam, 0 to	3 percent slopes.	
Property Address:	1399 Lamberton Drive Si	ver Spring MD	frequently	flooded	
Property Owner(s):	MNCPPC	=			
		General F	ield Observations		
Is there evidence that t	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the c	onfines of the	
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limi	ts? Explain	
Explain:			Explain:		
Yes, dam at downstream	n extent, culvert outfall at t	op, multiple utility	No, all can be done on MNCPPC between culvert and dam		
crossing work sections					
.		Mitigat	tion Site Rating		
Criteria		Score		<u>Score</u>	
Estimated Bank erosion	within reach	10	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%					
Describe:	and active presion at eve	nu quitcido moondor	Describe: Nature forest with some wetlands, especially on the right ha		
Consistent vertical bank	s and active erosion at eve	ry outside meander	Mature forest with some wetlands, especially on the right ba	пк	
Dograp of Channel Incis	ion	5	Land Lise	1	
10 Pank Hoight groator	r than 10 foot	5	10 Agricultural or Open Space	1	
5 - Bank Height betweer	1 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Average 5'			Forest with wetlands on terrace		
U					
				-	
Existing Floodplain Acce	2SS	1	Opportunity for Ecological Lift	5	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5- Yes (Infrequent out of	r bank now)		5 - Lift limited to one or few aspects	tain	
1 - Yes (evidence of freq	uent nooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe: Many wrack lines and so	diment denosition on floo	dalain	Describe:		
widily widek lilles allu se	cument deposition on noo	upialli	Lateral and vertical instability, noouplain reconnection on up	stream enu	
Opportunity for Floodp	lain Develonment	10	Fase of Arcess	5	
10 - Existing space for flo	oodplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site	2)	
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)	,	
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:	i		Describe:		
Greater than 10, potential to raise bed to access existing floodplain		Some wide trails will get close to stream with utility access ar	nd open mature		
more often			forest for remaining area		
			-		
Drainage Area Evaluatio	on	10	I Itilities Present	1	
10 -D A loss than 1 can	ni	10	10 - No utilities on site	<u> </u>	
5- D. A. between 1 & 3 <	 a. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	g. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
0.69 sq. mi			Water and sewer crossing		
5.55 5q. mi					
			Total Score out of 100	49	





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: MP	AO0023	
Projects Estimated Strea	am Mitigation Needs (LF):				
	7/47/2040				
Date of Field Assessment:	//1//2019	Lesstine Details	Consultant Firm/Investigator(s): RKa	&K KJH, AJN	
C	Site	Location Details	-taken from desktop review	L L La La cue Ch	
	Montgomery	Cross Roads:	Denteid Ave and	a Haisey St.	c
Dasin (FUC 8): Provimity to Impacted S	tream (mi):	la-Occoquan	INDE watersned (8 digit):	39 037829	2 -77 080548
Proximity to impacted 5	tieani (nn.).	1.03		39.037829	-77.080348
		<u>-</u>	<u>Site Data</u>	1.070	
Parcel Size (ac):	1.45		Potential Restoration Reach (LF):	1,078	
Site Opportunities:	Channel Restoration	Livestock Exclusion	XRiparian Buffer Planting	Habitat Enhancement	_X_Fish Passage
Stream Order:	1st	Stream Hydrology:	Ephemeral	Stream Use:	
Drainage Area to Reach	(sq. ml.)	0.05	Mannad Saila	nola Urban land com	nlov
Land Use: Droporty Addrossy	County POW within Donf	ald Ava	Gie Gie	neig-Orban land com	piex
Property Address: Property Owner(s)	Montgomery County	elu Ave.			
Froperty Owner(s).	Montgomery County				
la thana anidanaa that th	a atua ana kao kaona diatum	<u>General F</u>	ield Observations	den e with in the com	fines of the
is there evidence that th	ie stream has been distur	bed by some kind	Can the stream restoration be reasonably	done within the con	Tines of the
of human action, like gra	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyo	ond the parcel limits:	? Explain
Explain:			Explain:		
Imbricated walls and rip-	rap throughout site.		County ROW. MNCPPC recommendation. I	Ephemeral channel.	
		Mitigat	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>		<u>Score</u>
Estimated Bank erosion	within reach	1	Vegetation		10
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Minor erosion within site	2		Mostly maintained lawn with scattered lar	ge trees	
Degree of Channel Incisi	on	1	Land Use		10
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
1-3' tall banks			Maintained ROW		
Existing Floodplain Acce	SS	10	Opportunity for Ecological Lift		1
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspects of	lift to be achieved an	d sustained
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
No floodplain exists - eph	hmeral channel		No opportunities - ephemeral channel		
Opportunity for Floodpl	ain Development	1	Ease of Access		10
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular acce	ess to potential site)	
5 - Existing space for floor	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular acce	ss)	
1 - Little to no space for f	floodplain development		1 - No (no vehicular access, clearing neede	d)	
Describe:			Describe:		
County Row between roa	ads and houses		Open lawn with scattered large trees		
Drainago Aroa Evaluatio	n	10	Utilities Present		1
Drainage Area Evaluatio	n N	10	10 No utilitios on site		1
IU-D.A. less than I sq. fr	11. 		10 - NO utilities on site		
J- D. A. Delween I & 3 S(4. 1111. n. mi		5 - ounces but not within restoration area 1 - Utilities within not ontial restoration area	22	
I - D. A. greater than 3 S	y. 1111.		1 - ounces within potential restoration are	a	
Describe:			Describe:		
0.05 square miles			Sewerlines in floodplain		
			Total So	core out of 100	55











	Str	ream Mitigation	Field Site Assessment Form	
		Pro	oject Details	
Project Name:	I-495/I-270 Managed Lar	nes Study	Mitigation Site Number: MPAO0024	
Projects Estimated Strea	am Mitigation Needs (LF):	TBD	-	
Data of Field Assessment	. 7/24/2010		Concultant Firm (Investigator(c)) CDI/SN_MD	
Date of Field Assessment	: 7/24/2019 Site	Location Detail	s-taken from deskton review	
County:	Montgomery	Cross Roads	1399 Lamberton Drive Silver Spring MD	
Basin (HUC 8):	Middle Potomac-Anacos	tia-Occoquan	MDE Watershed (8 digit): 2140205	
Proximity to Impacted	Stream (mi.):	3.37	Lat/Long: 39.066586	-76.991351
			Site Data	
Parcel Size (ac):	3 parcels - 18.2, 1.2. 0.6		Potential Restoration Reach (LF): 462	2
Site Opportunities:	Channel Restoration	Livestock Exclusion	Riparian Buffer PlantingHabitat Enhancement	_ tXFish Passage
Stream Order:	1st	Stream Hydrology:	: Perennial Stream Use:	:1
Drainage Area to Reac	h (sq. mi.)	•		
Land Use:	Forest		Mapped Soils: Baile silt loam, 0 to	3 percent slopes;
Property Address:	12820 Maple Street Silve	er Spring MD	Brinklow-Blocktown	channery silt loam
Property Owner(s):	MINCPPC			
		General F	ield Observations	C
Is there evidence that	the stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the	contines of the
of human action, like g	rading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel lim	its? Explain
Explain:			Explain:	
Culvert at upstream en	d, concrete downstream of	culvert	Yes. All within M-NCPPC property	
		Mitiga	tion Site Rating	
Criteria		Score	ICriteria	Score
Estimated Bank erosio	n within reach	10	Vegetation	1
10 - Greater than 50%		10	10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
75%-100% eroded ban	KS		Forested buffer, bamboo stands on right bank	
Degree of Channel Inci	sion	5	Land Use	1
10 - Bank Height greate	er than 10 feet	<u></u>	10 - Agricultural or Open Space	
5 - Bank Height betwee	n 3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less tha	in 3 feet		1 - Old field/ Developed/Forested	
Describe:			Describe:	
8-9' incised channel			Forested land use immediately adjacent to stream, residentia	al outside buffer
			area	
Existing Floodplain Acc	cess	10	Opportunity for Ecological Lift	5
10 - No evidence of out	t of bank flooding	<u>.</u>	10 - Conditions exist for several aspects of lift to be achieved	and sustained
5- Yes (Infrequent out o	of bank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of fre	quent flooding)		1 - Conditions are such that Lift is difficult to achieve and sus	tain
Describe:			Describe:	
Flows completely confi	ned in channel		Vertical/lateral	
Opportunity for Flood	plain Development	5	Ease of Access	5
10 - Existing space for f	loodplain greater than 10 ti	imes stream width	10 - Yes (with <u>existing</u> direct venicular access to potential site	2)
5 - Existing space for fig	odpiain 3 to 10 times strea	im width	5- yes (open but no existing venicular access)	
I - LILLIE LO HO SPACE IO	noouplain development		1 - NO (110 venicular access, clearing needed)	
Describe: Maturo forost huffor w	ill limit floodplain		Describe: Access from Manlo Street, some tree impacts to access entir	o longth off of
wature lorest buller w			Access from Maple Street, some tree impacts to access entit	e length off of
			Maple Street	
Drainage Area Evaluat	ion	10	Utilities Present	1
10 -D.A. less than 1 sq.	mi.		10 - No utilities on site	
5- D. A. between 1 & 3	sq. mi.		5 - Utilities but not within restoration area	
1 - D. A. greater than 3	sų. mi.		1 - Ouncies within potential restoration area	
Describe:			Describe:	
0.35 sq mi			Manhole exposed on left bank	
			Total Score out of 100	E.2
				/ 33



Site Photos



Project Details Project Details Project Details Militation Site Number: MPAQUU25 Militation Site Variable Addressessment: B/26/2019 Consultant Firm/Investigatorist: CAV 51, MD Stee Oralle Statem Trim/Investigatorist: CAV 51, MD Stee Oralle Statem Trim/Investigatorist: CAV 51, MD Stee Oralle Statem Trim/Investigatorist: CAV 51, MD Molecular Colspan="2">Consultant Firm/Investigatorist: CAV 51, MD Stee Orgen Trimester Stream Mile Work Stream Mythology: Project Matter Reling: Stee Orgen Trimester Stream Mythology: Trimester Stream Mythology: <th c<="" th=""><th></th><th>S</th><th>tream Mitigation F</th><th>ield Site Assessment Form</th><th></th><th></th></th>	<th></th> <th>S</th> <th>tream Mitigation F</th> <th>ield Site Assessment Form</th> <th></th> <th></th>		S	tream Mitigation F	ield Site Assessment Form		
Order, Kammer L-035/1/20 Managed Lane Study Mitigation Site Number: MPAODU2S Date of Pield Assessment: 8/26/201 Consultant Firm/Inventigator(s): CR/51, MD Date of Pield Assessment: 8/26/201 Consultant Firm/Inventigator(s): CR/51, MD Sonis HULC Site Molice Pielotance-Anacotta-Concount Molice Pielotance-Anacotta-Concount Molice Pielotance-Anacotta-Concount Molice Pielotance-Anacotta-Concount Molice Pielotance-Anacotta-Concount Molice Pielotance-Anacotta-Concount Percential Restoration Reach (R): 20.00 77.013256 Site Opportunities: Comment Network (R): Molice Pielotance-Macotta-Concount Protential Restoration Reach (R): 20.00 77.013256 Site Opportunities: Comment Network (R): Molice Pielotance Freedomine Miler Piening Stream (R): 20.00 77.013256 Site Opportunities: Comment Network (R): Molice Pielotance Freedomine Miler Piening Stream (R): 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00			Proj	ect Details			
Projects Stimulated Stream Mitigation Needs (JP):	Project Name:	I-495/I-270 Mana	ged Lane Study	Mitigation Site Number:	MPA00025		
Date of Field Assessment: 8/26/2013 Consultant Firm/Investigator(i): CRU 5), MD County: Montgomery Cross Room Endersch 2: rand Northwood P Stain (FUC 5): Montgomery Cross Room Endersch 2: rand Northwood P Provinity to impacted Stream (mit): 1.5 Endersch 2: rand Northwood P 77.01838 Stream (FUC 5): .0 Provinity: Provinity: Favoration (Fernance Association Science (Fernance Association (Fern	Projects Estimated Strea	am Mitigation Needs (LF):	TBD	-			
Oncomp: Operation	Data of Field Assossment:	8/26/2010		Consultant Firm/Investigator(s):			
Country: Monitory because where the second method by	Date of Field Assessment.	Sit	e Location Details-	taken from deskton review	Chi 33, 10		
Mode Stream (mil): Mode Posimic A function Positive Stream (mil): 1.5 Parcel Size (ac): 9.5 Size Option (U): 2.65 proving to (U): proving to	County:	Montgomery	Cross Roads:	Kenbrook Dr a	nd Northwood Dr		
Proximity to Impacted Stream (mi): 1.5 LityLong: 39.01022 -77.01838 Parcel Site (ac): 9.5 Stream Mytoriogy:	Basin (HUC 8):	Middle Potomac-Anacosti	a-Occoquan	MDE Watershed (8 digit):	2140205		
Site Data Parel Size (a): 9.5 Porter Size (b): Channel Retornation Elevented Lackedon Site Optimitie: Channel Retornation Elevented Lackedon Draining Area to Reach (R, mL) 0.1 Cannot the stream hydrology: Perential Draining Area to Reach (R, mL) 0.1 Mapped Soils: Binlow-Biocktown channery sill loams Propert Vone(L): MANDE Cannot the stream hydrology: Binlow-Biocktown channery sill loams Propert Vone(L): MANDE Cannot the stream restoration be reasonably done within the confines of the human action, like grading, dumping, livestock, cubert, etc ? Epidan: Cannot the stream restoration be reasonably done within the confines of the parcel of does in regure connections beyond the parcel limits? Explain Colder: Mapped Soil: Cannot the stream restoration be reasonably done within the confines of the parcel of does in regure connections beyond the parcel limits? Explain Colder: Mapped Soil: Cannot the stream restoration be reasonably done within the confines of the parcel of does in regure connections beyond the parcel limits? Explain Colder: Mapped Soil: Stream Westore Score Conternet than 10% 10 Hereanse Score <th< td=""><td>Proximity to Impacted S</td><td>tream (mi.):</td><td>1.5</td><td>Lat/Long:</td><td>39.04022</td><td>-77.01838</td></th<>	Proximity to Impacted S	tream (mi.):	1.5	Lat/Long:	39.04022	-77.01838	
Parcel Site (a): 9.5 Pedential Restoration Reach (LF): 266 Stream Myrology:			S	ite Data			
Site Opportunities:	Parcel Size (ac):	9.5		Potential Restoration Reach (LF):	266		
Stream Order: Date Prevention Stream Use: IV Onlinge Area Deck [sq. mi,] 0.3 0.3 Brinlow-Blocktown channery sill loams Property Address GOE Kenbrook Drive Silver Spring MD Brinlow-Blocktown channery sill loams Property Address GOE Kenbrook Drive Silver Spring MD Brinlow-Blocktown channery sill loams Property Address General Field Observations Brinlow-Blocktown channery sill loams Is there evidence that the stream has been disturbed by some kind of Date Stream restoration be reasonably done within the confines of the human action, like grading, dumping livestode, culvert, etc? Peplain Bracel of does it require connections beyond the parcel limits? Explain Explain: Yes access through near by trail. Explain: Citeria Score Citeria Score Citeria Score Citeria Score </td <td>Site Opportunities:</td> <td>Channel Restoration</td> <td>Livestock Exclusion</td> <td>Riparian Buffer Planting</td> <td>Habitat Enhancement</td> <td>Fish Passage</td>	Site Opportunities:	Channel Restoration	Livestock Exclusion	Riparian Buffer Planting	Habitat Enhancement	Fish Passage	
Dramage Area to Reach (B, M) 0.13 Indu Use: Toriest Toriest Toriest Address:	Stream Order:	2nd	Stream Hydrology:	Perennial	Stream Use:	V	
Property Uddress: Different occurrent stream is a second by some line of the stream restoration be reasonably done within the confines of the fundament of the grading. dumping livestode, cultert, etc? Explain: is there evidence that the stream has been disturbed by some kind of Explain: Explain: Explain: Explain: Yes, Utilities and constructed plunge pool in the channel. Explain: Yes, Utilities and constructed plunge pool in the channel. Explain: Yes, Utilities and constructed plunge pool in the channel. Explain: Yes, Utilities and constructed plunge pool in the channel. Iter evidence that the stream restoration be reasonably done within the confines of the fundament of the parcel fundament of t	Drainage Area to Reach	(sq. mi.)	0.15	Manned Soils:	Brinlow-Blocktown chan	nery silt loams	
Property Owner(s): M-NCPPC State evidence that the stream has been disturbed by some kind of human action, like grading, dumping, livestods, culvert, etc? Explain Explain: Can the stream restoration be reasonably done within the confines of the human action, like grading, dumping, livestods, culvert, etc? Explain Yes, Utilities and constructed plunge pool in the channel. Explain: Yes, Utilities and constructed plunge pool in the channel. Explain: Yes, State and Sta	Property Address:	606 Kenbrook Drive Silver	Spring MD	Mappeu Solis.	BIIIIOW-BIOCKLOWIT CHail		
General Field Observations is there evidence that the stream has been disturbed by some kind of Can the stream restoration be reasonably done within the contines of the parcel or does it require connections beyond the parcel limits? Explain Explain: Yes, Utilities and constructed plunge pool in the channel. Explain: Wes access through near by trail. Criteria Score Criteria Score Estimated Bank erosion within reach 10 Vegetation 10 10 - Grater than 50% 10 - Herbaceous cover (non-wetland) 1 5 - 10% to 50% 10 - Herbaceous cover (non-wetland) 1 1 - Less than 10% Describe: Describe: Approximately 60% eroded, mostly on the left bank. Eroded banks average 5' tall. Mature Forest 11 Do = Sank Height Desthan 3 feet 10 - Afgricultural or Open Space 1 Di = Sank Height Developed/Forested Describe: Mostly forested adp/or wetland Di = Nank Height Developed/Forested Describe: Mostly forested adp/or wetland Di = Sank Height Developed/Forested Describe: Mostly forested some developed. Di = Sank Height Developed/Forested Describe: Describe: Di = No evidere of frought flooding 10 - On devidere of frought du suitained <td>Property Owner(s):</td> <td>M-NCPPC</td> <td>opring mb</td> <td></td> <td></td> <td></td>	Property Owner(s):	M-NCPPC	opring mb				
is there evidence that the stream has been disturbed by some kind of Can the stream restoration be reasonably done within the conflines of the harmed or does it require connections beyond the parcel low for does it require connections beyond the parcel low for does it require connections beyond the parcel low for does it require connections beyond the parcel low for does it require connections beyond the parcel low for does it require connections beyond the parcel low for does it require connections beyond the parcel low for does it require connections beyond the parcel low for does it require connections beyond the parcel low for does it require connections beyond the parcel low for does it requires cover it and the stream restoration of the formation of the f			General Fi	eld Observations			
human action, like grading, dumping, livestock, culvert, etc2 Explain parcel or does it require connections beyond the parcel limits? Explain Explain: Yes Explain: Yes access through near by trail. Yes, Utilities and constructed plunge pool in the channel. Explain: Yes access through near by trail. Criteria Score Criteria Score Estimated Bank erosion within reach 10 Vegetation 1 10 - Greater than 50% 5 Score through near by trail. 1 11 - Sort than 50% 5 Score through near by trail. 1 12 - Horseeous cover (non-wetland) 1 House the score through the score through near by trail. 1 12 - Horsetter Describe: Describe: 0 Score through through the score through	Is there evidence that the	ne stream has been disturb	ed by some kind of	Can the stream restoration be reasona	bly done within the conf	ines of the	
Explain: Explain: Explain: Yes, Utilities and constructed plunge pool in the channel. Explain: Yes access through near by trail. Yes, Utilities and constructed plunge pool in the channel. Score Criteria Score Criteria Score Criteria Score Criteria Score Criteria Score Estimated Bank erosion within reach 10 Vegetation 1 10 - Grater than 50% 10 Hegetation 1 1 - Stating Score (non-wetland) - Score Criteria 0 - Score Score (non-wetland) - Score (non-wetland) - 1 - Less than 10% Describe: Describe: Describe: - Approximately 60% eroded, mostly on the left bank. Eroded banks average 5' tall. Mature Forest Mature Forest 10 - Bank Height greater than 10 feet 10 - Agricultural or Open Space 1 1 2 - Sank Height Isss than 3 feet Describe: Describe: Describe: Describe: Describe: 1 1 - Bond Kinght For Ecological Lift 5 10 Conditions exist for several aspects of lift to be achieved and sustained 5 -	human action, like gradi	ing, dumping, livestock, cul	vert, etc? Explain	parcel or does it require connections b	eyond the parcel limits?	Explain	
Yes, Utilities and constructed plunge pool in the channel. Yes access through near by trail. Yes, cortest than solv. Score Criteria Score Criteria Score Criteria Score Estimated Bank erosion within reach 10 Vegetation 1 10 - Greater than 50% 10 - Herbaceous cover (non-wetland) 1 5 - 10% to 50% 1 - Mostly forested and/y forested and sustained 6 - Bank Height Breater than 10 feet 10 - Agricultural or Open Space 1 6 - Bank Height Breater than 10 feet 1. Odd field/ Developed/Forested 1 10 - Bank Height Breater than 10 feet 1. Odd field/ Developed/Forested 1 10 - No evidence of out of Bank flooding 10 - Conditions exist for several aspects of lift to be achieved and sustained 5 10 - No evidence of frequent flooding 10 - Conditions exist for several aspects of lift to be achieved and sustained 5 10 - No evidence of frequent flooding 10 - Conditions exist for several aspects of lift to be achieved and sustained 5 10 - No evid	Explain:			Explain:			
Mitigation Site Rating Criteria Score Estimated Bank erosion within reach 10 10 - Greater than 50% 10 - Herbaceous cover (non-wetland) 5 - 10% to 50% 1 - Mosily forested and/or wetland 1 - Less than 10% Describe: Describe: Describe: Approximately 60% eroded, mostly on the left bank. Eroded banks average 5' tall. Mature Forest Degree of Channel Incision 5 10 - Bank Height greater than 10 feet 10 - Agricultural or Open Space 5 - Bank Height greater than 10 feet 10 - Agricultural or Open Space 1 - Bank Height greater than 10 feet 10 - Opentume / Agricultural or Open Space 2 - Bank Height Best than 3 feet Describe: Describe: Describe: Let bank approximately 5', Right bank approximately 4'. Mostly forested some developed. Existing Floodplain Access 10 10 - Ne vidence of out of bank flooding 5 - Lift limited to one or few aspects of lift to be achieved and sustained 5 - Yes (Inferguent out of bank flooding 5 - Lift limited to one or few aspects of lift to be achieved and sustained 10 - Ne vidence. Ease of Access 10 10 - Ne vidence of frequent flooding) 5 - Li	Yes, Utilities and constru	icted plunge pool in the cha	nnel.	Yes access through near by trail.			
Mitigation Site Rating Criteria Score Criteria Criteria Score Criteria Criteria Score Criteria Criteria Score Criteria Criteria Score Stimated Bank erosion within reach 10 Vegetation 1 10 - Greater rhan 50% 5 - Scrub-shrub cover (non-wetland) 1 1 - Less than 10% 1 - Mostiy forested and/or wetland Describe: Approximately 60% eroded, mostly on the left bank. Eroded banks average 5' tail. Mature Forest Describe: Do - Bank Height prester than 10 feet 1 - Adjentultral or Open Space 1 10 S - Bank Height prester than 10 feet 1 - Od field/ Developed/Forested Describe: Mostly forested some developed. Describe: Left bank approximately 5'. Right bank approximately 4'. Mostly forested some developed. S Existing Floodplain Access 10 Opportunity for Ecological Lift S To - No evidence of out of bank flowing 1 - Conditions are such that Lift adifficult a access to potential strained S S - Ves (Infequent toout of bank flowing <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>							
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Opportunity for Floodplain Development 5 Ease of Access 1 10 - Existing space for floodplain greater than 10 times stream width 10 - Yes (with existing direct vehicular access to potential site) 5 5 - Existing space for floodplain 3 to 10 times stream width 10 - Yes (with existing direct vehicular access) 1 1 - Little to no space for floodplain development 1 - No (no vehicular access, clearing needed) 5 Describe: Describe: Able to use the trail off of Hillsboro Dr. Tree impacts expected. 10 - No utilities Present 1 10 - D.A. less than 1 sq. mi. 10 - No utilities on site 5 5 - D. A. between 1 & 3 sq. mi. 1 - Utilities within potential restoration area 1 1 - D. A. greater than 3 sq. mi. 1 - Utilities within potential restoration area 1 Describe: 0.15 sq.mi Sewer utilities within the potential restoration area. 49							
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Tree impacts expected. Able to use the train of of Hillsboro Dr. Drainage Area Evaluation 10 10 - D.A. less than 1 sq. mi. 10 - No utilities on site 5 - D. A. between 1 & 3 sq. mi. 5 - Utilities but not within restoration area 1 - D. A. greater than 3 sq. mi. 1 - Utilities within potential restoration area Describe: Describe: 0.15 sq.mi Sewer utilities within the potential restoration area.	Describe:		Describe:				
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1 - D. A. greater than 3 sq. mi. 1 - Utilities within potential restoration area Describe: Describe: 0.15 sq.mi Sewer utilities within the potential restoration area. Total Score out of 100	5- D. A. between 1 & 3 so	q. mi.		5 - Utilities but not within restoration a	rea		
Describe: 0.15 sq.mi Sewer utilities within the potential restoration area. Total Score out of 100 49	1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration	area		
0.15 sq.mi Sewer utilities within the potential restoration area. Total Score out of 100 49	Describe:			Describe:			
Total Score out of 100 49	0.15 sq.mi			Sewer utilities within the potential rest	oration area.		
Total Score out of 100 49							
				Tot	al Score out of 100	Δ٩	



<u>Site Photos</u>





	S	tream Mitigatio	n Field Site Assessment Form			
		P	roject Details			
Project Name:	I-495/I-270 Manage	ed Lanes Study	Mitigation Site Number:	MPAOO0026		
Projects Estimated Stre	am Mitigation Needs (LF):	TBD	-			
			-			
Date of Field Assessment	: 7/26/2019		Consultant Firm/Investigator(s):	CRI - SJ/	MD	
	<u>Sit</u>	te Location Detai	ils-taken from desktop review			
County:	Montgomery	Cross Roads:	200 Lambert	on Dr, Silver Spring		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit):	214020)5	
Proximity to Impacted	Stream (mi.):	2.27	Lat/Long:	39.050182	-77.011505	
			Site Data			
Parcel Size (ac):	15.8		Potential Restoration Reach (LF):	238		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer Planting	_XHabitat Enhancement	Fish Passage	
Stream Order:	2nd	Stream Hydrology:	Ephemeral	Stream Use:		
Drainage Area to Reach	ո (sq. mi.)	0.00305				
Land Use:	Forest		Mapped Soils: Blacktown channery silt	loam		
Property Address:	200 Lamberton Dr, Silver	Spring, MD				
Property Owner(s):	MNCPPC					
		<u>General</u>	Field Observations			
Is there evidence that t	he stream has been disturb	ed by some kind of	Can the stream restoration be reasona	ably done within the conf	ines of the parcel	
human action, like grac	ling, dumping, livestock, cu	lvert, etc? Explain	or does it require connections beyond	the parcel limits? Explain	า	
Explain:			Explain:			
Yes; Utility ROWs			Yes. M-NCPPC Recommendation			
		Mitig	ation Site Rating			
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>		<u>Score</u>	
Estimated Bank erosion	n within reach	1	Vegetation		1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)			
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)			
1 - Less than 10%			1 - Mostly forested and/or wetland			
Describe:			Describe:			
Bank erosion of approxi	imately 0%; No channel obse	erved; flow	Wetland and forest			
dispersed into wetland	,	, -				
Degree of Channel Incis	sion	1	Land Use		1	
10 - Bank Height greate	r than 10 feet		10 - Agricultural or Open Space			
5 - Bank Height betwee	n 3 and 10 feet		5 - Marginal Pasture			
1 - Bank Height less tha	n 3 feet		1 - Old field/ Developed/Forested			
Describe:			Describe:			
No channel incision			Forest			
		4			4	
Existing Floodplain Acc	ess	1	Opportunity for Ecological Lift		1	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects	s of lift to be achieved and	sustained	
5- Yes (Infrequent out o	of bank flow)		5 - Lift limited to one or few aspects	In the second		
1 - Yes (evidence of free	quent flooding)		1 - Conditions are such that Lift is diffic	ult to achieve and sustain		
Describe:			Describe:			
Flow dispersed into we	tland		Restoration would cause more disturbance than the site requires			
Our out with four Floodu		10	Free of Assess		1	
Opportunity for Floodp	blain Development	10 noo atroom width	Ease of Access	accord to not ontial cita)	1	
10 - Existing space for flo	oodplain greater than 10 tir	nes stream width	10 - fes (with <u>existing</u> direct vehicular a			
1 Little to pe coace for	floodplain 5 to 10 times stream	n wiuth	1 No (no vobicular access, clearing no	adad)		
	noodplain development		1 - NO (NO VEHICUIAI ACCESS, Cleaning He	eueu)		
Describe:			Describe:			
Already very wide flood	l plain		Clearing of mature forest for access			
Drainaga Araa Evaluati	on.	10	Litilities Present		1	
10 D A loss than 1 ca	mi	10	10 No utilitios on sito		1	
IU-D.A. less than I sq.	(1). ca mi		10 - NO utilities of site			
1 D A greater than 2	sq. mi		J - Otilities but not within restoration	ilea		
I - D. A. greater than S	sq. m.			lalea		
Describe:			Describe:			
Drainage Area00305			Outfall present; photo 6			
1			Tota	al Score out of 100	28	



	Str	eam Mitigation	Field Site Assessment Form		
		Pro	<u>pject Details</u>		
Project Name: I-495/	270 Manage	d Lane Study	Mitigation Site Number: MI	PAO0027	
Projects Estimated Stream Mitigation	n Needs (LF):	TBD			
	_ / /		-		
Date of Field Assessment:	//30/2019		Consultant Firm/Investigator(s):	CRI - DS/SN	
	Site	Location Details	s-taken from desktop review	ad Flava I.a	
County: Iviontgomery	/	Cross Roads:	Flora Terrace a	nd Flora Ln	
Provimity to Impacted Stream (mi):	mac-Anacosi		Interview (8 digit):	39 01234 -77 0342	
rioximity to impacted stream (imi).		0.04	Cite Date	55.01254 77.0542	
	2 parcols (9	4 1 4)	Site Data	1 260	
Parcel Size (ac):	2 parcers (8.	4, 1.4)	Potential Restoration Reach (LF):	1,309 V Habitat Enbancomont	
Stream Order:	lestoration _	Stream Hydrology	Nparian burier Flanting		
Drainage Area to Reach (sg. mi.)		Stream Hydrology.	Ferennia	0.37	
Land Use: Parkland/For	rest		Mapped Soils: Baile, hatboro and channel	ry silt loams	
Property Address: 1400 Flora Te	errace, Silver	Spring, MD		·	
Property Owner(s): MNCPPC					
		General F	ield Observations		
Is there evidence that the stream has	been distur	ped by some kind	Can the stream restoration be reasonable	y done within the confines of the	
of human action, like grading, dumpir	ng, livestock,	culvert, etc?	parcel or does it require connections bey	ond the parcel limits? Explain	
Explain:			Explain:	· · · ·	
Yes; Culverts, concrete weirs and rip-ra	ap bank prot	ection is present	Removing the concrete weirs, confirming	more weirs are not further	
	•	-	downstream; There is potential to extend	downstream with the proper owne	
			coordination.		
		Mitiga	tion Site Bating		
Criteria		Score	Criteria	Score	
Estimated Bank erosion within reach		5	Vegetation		
10 Groater than 50%		5	10 Horbacoous cover (non-wetland)		
5 - 10% to $50%$			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Approximately 40% of the banks are e	roded		There is a park and shrubs with invasive si	necies on the edge of the forest in a	
	roucu.		residential area	beeles on the edge of the forest in a	
Degree of Channel Incision		5	Land Use		
10 - Bank Height greater than 10 feet			10 - Agricultural or Open Space	_	
5 - Bank Height between 3 and 10 feet	ī.		5 - Marginal Pasture		
1 - Bank Height less than 3 feet			1 - Old field/ Developed/Forested		
Describe:			Describe:		
Banks range from approximately 4-8 fe	eet tall.		Site consists of developed forest.		
Existing Floodplain Access		5	Opportunity for Ecological Lift		
10 - No evidence of out of bank floodi	ng	5	10 - Conditions exist for several aspects of	f lift to be achieved and sustained	
5- Yes (Infrequent out of bank flow)	пв		5 - Lift limited to one or few aspects	int to be achieved and sustained	
1 - Yes (evidence of frequent flooding)			1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
There is no significant evidence of floo	ding		Eish blockage: Lateral and vertical stability is present: Habitat: Bed form		
	ang.		diversity with fleedelain reconnection		
			diversity with hoodplain reconnection.		
Opportunity for Floodplain Developm	nent	5	Ease of Access		
10 - Existing space for floodplain great	er than 10 ti	mes stream width	10 - Yes (with existing direct vehicular acc	ess to potential site)	
5 - Existing space for floodplain 3 to 10) times strea	n width	5- yes (open but no existing vehicular acce	ess)	
1 - Little to no space for floodplain dev	velopment		1 - No (no vehicular access, clearing neede	ed)	
Describe:			Describe:		
Trails located on either side and road l	ocated at do	wnstream end.	Access is adjacent to road and trail with m	inimal clearing necessary.	
Drainago Aros Suclustica		10	Litilities Present		
10 -D A less than 1 sa mi		10	10 - No utilities on site		
-υ.Α. ιεςς ι ιαι τ sq. IIII. 5- D Δ hetween 1 & 3 ca mi			5 - Itilities but not within restoration area	a	
1 - D. A. greater than 3 sq. mi			1 - Utilities within notential restoration ar	ea	
Describe					
Drainage Area - 0.37			There are multiple utility crossings along w	with low overheard powerlines. Gas	
			and sewer lines are also present.		
			<u> </u>		
			<u>Iotal S</u>	core out of 100	

	Stream Mitigation Field Site Assessment Form						
			Project Details				
Project Name:	I-495/270 Manage	ed lane study	Mitigation Site Number:	MPAO0028			
Projects Estimated St	ream Mitigation Needs (I	. TBD					
	7/20/2040			0.01			
Date of Field Assessme	n //30/2019	Cite Leastien De	Consultant Firm/investigator(s):	CRI -	DS/SN		
Country	Montgomony	Site Location De	talls-taken from desktop review	Diver & Deemar Ave			
County: Basin (HUC 8):	Middle Potomac Anacost		MDE Watershed (9 digit):	214	0205		
Provimity to Impacte	d Stream (mi).	1 28	lat/long:	2140	-77 005321		
i i oxinity to inipuete	a otream (mil)	1.20	Site Data	00.000001	7710000021		
Parcal Siza (ac):	21.6		<u>Sile Daid</u> <u>Botontial Postoration Poach (LE):</u>	766			
Site Opportunities:	X Channel Posteration	Livesteck Evolusion	Potential Restoration Reach (LF).	Habitat Enhancoment	V. Fich Passage		
Stream Order:	2nd	Stream Hydrology:		Stream Use:	_^_FISH Fassage		
Drainage Area to Rea	ch (sa. mi.)			6.23 sa mi			
Land Use:	Parkland		Mapped Soils:	Hatboro Silt Loam, 0 to	3 % slopes		
Property Address:	Sligo Creek Parkway and	Doomerville Avenue	, Tacoma Park, MD	· · · · · ·	•		
Property Owner(s):	MNCPPC						
		Gener	al Field Observations				
Is there evidence that	t the stream has been dist	turbed by some	Can the stream restoration be reasona	ably done within the co	nfines of the parcel or		
kind of human action	ı, like grading, dumping, li	vestock, culvert,	does it require connections beyond th	e parcel limits? Explain			
Explain:			Explain:				
Yes; asset stabilization	n and a lot of placed rip-ra	p boulders	Yes; it could extend if needed stability a	all the way to next WSS	C exposed asset		
		<u>Mit</u>	igation Site Rating				
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>		<u>Score</u>		
Estimated Bank erosi	on within reach	1	Vegetation		1		
10 - Greater than 50%	/ D		10 - Herbaceous cover (non-wetland)				
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)				
1 - Less than 10%			1 - Mostly forested and/or wetland				
Describe:							
Mostly rip-rap/boulde	er protection		Forest				
Degree of Channel In	cision	5	Land Use		1		
10 - Bank Height grea	ter than 10 feet	_	10 - Agricultural or Open Space				
5 - Bank Height betwe	een 3 and 10 feet		5 - Marginal Pasture				
1 - Bank Height less th	nan 3 feet		1 - Old field/ Developed/Forested				
Describe:			Describe:				
Approximately 5 feet			Forested				
Existing Eloodalain A	CC955	5	Opportunity for Ecological Lift		5		
10 - No evidence of o	ut of bank flooding	5	10 - Conditions exist for several aspects	s of lift to be achieved a	nd sustained		
5-Yes (Infrequent out	t of bank flow)		5 - Lift limited to one or few aspects	s of fire to be achieved a			
1 - Yes (evidence of fr	requent flooding)		1 - Conditions are such that Lift is diffic	ult to achieve and susta	in		
Describe:			Describe:				
Some evidenece of flo	ooding on trail		Fish passage: vertical stability				
Opportunity for Floor	dplain Development	1	Ease of Access		5		
10 - Existing space for	floodplain greater than 10	0 times stream width	10 - Yes (with <u>existing</u> direct vehicular a	access to potential site)			
5 - Existing space for f	iloodplain 3 to 10 times str	ream width	5- yes (open but no existing vehicular a	ccess)			
1 - Little to no space f	or floodplain development	t	1 - No (no vehicular access, clearing ne	eded)			
Describe:			Describe:				
Steep valley; trail; roa	ıd		Adjacent to road and paved trail				
Drainage Area Evalua	ation	1	Utilities Present	I	1		
10 -D.A. less than 1 so	a. mi.	I	10 - No utilities on site		i		
5- D. A. between 1 &	3 sg. mi.		5 - Utilities but not within restoration a	irea			
1 - D. A. greater than	3 sq. mi.		1 - Utilities within potential restoration	area			
Describe:	· · ·		Describe:				
Drainage area - 6 23 s	square miles		Sewer crossing fish blockage				
			Tot	al Score out of 100	26		

 Site No. [MPA00028]
 Scale: 1 in. = 20,000 ft

<u>Map</u>

Site Photos

Page 2 of 3

	Str	eam Mitigation	Field Site Assessment Form		
		Pro	bject Details		
Project Name:	I-495/27	70	Mitigation Site Number: MPAO0029		
Projects Estimated Strea	am Mitigation Needs (LF):	TBD			
			-		
Date of Field Assessment:	7/30/2019		Consultant Firm/Investigator(s): CRI - DS	S/SN	
	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Piney Branch Parkway and Barron Street	0.5	
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 21402	.05	
Proximity to impacted s	stream (mi.):	0.6	Lat/Long: 39.00188	-76.999002	
		-	<u>Site Data</u>		
Parcel Size (ac):	9 parcels (1, 0.6, 0.5, 1.03, 0.4	7, 0.94, 2.17, 8.74, 2.4)	Potential Restoration Reach (LF): 2,575	-	
Site Opportunities:	_xChannel Restoration	Livestock Exclusion	nRiparian Buffer PlantingHabitat Enhancement	_xFish Passage	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:		
Drainage Area to Reach	(sq. ml.) Park/forost	0.62 sq. mi	Mannad Sails: Hathara silt loam		
Property Address	8700 Piney Branch Parkw	av Silver Spring M			
Property Owner(s):	MNCPPC	ay, shiver spring, w	0 20301		
		Conoral	ield Observations		
Is there evidence that the	he stream has heen distur	bed by some kind	ICan the stream restoration be reasonably done within the o	onfines of the	
of human action like gr	rading dumping livesteck		can the stream restoration be reasonably done within the t	tc2 Evolain	
Containan action, like gr	aunig, auniping, investock,	cuivert, etc.:	parcer of does it require connections beyond the parcer inn		
Explain: There is ovidence of rest	toration near unstream out	wart and work has	Explain:	ation is needed to	
there is evidence of rest	toration hear upstream cur		bownstream end appears to be actively worked on. Commin	ation is needed to	
started at downstream e	and; Mattresses and couch	les present in	confirm project extent		
stream.					
		Mitiga	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
20% restored; Restoration	on planned at downstream	end	Forest corridor		
Degree of Channel Incia	ion	F		1	
10 Park Height greater	ion r than 10 faat	5	10 Agricultural or Open Space	1	
10 - Bank Height greater	r than 10 feet		E Marginal Pacture		
 Bank Height between Bank Height loss that 	n 2 foot		5 - Marginal Pasture		
I - Dalik Height less that	151661				
Describe:			Describe: Forest corridor		
Approximately 4-7 reet			Forest corridor		
Existing Floodplain Acce	ess	5	Opportunity for Ecological Lift	5	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
There is some evidence	of flooding primarily In the	restored reach	Lateral and vertical stability; Floodplain reconnection with in	vasive species	
Opportunity for Floodpl	lain Development	5	Ease of Access	5	
10 - Existing space for flo	oodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site	;)	
5 - Existing space for floo	odplain 3 to 10 times stream	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
FP width varies with par	k and residential along ban	ks, consistently	There is easy access for the upstream and downstream section	on coming from	
~3+			the left bank community center and park. Clearing is require	d.	
Drainage Area Evoluatio	on	10	l Itilities Present	5	
10 -D A less than 1 can	ni	10	10 - No utilities on site		
5- D A hetween 1 $\&$ 2 c	in. Sa mi		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	sa. mi.		1 - Utilities within potential restoration area		
Describe:	·····				
Describe.					
rainage area - 0.62 squ	iare miles		iviuitiple sewer line markers visible; No exposed crossings ob	served	
			1		
			Tatal Casua and 15400		
			<u>I otal Score out of 100</u>	47	

	Sti	eam Mitigation	Field Site Assessment Form		
		Pro	pject Details		
Project Name: Projects Estimated Strea	1-495/I-270 Manage m Mitigation Needs (LF):	ed Lanes Study	Mitigation Site Number: MPAO0030		
Date of Field Assessment:	7/24/2019		Consultant Firm/Investigator(s):	CRI- MD/SN	
. .	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Hugo Circle	2140205	
Proximity to Impacted St	tream (mi):	la-Occoquan A	Lat/Long:	2140205	
rioxinity to impacted of	tream (mil).	-	Site Data	55.072757 77.050004	
Parcel Size (ac):	6 parcels (8 / 1/ 7 9	6 8 0 3 8 57 5)	Dile Dala Rotential Restoration Reach (IE):	5 800	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	X Rinarian Buffer Planting X Ha	abitat Enhancement X Fish Passage	
Stream Order:	xend	Stream Hydrology:	Perennial	Stream Use: IV	
Drainage Area to Reach	(sq. mi.)	4.3 sq. mi			
Land Use:	Forest		Mapped Soils: Hatboro silt loam		
Property Address:	1607 Hugo Circle Dr				
Property Owner(s):	MNCPPC				
Is there evidence that th	e stream has been disturb	<u>General F</u>	ield Observations	ne within the confines of the	
human action like gradi	ng dumning livestock cu	lvert etc ? Evolain	narcel or does it require connections beyond	the narcel limits? Explain	
Evolain:	ng, dumping, nvestock, cu		Evolution:		
Yes: Multiple locations ha	ave rin-ran lining embankm	nents Utility	Yes: Large MNCPPC floodplain parcel		
crossings are present alo	ng with bridges	iento. Otinty			
eressings are present are	ing with bridges.				
		Mitiga	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	Criteria	<u>Score</u>	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe: Cite consists of vice vice vectories on both banks and come wetlands in the		
Approximately 35% of ba	inks eroded. Bank heights	were about 4 feet	Site consists of riparian vegetation on both ba	inks and some wetlands in the	
on outside meanders wit site	h a few higher max ~7 feet:	banks at the top of	terrace		
Degree of Channel Incisi	on	5	Land Use	1	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Bank height average is 4	feet. Average increases sig	gnificantly along the	Young mature forest is within the MNCPPC pro-	operty.	
valley wall.					
Existing Floodplain Acces	SS	5	Opportunity for Ecological Lift	10	
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspects of lift	to be achieved and sustained	
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
Some benches on inside	meanders flood but terrace	e log original flood	Bedform diversity; Riparian; Lateral migration; Habitat enhancement; SWM		
plain gets occasional floo	oding.		treatment of road in a residential area.		
Opportunity for Floodpla	ain Development	10	Ease of Access	5	
10 - Existing space for flo	odplain greater than 10 tir	nes stream width	10 - Yes (with existing direct vehicular access t	to potential site)	
5 - Existing space for floo	dplain 3 to 10 times strear	n width	5- yes (open but no existing vehicular access)		
1 - Little to no space for f	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Most locations are 10 tim	nes stream width; Some ar	eas have residential	Access for downstream section fairly easy at t	he new road crossing. Access for	
land along corridor			the upstream portion is located at Middle Bric	lge Dr or the MNCPPC Hickory Hill	
			pool.		
Drainage Area Evaluation	n	1	Utilities Present	1	
10 -D.A. less than 1 sq. m	ni.	-	10 - No utilities on site		
5- D. A. between 1 & 3 sc	ą. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 so	q. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
Drainage area - 4.3 squar	re miles		Multiple Crossings and utility markers are para	allel to stream. No utilities	
			exposed in stream.		
			and letaT		

Site Photos

Str	eam Mitigation	Field Site Assessment Form		
	Pro	oject Details		
Project Name: I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: MPAO0031		
Projects Estimated Stream Mitigation Needs (LF):	TBD	-		
Date of Field Assessment: 7/17/2019		Consultant Firm/Investigator(s): RK&K: KIH AIN		
Site	Location Details	s-taken from desktop review		
County: Montgomery	Cross Roads:	Imperial Drive and Woodman Ave	2	
Basin (HUC 8): Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 02	2140205	
Proximity to Impacted Stream (mi.):	0.3	Lat/Long: 39.02	2574 -77.034107	
		Site Data		
Parcel Size (ac): 15.5		Potential Restoration Reach (LF): 2	2,156	
Site Opportunities:X_Channel Restoration	Livestock Exclusion	Riparian Buffer PlantingX_Habitat Enhance	ement _X_Fish Passage	
Stream Order: 1st	Stream Hydrology:	Perennial Stream	Use:	
Drainage Area to Reach (sq. mi.)	1.32			
Land Use: Forested Parkland		Mapped Soils: Hatboro silt loam	1	
Property Address: Joseph Park, Woodman A	.ve.			
	Conoral E	ield Observations		
Is there evidence that the stream has been distur	General F	ICan the stream restoration be reasonably done within	the confines of the	
of human action like grading dumping livestock	culvort otc 2	can the stream restoration be reasonably done within	l limite? Evolain	
Evaluint	cuivert, etc.:	Evolution		
Yes old restoration: stone toes log vane ford cros	sing	Wheaton Branch, US and in Montgomery County ROW	MNCPPC	
	511 <u>6</u> .	recommendation		
	Mitigat	tion Site Rating		
<u>Criteria</u>	Score	Criteria	Score	
Estimated Bank erosion within reach	5	Vegetation	1	
10 - Greater than 50%		10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%		5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%		1 - Mostly forested and/or wetland		
Describe:		Describe:		
Localized moderate to severe erosion, some sectio	ns stable	Mid successional upland forest; Tulip poplar, Red maple	, Oaks. Invasives in	
		understory.		
Degree of Channel Incision	5	Land Use	1	
10 - Bank Height greater than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between 3 and 10 feet		5 - Marginal Pasture		
Describe		Describe:		
4-8' tall banks		Forested parkland		
Existing Floodplain Access	10	Opportunity for Ecological Lift	5	
10 - No evidence of out of bank flooding		10 - Conditions exist for several aspects of lift to be achi	eved and sustained	
5- Yes (Infrequent out of bank flow)		5 - Lift limited to one or few aspects		
		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:		Describe: Opportunity for sediment reduction, fish passage, ripari	an huffer	
No evidence of hoodplain access		opportunity for sediment reduction, iish passage, fipan	an buller	
		improvement. Ennited opportunity for hoodplain develo	Jpinent.	
Opportunity for Floodplain Development	5	Ease of Access	5	
10 - Existing space for floodplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potentia	al site)	
5 - Existing space for floodplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:		Describe:		
No opportunity in western floodplain due to valley	hillslope. ~200'	Old clearing along stream. Some tree clearing would stil	l be required	
potential development in eastern floodplain.				
Drainage Area Evaluation	5	Utilities Present	1	
10 -D.A. less than 1 sq. mi.		10 - No utilities on site	•	
5- D. A. between 1 & 3 sq. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. mi.		1 - Utilities within potential restoration area		
Describe:		Describe:		
1.32 square miles		Sewer lines in floodplain		
		Total Score out of	100 43	

Site Photos

	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number:	PG00002	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD			
Data of Field Assessments	6/14/2010		Concultant Firm (Investigator(a))		
Date of Field Assessment:	6/14/2019	Location Dotail	consultant Firm/investigator(s):	RK&K/KJH, AJN	
County:	Brinco Goorgo's	Cross Poads:	Brinklov Road an	d Charaufiald Road	
Basin (HUC 8)	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit):		01
Proximity to Impacted S	tream (mi.):	1.15	Lat/Long:	38.794602	-76.95533
,		-	Site Data		
Parcel Size (ac):	253 3	2	Potential Restoration Reach (LE):	9 051	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	Riparian Buffer Planting	Habitat Enhancement	Fish Passage
Stream Order:		Stream Hydrology:	Perennial	Stream Use:	
Drainage Area to Reach	(sq. mi.)	16.5		-	
Land Use:	Forested Parkland		Mapped Soils:	Widewater and Issue s	oils
Property Address:	Henson Valley Way, Fort	Washington			
Property Owner(s):	MNCPPC - PG County				
		<u>General F</u>	ield Observations		
Is there evidence that th	ie stream has been distur	oed by some kind	Can the stream restoration be reasona	ably done within the co	onfines of the
of human action, like gra	ading, dumping, livestock,	culvert, etc?	parcel or does it require connections b	peyond the parcel limit	s? Explain
Explain:			Explain:		
Yes. Several sections of la	arge riprap along banks for	sewer protection.	No. Large section on private property.		
Cuitorio		<u>Mitigat</u>	tion Site Rating		Cooro.
	·· · · · · · · · · · · · · · · · · · ·	<u>Score</u>			Score
Estimated Bank erosion	within reach	5	Vegetation		1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% 10 50% 1 Loss than 10%			5 - Scrub-Sirrub cover (non-wetland)		
1 - Less than 10%					
Describe: Localized moderate to se	wara arasian Most hanks	vortical and	Mostly midsuccessional forest Sycamore elm swamp white oak swamp		
stabilized hy trac reate o	evere erosion. Wost Danks		shostnut ook chicobush now now	ne, eini, swamp winte i	uak, swamp
stabilized by tree roots o	or vegetation.		chesthut oak, spicebush, paw paw.		
Degree of Channel Incisi	on	5	Land Lise		1
10 - Bank Height greater	than 10 feet	5	10 - Agricultural or Open Space		1
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
5-7' tall banks			Forested parkland		
Fuinting Flagshals in Asso		F			1
Existing Floodplain Acce	SS of book flooding	5	Opportunity for Ecological Lift	a of lift to be achieved a	L and sustained
5 Vos (Infroquent out of	bank flow)		5 Lift limited to one or fow aspects	s of fift to be achieved a	and sustained
1 - Ves (evidence of frequence)	uent flooding)		1 - Conditions are such that Lift is diffic	ult to achieve and sust	ain
Describe:	uent noounig/		1 - Conditions are such that Lift is difficult to achieve and sustain		
Some matted down yege	atation at ton of hanks		Opportunities for sediment reduction	Very limited otherwise	Decent instream
Some matted down vege			habitat LWD	very minited otherwise	. Decent instream
Opportunity for Floodpl	ain Development	1	Ease of Access		10
10 - Existing space for flo	odplain greater than 10 ti	nes stream width	10 - Yes (with existing direct vehicular a	access to potential site	1
5 - Existing space for floo	odplain 3 to 10 times stream	n width	5- yes (open but no existing vehicular a	iccess)	
1 - Little to no space for f	floodplain development		1 - No (no vehicular access, clearing ne	eded)	
Describe:			Describe:		
No. Most of site limited by pedestrian trail, horse track, and adjacent		Existing pedestrian trail and grass swale	e along trail.		
landowners.					
Drainage Area Evaluatio	n	1	Litilities Present		1
10 -D.A. less than 1 sq. m	ni.	-	10 - No utilities on site		-
5- D. A. between 1 & 3 so	a. mi.		5 - Utilities but not within restoration a	irea	
1 - D. A. greater than 3 so	, q. mi.		1 - Utilities within potential restoration	area	
Describe:			Describe:		
16.5 square mile			Sewerline water and gas lines procent	t within site	
10.0 Square mile.			sewernine, water, and gas mes present		
			T-+-	Score out of 100	24
			1013	a score out of 100	31

Site Photos

Stream Mitigation Field Site Assessment Form					
		<u>Proje</u>	ect Details		
Project Name:	I-495/I-270 Manage	ed Lanes Study	Mitigation Site Number:	PG_00016	
Projects Estimated Stream Mitig	ation Needs (LF):	TBD	-		
Data of Field Assocration	6/12/2010		Consultant Firm (Investigator(s))		ח ח
Date of Field Assessment:	Sito I	ocation Details	taken from deskton review	Скілійі	D, D3
County:	Prince George's	Cross Boads	Rte 0	5 and Rte 212	
Basin (HUC 8):	Middle Potomac-Ana	costia-Occoquan	MDE Watershed (8 digit):	2140	205
Proximity to Impacted Stream (n	ni.):	0.37	Lat/Long:	39.048994	-76.931214
		Si	te Data		
Parcel Size (ac):	12.7, 55.9,	ROW	Potential Restoration Reach (LF):	1,569	
Site Opportunities:	Channel Restoration	Livestock Exclusion	XRiparian Buffer Planting	_X_Habitat Enhancement	Fish Passage
Stream Order:	3rd	Stream Hydrology:	Perennial	Stream Use:	
Drainage Area to Reach (sq. mi.)	7.89				
Lond Lloo.	DOW Transportation Or		Manual Caller	Udanthanta history	
Land Use: Property Address:	11508 Montgomery Rd	en space Reltsville MD 20705	Mapped Solis:	Udorthents, highway; (Lodorus and Hatboro
Property Owner(s):	Maryland National Capita	I Park & Planning Co	ommission. Potomac Electric		
		General Fig	d Observations		
Is there evidence that the stream	n has been disturbed by s	ome kind of human	Can the stream restoration be reason	ably done within the co	nfines of the parcel
action, like grading, dumping, liv	estock. culvert. etc? Expla	in	or does it require connections beyon	d the parcel limits? Expla	ain
Explain:			Explain:	<u> </u>	
Stream is channelized within a co	ncrete trapezoid. Two cul	verts are present.	Yes, the site is within two parcels and	a Right-of-Way.	
Evidence of prior bank stabilization	on (imbricated rock).	· · · · ·		0 0 0 0 0	
		<u>Mitigati</u>	on Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>		<u>Score</u>
Estimated Bank erosion within re	each	1	Vegetation		10
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:	ion concrete channel and	prior stabilization	Describe:	to offerest at the downst	room ovtont
Little to no evidence of bank eros	sion, concrete channel and	prior stabilization.	Mostly herbaceous with small amount	is of forest at the downst	ream extent.
Degree of Channel Incision		5	Land Use		1
10 - Bank Height greater than 10	feet		10 - Agricultural or Open Space		
5 - Bank Height between 3 and 10) feet		5 - Marginal Pasture		
1 - Bank Height less than 3 feet			1 - Old field/ Developed/Forested		
Describe:			Describe:		
Channelized stream, no access to	a floodplain.		Developed land, ROW between northbound and southbound I-95 and a ROW at		
			powerlines.		
Existing Floodplain Access		10	Opportunity for Ecological Lift		5
10 - No evidence of out of bank fl	looding		10 - Conditions exist for several aspec	ts of lift to be achieved a	nd sustained
5- Yes (Infrequent out of bank flo	w)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequent floo	ding)		1 - Conditions are such that Lift is diffi	cult to achieve and susta	in
Describe:			Describe:		
Channelized stream, no access to	a floodplain.		Habitat, riparian, vertical stabilization,	, floodplain access.	
Opportunity for Floodplain Deve	lopment	5	Ease of Access		10
10 - Existing space for floodplain	greater than 10 times stre	am width	10 - Yes (with existing direct vehicular	access to potential site)	
5 - Existing space for floodplain 3	to 10 times stream width		5- yes (open but no existing vehicular	access)	
1 - Little to no space for floodplai	n development		1 - No (no vehicular access, clearing no	eeded)	
Describe:		Describe:			
3-10 times stream width available given the stream is currently overwidened		May require shoulder closure on I-95.	Access from the MNCPP	C park land. Also	
throughout the reach.			potential access from utility ROW.		
Drainage Area Fusikation		1	Litilities Press	T	F
10 -D A less than 1 sq mi		1	10 - No utilities on site		5
5- D. A. between 1 & 3 sa mi			5 - Utilities but not within restoration	area	
1 - D. A. greater than 3 sq. mi			1 - Utilities within potential restoration	n area	
Describe:			Describe:		
DA = 7.89			Old (Inactive) utility crossing Overhea	d lines (high hanging) at	Potomac Electric
5 7.05			ROW	a mes (men nanging) at	
			Tot	al Score out of 100	53

Site Photos

	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: PG_00077		
Projects Estimated Stream	Mitigation Needs (LF):	TBD			
	•		•		
Date of Field Assessment:	12/14/2018		Consultant Firm/Investigator(s): CRI/MD, DS		
	<u>Site</u>	Location Details	-taken from desktop review		
County:	Prince George's	Cross Roads:	Columbia Park Rd. & 64th Ave.		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 02140205	76.012602	
Proximity to impacted St	ream (mi.):	2.58	Lat/Long: 38.915426	-76.912602	
		<u><u>S</u></u>	<u>Site Data</u>		
Parcel Size (ac):	8 parcels - 5.8, 0.8, 0.8, 4.	0, 1.0, 1.0, 3.1, 0.8	Potential Restoration Reach (LF): 1,669		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer PlantingXHabitat Enhancement	Fish Passage	
Stream Order:	4th	Stream Hydrology:	Perennial Stream Use:	I	
Drainage Area to Reach ()	sq. m., Agriculture Eorest	4.94	Manned Soils:		
Property Address	Middle Parcel - 5540 Colu	mbia Park Road I a	ndover, MD 20785	iplex, Zekiah and	
Property Owner(s):	Washington Metro Area Tra	http://www.ca	Maryland National Capital Park & Planning Commission, Mayor and T	oils Town Council of Che	
		Conoral E	ield Observations		
Is there evidence that the	a stream has been distur	<u>General F</u>	<u>ICan the stream restoration be reasonably done within the co</u>	onfines of the	
of human action like gra	ding dumping livesteck	culvert etc2	can the stream restoration be reasonably done within the to	c2 Evalaia	
Or Human action, like gra	ung, uumping, investock,	cuivert, etc:	parcer of does it require connections beyond the parcer mint		
<u>Explain:</u> Vest Channelization, read	fill confines stream Brier	hank stabilization	Explain: Vasi cita completely confined in parcel. Easily accessible from	Tropt St	
res; channelization, road	ini commes stream. Prior		res, site completely commed in parcel. Easily accessible from	frent St.	
		Mitigat	tion Site Pating		
Criteria		Score	ICriteria	Score	
Estimated Bank erosion v	within reach	1	Vegetation	1	
10 - Greater than 50%		1	10 - Herbaceous cover (non-wetland)	Ŧ	
5 - 10% to $50%$			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Select areas of sever eros	ion Overall hanks protec	ted by gabion	Mature deciduous forest with lots of invasive ivy present		
Select dieds of sever elos	ion. Overall, ballks protec	teu by gabion.	mature deciduous forest with fots of invasive wy present.		
Degree of Channel Incisio	n	5	l and lise	1	
10 - Bank Height greater t	han 10 feet	5	10 - Agricultural or Open Space	Ŧ	
5 - Bank Height between	and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than 3	3 feet		1 - Old field/ Developed/Forested		
Banks are ~8-9 ft tall on a	average but range from 3	-10 ft	Besidential and transportation uses observed		
	verage, sucrange nom s	1011.			
Existing Floodplain Acces	S	10	Opportunity for Ecological Lift	5	
10 - No evidence of out of	f bank flooding		10 - Conditions exist for several aspects of lift to be achieved a	and sustained	
5- Yes (Infrequent out of I	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freque	ent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
No evidence of out-of-bar	nk flooding, incised chann	el.	Possibility for vertical geomorphic stability and habitat improvement.		
		_			
Opportunity for Floodpla	in Development	5	Ease of Access	1	
10 - Existing space for floo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site))	
5 - Existing space for floodplain 3 to 10 times stream width			5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development			1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Heavy tree impacts, upstream is more confined.			Clearing needed, staging in residential dead-end possible.		
Drainage Area Evaluation		1	Utilities Present	10	
10 -D.A. less than 1 sq. mi			10 - No utilities on site		
5- D. A. between 1 & 3 sq	. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq	. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
Drainage area - 4 94			No utilities observed within reach		
			Total Score out of 100	40	

	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: PG_00079		
Projects Estimated Strear	n Mitigation Needs (LF):	TBD			
	44 /27 /2040				
Date of Field Assessment:	11/2//2018	Location Dataila	Consultant Firm/Investigator(s): RK&K/KJH	, BDM	
Country	<u>Site</u>	Location Details	Birchloof Ave & Valley Dark Dd		
County: Basin (HLIC 8)	Middle Potomac-Anacost		MDE Watersbed (8 digit): 021402	205	
Proximity to Impacted St	ream (mi.):	2.42	Lat/Long: 38.89304891	-76.89516754	
,		(Site Data		
Parcel Size (ac):	Several Parcels - 6.2	9 17 71 0 48	Potential Restoration Reach (LE): 1 068		
Site Opportunities:	X Channel Restoration	Livestock Exclusion	Rinarian Buffer Planting X Habitat Enhancement	Fish Passage	
Stream Order:	xchannel restoration	Stream Hydrology:	Perennial Stream Use:		
Drainage Area to Reach (sq. mi.)	,			
Land Use:	Forest		Mapped Soils: Zekiah and Issue soils		
Property Address:	Main Parcel - 190 Datelea	af Ave, Capital Heigh	nts 20743-0000		
Property Owner(s):	Maryland National Capita	I Park & Planning Co	ommission, Seat Pleasant Mayor & Comm Cou		
		General F	ield Observations		
Is there evidence that the	stream has been distur	oed by some kind	Can the stream restoration be reasonably done within the c	onfines of the	
of human action, like grad	ding, dumping, livestock,	, culvert, etc.?	parcel or does it require connections beyond the parcel limit	ts? Explain	
Explain:			Explain:		
No direct evidence of hun	nan disturbance.		Restoration would require access to City and MNCPPC proper	ties.	
		Mitigol	tion Site Poting		
Criteria		Score	LON SILE Kaling	Score	
Estimated Bank erosion w	vithin roach	10	Vegetation	1	
10 - Greater than 50%		10	10 - Herbaceous cover (non-wetland)	L	
5 - 10% to $50%$			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Severe bank erosion throu	ughout most of site. Num	erous fallen trees	Mid-successional forest surrounds site.		
in channel.	0				
Degree of Channel Incisio	n	10	Land Use	1	
10 - Bank Height greater t	han 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between 3	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than 3	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
6-11 foot tall banks.			Mid-successional forest on City and M-NCPPC parkland.		
Existing Floodplain Acces	s	10	Opportunity for Ecological Lift	10	
10 - No evidence of out of	bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5- Yes (Infrequent out of b	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freque	ent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
No evidence of out-of-bar	hk flooding. Deeply incise	d channel.	High potential for improving instream habitat and reducing erosion. Some		
			opportunity for floodplain development in downstream segment.		
Opportunity for Floodpla	in Development	5	Ease of Access	1	
10 - Existing space for floo	dplain greater than 10 til	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site)	
5 - Existing space for flood	ipiain 3 to 10 times streai	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development			1 - NO (NO VENICUIAR ACCESS, Clearing needed)		
Describe: Some apportunity for floodplain development in downstream			Describe: Majority of site surrounded by mid-successional forest, however some of the		
comment. Eloodolain areas in unstream cogment limited by steep			iviajonity of site surrounded by mid-successional forest, nowever some of the		
steps in a sever line route that was recently planted with sind					
sopes, narrow valley of a	ajacent ianuowners.			· ·	
Drainage Area Evaluation	1	5	Utilities Present	1	
10 -D.A. less than 1 sq. mi			10 - No utilities on site		
D-D. A. Detween I & 3 Sq. MI.			5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. ml.			1 - otinites within potential restoration area		
Describe.					
rainage area - 2.18 squai	re miles.		sewer line runs parallel stream in eastern floodplain.		
			Total Score out of 100	54	

	Stre	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number:	PG00097	
Projects Estimated Stre	am Mitigation Needs (LF):	TBD	-		
Date of Field Assessment:	6/14/2019		Consultant Firm/Investigator(s)	RK&K/KIH AIN	
Date of field Assessment.	Site	location Details	s-taken from deskton review		
County:	Prince George's	Cross Roads:	Oxon Hill Road ar	nd Livingston Road	
Basin (HUC 8):	Middle Potomac-Anacost	a-Occoquan	MDE Watershed (8 digit):	02131103	
Proximity to Impacted S	Stream (mi.):	4.85	Lat/Long:	38.756622	-77.000749
		0	Site Data		
Parcel Size (ac):	56		Potential Restoration Reach (LF):	1,568	
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer Planting	X_Habitat Enhancement	Fish Passage
Stream Order: Drainage Area to Beach	3rd	Stream Hydrology:	Perennial	Stream Use:	
Land Use:	Forested Parkland	24.5	Mapped Soils:	Widewater and Issue soil	s
Property Address:	Henson Creek Stream Val	ley Park, Oxon Hill F	Road, Fort Washington		
Property Owner(s):	MNCPPC - PG County	1 1	, 0		
		General F	ield Observations		
Is there evidence that t	he stream has been disturb	ed by some kind	Can the stream restoration be reasona	bly done within the con	fines of the
of human action, like gr	rading, dumping, livestock,	culvert, etc?	parcel or does it require connections b	eyond the parcel limits?	Explain
Explain:			Explain:		
No evidence. Downstrea	am 500 LF are within critical	l area. Located in a	No. Small sections on PG county and ch	urch properties.	
Historic District.					
		Mitigat	tion Site Rating		
<u>Criteria</u>		Score	<u>Criteria</u>		<u>Score</u>
Estimated Bank erosion	within reach	5	Vegetation		1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)	•	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Localized moderate to s	evere erosion		Nid successional forest. Sycamore, pawpaw, sweetgum, spicebush, boxeider.		
			Dense understory.		
Degree of Channel Incis	ion	5	Land Lise		1
10 - Bank Height greate	r than 10 feet	5	10 - Agricultural or Open Space	I	-
5 - Bank Height betweer	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
5-6' tall banks			Forested parkland		
Existing Floodplain Acce	ess	10	Opportunity for Ecological Lift		10
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects	of lift to be achieved and	d sustained
5- Yes (Infrequent out o	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:	ank flooding		Describe:		
No evidence of out of ba	ank hooding		Opportunities for sediment reduction, hoodplain connectivity, fish and benthic		
			improvements, water quality.		
Opportunity for Floodp	lain Development	5	Ease of Access		5
10 - Existing space for fl	oodplain greater than 10 tir	nes stream width	10 - Yes (with <u>existing</u> direct vehicular a	ccess to potential site)	
5 - Existing space for flo	odplain 3 to 10 times strear	n width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development			1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Large existing floodplain. Some limitations on eastern side near		Old sewer access and abandoned road	will require small tree im	pacts.	
cnurch.					
		4			4
Urainage Area Evaluatio	on	1	Utilities Present		1
TO -D.A. less than I sq. f	ni. Ia mi		10 - NO UTITUES ON SILE	rea	
1 - D. A. greater than 3 s	sa. mi.		1 - Utilities within potential restoration	area	
Describe:			Describe:		
24.5 square miles			Sewerlines within site Unstream and h	as overhad nowerlines	
			oction and a state of stream end in	as overhou powernites.	
			Tota	Score out of 100	11

Stream Mitigation Field Site Assessment Form					
		Pro	<u>ject Details</u>		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: PG_00111		
Projects Estimated Strean	n Mitigation Needs (LF):	TBD	-		
Date of Field Assessment	11/19/2018		Consultant Firm/Investigator(s): CRI/MD_CN		
bute of field Assessment.	Site	Location Details	s-taken from desktop review		
County:	Prince George's	Cross Roads:	Rt. 295 & Beaver Dam Rd.		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 02140205		
Proximity to Impacted S	tream (mi.):	1.1	Lat/Long: 38.915426	-76.912602	
			Site Data		
Parcel Size (ac):	2 parcels - 24.2, 759.5		Potential Restoration Reach (LF): 3,154		
Site Opportunities:	<u>X</u> Channel Restoration	Livestock Exclusion	Riparian Buffer Planting <u>X</u> Habitat Enhancement	Fish Passage	
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Use: 1		
Drainage Area to Reach	(sq. mi.)	1.84			
Land Use: Property Address	Main Parcel - Edmonstro	n Road, Greenhelt, I	Zekiah and Iss	ue soils	
Property Address: Property Owner(s):	Beltsville Agricultural Resea	rch Center. City of Gre	enbelt		
		General F	ield Observations		
Is there evidence that th	e stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the co	nfines of the	
of human action. like gra	ading, dumping, livestock	. culvert. etc?	parcel or does it require connections beyond the parcel limits	? Explain	
Explain:	0, 1 I 0,	· · · · · · · · · · · · · · · · · · ·	Explain:		
Yes; Sewer crossing obse	erved, riffle upstream of se	wer crossing.	Yes; Well within BARC property.		
	•	-			
		Mitiga	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Estimated Bank erosion	within reach	10	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:	anks aradad spacifically in	the unstream	Describe: Mature forest and wetlands present at downstream and in the	floodplain	
Approximately 50% of ba	al bacemes sourcely incide	the upstream	Mature forest and wetiands present at downstream end in the	noouplain.	
section where the chann	el becomes severely incise	3d, 4-9 ft. banks.			
Degree of Channel Incisi	07	5	Land Lise	1	
10 - Bank Height greater	than 10 feet	5	10 - Agricultural or Open Space	I	
5 - Bank Height hetween	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Bank heights up to 9 ft. t	all. Upstream section dee	oly incised,	Stream is surrounded by forest.		
downstream section with	n 3-4 ft. banks.				
Existing Electrologia Acco	~	5	Opportunity for Ecological Lift	10	
10 - No evidence of out c	of hank flooding	5	10 - Conditions exist for several aspects of lift to be achieved a	nd sustained	
5-Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
Downstream end accesse	es floodplain often. Upstre	eam end (2/3) does	Forested buffer present on both banks, stabilize banks and bed, habitat		
not access floodplain.			creation, wetland creation, if channel is raised, expand the floodplain.		
				-	
Opportunity for Floodpla	ain Development	5	Ease of Access	5	
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site)		
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development			1 - No (no venicular access, clearing needed)		
Describe: Plenty of space, but unstream section is down out too much to		Describe:	ing for houl		
reconnect to the floodplain. Development would require significant			could use utilities ROW for access, but would need some clear	ing for naul	
troo impacts	ree impacts				
Drainage Area Evaluatio	n	5	Utilities Present	1	
10 -D.A. less than 1 sq. m	11. 		10 - No utilities on site		
5- D. A. between 1 & 3 sq. mi.		 ounces but not within restoration area Utilities within potential restoration area 			
I - D. A. greater than 3 SC	y				
Drainage area - 1.84 squa	are miles.		One crossing noted. No utilities observed on most of the site.		
			Total Score out of 100	48	

	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Lan	ies Study	Mitigation Site Number: PG_00112		
Projects Estimated Stream	m Mitigation Needs (LF):	TBD			
Data of Field Assessments	11/10/2019		Consultant Firm (Investigator(a))		
Date of Field Assessment:	11/19/2010 Site	Location Details	consultant Film/investigator(s). CRI/MD, CN		
County:	Prince George's	Cross Roads	Rt 295 & Beaver Dam Rd		
Basin (HUC 8):	Middle Potomac-Anacost	tia-Occoquan	MDE Watershed (8 digit): 02140205		
Proximity to Impacted S	Stream (mi.):	1.68	Lat/Long: 39.023302	-76.85279	
			Site Data		
Parcel Size (ac):	3 parcels - 629.1, 246.4, 7		Potential Restoration Reach (LF): 4,147		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer PlantingXHabitat Enhancement	Fish Passage	
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Use:		
Drainage Area to Reach	(sq. mi.)	6.58			
Land Use:	Forest, Transportation	L MD 20700	Mapped Soils: Zekiah and Issue soils	s, Longmarsh and	
Property Address: Property Owner(s):	Beaver Dam Road, Laurei	rch Center	Indiantown soils	Udorthents	
rioperty owner(3).	Densville Agricultural Resea	Conorol	ield Observations		
Is there evidence that t	he stream has been distur	<u>General F</u> bed by some kind	ICan the stream restoration be reasonably done within the c	onfines of the	
of human action like gr	ading dumning livestock		can the stream restoration be reasonably done within the commes of the		
Evolain:	aung, aunping, westock	, curvert, etc.	Evaluin:		
Yes: Culverts at Beaverd	am Rd. and Soil Conservat	ion Rd.	Yes: Well within BARC property.		
		Mitigat	tion Site Rating		
<u>Criteria</u>		Score	Criteria	<u>Score</u>	
Estimated Bank erosion	within reach	1	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:		:	Describe:		
Mostly low banks, some	minor erosion at the outsi	ide meanders.	Forested and possible wetlands present surrounding stream.		
Dograp of Channel Incis	ion	1		1	
10 - Bank Height greater	r than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height betweer	1 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Average bank height ~2	ft tall. Some sections great	ter than 3 ft. tall,	Site is forested and surrounded by old fields.		
but infrequent.					
Existing Eloodalain Acce	266	1	Opportunity for Ecological Lift	5	
10 - No evidence of out	of bank flooding	-	10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
More than 70% of stream	m channel gets out-of-ban	k flows regularly.	Good floodplain access, could create braided channel within	floodplain,	
			increase habitat, provide additional floodplain access.		
				_	
Opportunity for Floodp	ain Development	10	Ease of Access	5	
10 - Existing space for flo	bodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site)	
5 - Existing space for floodplain 3 to 10 times stream width			1 - No (no vehicular access, clearing needed)		
Forested floodplain present, but could create braided channel and			It may be possible to use USDA access or utility ROW		
minimize forest impacts.					
Ducing an Augo Fuchuatio		1	Litilities Descent	1	
10 D A loss than 1 cm	л ni	1	10 No utilities on site	1 ¹	
5- D. A. hetween 1 & 2 c	.a. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. mi.		1 - Utilities within potential restoration area			
Describe:			Describe:		
Drainage area - 6 58 cou	are miles		One overhead powerline crossing present		
	a. e mileo.				
			Total Score out of 100	27	

	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: PG-00114		
Projects Estimated Stream Mitigation Needs (LF): TBD			-		
Date of Field Assessment	12/14/2018		Consultant Firm/Investigator(s): CRI/DS_MD		
Bate of field Assessment.	Site	Location Details	s-taken from desktop review		
County:	Prince George's	Cross Roads:	Cherrywood Ln. & I-495		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 02140205		
Proximity to Impacted St	tream (mi.):	0.04	Lat/Long: 39.008461	-76.904091	
		(Site Data		
Parcel Size (ac):	4 parcels - 15.3, 1.1, 7.7,	72.5	Potential Restoration Reach (LF): 1,235		
Site Opportunities:	<u>X</u> Channel Restoration	Livestock Exclusion	Riparian Buffer PlantingHabitat Enhancement	Fish Passage	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:	:	
Drainage Area to Reach ((sq. mi.)	1.47	Manual Caller		
Land Use: Proporty Addross:	Algo Density Residential,	Forest	Zekiah and Issue so	oils, Udorthents	
Property Owner(s):	City of Greenbelt, Empiria	an Village of MD LLC	C. State of MD. Board of Education		
		General E	ield Observations		
Is there evidence that th	e stream has been distur	bed by some kind	ICan the stream restoration be reasonably done within the	confines of the	
of human action like gra	ding dumning livestock	culvert etc?	narcel or does it require connections beyond the narcel lim	its? Explain	
Evolain:			Explain:		
Yes: Culvert located unde	er bridge. Possible channe	l relocation	No: No access to most of site with the exception of the dowr	stream reach at	
present. Rip rap present a	along banks and stream b	ed.	Cherrywood Lane where possible previous restoration occur	red.	
		Mitigat	tion Site Rating		
Criteria		Score	Criteria	Score	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Most banks are armored	in the parcel where there	was access.	Mature deciduous trees are present with meadow adjacent	to stream.	
Approximately 15% of ba	nk erosion present.				
Degree of Channel Incici		1		1 1	
Degree of Channel Incisio	on than 10 fact	Ţ	Land Use	Ţ	
10 - Bank Height hetween	2 and 10 feet		10 - Agricultural or Open Space		
1 - Bank Height less than	2 feet		1 - Old field/ Developed/Forested		
Describe:	51000		Describe		
Average bank height is <3	3 ft tall. ranging from 1.5	to 3.5 ft.	Area consists of developed residential uses in addition to the	Greenbelt Metro	
			station.		
		4		1	
Existing Floodplain Acces	SS flooding	1	Opportunity for Ecological Lift		
10 - NO evidence of out o	bank floud		5 - Lift limited to one or few aspects		
1 - Ves (Initequent out of 1	Dalik Howj Lent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:	cam	
Banks are relatively low.	evidence of frequent out-	of-bank flow is	Possibility for geomorphic stability at confluence with Indian	Creek, otherwise	
nresent	evidence of frequent out		low opportunity exists		
present.					
Opportunity for Floodpla	ain Development	10	Ease of Access	1	
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site	e)	
5 - Existing space for floo	dplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development			1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Fairly open areas are present immediately adjacent to stream with			Access road with clearing is needed. Possible traffic pattern change on		
low tree impact.			Cherrywood Lane.		
Drainage Area Evaluation	n	5	Utilities Present	5	
10 -D.A. less than 1 sq. m	i.		10 - No utilities on site		
5- D. A. between 1 & 3 sq. mi.		5 - Utilities but not within restoration area			
1 - D. A. greater than 3 sq. mi.			1 - Utilities within potential restoration area		
Describe:			Describe:		
Drainage area - 1.47 squa	are miles.		Overhead power lines are present at upstream end of stream near bridge, w	which may restrict	
			access.	T	
			Total Score out of 100	31	




	Stro	eam Mitigation	Field Site Assessment Form		
		Pro	oject Details		
Project Name:	I-495/I-270 Managed Land	es Study	Mitigation Site Number: PG-00118		
Projects Estimated Stream	m Mitigation Needs (LF):	TBD			
Data of Field Associations	11/20/2019		Consultant Firm (Investigator(c))		
Date of Field Assessment.	Site	Location Detail	s-taken from deskton review		
County:	Prince George's	Cross Roads:	: Greenbelt Park: Greenbelt Park Access Rd		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 02140205		
Proximity to Impacted S	Stream (mi.):	1.24	Lat/Long: 38.9765	8 -76.905648	
			Site Data		
Parcel Size (ac):	1 parcel - 726.5		Potential Restoration Reach (LF): 5,06	57	
Site Opportunities:	XChannel Restoration	Livestock Exclusion	nRiparian Buffer PlantingXHabitat Enhanceme	ntXFish Passage	
Stream Order:	1st	Stream Hydrology	Perennial Stream Use	e: <u>I</u>	
Drainage Area to Reach	(sq. mi.)	0.49			
Land Use:	Forest	H NAD 20770	Mapped Soils: Zekiah and Issue soils, Udorther Downer-Hammonton complex	its, Russett-Christiana complex, x, Christiana-Downer complex	
Property Address: Property Owner(s):	USA Greenhelt Park	eit, IVID 20770			
	USA GICCIDEILI UIK	Conorol	Field Observations		
Is there evidence that t	he stream has heen disturk	General r bed by some kind	Field Observations	confines of the	
of human action like gr	ading dumning livestock	culvert etc?	parcel or does it require connections beyond the parcel lin	nits? Fynlain	
Evolain:	dunis, duniping, incorocit,	curvert, etc.	Evolain:		
Yes: Culvert crossings pr	esent, likely impacted by co	onstruction of I-	Yes, the site is competely within the parcel		
295.					
200.					
		<u>Mitiga</u>	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Estimated Bank erosion	within reach	10	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:	doutting procept in the unst	room portion of	Describe: Site located within a national park. Mature forest with done	so troos prosont	
severe erosion and nead	scutting present in the upst	ream portion of	Site located within a national park. Mature forest with dens	le trees present.	
the stream.					
Degree of Channel Incis	ion	5	Land Lise	1	
10 - Bank Height greater	than 10 feet	5	10 - Agricultural or Open Space	1	
5 - Bank Height betweer	1 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Top 2/3 of stream reach	with ~6-10 ft banks. Botto	m 1/3 of stream	Site located within a national park with mature forest.		
reach with ~3-6 ft banks	•				
Existing Floodplain Acce	200	10	Opportunity for Ecological Lift	5	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieve	d and sustained	
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
No rack lines or sedimer	nt noted outside of banks. A	Appears to be	Possibility for habitat creation and stabilization of bed and l	banks.	
forming inset "C" channe	el within eroded gully.				
		10			
Opportunity for Floodpl	ain Development	10	Ease of Access	1	
10 - Existing space for flo	odplain greater than 10 tir	nes stream width	10 - Yes (with <u>existing</u> direct venicular access to potential si	te)	
1 - Little to no snace for	floodnlain development		1 - No (no vehicular access, clearing needed)		
Describe:	noouplain acvelopment		Describe:		
Steep, narrow valley. Str	ream is located within a der	nselv forested.	Site is located within a denselv forested national park. Foot	trails present.	
incised "B" channel Flo	odplain reconnection woul	d require immense			
tree impacts					
Drainage Area Evaluatio	an I	10	l Itilities Dresent	5	
10 -D A loss than 1 so n	ni	10	10 - No utilities on site	J	
5- D. A. between 1 & 3 s	a. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	iq. mi.		1 - Utilities within potential restoration area		
Describe:	·		Describe:		
Drainage area = 0.49 sou	uare mile.		Sewer utility present at downstream end of reach		
			Total Score out of 10	0 58	





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	<u>ject Details</u>		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	PG-00120a	
Projects Estimated Stream	n Mitigation Needs (LF):	TBD	-		
Data of Field Assessments	11/20/2019		Consultant Firm (Investigator(a))		
Date of Field Assessment:	11/20/2018 Site	Location Dotail	consultant Firm/investigator(s):	CRI/DS, CN	
County:	Prince George's	Cross Boads	Edmonston Rd & Sunnyside Ave		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit):	02140205	
Proximity to Impacted S	tream (mi.):	0.4	Lat/Long:	39.019955	-76.892741
			Site Data		
Parcel Size (ac):	2 parcels - 759.6, 495.3		Potential Restoration Reach (LF):	5.371	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	X Riparian Buffer Planting	X Habitat Enhancement	Fish Passage
Stream Order:	4th	Stream Hydrology:	Perennial	Stream Use:	=
Drainage Area to Reach	(sq. mi.)	14.1			
Land Use:	Forest		Mapped Soils:	Zekiah and Issue soils,	Longmarsh and
Property Address:	Edmonston Road, Greent	pelt, MD 20770		Indiantown	u soils
Property Owner(s):	Beitsville Agricultural Res	earch Center			
		<u>General F</u>	ield Observations		. Constant of the s
is there evidence that th	ie stream nas been distur	bed by some kind	Can the stream restoration be reason	ably done within the co	infines of the
of human action, like gra	ading, dumping, livestock,	, culvert, etc?	parcel or does it require connections	beyond the parcel limits	s? Explain
Explain:		tale to same size	Explain:		
Yes; Some old, dilapidate	a infrastructure present v	vitnin stream	res, the stream is completely within tr	le parcel	
including concrete and m	netal. Geotextile and outfa	ills present along			
banks		Mitiga	tion Site Rating		
Criteria		Score	Criteria		Score
Estimated Bank erosion	within reach	10	Vegetation		1
10 - Greater than 50%		-	10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Approximately 4 ft. verti	cal banks are present on b	oth sides of the	Mature forest and wetlands within flo	odplain present on both	sides of the
stream for the majority of	of the reach.		stream for extent of the reach.		
				r	
Degree of Channel Incisi	on	5	Land Use		1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
Describe	5 1661		Describe:		
Approximately 4 ft verti	cal hanks are present on h	oth sides of the	Mature forest present surrounding site	۵	
stream However stream	n still accesses the flood of	ain	Mature forest present surrounding site		
stream. nowever, stream	i still accesses the hoodpla	ann.			
Existing Floodplain Acce	SS	1	Opportunity for Ecological Lift		10
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspect	is of lift to be achieved a	ind sustained
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		1
1 - Yes (evidence of frequence of frequence)	Jent flooding)		1 - Conditions are such that Lift is diffic	cuit to achieve and susta	1111
Describe. Pack lines and fine sodim	agent donosition on both h	nks/within the	Some notential in reducing bank eresit	on increasing geometry	nic stability
floodolain are present fo	ient deposition on both be	anks/ within the	babitat creation and wotland onbance	omont	ne stability,
noouplain are present to	in the extent of the reach.		habitat creation, and wetiand enhance	inent.	
Opportunity for Floodpl	ain Development	10	Ease of Access		5
10 - Existing space for flo	podplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular	access to potential site)	
5 - Existing space for floc	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular a	access)	
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing ne	eded)	
Describe:			Describe:		
Wide, flat valley is prese	nt within a mature forest,	but sparse trees	Multiple access points from downstrea	am to upstream end of r	each with
may allow for minimal tr	ee disturbance.		minimal tree removal required.		
Drainage Area Evaluatio	n	1	Utilities Present		5
10 -D.A. less than 1 sq. m	ni.	-	10 - No utilities on site		
5- D. A. between 1 & 3 so	ą. mi.		5 - Utilities but not within restoration a	area	
1 - D. A. greater than 3 so	q. mi.		1 - Utilities within potential restoration	n area	
Describe:			Describe:		
Drainage area - 14.1 squ	are miles.		Powerline ROW crosses stream.		
			Tota	al Score out of 100	49





	Str	eam Mitigation	Field Site Assessment Form	
		Pro	ject Details	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: PG-00120b	
Projects Estimated Stream	n Mitigation Needs (LF):	TBD	-	
Date of Field Assessment:	11/20/2018		Consultant Firm/Investigator(s): CRI/DS. CN	
Date of Field Assessment.	Site	Location Details	s-taken from desktop review	
County:	Prince George's	Cross Roads:	Research Rd & Beaver Dam Rd	
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 02140205	
Proximity to Impacted S	tream (mi.):	1.23	Lat/Long: 39.023356	-76.879996
			Site Data	
Parcel Size (ac):	2 parcels - 759.6, 495.3		Potential Restoration Reach (LF): 1,420	
Site Opportunities:	XChannel Restoration	Livestock Exclusion	XRiparian Buffer PlantingXHabitat Enhancement	Fish Passage
Stream Order:	4th	Stream Hydrology:	Perennial Stream Use:	
Drainage Area to Reaction	(sq. mi.) Forest	13.1	Manned Soils. Zokiah and Issue soils	Longmarch and
Property Address:	Research Road, Greenbel	t. MD 20770	Lekiali aliu issue solis.	Longmarshanu
Property Owner(s):	Beltsville Agricultural Res	earch Center	IIIIIaiiiowi	
• •		General F	ield Observations	
Is there evidence that th	ne stream has been distur	oed by some kind	Can the stream restoration be reasonably done within the co	onfines of the
of human action, like gra	ading, dumping, livestock,	culvert, etc?	parcel or does it require connections beyond the parcel limit	s? Explain
Explain:			Explain:	
Yes, possibly former agri	culture or livestock field		Yes, the site is completely within the parcel	
		Mitigo		
Critoria		Score	tion Site Kating	Score
Cillena Estimated Bank prosion	within roach	10		1
10 Greater than 50%	Within reach	10	Vegetation	1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
Vertical unstable banks	approximately 4-5 ft. tall p	resent for entire	Site consists mostly of palustrine emergent wetland. No trees	or shrubs were
reach with very little roo	t mass.		present.	
Degree of Channel Incisi	on	5	Land Use	10
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space	
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested	
Describe:			Describe:	
Vertical, incised banks ap	oproximately 4-5 ft. tall pre	esent for entire	Land use consists of open grass fields which may have been us	sed for
reach. However, access	to floodplain is present.		agriculture in the past, but are now overgrown with grass.	
Existing Floodplain Acce		5	Opportunity for Ecological Lift	10
10 - No evidence of out of	of hank flooding		10 - Conditions exist for several aspects of lift to be achieved a	and sustained
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain	
Describe:			Describe:	
Evidence of floodplain ac	ccess is present at the dow	nstream end of the	e Some potential in reducing bank erosion, increasing geomorphic stability,	
stream reach, but not up	ostream.		habitat creation, floodplain access, and developing stream but	fer.
Opportunity for Floodpl	ain Development	10	Ease of Access	5
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site)	
5 - Existing space for floc	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)	
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)	
Describe:			Describe:	
Wide open flat valley wit	th no trees present.		Site is in close proximity to roads and powerline ROW.	
Drainage Area Evaluatio	n	1	Utilities Present	10
10 -D.A. less than 1 sq. m	ni.		10 - No utilities on site	
5- D. A. between 1 & 3 so	q. mi.		5 - Utilities but not within restoration area	
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area	
Describe:			Describe:	
Drainage area - 13.1 squ	are miles.		No utilities observed.	
J			l	
			Total Score out of 100	67





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	<u>ject Details</u>		
Project Name:	495/27	0	Mitigation Site Number:	²G-00122	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD	_		
Data of Field Accorrent:	8/21/2010		Consultant Firm (Investigator(s))		
Date of Field Assessment:	8/21/2019	Location Details	s-taken from deskton review	CRI- MD/D3	
County:	Prince George's	Cross Roads:	Kenner Ct and	d Nashville Rd	
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoguan	MDE Watershed (8 digit):	214025	
Proximity to Impacted S	tream (mi.):	0.01	Lat/Long:	38.985788 -76.88841	
			Site Data		
Parcel Size (ac):	265.6	-	Potential Restoration Reach (LF):	3,548	
Site Opportunities:	X_Channel Restoration	Livestock Exclusion	Riparian Buffer Planting	Habitat EnhancementFish Passa	
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	
Drainage Area to Reach	(sq. mi.)	0.21	Manual Caller Christiana Davison Zaki		
Land Use: Property Address:	6565 Greenbelt Rd. Green	halt MD 20770	wapped Solis: Christiana-Downer, Zekia	in, and Odorthents	
Property Address. Property Owner(s):	National Park Service	ideit, MD 20770			
		General F	ield Observations		
Is there evidence that th	e stream has been distur	bed by some kind	ICan the stream restoration be reasona	bly done within the confines of the	
of human action. like gra	ading, dumping, livestock,	culvert. etc.?	parcel or does it require connections b	evond the parcel limits? Explain	
Explain:	,, p. 0,,		Explain:	- / · · · · · · · · · · · · · · · · · ·	
Yes, utilities exposed thr	oughout the site		Yes, all NPS property but will need SHA	ROW access	
, ,	C				
		<u>Mitigat</u>	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Estimated Bank erosion	within reach	10	Vegetation		
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50% 1 Loss than 10%			5 - Scrub-snrub cover (non-wetland)		
Describe:			Describe:		
Frosion from downcuttin	impacting ~80% of strea	m hank	Forested		
	ig impacting box of strea		l'oresteu		
Degree of Channel Incisi	on	10	Land Use		
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Dalik Height less than Describe:	5 1001		1 - Old Held/ Developed/Forested		
Between 3-10 feet for m	ost downstream greater t	han 10 unstream	Forested		
	ost downstream, Breater t		, or ested		
		10			
Existing Floodplain Acce	SS	10	Opportunity for Ecological Lift		
10 - No evidence of out of	br bank flooding		10 - Conditions exist for several aspects	of lift to be achieved and sustained	
1 - Yes (initequent out of 1 - Yes (evidence of frequent	uent flooding)		1 - Conditions are such that Lift is difficu	It to achieve and sustain	
Describe:			Describe		
No floodplain access out	side incised channel		Lateral/Vertical stability, bedform diversity		
····			,	,	
Opportunity for Floodpl	ain Development	5	Ease of Access		
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular a	ccess to potential site)	
5 - Existing space for floo	dplain 3 to 10 times streai	n width	5- yes (open but no existing venicular ac	;Cess) vdad)	
1 - Little to no space for i			1 - NO (NO VENICULAI access, cleaning nee		
Describe: Space for 10 times width	with massive tree loss or	raising of channel	Describe:		
had		aising of channel	No access existing, clearing needed with	I SHA ROW	
beu					
Drainage Area Evaluatio	n	10	Utilities Present		
10 -D.A. less than 1 sq. m	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 so	q. mi.		5 - Utilities but not within restoration and	ea	
1 - D. A. greater than 3 so	q. mı.		1 - Utilities within potential restoration	area	
Describe:			Describe:		
0.21 square miles			Utilities exposed throughout site within	stream	
			T-+-	Score out of 100	
			lota		



Site Photos





Str	eam Mitigation	Field Site Assessment Form		
	Pro	<u>oject Details</u>		
Project Name: I-495/I-270 Managed Lar	nes Study	Mitigation Site Number:	PG_00124	
Projects Estimated Stream Mitigation Needs (LF)	: TBD			
		-		
Date of Field Assessment: 6/11/2019		Consultant Firm/Investigator(s):	CRI - CN, SJ	
<u>Site</u>	Location Details	s-taken from desktop review	d and Danel Dd	
County: Prince George's	Cross Roads:	Powder Mill F		
Proximity to Impacted Stream (mi.):		Iat/Long	39 028914	-76 950838
	0.01	Site Data	55.020514	70.550050
Parcol Size (ac): 4 Parcols: 2.4.22		Detential Postoration Poach (LE):	1 059	
Site Opportunities: X Chappel Restoration		Riparian Buffer Planting	L,930 Habitat Enhancement	Fish Passage
Stream Order:4th	Stream Hydrology:	Perennial	Stream Use: III	113111 d33dgc
Drainage Area to Reach (sq. mi.)	15.8			
Land Use: Forest		Mapped Soils:	Codorus and Hatboro soils	
Property Address: Main Parcel: 3101 Powde	er Mill Rd, Adelphi, N	MD. 20783		
Property Owner(s): Maryland National Capita	al Park & Planning Co	ommission		
	General F	ield Observations		
Is there evidence that the stream has been distur	bed by some kind	Can the stream restoration be reasona	bly done within the confin	ies of the
of human action, like grading, dumping, livestock	, culvert, etc?	parcel or does it require connections b	eyond the parcel limits? E	xplain
Explain:		Explain:		
Yes, culverts at US and DS ends of site, sewer arma	ament along LB.	Yes, can be done within parcel.		
	N 4141	tion City Dating		
Critoria	<u>iviitigat</u>	tion Site Kating		Scoro
Criteria	<u>3core</u>	Vesetetien		<u>3001e</u>
Estimated Bank erosion within reach	5	vegetation		1
10 - Greater than 50%		5 Scrub shrub cover (non-wetland)		
1 - Less than 10%		1 - Mostly forested and/or wetland		
		Describe:		
Small natches of erosion, closer to 10%		Mature forest		
		Wature forest		
Degree of Channel Incision	5	Land Use		1
10 - Bank Height greater than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than 3 feet		1 - Old field/ Developed/Forested		
Describe:		Describe:		
~5' banks, FP access on DS end of reach.		Mature forest		
Existing Floodplain Access	5	Opportunity for Ecological Lift		1
10 - No evidence of out of bank flooding		10 - Conditions exist for several aspects	s of lift to be achieved and s	sustained
5- Yes (Infrequent out of bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequent flooding)		1 - Conditions are such that Lift is diffic	ult to achieve and sustain	
Describe:		Describe:		
Some signs of FP access, sand on FP at DS end of s	ite, may be due to	In good condition, only real uplift is FP reconnection, would require extensive		
backwater from debris jam at culvert.		impact to mature forest.		
Onnertunity for Floodalain Development	5	Face of Access		
Opportunity for Floodplain Development	imes stream width	Lase of Access	access to notential site)	
5 - Existing space for floodplain greater than 10 th	m width	5- yes (open but no existing vehicular a	cress)	
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing ne	eded)	
Describe [.]		Describe:		
Valley wall on RB. road on LB. mature forest on ex	isting FP.	Old access road to sewer on RB. young	tree planting along road.	
Drainage Area Evaluation	1	Utilities Present		1
10 -D.A. less than 1 sq. mi.		10 - No utilities on site		
5- D. A. between 1 & 3 sq. mi.		5 - Utilities but not within restoration a	rea	
1 - D. A. greater than 3 sq. mi.		1 - Utilities within potential restoration	area	
Describe:		Describe:		
15.8 sq. mi		Sewer line running along LB.		
		Tota	I Score out of 100	30





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Lan	ies Study	Mitigation Site Number:	PG_00132	
Projects Estimated Stream	n Mitigation Needs (LF):	TBD	-		
	11/20/2010				
Date of Field Assessment:	11/20/2018	Location Dotails	Consultant Firm/investigator(s):	CRI/DS, CN	
Country	Drinco Coorgo's	Location Details	Edmonston Rd & Suppyride Ave		
Basin (HUC 8)	Middle Potomac-Anacost		MDE Watersbed (8 digit):	02140205	
Proximity to Impacted S	tream (mi.):	0.35	Lat/Long:	39.016993	-76.898683
,		(Site Data		
Parcel Size (ac):	1 narcel - 116 7	<u>-</u>	Potential Restoration Reach (LE):	954	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	X Riparian Buffer Planting	X Habitat Enhancement	Fish Passage
Stream Order:	4th	Stream Hydrology:	Perennial	Stream Use:	
Drainage Area to Reach	(sq. mi.)	9.77			
Land Use:	Forest		Mapped Soils:	Zekiah and Iss	sue soils
Property Address:	Edmonston Road, Greent	oelt, MD 20770	•	·	
Property Owner(s):	Beltsville Agricultural Res	earch Center			
		General F	ield Observations		
Is there evidence that th	e stream has been distur	bed by some kind	Can the stream restoration be reason	ably done within the co	nfines of the
of human action, like gra	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections	peyond the parcel limit	s? Explain
Explain:			Explain:		
No, there is no sign of hu	ıman disturbance.		Yes, the stream is completely within the	ie parcel.	
Cuitouia		Mitigat	tion Site Rating		Coord
<u>Criteria</u>		Score	<u>criteria</u>	r	<u>score</u>
Estimated Bank erosion	within reach	5	Vegetation		1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% 10 50% 1 - Loss than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Upper 2/3 of stream read	ch with $\sim 1_2$ ft aroded ha	nks on outer	Describe. Mature forest huffer present on both s	sides A minimum 50 ft	forested buffer
moondors of stream Flor	odplain accoss good root	donsity Lower 1/2	is present on the left bank of stream h	otwoon stroom and Edn	nonesteu builer
of streams reach with x2	After and ad hanks an hat	uensity. Lower 1/5	is present on the left bank of stream b	etween stream and Eur	
of stream reach with "2-	4 ft. eroded banks on both	i sides, no			
Degree of Channel Incisi	on	1	Land Use		1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Bank heights range from	~1-2 ft. in the upper 2/3 c	of the stream and	Site consists of mature forest.		
between ~2-4 ft. in the lo	ower 1/3 of the stream.				
Evisting Floodalain Asso		1	Opportunity for Foological Lift	r	5
Existing Floodplain Acce	55 of bank flooding	1	Opportunity for Ecological Lift	s of lift to be achieved s	c bod sustained
5- Ves (Infrequent out of	hank flow)		5 - 1 ift limited to one or few aspects	s of fill to be achieved a	inu sustaineu
1 - Yes (evidence of frequ	ent flooding)		1 - Conditions are such that Lift is diffic	cult to achieve and sust:	ain
Describe:			Describe:		
Back lines on both banks	and active overflow chan	nels are present.	Good habitat and flow diversity is pres	ent, in addition to lots c	of large woody
Sediment denosition pre	sent on hars to top of han	iks and fine	debris. Other potential exists in reduci	ng hank erosion floodn	lain connectivity
sediment deposition pre	sent within floodnlain	ks und nine	and habitat creation		an connectivity,
sediment deposition pre-					
Opportunity for Floodpl	ain Development	10	Ease of Access		5
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular	access to potential site)	
5 - Existing space for floo	dplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular a	access)	
1 - Little to no space for I	loodplain development		1 - No (no vehicular access, clearing ne	eded)	
Describe:			Describe:	•.	
Mature forest with many	rrees present within a fla	t, wide valley.	Eamonston Road in close proximity to	site.	
		4		r	40
Urainage Area Evaluatio	n	1	Utilities Present		10
D.A. less than 1 sq. m	II. n mi		10 - NO UTILITIES ON SITE	200	
J = D. A. Delweell I & 3 S(1 - D A greater than 2 c_{1}	1 n. mi		1 - Utilities within notential restoration	n ca Narea	
	1		Describe:		
Drainage area - 9.77 squa	are miles.		NO UTILITIES ODSERVED.		
			- Tot	al Score out of 100	40
			1010	JUL DUCE OUL OF TOU	40





Page 2 of 3

	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	ed Lanes Study	Mitigation Site Number: PG	_00138	
Projects Estimated Stre	am Mitigation Needs (LF):	TBD			
	11/27/2010				
Date of Field Assessment:	11/2//2018	Location Datail	Consultant Firm/Investigator(s):	RK&K/KJH, BDIVI	
Country	Drinco Coorgo's	Location Details	<u>Control Avo & Coh</u>	in Pranch Rd	
Basin (HUC 8):	Middle Potomac-Ana	rostia-Occoquan	MDF Watersbed (8 digit):	02140205	
Proximity to Impacted S	Stream (mi.):	2.02	Lat/Long:	38.88651986 -76.88835557	
.,		-	Site Data		
Parcel Size (ac):	Several Parcels - 16 72 4	41 4 65	Potential Restoration Reach (LF):	1 940	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	Riparian Buffer Planting X	Habitat Enhancement Fish Passage	
Stream Order:	2nd	Stream Hydrology:	Perennial	Stream Use:	
Drainage Area to Reach	ı (sq. mi.)	0.26			
Land Use:	Forest		Mapped Soils: Adelphia-Holmdel-Urban C	omplex & Widewater and Issue soils	
Property Address:	Main Parcel - 100 Cabin E	Branch Dr., Capital H	leights 20743-0000		
Property Owner(s):	Board of education, Wash	hington Metro Area	Transit Authority, PG. County ROW		
		General F	ield Observations		
Is there evidence that t	he stream has been distur	bed by some kind	Can the stream restoration be reasonably	y done within the confines of the	
of human action, like gr	rading, dumping, livestock	, culvert, etc?	parcel or does it require connections bey	ond the parcel limits? Explain	
Explain:			Explain:		
Trash dumping in and ac	djacent to channel.		Restoration would require access to Board	d of Education, WMATA & PG. County	
			ROW.		
		Mitiga	tion Site Pating		
Criteria		Score	ICriteria	Score	
Estimated Bank erosion	within reach	5	Vegetation		
10 - Greater than 50%	Within reach	5	10 - Herbaceous cover (non-wetland)	1	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Moderate bank erosion	throughout majority of site	e. Some localized	Site surrounded by mid-successional fores	st. Dense understory. Several mature	
severe bank erosion.	0 , ,		, trees growing along channel. One small PF	-O wetland.	
Degree of Channel Incis	ion	5	Land Use	1	
10 - Bank Height greater	r than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height betweer	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
5-10 foot tall banks.			Mid-successional forest on Board of Educa	ation & WMATA properties.	
Existing Floodplain Acce	ess	10	Opportunity for Ecological Lift	10	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of	f lift to be achieved and sustained	
5- Yes (Infrequent out o	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	juent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
No evidence of out-of-b	ank flooding. Small channe	l that is deeply	Opportunities for improving instream habitat and reducing erosion. Some		
incised.			opportunities for floodplain development in southern floodplain.		
		-			
Opportunity for Floodp	lain Development	5	Ease of Access	1	
10 - Existing space for fl	oodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular acce	ess to potential site)	
5 - Existing space for flo	odpiain 3 to 10 times strea	m width	5- yes (open but no existing venicular acce	25S)	
1 - Little to no space for Describe:			1 - NO (NO VENICULAI ACCESS, Cleaning neede	30)	
Somo opportunitios for	floodalain dovelopment in	couthorn	Majority of site is surrounded by mid succ	sossional forest however there is an	
floodoloin, however nor	thorn floodalain dovelopment	southern	ald sower line access route along the site	that consists of onon proper with	
motro orcharder or	mern noouplain developm	ient is innited by	ou sewer line access route along the site i	that consists of open areas with	
metro embankment.			scattered smaller trees.		
Drainage Area Evaluatio	on	10	Utilities Present	1	
10 -D.A. less than 1 sq. r	nı.		10 - No utilities on site	_	
5- D. A. Detween $1 \& 3 s$	iq. mi.		5 - Utilities but not within restoration area	1	
I - D. A. greater than 3 s	y, III.		1 - Other within potential restoration are	Ed	
Describe:			Describe:	a	
Drainage area - 0.26 squ	lare miles		Sewer line runs parallel to stream in south	iern floodplain.	
			<u>Total S</u>	core out of 100 49	



Site Photos









	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: SSS-150020		
Projects Estimated Stream	n Mitigation Needs (LF):	TBD	<u>.</u>		
Data of Field Association	11/16/2019		Consultant Firm (Investigator(s), CDI/MD_SI		
Date of Field Assessment:	11/10/2010 Site	Location Details	consultant Finny investigator(s). Chi/MD, SJ		
County:	Montgomery	Cross Roads	Randoloh Rd & Kemp Mill Rd		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 02140205		
Proximity to Impacted S	tream (mi.):	3.5	Lat/Long: 39.068978 -	77.028791	
			Site Data		
Parcel Size (ac):	3 parcels - 14.5, 83.5, 57.	2	Potential Restoration Reach (LF): 2,583		
Site Opportunities:	<u>X</u> Channel Restoration	Livestock Exclusion	Riparian Buffer Planting XHabitat Enhancement	Fish Passage	
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Use: IV		
Drainage Area to Reach	(sq. mi.)	4.5			
Land Use:	Forest		Mapped Soils: Hatboro silt le	oam	
Property Address: Property Owner(s):		ring, IVID 20906			
Property Owner(s).	IVI-INCEPC	Comoral	ield Obeenvetiene		
Is there evidence that th	na stream has been distur	General F	ICan the stream restoration be reasonably done within the con-	fines of the	
of human action like gr	ading dumping livestock		narcal or does it require connections beyond the narcal limits?	Person the	
Evolution	aunig, auniping, investock,		Evaluin:	слріані	
Yes rin ran armored sew	ver crossing observed		Yes best access will be from Tivoli which is pretty far from the s	study site	
				tudy site.	
		Mitigat	tion Site Rating		
<u>Criteria</u>		Score	Criteria	<u>Score</u>	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:		mataly 200/ aftertal	Describe:		
Outside meander, banks rai	nge from "4-5 ft. tail, approxi	mately 30% of total	Mature forest is present on floodplain. Possible floodplain weth	ands present at	
length of reach.			toe-of-slope.		
Degree of Channel Incisi	ion	5	Land Lise	1	
10 - Bank Height greater	than 10 feet	5	10 - Agricultural or Open Space	I	
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Banks are incised and range	e from ~4-5 ft. tall. It may be o	lifficult to raise the	Mature forest is present on floodplain.		
channel at confluence with	Northwest Branch Anacostia	River.			
Existing Floodplain Acce	SS	10	Opportunity for Ecological Lift	5	
10 - No evidence of out of	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved an	d sustained	
5-Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustair	1	
Describe:		a	Describe:		
No evidence of rack lines	s or sediment deposition o	n floodplain.	Potential for habitat enhancement, increasing geomorphic stabi	llity.	
Opportunity for Eloodal	ain Develonment	1	Fase of Access	1	
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site)		
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
It may be difficult to raise the channel at confluence with Northwest		e with Northwest	The best access to site is through neighborhood west of site or v	via Trivoli Lake	
Branch Anacostia River.	Floodplain consists of mate	ure forest.	Blvd.		
Drainage Area Evaluatio	n	1	Utilities Present	1	
10 -D.A. less than 1 sq. n	ni		10 - No utilities on site		
5- D. A. between 1 & 3 s	ą. mi. a. mi		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 S	ų. m.		1 - orinnes within potential restoration area		
Describe:					
Drainage area - 4.5 squa	re miles.		Sewer crossing observed at upstream end, but may be possible	to avoid.	
			Sewer within floodplain.		
			Total Score out of 100	31	





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	oject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: SSS-150021		
Projects Estimated Stream	m Mitigation Needs (LF):	TBD			
			-		
Date of Field Assessment:	11/12/2018		Consultant Firm/Investigator(s): CRI/MD, SN		
	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Wick Ln & Keats Ter		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 02140206	77 420000	
Proximity to impacted S	Stream (mi.):	2.5	Lat/Long: 39.12/546	-77.139088	
			Site Data		
Parcel Size (ac):	3 parcels - 30.4, 80.4, 0.9		Potential Restoration Reach (LF): 1,781		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer PlantingHabitat Enhancement	XFish Passage	
Stream Order:	1st	Stream Hydrology	Perennial Stream Use:	IV	
Drainage Area to Reach	(sq. mi.)	0.32	Manual Caller		
Land Use:	Forest	Read Realwille M	Hatboro silt loam, Co	dorus silt loam,	
Property Address: Property Owner(s):	M-NCPPC	ROAD, ROCKVIIIE, IVIL	Glenelg silt	loam	
Troperty Owner(3).	WINCITC	Conservation	tiald Observations		
le there evidence that th	ha atuan haa haan diatuu	<u>General H</u>	-ield Observations	unfines of the	
is there evidence that the	ne stream nas been distur	subset sta	can the stream restoration be reasonably done within the co	nines of the	
of numan action, like gr	ading, dumping, livestock	culvert, etc?	parcel or does it require connections beyond the parcel limit	s? Explain	
Explain:		1	Explain:		
Yes; Culvert present at h	head, placed rip rap at upst	ream end,	Yes; Stream site completely within M-NCPPC property.		
downstream of culvert.					
			tion Site Deting		
Critoria		<u>iviitiga</u>	tion Site Rating	Scoro	
Criteria Estimated Dauly survivo		<u>3001e</u>		<u>3core</u>	
Estimated Bank erosion	within reach	10	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-snrub cover (non-wetland)		
Describe:	anks are areded renging fo	am ~4 0 ft tall	Describe:	accies noted	
Approximately 70% of b	anks are eroded, ranging n	om "4-9 ft. tall,	vegetation is mostly forested, with many vines and invasive sp	becles noted.	
alternating at meanders	. Several areas of severe en	osion.			
	•	_			
Degree of Channel Incis	ion	5	Land Use	1	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height betweer	and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:		C . 1 .	Describe:		
Bank heights range betw	veen ~3-10 ft. tall for most	of the stream	Land use consists of forest.		
length. Approximately 4	0% of banks are over 5 ft. 1	all.			
Existing Floodplain Acce	ess	5	Opportunity for Ecological Lift	10	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved a	and sustained	
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
Few indicators of out-of-	-bank flow in parts of the r	each. Bent over	Potential for bank height and encroachment ration improvem	ent, floodplain	
vegetation and rack line	s present.		reconnectivity, stabilizing severely eroded banks, and improving vegetative		
			cover with plantings		
Opportunity for Floodp	lain Development	10	Ease of Access	5	
10 - Existing space for flo	podplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site)		
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Wide valley present, but	t stream is incised so the ch	annel would have	There appears to be good access from Wick Lane with little ma	aintenance of	
to be raised to floodplai	n.		traffic needed and minor tree trimming.		
Ducing an Array Freedow 11		10	Likiliking Dunggut	F	
		10	Unites Present	5	
IU-D.A. less than 1 sq. n	III. a mi		IU - NO UTILITIES ON SITE		
5- D. A. Detween 1 & 3 s	ų. mi.		5 - Ouncies but not within restoration area		
I - D. A. greater than 3 s	ı q. m.		1 - Other within potential restoration area		
Describe:			Describe:		
Drainage area - 0.32 squ	iare mile.		Sewer manhole present at upstream end and approximately 1	.50 feet from	
			channel at edge of valley.		
			Total Score out of 100	62	
			Total Score out of 100	02	





	Str	eam Mitigation	Field Site Assessment Form	
		Pro	oject Details	
Project Name:	I-495/I-270 Managed Lan	ies Study	Mitigation Site Number: SSS-150023	
Projects Estimated Stream	n Mitigation Needs (LF):	TBD		
			-	
Date of Field Assessment:	11/14/2018		Consultant Firm/Investigator(s): CRI/MD, DS	
	Site	Location Details	s-taken from desktop review	
County:	Montgomery	Cross koaus:	Glenallan Ave & Kemp MIII Ka	
Basin (HUC 8): Provimity to Impacted S	Middle Potomac-Anacosi	a-Occoquan .	MDE Watersnea (8 algit): U214U2U5	77 022205
Proximity to impacted 5	tream (mi.).	2.9		-77.020795
	4	40.0	Site Data	
Parcel Size (ac):	4 parceis - 97.0, 4.0, 5.5,	49.b	Potential Kestoration Keach (LF): 5,003	Fich Dassage
Site Opportunities.		LIVESTOCK Exclusion	Kiparian Buffer Planting _A_Habitat Ennancement	FISN Passage
Drainage Area to Reach		1 18		IV
Land Use:	Forest	1.10	Mapped Soils: Hathoro silt loam G	lonelg silt loam
Property Address:	Main Parcel - Kemp Mill F	Road, Silver Spring 2	0902	lelieig siit ioann
Property Owner(s):	M-NCPPC, Montgomery (County		
		General F	ield Observations	
Is there evidence that th	ne stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the co	onfines of the
of human action, like gra	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limit	s? Explain
Explain:	<u> </u>	·	Explain:	
Yes; Road culvert presen	t at Kemp Mill Road. Pede	strian bridge and	Yes; Possible to extend upstream into adjacent parcels for add	ditional length.
horse trail bridge also pr	esent.	-		-
		<u>Mitigat</u>	tion Site Rating	
Criteria		Score	Criteria	Score
Estimated Bank erosion	within reach	5	Vegetation	1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
A few spots of minor-to-mo	derate bank erosion are pres	ent with sparse areas	Vegetation consists mostly of a forested riparian buffer. The le	eft bank
of high bank erosion. Banks	are highly erodible.		upstream of Kemp Mill Road contains a ~20-50 ft. forested bu	ffer and the right
		-	bank contains greater than 200 feet of mature forest buffer.	
Degree of Channel Incisi	on	5	Land Use	1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space	
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested	
Describe:	staly 1 ft on average		Describe:	
Balik heights are approxime	Itely 4 It. On average.		Land use consists of forested park land.	
Existing Floodplain Acce	SS	5	Opportunity for Ecological Lift	10
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved a	and sustained
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of frequence of trequence of the second	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and susta	ain
Describe:	· · · · · ·		Describe:	
Few areas get out-of-bar	nk flow during storm event	ts. Evidence of fine	Potential for geomorphic uplift, increase floodplain access, pro	ovide sediment
sediment deposits prese	nt.		deposition, enhance habitat.	
Opportunity for Floodpl	ain Development	5	Ease of Access	5
10 - Existing space for floo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct venicular access to potential site)	
1 - Little to no space for	floodalain development	in width	1 - No (no vehicular access, clearing needed)	
Describe:			Describe:	
Eloodalain development would require moderate tree impacts		Potential access off of Glenallan Ave and Kemp Mill Rd. Minor	clearing may be	
Potential exists specifica	lly on left stream bank	fice impacts.	required	cicaring may be
i otentiai exists specifica	ny on iert stream bank.			
				10
Drainage Area Evaluatio	n	5	Utilities Present	10
IU-D.A. less than I sq. m	11. a. mi		10 - No utilities on site	
5- D. A. between 1 & 3 so	ą. mi. a. mi		5 - Utilities but not within restoration area	
Describer	4			
Describe:				
Drainage area - 1.18 squ	are miles.		No utilities observed.	
			Total Score out of 100	52





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	oject Details		
Project Name:	I-495/I-270 Managed Lan	ies Study	Mitigation Site Number:	SSS-150040	
Projects Estimated Stream	m Mitigation Needs (LF):	TBD	-		
			-		
Date of Field Assessment:	11/12/2018		Consultant Firm/Investigator(s):	CRI/MD, SN	
	<u>Site</u>	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Olney Laytonsville Rd & Stanbrook Ln		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit):	02140206	
Proximity to Impacted S	stream (mi.):	5.4	Lat/Long:	39.183457 -77.120	731
			<u>Site Data</u>		
Parcel Size (ac):	2 parcels - 62.7, 31.8		Potential Restoration Reach (LF):	1,477	
Site Opportunities:	Channel Restoration	Livestock Exclusion	XRiparian Buffer Planting	Habitat EnhancementFish	h Passage
Stream Order:	1st	Stream Hydrology:	Intermittent	Stream Use: III	
Drainage Area to Reach	(sq. mi.)	N/A			
Land Use:	Forest, Agriculture		Mapped Soils:	Baile silt loam	
Property Address:	East Parcel - 19820 Muno	aster Road, Rockvil	e, MD 20855		
Property Owner(s):	Montgomery County				
		General F	ield Observations		
Is there evidence that th	ne stream has been distur	bed by some kind	Can the stream restoration be reasona	ably done within the confines o	of the
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections b	peyond the parcel limits? Explai	in
Explain:		-	Explain:		
No, no evidence of hum	an action		Yes; Stream is well within Montgomery	County property. Access from	roadway
-,			within property present		
			within property present.		
		Mitiga	tion Site Rating		
Criteria		Score	Criteria	Sci	ore
Estimated Bank erosion	within reach	5	Vegetation		1
10 - Greater than 50%		-	10 - Herbaceous cover (non-wetland)		_
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Minor erosion present	Stream slightly incised dow	Instream of minor	Wetland meadow present with adjacer	at tree plantings. Section of pal	istrine
headcuts, characteristic	of stable "E"channel.		scrub-shrub wetland present. Some mu	ultiflora rose observed.	Johne
Degree of Channel Incis	ion	1	Land Use		1
10 - Bank Height greater	than 10 feet	-	10 - Agricultural or Open Space		-
5 - Bank Height hetweer	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	13 feet		1 - Old field/ Developed/Forested		
Doscribo:			Poscribo:		
Describe. Incision characteristic of	stable "F" channel (~1 5 ff	t tall hanks)	Wet meadow and tree plantings prese	nt Rinarian huffer will develop i	into
	stable E channel (1.5 h	tan banksy.	forest.		into
Existing Floodplain Acce	ess	1	Opportunity for Ecological Lift		1
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects	s of lift to be achieved and susta	ained
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is diffic	ult to achieve and sustain	
Describe:			Describe:		
Low banks present throu	ughout reach. Flatland gras	sses present.	Potential exists for lift as stable channe	l is present with existing wetlar	nds and
Standing water noted w	ithin floodplain	· · · · ·	tree plantings to enhance riparian buff	er	
			tree plantings to enhance riparian bar		
Opportunity for Floodpl	ain Development	5	Fase of Access	1	10
10 - Existing space for flo	podplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular a	access to potential site)	_
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- ves (open but no existing vehicular a	iccess)	
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing ne	eded)	
Describe:			Describe:	- /	
Eloodolain is already 3-1	0 times the stream width f	for most of the	Existing park entrance is present in ad	dition to a maintained nath nar	allel to
roach	o times the stream water		the stream	allon to a maintainea path part	
			the stream.		
Drainage Area Evaluation	on	10	Utilities Present	1	10
10 -D.A. less than 1 sq. n	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration a	rea	
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration	area	
Describe:			Describe:		
Drainage area is less tha	n 1 square mile.		No utilities observed.		
	, 		l		
			Tota	I Score out of 100 4	15





	Stream Mitigation	Field Site Assessment Form		
	Pro	oject Details		
Project Name: I-495/I-270 Managed	Lanes Study	Mitigation Site Number: SSS-150041		
Projects Estimated Stream Mitigation Needs (LI	:): TBD	_		
Data of Field Assocrants 11/12/2018		Concultant Firm (Investigator(s): CPI/MD_SN		
Date of Field Assessment: 11/12/2018	Site Location Detail	s-taken from deskton review		
County: Montgomery	Cross Roads	: Olney Laytonsville Rd & Wickham Rd		
Basin (HUC 8): Middle Potomac-Ana	costia-Occoguan	MDE Watershed (8 digit): 02140206		
Proximity to Impacted Stream (mi.):	5.8	Lat/Long: 39.17486	-77.100179	
		Site Data		
Parcel Size (ac): 1 parcel - 19.4		Potential Restoration Reach (LF): 925		
Site Opportunities:Channel Restoration	Livestock Exclusior	nXRiparian Buffer PlantingXHabitat Enhancement	Fish Passage	
Stream Order: 1st	Stream Hydrology	: Perennial Stream Use:	III	
Drainage Area to Reach (sq. mi.)	0.13			
Land Use: Forest, Agriculture		Mapped Soils: Baile silt I	oam	
Property Address: Olney Laytonsville Ro	ad, Olney, MD 20832			
Property Owner(s): IM-INCPPC				
la thora ovidorea that the stream has been di	<u>General I</u>	Field Observations	unfines of the	
is there evidence that the stream has been di	sturbed by some kind	can the stream restoration be reasonably done within the co	onines of the	
Finishing action, like grading, dumping, lives	JOCK, CUIVERL, ELC?	parcel or does it require connections beyond the parcel limit	Sr Explain	
Vos: Signs of historic straightoning Culvert pre	cont at road crossing	No: May pood use of County POW along Olney Laytonsville Po	ad or accoss	
sooms too low	sent at road crossing	from community at Wickham Road	au of access	
seems too low.				
	Mitiga	tion Site Rating		
<u>Criteria</u>	Score	Criteria	<u>Score</u>	
Estimated Bank erosion within reach	1	Vegetation	1	
10 - Greater than 50%		10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%		5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%		1 - Mostly forested and/or wetland		
Describe:		Describe:		
No bank erosion observed.		Wetland meadow present throughout site.		
			-	
Degree of Channel Incision	1	Land Use	5	
10 - Bank Height greater than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height less than 3 feet		5 - Marginal Pasture		
Describe:		Describe:		
Bank height is less than 1 foot tall throughout	site.	Possible fallow agricultural field, currently wetland meadow.		
Existing Floodplain Access	1	Opportunity for Ecological Lift	5	
10 - No evidence of out of bank flooding		10 - Conditions exist for several aspects of lift to be achieved a	and sustained	
5- Yes (infrequent out of bank now)		5 - LIT IIMITED to one of rew aspects		
Describe		Describe		
Stream banks are low Standing water and sat	irated soils are present	Potential to improve riparian buffer and enhance babitat. Stre	am is stable but	
within the floodplain. Vegetation bent over		has been historically straightened		
within the noouplain. Vegetation bent over.		has been historically straightened.		
Opportunity for Floodplain Development	10	Ease of Access	5	
10 - Existing space for floodplain greater than	10 times stream width	10 - Yes (with existing direct vehicular access to potential site)		
5 - Existing space for floodplain 3 to 10 times s	tream width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain developme	nt	1 - No (no vehicular access, clearing needed)		
Describe:		Describe:		
Stream situated in a large, wet meadow withir	i an open field. Banks	No direct vehicular access. Path may be needed through wetla	ands.	
are already low, so floodplain development we	ould not require a lot of	Maintenance of traffic required along road.		
grading.				
Drainage Area Evaluation	10	Utilities Present	10	
10 -D.A. less than 1 sq. mi.		10 - No utilities on site		
5- D. A. between 1 & 3 sq. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. mi.		1 - Utilities within potential restoration area		
Describe:		Describe:		
Drainage area - 0.13 square mile.		No utilities observed.		





Stream Mitigation Field Site Assessment Form				
Project Details				
Project Name: I-495/I-270 Managed La	nes Study	Mitigation Site Number: SSS-160039		
Projects Estimated Stream Mitigation Needs (LF): TBD	_		
		-		
Date of Field Assessment: 6/14/2019) 	Consultant Firm/Investigator(s):	CRI - SN/DS	
<u>Site</u>	Location Details	s-taken from desktop review		
County: Prince George's	Cross Roads:	Hamilton St a	nd 38th Avenue	
Basin (HUC 8): Mildale Potomac-Ana	acostia-Occoquan	- NIDE Watersnea (8 aigit):	2140205 29.050104 -76.051858	
	4.J		38.330134 -70.331636	
		Site Data	4.400	
Parcel Size (ac): 2.5, 1/.4,	6< 1ac	Potential Restoration Reach (LF):	1,123	
Site Opportunities:xunannel Restoration		Riparian Buffer Planting	Habitat EnhancementXHsn Passage	
Stream Urger:			Stredin Use.	
Land Use: Forest, open space	0.40	Manned Soils:	Codorus-Hatboro-Urban land complex	
Property Address: 3901 Hamilton St Hyatts	ville. MD 20781		and Codorus-Hatboro	
Property Owner(s): M-NCPPC, WSSC	vine,			
	General F	ield Observations		
Is there evidence that the stream has been distu	rbed by some kind	ICan the stream restoration be reasona	ably done within the confines of the	
of human action, like grading, dumping, livestoc	k culvert. etc?	narcel or does it require connections b	beyond the parcel limits? Explain	
Fxnlain:	y current, etc.	Explain:		
Yes bridges and parkland directly adjacent. lots o	f trash in stream.	Ves all within M-NCPPS property. Coul	d extend downstream to one additional	
foothridge over stream, nerhans historically straig	Thtonod	private property owner to extend appr	The streng downstream to sine duality in the strength of the s	
1001Driuge over stream, pernaps instoricany straig	inteneu.	private property owner to extern appr	0x. 1000 II.	
	Mitiga	tion Site Rating		
Criteria	Score	Criteria	Score	
Estimated Bank erosion within reach	5	Vegetation	1	
10 - Greater than 50%		10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%		5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%		1 - Mostly forested and/or wetland		
Describe:		Describe:		
Erosion looks to be old, stream most likely previou	usly downcut and	Mature to old deciduous forest along lo	Mature to old deciduous forest along left bank, some forest and parking lot	
now stream banks look more stable.		along right hank.		
Degree of Channel Incision	5	Land Use	5	
10 - Bank Height greater than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than 3 feet		1 - Old field/ Developed/Forested		
Describe:		Describe:		
Approximately 5' tall eroded banks, entrenched st	tream channel and	Adjacent land use is forest and developed/ park and open space.		
over widened.				
Existing Floodplain Access	5	Opportunity for Ecological Lift	5	
10 - No evidence of out of bank flooding	-	10 - Conditions exist for several aspect	s of lift to be achieved and sustained	
5- Yes (Infrequent out of bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:		Describe:		
Mostly 5' banks but some inside banks and other	locations have small	Poor water quality is limiting, increase floodplain, provide lateral stability.		
vegetated henches		increase habitat		
Opportunity for Floodplain Development	10	Ease of Access	5	
10 - Existing space for floodplain greater than 10 t	imes stream width	10 - Yes (with <u>existing</u> direct vehicular a	access to potential site)	
5 - Existing space for floodplain 3 to 10 times stree	am width	5- yes (open but no existing vehicular a	access)	
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:		Describe:		
Stream is over widened		Adjacent to public park with ample par	rking.	
Drainage Area Evaluation	10	Utilities Present	1	
10 -D.A. less than 1 sq. mi.		10 - No utilities on site		
5- D. A. between 1 & 3 sq. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. mi.		1 - Utilities within potential restoration area		
Describe:		Describe:		
DA = 0.46 ac		Sewer manhole potentially near site, c	rossing at footbridge, gas line crossing.	
		Tota	al Score out of 100 52	





Stream Mitigation Field Site Assessment Form					
		Pro	oject Details		
Project Name:	495/27	0	Mitigation Site Number:	SSS-	160041
Projects Estimated Stre	eam Mitigation Needs (LF):	TBD			
			-		
Date of Field Assessment:	: 8/21/2019		Consultant Firm/Investigator(s):	CRI- MD/DS	
	<u>Site</u>	Location Details	s-taken from desktop review		
County:	Prince George's	Cross Roads:	Nashville Rd,	/Newburg Dr	
Dasin (HUC 8): Provimity to Impacted	Stream (mi):	ostia-Occoquan	INIDE Watersned (8 digit):	214025	-76 88/11/
Froximity to impacted	Stream (mi.).			38.985380	-70.884114
		<u>-</u>	Site Data	2 400	
Parcel Size (ac):	205.0		Potential Restoration Reach (LF):	Z,408	Fish Desses
Site Opportunities. Stream Order:		Livestock Exclusion	Comparian Buffer Planting Decompial	Habitat Ennancement	FISH Passage
Drainage Area to Read	h (sa mi)	0.97			
Land Use:	Greenbelt Park/Residenti	al	Mapped Soils: Christiana-Downer-Urban, Ze	kiah, and Russett-Christiana-U	Jrban
Property Address:	6565 Greenbelt Rd, Gree	nbelt, MD 20770			
Property Owner(s):	National Parks Service/Pr	ivate residence (acc	cess only)		
		General F	ield Observations		
Is there evidence that t	the stream has been distur	ped by some kind	Can the stream restoration be reasona	bly done within the confir	nes of the
of human action, like g	rading, dumping, livestock	, culvert, etc.?	parcel or does it require connections b	eyond the parcel limits? E	xplain
Explain:			Explain:		
Channelization from ro	ad and culvert		Yes, NPS parcel but may need additiona	al access at upstream neigh	borhood
		Mitigat	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>		<u>Score</u>
Estimated Bank erosion	n within reach	10	Vegetation		1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:		000/	Describe:		
Greater than 50% of ba	inks experiencing erosion, ~	80%	Forested		
Degree of Channel Inci	sion	5	Land Use		1
10 - Bank Height greate	er than 10 feet		10 - Agricultural or Open Space	I	
5 - Bank Height betwee	en 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less tha	in 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Average bank height ~6	5 feet		Forested		
Existing Eloodalain Acc	2205	10	Opportunity for Ecological Lift		5
10 - No evidence of out	t of bank flooding	10	10 - Conditions exist for several aspects	of lift to be achieved and	J
5-Yes (Infrequent out o	of bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of free	auent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
Very little if any out of l	bank flow evident		Vertical/lateral stability , bedform diversity, floodplain reconnection		
-,,				<i>,,</i> ,,	
Opportunity for Floodp	olain Development	10	Ease of Access		1
10 - Existing space for f	loodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular a	ccess to potential site)	
5 - Existing space for flo	odplain 3 to 10 times stream	m width	5- yes (open but no existing vehicular ad	ccess)	
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)			
Describe:		Describe:			
Existing space for ten times stream width with tree loss, or channel		No access existing, clearing needed. Pot	cential access from Kepner	rd	
bed being raised					
Drainage Area Evaluati	ion	10	Utilities Present	I	10
10 -D.A. less than 1 so	mi.		10 - No utilities on site	I	10
5- D. A. between 1 & 3	sg. mi.		5 - Utilities but not within restoration a	rea	
1 - D. A. greater than 3	sq. mi.		1 - Utilities within potential restoration	area	
Describe:	<u> </u>		Describe:		
0.97			No utilities within NPS narcel		
			Tota	Score out of 100	63







	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: S	SS-160042	
Projects Estimated Strear	n Mitigation Needs (LF):	TBD			
	/		- 		
Date of Field Assessment:	11/20/2018		Consultant Firm/Investigator(s): C	.RI/CN, DS	
. .	<u>Site</u>	Location Details	s-taken from desktop review		
County:	Prince George's	Cross Roads:	I-295 & Greenbelt Park	2140205	
Dasin (HUC 8): Provimity to Impacted S	tream (mi):		INDE watersned (8 digit): 0	2140205	-76 800/35
Froximity to impacted 5	tream (mi.).	0.48	Cite Date	38.334218	-70.833433
Demost Cine (e.e.)	1 marrael 720 F	<u>-</u>	Site Data	001	
Parcel Size (ac):	1 parcel - 726.5	Liverte du Fuelveiere		.,091	Fish Desses
Site Opportunities.		Livestock Exclusion	Riparian Buffer Planting	XHabitat Ennancement	FISH Passage
Drainage Area to Reach	(sa mi)		rerennia	Stream Ose.	
Land Use:	Forest	0.05	Mapped Soils:	Zokiah and Isr	
Property Address:	Greenbelt Road. Greenbe	elt. MD 20770		Zekiali aliu iss	Jue solis
Property Owner(s):	USA Greenbelt National F	Park			
		General F	ield Observations		
Is there evidence that the	ne stream has been distur	bed by some kind	Can the stream restoration be reasonab	bly done within the co	nfines of the
of human action. like gr	ading, dumping, livestock	. culvert. etc?	parcel or does it require connections beyond the parcel limits? Explain		
Explain:			Explain [.]	<u></u>	
Yes: Upstream end of rea	ach begins at outfall. Rip ra	ap dumped as	Yes, the stream is completely within the	parcel	
headcut stabilization flo	ws through nine under Gr	eenhelt Park access	····, ·······		
road	no through pipe that of				
Todu.		N 4141	tion Cite Detine		
Critoria		<u>iviitigat</u>	Critoria		Score
Criteria Estimated Dauk sussian		<u>score</u>	Criteria	r	<u>score</u>
Estimated Bank erosion	within reach	10	Vegetation		1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% t0 50% 1 Loss than 10%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe: Both banks arodod throu	ich antira raach. Bank hai	abt ranges from XE	Describe:		
Both banks eroded throu	ign entire reach. Bank heig	ant ranges from "5-	Site is located within a forested national	park.	
15 ft. tall.					
		40		r	
Degree of Channel Incisi	on	10	Land Use		1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
 Bank Height between Bank Height loss than 	3 dilu 10 leet		5 - Marginal Pasture		
1 - Dalik Heigilt less tildi	5 TEEL		1 - Old Held/ Developed/Forested		
Describe:		Describe:			
balliks are severely incise	downstroom and	ertelevations	Land use is forested national park.		
between upstream and o	Jownstream end.				
Existing Floodplain Acce	SS	10	Opportunity for Ecological Lift		1
10 - No evidence of out of	of bank flooding		10 - Conditions exist for several aspects	of lift to be achieved a	nd sustained
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
Banks are severely incise	d, no evidence of out-of-b	ank flooding.	Stream situated within very steep valley. Culvert invert elevations prevent		
			significant changes. Headcut/grade control only realistic option for lift.		
				T	
Opportunity for Floodpl	ain Development	1	Ease of Access		1
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site)		
5 - Existing space for floodplain 3 to 10 times stream width		5- yes (open but no existing vehicular access)			
1 - Little to no space for floodplain development		1 - NO (NO VEHICULAR ACCESS, Clearing needed)			
Describe:	<u> </u>		Describe:		
Flows down valley wall of mainstem, no real floodplain present.		Roads at upstream and downstream end	d, but dense forest pre	sent throughout	
			reach.		
Drainage Area Evaluatio	'n	10	Utilities Present		10
10 -D.A. less than 1 so n	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 s	g. mi.		5 - Utilities but not within restoration are	еа	
1 - D. A. greater than 3 sq. mi.		1 - Utilities within potential restoration a	area		
Describe:			Describe:		
Drainage area - 0.03 cou	are mile		No utilities observed		
			Total	Score out of 100	55





Stream Mitigation Field Site Assessment Form				
	Pro	oject Details		
Project Name: I-495/I-270 Managed Land	es Study	Mitigation Site Number: SSS-160053		
Projects Estimated Stream Mitigation Needs (LF):	TBD			
	C /11 /2010	Consultant Firm (Investigator(a))		
Date of Field Assessment:	6/11/2019	consultant Firm/investigator(s):	· CN, SJ	
Sile Country: Prince George's	Cross Poads:	S-Laken from desktop review		
Basin (HUC 8): Middle Potomac-Anac	ostia-Occoquan	MDF Watershed (8 digit): 21/	40205	
Proximity to Impacted Stream (mi.):	1.8	Lat/Long: 38.9874	-76.964188	
		Site Data		
Parcel Size (ac): 4 Parcels: 1.3, 21.	<u>*</u> 7. 18.5. 8.5	Potential Restoration Reach (LF): 23	378	
Site Opportunities: X Channel Restoration	Livestock Exclusion	Riparian Buffer Planting Habitat Enhancem	ient Fish Passage	
Stream Order: 4th	Stream Hydrology:	Perennial Stream U	se: IV	
Drainage Area to Reach 33.7				
Land Use: Forest		Mapped Soils: Codorus and Hatbo	oro soils	
Property Address: Main Parcel: 8000 W Park	Dr, Adelphi, MD, 2	20783		
Property Owner(s): Maryland National Capita	Park & Planning C	ommission		
	General F	Field Observations	C C U	
Is there evidence that the stream has been disturb	ed by some kind	Can the stream restoration be reasonably done within th	ie confines of the	
of human action, like grading, dumping, livestock,	culvert, etc?	parcel or does it require connections beyond the parcel I	imits? Explain	
Explain:		Explain:		
Yes, bank armoring in multiple places, bridges US a	nd DS of reach	Yes, can be done within parcel		
	Mitigat	tion Site Pating		
Criteria	Score	Criteria	Score	
Estimated Bank erosion within reach	5	Vegetation	1	
10 - Greater than 50%	5	10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%		5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%		1 - Mostly forested and/or wetland		
Describe:		Describe:		
Closer to 10%, some patches of hig - very high eros	ion on outer meand	d Mature forest		
Degree of Channel Incision	5	Land Use	1	
10 - Bank Height greater than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between 3 and 10 feet		5 - Marginal Pasture		
1 - Ballk Height less than 5 leet		Describe:		
5-8' hanks but good hars and EP henches		Describe. Mature forest		
5 6 banks but good bars and 11 benefics		Watare forest		
Existing Floodplain Access	1	Opportunity for Ecological Lift	1	
10 - No evidence of out of bank flooding		10 - Conditions exist for several aspects of lift to be achiev	ed and sustained	
5- Yes (Infrequent out of bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:		Describe: Not much needed other than some miner hank rehab/stabilization		
Sand deposition and rackines of FP		Not much needed other than some minor bank renab/sta	DIIIZATION	
Opportunity for Floodplain Development	10	Ease of Access	5	
10 - Existing space for floodplain greater than 10 tir	nes stream width	10 - Yes (with existing direct vehicular access to potential	site)	
5 - Existing space for floodplain 3 to 10 times strear	n width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:		Describe:		
Flat, wide floodplain area		Could access without extensive forest impacts		
Drainage Area Evoluction	1	Litilities Dresent	F	
Urainage Area Evaluation 1		10 - No utilities on site	5	
10 - D.A. less than 1 sq. ml.		5 - Utilities but not within restoration area		
D-D.A. between 1 & 5 Sq. mi. 1 - D.A. greater than 3 sq. mi		1 - Utilities within potential restoration area		
Lecribe		Describe:		
		Sower procent but not close to streem		
Sewel present but not close to stream				
		Total Score out of 1	00 २५	





Str	eam Mitigation	Field Site Assessment Form		
Project Details				
Project Name: I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: SSS-160058		
Projects Estimated Stream Mitigation Needs (LF):	TBD	-		
Date of Field Assessment: 6/11/2019		Consultant Firm/Investigator(s): RK&K/KIH_CAS		
Site	Location Details	s-taken from desktop review		
County: Prince George's	Cross Roads:	Seat Pleasant Drive and Hill Road		
Basin (HUC 8): Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 021402	205	
Proximity to Impacted Stream (mi.):	2.1 miles	Lat/Long: 38.901499	-76.891591	
		Site Data		
Parcel Size (ac): 9.6		Potential Restoration Reach (LF): 1,361		
Site Opportunities:X_Channel Restoration	Livestock Exclusion	Riparian Buffer PlantingX_Habitat Enhancement	Fish Passage	
Stream Order: 1st	Stream Hydrology:	Perennial Stream Use:		
Drainage Area to Reach (sq. mi.)	0.18	Manual Calles		
Property Address: Highland Park		Mapped Solis: Christiana-Downer-Or	ban land complex	
Property Owner(s): MNCPPC - PG County				
	General F	ield Observations		
Is there evidence that the stream has been distur	bed by some kind	ICan the stream restoration be reasonably done within the c	onfines of the	
of human action, like grading, dumping, livestock	. culvert. etc?	parcel or does it require connections beyond the parcel limit	ts? Explain	
Explain:		Fridain:		
Extensive trash dumping		Yes		
	<u>Mitigat</u>	tion Site Rating		
<u>Criteria</u>	<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Estimated Bank erosion within reach	5	Vegetation	1	
10 - Greater than 50%		10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%		5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%		1 - Mostly forested and/or wetland		
Describe:		Describe:	Describe:	
Localized areas of moderate to severe erosion. Sor	ne sections are	Mid-successional forest - upland. Beech, tulip poplar, mixed oaks, spicebush,		
stable.		musslewood.		
Degree of Channel Insision	F		1	
10 - Bank Height greater than 10 feet	5	10 - Agricultural or Open Space	±	
5 - Bank Height between 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than 3 feet		1 - Old field/ Developed/Forested		
Describe:		Describe:		
5-10' tall banks		Forested parkland		
Evicting Flooduloin Access	10	Onnortunity for Ecological Lift	5	
Existing Floodplain Access	10	Opportunity for Ecological Lift	ond sustained	
5- Yes (Infrequent out of bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:		Describe:		
No evidence, deeply incised channel		Opportunities for sediment reduction, instream habitat. Limited to a few		
		aspects.		
Opportunity for Floodplain Development	1	Ease of Access	5	
10 - Existing space for floodplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site		
5 - Existing space for floodplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:		Describe:		
Limited by adjacent houses and recreational fields		No existing access. Old WSSC path with small tree impacts.		
Drainage Area Evaluation	10	Utilities Present	1	
10 -D.A. less than 1 sq. mi.		10 - No utilities on site		
5- D. A. between 1 & 3 sq. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. mi.		1 - Utilities within potential restoration area		
Describe:		Describe:		
0.18 square miles		Sewerline runs along northern side of channel.		
Total Score out of 100 44				



Site Photos



Str	eam Mitigation	Field Site Assessment Form	
	Pro	bject Details	
Project Name: I-495/I-270 Managed Lar	nes Study	Mitigation Site Number: SSS-160059	
Projects Estimated Stream Mitigation Needs (LF)	TBD		
		-	
Date of Field Assessment: 6/14/2019	· · · ·	Consultant Firm/Investigator(s):	CRI-SN/DS
<u>Site</u>	Location Details	s-taken from desktop review	
County: Prince George's	Cross Roads:	Hillside Ave and Oak Forest C	.t
Basin (HUC 8): Middle Potomac-Ana	costia-Occoquan	WIDE watersned (8 digit):	02140205
Proximity to impacted Stream (init).	1.7		70.502540
	7 0 66 4 02)	Site Data	4047
Parcel Size (ac): 4 parcels (0.84, 1.5	57, 0.66, 4.82)	Potential Restoration Reach (LF):	<u>1347</u>
Site Opportunities:x_channel Restoration	LIVESTOCK EXClusion	Riparian Buffer Planting	ncementFish Passage
Drainage Area to Reach (sq. mi.)		Perennial Stiled	
Land Use: Forest, Residential	0.17	Mapped Soils: Christiana-Dov	vner-Urban land
Property Address: Oak St. Cheverly, MD 20	785	complex; Russ	ett-Christiana-Urban land
Property Owner(s): Cheverly Mayor & Town	Council, M-NCPPC	complex	
	General F	ield Observations	
Is there evidence that the stream has been distur	bed by some kind	Can the stream restoration be reasonably done with	in the confines of the
of human action, like grading, dumping, livestock	. culvert. etc?	parcel or does it require connections beyond the par	cel limits? Explain
Explain:	,,	Explain:	
Yes, remnant restoration (bed/bank stabilization). culvert at RTE 50	Yes- within M-NCPPC property	
	,,		
	Mitiga	tion Site Rating	
<u>Criteria</u>	Score	Criteria	Score
Estimated Bank erosion within reach	5	Vegetation	1
10 - Greater than 50%		10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%		5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%		1 - Mostly forested and/or wetland	
Describe:		Describe:	
DS section has previous restoration but was still en	oding, overall	Stream corridor is mostly forested young/mature dec	iduous
stream appears to be downcutting, multiple man r	nade grade control		
structures with localized success			
Degree of Channel Incision	5	Land Use	1
10 - Bank Height greater than 10 feet		10 - Agricultural or Open Space	
5 - Bank Height between 3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less than 3 feet		1 - Old field/ Developed/Forested	
Describe:		Describe:	
Average eroded bank height is approximately 4-5'		Forested adjacent to stream and residential housing encroaching in a few areas	
с с <u>, , , , , , , , , , , , , , , , , ,</u>		, , , , , , , , , , , , , , , , , , , ,	C C
	-		
Existing Floodplain Access	5	Opportunity for Ecological Lift	5
10 - No evidence of out of bank flooding		10 - Conditions exist for several aspects of lift to be ac	inleved and sustained
5- Yes (Infrequent out of bank flow)		5 - Lift limited to one or few aspects	
1 - fes (evidence of frequent hooding)		1 - Conditions are such that Lift is difficult to achieve and sustain	
Describe:		Describe:	
Rarely accesses FP and only in specific areas		Lateral migration, vertical instability, habitat enhance	ment
Opportunity for Floodplain Development	5	Fase of Access	1
10 - Existing space for floodplain greater than 10 t	mes stream width	10 - Yes (with existing direct vehicular access to poten	itial site)
5 - Existing space for floodplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)	•
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)	
Describe:		Describe:	
Lower end of stream may be over 10 times, but m	ajority of the	Stream ins entirely within forested buffer	
stream only has an opportunity for 3-10 times the stream width			
, .			
Drainage Area Evaluation	10	Utilities Present	1
10 -D.A. less than 1 sq. mi.		10 - No utilities on site	
5- D. A. between 1 & 3 sq. mi.		5 - Utilities but not within restoration area	
1 - D. A. greater than 3 sq. mi.		1 - Utilities within potential restoration area	
Describe:		Describe:	
DA=0.17 sq mi O		Overhead lines and possible sewer crossing observed	
			4 +
		Total Score out o	ot 100 39




	Str	eam Mitigation	Field Site Assessment Form	
		Pro	ject Details	
Project Name:	I-495/I-270 Managed Lan	ies Study	Mitigation Site Number: SSS-160060	
Projects Estimated Strea	am Mitigation Needs (LF):	TBD		
			-	
Date of Field Assessment:	11/27/2018		Consultant Firm/Investigator(s): RK&K/KJ	H, BDM
	<u>Site</u>	Location Details	s-taken from desktop review	
County:	Prince George's	Cross Roads:	Seat Pleasant Dr. & Ashleaf Ave.	
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan:	MDE Watershed (8 digit): 02140205	
Proximity to Impacted S	stream (mi.):	2.53	Lat/Long: 38.89717533	3 -76.8994935
			Site Data	
Parcel Size (ac):	Several parcels - 2.39,	17.71, 1.39, 4.89	Potential Restoration Reach (LF): 4,478	8
Site Opportunities:	XChannel Restoration	Livestock Exclusion	XRiparian Buffer PlantingXHabitat Enhancemen	tFish Passage
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Use	:: 1
Drainage Area to Reach	(sq. mi.)	3.08		
Land Use:	Forest		Mapped Soils: Zekiah and Issue soils	S
Property Address:	Martin Luther King Jr. Hw	v, Capitol Heights 2	0743-0000	
Property Owner(s):	State of MD, Seat Pleasar	nt Mayor & Comm C	Cou, Acuna Hugo R, Maryland National Capital Park & Plannin	g Commissior
		General F	ield Observations	
Is there evidence that the	ne stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the	confines of the
of human action. like gr	ading, dumping, livestock	. culvert. etc?	parcel or does it require connections beyond the parcel lim	nits? Explain
Evolain:		,	Explain:	
Explain.	ncrete lined channel		Restoration and access would be required on numerous pro	nerty owner
	nerete inted channel.		nestoration and access would be required on numerous pro	perty owner
			parceis.	
		Mitigat	tion Site Bating	
Criteria		Score	ICriteria	Score
Estimated Bank erosion	within reach	1	Vegetation	1
10 Greater than EO%	Within reach	1	10 Herbacous cover (non wetland)	
10 - Greater than 50%			E Scrub chrub cover (non-wetland)	
5 - 10% (0 50%) 1 Locs than 10%			1 Mostly forested and/or wetland	
Describe:		P 1 1 1	Describe:	
very minor erosion. Enti	re site consists of concrete	e lined channel.	Majority of site is surrounded by forest. Downstream reach	is a mix of scrub-
			shrub, mowed lawn, and forest.	
Degree of Channel Incisi	ion	5	Land Use	1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space	
5 - Bank Height between	1 3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less than	i 3 feet		1 - Old field/ Developed/Forested	
Describe:			Describe:	
6' foot tall concrete lined	d banks.		Majority of site is surrounded by forest located on a mix of o	ounty parkland,
			city parcels, and private properties.	
		10		
Existing Floodplain Acce	:SS	10	Opportunity for Ecological Lift	
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	d and sustained
5-Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and su	stain
Describe:			Describe:	
No evidence of out-of-ba	ank flows. Stream appears	to stay within the	Limited potential for improving instream habitat. No potent	ial for floodplain
concrete lined channel.			development, improving water quality, or reducing erosion.	
Opportunity for Floodpl	ain Development	1	Ease of Access	5
10 - Existing space for flo	oodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential sit	e)
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)	
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)	
Describe:			Describe:	
Very limited space for flo	oodplain development due	to adjacent	Clear access in some segments from past sewer repairs. Oth	er segments would
communities. recreation	al parks, roads or steen sk	opes.	require tree clearing.	-
		1	Litilities Dresent	1
Drainage Area Evaluatio	n		utilities Present	1
IU -D.A. less than 1 sq. n	חו.		10 - INO UTILITIES ON SITE	
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration area	
1 - D. A. greater than 3 s	q. mı.		1 - Utilities within potential restoration area	
Describe:			Describe:	
Drainage area - 3.08 squ	are miles.		Sewer line runs parallel to stream.	
			1	
			Total Score out of 100) 27



Site Photos



	Str	eam Mitigation	Field Site Assessment Form	
		Pro	oject Details	
Project Name:	495/27	70	Mitigation Site Number: SSS-160062a	
Projects Estimated Strea	Mitigation Needs (LF)	TBD	_	_
Date of Field Assessment:	8/21/2019		Consultant Firm/Investigator(s): CRI- MD/DS	
	Site	Location Detail	s-taken from desktop review	
County:	Prince George's	Cross Roads:	: Nashville Rd	
Basin (HUC 8):	Middle Potomac-Anacost	tia-Occoquan	MDE Watershed (8 digit): 214025	
Proximity to Impacted S	tream (mi.):	0.41	1 Lat/Long: 38.981681 -	76.889402
			Site Data	
Parcel Size (ac):	265.6	; 	Potential Restoration Reach (LF): 3341	
Site Opportunities:	XChannel Restoration	Livestock Exclusion	nRiparian Buffer PlantingHabitat Enhancement	_Fish Passage
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:	
Drainage Area to Reach	(sq. mi.)	1.85		
Land Use:	Greenbelt Park		Mapped Soils: Zekiah and Issue soils	
Property Address: Property Owner(s):	National Park Service	nbeit, Nid 20770		
		Conoral I	ri-ld Ohaamadiana	
Is there evidence that th	e stream has been distur	<u>General r</u>	FIEID Ubservations	of the
of human action like gr	ading dumning livestock	culvert atc?	parcel or does it require connections beyond the narcel limits? Evol	lain
	aunig, uuniping, neeseen			lanı
Explain: Channelization at upstre	am extent multiple 295 c	ulverts	Explain. Vec NPS property Addressing concrete aprop at upstream extent m	av require
channenzation at aporte	am extent, maniple 200 0		additional access	ayrequire
		Mitiga	ation Site Rating	
Criteria		Score	<u> Criteria</u>	Score
Estimated Bank erosion	within reach	5	5 Vegetation	1
10 - Greater than 50%		<u> </u>	10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
~40% of banks eroded			Forested	
		-	-1	1
Degree of Channel Incisi	on	5	2 Land Use	I
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space	
5 - DdIIK Height between 1 - Rank Height less than			5 - Marginai rasiure 1 - Old field/ Developed/Forested	
Describer	5 1001		Describe:	
Average bank height 4 fe	tat		Forested	
Existing Floodplain Acce	SS	5	5 Opportunity for Ecological Lift	10
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved and sus	stained
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain	
Describe:			Describe:	
Infrequent access, some	section with access and so	ome with none	Lateral/Vertical stability, bedform, floodplain reconnection, Habitat	
			enhancement, riparian buffer planting	
Opportunity for Floodal	ain Develonment	10	DEase of Access	1
10 - Existing space for flo	odolain greater than 10 ti	imes stream width	10 - Yes (with existing direct vehicular access to potential site)	
5 - Existing space for floc	odplain 3 to 10 times strea	im width	5- ves (open but no existing vehicular access)	
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)	
Describe:			Describe:	
Greater than 10 times st	ream width, clearing need	led	No existing access, may be able to access at upstream extent	
	· •			
Drainage Area Evaluatio	n	5	Utilities Present	5
10 -D.A. less than 1 sq. m	ni.		10 - No utilities on site	
5- D. A. between 1 & 5 st	ą. mi.		5 - Utilities but not within restoration area	
I - D. A. greater than 5 s	q. mi.			
Describe:			Describe:	
1.85			Sewer crossing	
			Total Score out of 100	10
				48



Site Photos





	Str	eam Mitigation	Field Site Assessment Form	
		Pro	<u>oject Details</u>	
Project Name:	495/27	0	Mitigation Site Number:	SSS-160062b
Projects Estimated Strea	m Mitigation Needs (LF):	TBD		
	- / / /-		-	
Date of Field Assessment:	8/21/2019		Consultant Firm/Investigator(s):	CRI- MD/DS
0t	<u>Site</u>	Location Details	s-taken from desktop review	
County: Basin (HUC 8):	Prince George's	LTOSS ROads:	Park Central Ro	
Provimity to Impacted S	tream (mi).		Iat/Long:	38 988876 -76 895/01
	tream (min).	0.1		30.300070 70.033401
Dereel Size (ee):	726 5	-	Site Data	6,660
Site Opportunities:	/20.3		Potential Restoration Reach (LF):	0,009
Site Opportunities. Stream Order:	AChannel Restoration	Stream Hydrology	Perennial	
Drainage Area to Reach	(sa mi)	0.59		Stream Ose.
Land Use:	Greenbelt Park	0.55	Mapped Soils: Zekiah and Issue soils	
Property Address:	6565 Greenbelt Rd, Gree	nbelt MD 20770		
Property Owner(s):	National Park Service			
		General F	ield Observations	
Is there evidence that th	e stream has been distur	bed by some kind	Can the stream restoration be reasona	bly done within the confines of the
of human action, like gra	ading, dumping, livestock,	culvert, etc.?	parcel or does it require connections b	eyond the parcel limits? Explain
Explain:		-	Explain:	
Multiple culverts and roa	ad crossings, areas of rip ra	p armoring	Yes within NPS property. Overall highly incis	ed stream, many overland flow head cut,
			extend stream restoration up to you SHA rig	to be soil, split 160062A to be
			at confluence of 10062C	
		<u>Mitiga</u>	tion Site Rating	
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>
Estimated Bank erosion	within reach	10	Vegetation	1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
Greater than 50% for mo	ost of the reach. Site was e	xperiencing	Forested	
erosion for around 80% of	of banks			
Degree of Channel Incisi	on	5	Land Lise	1
10 - Bank Height greater	than 10 feet	5	10 - Agricultural or Open Space	
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested	
Describe:			Describe:	
Average bank height aro	und 6 feet with some area	s exceeding 10 feet	Forested	
		-		
Fuinting Flagshalain Arra				10
Existing Floodplain Acce	SS Af house flooding	5	Opportunity for Ecological Lift	10 of lift to be achieved and sustained
10 - No evidence of out of	bank flow)		10 - Conditions exist for several aspects	or lift to be achieved and sustained
1 - Ves (initequent out of	uent flooding)		1 - Conditions are such that Lift is difficu	ult to achieve and sustain
Describer	uent noounig)		1 - Conditions are such that Lift is diffee	
Describe:			Vertical/Lateral stability, bodform dive	rsity habitat onhancomont floodalain
			vertical/Lateral stability, bedronn diver	rsity, habitat enhancement, hoodplain
			access	
Opportunity for Floodpl	ain Development	10	Ease of Access	5
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular a	ccess to potential site)
5 - Existing space for floo	dplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular a	ccess)
1 - Little to no space for f	floodplain development		1 - No (no vehicular access, clearing nee	eded)
Describe:			Describe:	
Greater than 10 times st	ream width exists with tre	e clearing	Some areas of direct access via road an	d trail, clearing needed in most areas
		40		
Drainage Area Evaluatio	n N	10	10 No utilitios on site	1
$_{2}$ D.A. less than 1 sq. m	n. n mi		10 - NO UTITUES ON SITE	rea
$1 - D \Delta$ greater than 2 of	1 n mi		1 - Utilities within potential restoration	area
	4		Doscribo:	
0.59			Sewer utility throughout site parallels s	tream
			Toto	Score out of 100
			101d	1 JEDIE DUL DI 100 58







	Str	eam Mitigation	Field Site Assessment Form		
		Pro	<u>oject Details</u>		
Project Name:	495/27	0	Mitigation Site Number:	SSS-160062c	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD			
Data of Field Assessments	9/22/2010		Consultant Firm (Investigator(a))		
Date of Field Assessment:	8/22/2019	Location Datail	Consultant Firm/Investigator(s):	CRI- MD/DS	
County:	Brinco Goorgo's	Cross Boads	Konilworth A	o/Knowillo Dr	
County. Basin (HUC 8)	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit):	21/025	
Proximity to Impacted S	tream (mi.):	0.71	Lat/Long:	38,982327	-76,906283
· · · · · · · · · · · · · · · · · · ·			Sito Data		
Parcel Size (ac):	736 5	:	Potential Restoration Reach (LE):	889/	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	Rinarian Buffer Planting	Habitat Enhancement	Fish Passage
Stream Order:	xenamer restoration	Stream Hydrology:	Perennial	Stream Use:	
Drainage Area to Reach	(sq. mi.)	3.23		<u> </u>	
Land Use:	Greenbelt Park		Mapped Soils: Issue-Urban land comple	ex, and Zekiah and Issue so	ils
Property Address:	6565 Greenbelt Rd, Green	nbelt, MD 20770			
Property Owner(s):	National Park Service				
		General F	ield Observations		
Is there evidence that th	e stream has been distur	oed by some kind	Can the stream restoration be reasona	bly done within the confir	nes of the
of human action, like grading, dumping, livestock, culvert, etc.?			parcel or does it require connections b	eyond the parcel limits? E	xplain
Explain:		Explain:			
Multiple sewer crossings	, bank armoring, culverts		Yes within NPS property. Will need SHA	ROW in downstream sect	ion that
			parallels MD 201		
		B A ¹ 1 ¹			
Critoria		<u>IVIItiga</u>	tion Site Rating		Scoro
<u>Criteria</u>		<u>score</u>	<u>Criteria</u>		Score
Estimated Bank erosion	within reach	5	Vegetation		1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-snrub cover (non-weiland)		
Describe:	ing oracion		Describe:		
About 40% of site experie	encing erosion		Forested		
Degree of Channel Incisi	on	5	Land Use		1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Average bank height of 6	feet with some areas exce	eeding 15'	Forested		
Existing Floodalain Acces	22	10	Opportunity for Ecological Lift		10
10 - No evidence of out of	of hank flooding	10	10 - Conditions exist for several aspects	of lift to be achieved and	sustained
5-Yes (Infrequent out of	hank flow)		5 - Lift limited to one or few aspects		Sustanicu
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficu	ult to achieve and sustain	
Describe:			Describe:		
No evidence of floodnlai	n access		Vertical/lateral stability_bedform diverse	sity habitat enhancement	floodplain
				ing, habitat enhancement,	neeuplan
Opportunity for Floodpla	ain Development	5	Ease of Access		5
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular a	ccess to potential site)	
5 - Existing space for floo	dplain 3 to 10 times stream	n width	5- yes (open but no existing vehicular a	ccess)	
1 - Little to no space for f	floodplain development		1 - No (no vehicular access, clearing nee	eded)	
Describe:			Describe:		
3-10 times stream width	exists with tree impact		Access in some areas existing for Sewer	ROW and park road/ trails	s but clearing
			needed for most of site		
Ducing an Auge Fuchuatio		1			1
Drainage Area Evaluatio	n	1	10 No utilities on site		1
IU-D.A. less triain I sq. if	II. Nimi		5 Utilities but not within restoration a	roa	
$1 - D \Delta$ greater than 3 sc	1 n. mi		1 - Utilities within notential restoration	area	
Describer	4		Describer	area	
DA=3.23			Multiple sewer crossings instream and	line parallels stream	
			₹-4-	L Seara aut of 100	
			Iota	i score out of 100	44

<u>Map</u> SSS-160042 SSS-160062B SSS-160062D PG_00122 SSS-160063 SSS-160041 SSS-160062C SSS-160062A PG_00118 LEGEND n, (c) OpenStreetMap contributor C - Mitigation Site Boundary Site No. SSS-160062c Scale: 1 in. = 2000 ft

Site Photos





Page 2 of 3

Stream	n Mitigation	Field Site Assessment Form		
	Pro	oject Details		
Project Name: 495/270		Mitigation Site Number: SSS-160062D		
Projects Estimated Stream Mitigation Needs (LF):	TBD	-		
Date of Field Assessment: 8/22/2019		Consultant Firm/Investigator(s):		
Site Lo	cation Details	s-taken from desktop review		
County: Prince George's	Cross Roads:	Westchester Park Dr		
Basin (HUC 8): Middle Potomac-Anacostia-C	Dccoquan	MDE Watershed (8 digit): 214025		
Proximity to Impacted Stream (mi.):	0.89	Lat/Long: 38.98628	-76.903171	
	<u>e</u>	Site Data		
Parcel Size (ac): 726.5		Potential Restoration Reach (LF): 2423		
Site Opportunities:X_Channel Restoration	Livestock Exclusion	Riparian Buffer PlantingHabitat Enhancement	Fish Passage	
Stream Order: 1st Str	eam Hydrology:	Perennial Stream Use:		
Drainage Area to Keach (sq. ml.)	0.14	Manned Soils: Sassafras and Croom, and Zekiah and Issue soils		
Property Address: 6565 Greenbelt Rd. Greenbe	lt MD 20770	Mapped Jons. Sassanas and Croom, and Zekian and Issue sons		
Property Owner(s): National Park Service	10,1110 20770			
	General F	ield Observations		
Is there evidence that the stream has been disturbed	by some kind	Can the stream restoration be reasonably done within the confir	nes of the	
of human action, like grading, dumping, livestock, cu	lvert, etc?	parcel or does it require connections beyond the parcel limits? E	xplain	
Explain:		Explain:		
Multiple stormwater inputs and culvert at stream hear	d. Approx. 30'	Will need to extend upstream into Friends Community School property in	order to tie in	
of bank armoring		at stormwater facilities, Extend up to Winchester Park Dr to stabilize dow	nstream of	
		stormwater pipes		
Critoria	<u>Mitigat</u>	tion Site Rating	Scoro	
Estimated Bank crosion within reach	10	Vegetation	1	
10 - Greater than 50%	10	10 - Herbaceous cover (non-wetland)	1	
5 - 10% to 50%		5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%		1 - Mostly forested and/or wetland		
Describe:		Describe:		
About 85% eroded due to downcutting		Forested		
6				
	10	Lond Har		
Degree of Channel Incision	10	Land Use	1	
5 - Bank Height between 3 and 10 feet		5 - Marginal Pacture		
1 - Bank Height less than 3 feet		1 - Old field/ Developed/Forested		
Describe:		Describe		
Average bank height around 12', some lower banks ne	ar confluence	Forested		
с с <i>у</i>				
Existing Elondalain Access	10	Opportunity for Ecological Lift	5	
10 - No evidence of out of bank flooding	10	10 - Conditions exist for several aspects of lift to be achieved and	sustained	
5- Yes (Infrequent out of bank flow)		5 - Lift limited to one or few aspects	sustanteu	
1 - Yes (evidence of frequent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:		Describe:		
No evidence of floodplain access		Vertical/lateral stability, bedform diversity, floodplain access at do	ownstream	
		extent		
Opportunity for Floodplain Development	5	Ease of Access	5	
10 - Existing space for floodplain greater than 10 times	s stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site)		
1 - Little to no space for floodplain 5 to 10 times stream w	nath	1 - No (no vehicular access, clearing needed)		
		Describe:		
Existing space for about 3-10 times width		Roadway at top of site with potential access, otherwise clearing n	eeded	
		ļ		
Drainage Area Evaluation	10	Utilities Present	10	
10 -D.A. less than 1 sq. mi.		10 - No utilities on site		
5- D. A. between 1 & 3 sq. ml.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 Sq. Mi.		1 - Othities within potential restoration area		
DA=0.14 sq. mi.		No utility		

<u>Map</u>







	Stream Mitigation Field Site Assessment Form					
		Pro	oject Details			
Project Name:	I-495/I-270 Managed Lar	nes Study	Mitigation Site Number: SSS-160063			
Projects Estimated Stream	n Mitigation Needs (LF):	TBD	_			
Data of Field Associations	12/12/2010		Concultant Firm (Investigator(c))			
Date of Field Assessment:	12/13/2010	Location Dotails	consultant Finn, investigator(s). CRI/MD, DS			
County:	Prince George's	Cross Boads	Baltimore Ave & Campus Dr			
Basin (HUC 8):	Middle Potomac-Anacost	tia-Occoquan	MDE Watershed (8 digit): 02140205			
Proximity to Impacted S	tream (mi.):	1.7	Lat/Long: 38.986491 -76.93	30313		
	<i>x i</i>		Site Data			
Parcel Size (ac):	11 parcels - 20.0, 10 parc	els <0 5	Potential Restoration Reach (IF): 3 069			
Site Opportunities:	X Channel Restoration	Livestock Exclusion	Riparian Buffer Planting X Habitat Enhancement	ish Passage		
Stream Order:	4th	Stream Hydrology:	: Perennial Stream Use: I			
Drainage Area to Reach	(sq. mi.)	30.9				
Land Use:	Forest		Mapped Soils: Fallsington-Urban land co	omplex,		
Property Address:	East Parcel - 5051 Pierce	Avenu, College Park	, MD 20740 Codorus and Hatboro	soils		
Property Owner(s):	M-NCPPC, WSSC					
		<u>General F</u>	ield Observations			
Is there evidence that the	ne stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the confines	of the		
of human action, like gra	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limits? Expl	lain		
Explain:			Explain:			
Yes; Rip rap armoring in	several locations. Sewer c	rossing, pedestrian	No; Sections of stream parcel were not given access permission, but	would be		
bridges, and railroad cro	ssing present at downstre	am end of reach.	required if a restoration was done.			
		B 4:4:	tion City Dation			
Critoria		<u>iviitiga</u>	tion Site Kating	coro		
Criteria Estimate d Dank ana sian		Score	<u>Criteria</u>			
Estimated Bank erosion	within reach	5	vegetation	1		
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)			
5 - 10% (0 50% 1 - Less than 10%			1 - Mostly forested and/or wetland			
Describe						
Approximately 20% of ba	anks are eroded. Bank heid	tts were	Vegetation consists of mature deciduous trees within park land			
consistently high ranging	a from ~4 8 ft toll	Sinto were	vegetation consists of mature acciduous trees within park land.			
consistently high, ranging	g 110111 4-011. tall.					
Degree of Channel Incisi	ion	5	Land Lise	1		
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space			
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture			
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested			
Describe:			Describe:			
Banks range from ~4-8 ft	t. tall.		Site consists of high impervious developed watershed and park land			
			immediately adjacent to the stream reach.			
Evicting Eloodalain Acco	~	ς	Opportunity for Ecological Lift	10		
10 - No evidence of out of	af hank flooding	J	10 - Conditions exist for several aspects of lift to be achieved and sus	tained		
5-Yes (Infrequent out of	hank flow)		5 - Lift limited to one or few aspects	itanicu		
1 - Yes (evidence of frequence	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain			
Describe:			Describe:			
Limited low benches and	some evidence of deposi	tion at extremely	Potential for channel stabilization, floodplain reconnection, habitat			
high flows on top of eroo	ded banks.	·····	improvement, connection to restoration projects upstream and dow	nstream		
			of reach			
Opportunity for Floodpl	ain Development	10	Ease of Access	1		
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site)			
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)			
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)			
Describe:			Describe:			
Park land on left bank fo	r most of site, although m	any mature trees	Access present parallel to site with trails, but clearing is likely needed	d.		
present.						
Drainage Area Evaluatio	n	1	Utilities Present	1		
10 -D.A. less than 1 sq. m	ni.		10 - No utilities on site			
5- D. A. between 1 & 3 so	q. mi.		5 - Utilities but not within restoration area			
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area			
Describe:		-	Describe:			
Drainage area - 30.9 sour	are miles.		Sewer utility crossing and exposed pipe present downstream of pede	estrian		
<u> </u>			bridge on right bank. Overhead powerline present at pedestrian brid	lge.		
				<u>.</u>		
			Total Score out of 100	40		





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	oject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	SSS-160065	
Projects Estimated Stream	m Mitigation Needs (LF):	TBD	-		
	C 14 A 12040				
Date of Field Assessment:	6/14/2019	Line Deteile	Consultant Firm/Investigator(s):	CRI-SN/DS	
0t	Sile	Location Details	S-Taken from desktop review		
	Prince George s	Cross Roaus.	Zilu Ave allu i MDE Watarshed (8 digit):	anglewood Dr 02140205	
Dasin (noc o). Provimity to Impacted St	millule Potomac-Anacost	2.6		38 929105 -76,902346	
			Cite Data		
Darcal Size (ac):	1 narcels (38 3 0 9	· · · · · · · · · · · · · · · · · · ·	Detential Restoration Reach (LE):	1 00/	
Site Annortunities:	Y Channel Restoration	1, 40.0, 0.72	Y Rinarian Ruffer Planting	1,204 Y Hahitat Enhancement X Fish Passage	
Stream Order:		Stream Hydrology:	Perennial		
Drainage Area to Reach (sa. mi.)	0.54			
Land Use:	Forest, Open space		Mapped Soils:	Issue-Urban land complex; Codorus-	
Property Address:	5671 Tanglewood Dr, Riv	erdale, MD 20737		Hatboro-Urban land complex,	
Property Owner(s):	M-NCPPC		· · · · · · · · · · · · · · · · · · ·	frequently flooded	
		General F	ield Observations		
Is there evidence that the	e stream has been distur	oed by some kind	Can the stream restoration be reasona	bly done within the confines of the	
of human action, like gra	ding, dumping, livestock	, culvert, etc?	parcel or does it require connections b	eyond the parcel limits? Explain	
Explain:			Explain:		
Yes, evidence of straighte	ening around park, 2 cross	ings, site is very	Yes- within M-NCPPC property		
open, trash in stream					
		Mitiga	tion Cite Deting		
Criteria		Score	ICriteria	Score	
Ectimated Bank Prosion y	within roach	<u>50010</u>	Vegetation	<u> </u>	
10 Groater than 50%		. J	10 Horbacoous cover (non-wetland)	, ,	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Previoiusly downcut chan	inel with minor to modera	ate erosion	Mowed grass to top of stream bank, slo	opes and small buffer of herbaceous	
throughout			vegetation and invasives, few large tree	es scattered in the floodplain	
Degree of Channel Incisio	วท	5	Land Use	5	
10 - Bank Height greater t	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:	·····		Describe:		
Bank height averages app	roximately 4		Upstream section is mostly ope park wi	th a few trees, downstream section is	
			forested to the confluence with Northe	ast Branch	
Existing Floodplain Acces	iS	10	Opportunity for Ecological Lift	5	
10 - No evidence of out o	f bank flooding		10 - Conditions exist for several aspects	s of lift to be achieved and sustained	
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequ	ent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
Channel does not have ac	cess to the floodplain		Vertical stability, latral stability, habitat	enhancement, riparian butter	
			enhancement		
Opportunity for Floodpla	in Develonment	10	Face of Access	10	
10 - Existing space for floo	odolain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular a	access to potential site)	
5 - Existing space for floor	dplain 3 to 10 times strea	m width	5- ves (open but no existing vehicular a	ccess)	
1 - Little to no space for f	loodplain development		1 - No (no vehicular access, clearing nee	eded)	
Describe:	· · · · · · · · · · · · · · · · · · ·		Describe:		
Space exists fo expansive	floodplaindownstream of	f the footbridge	Parking lot access for much of the poter	ntial site	
			-		
Drainage Area Evaluation	1 ·	10	Utilities Present	1	
10 -D.A. less than 1 sq. m	i.		10 - No utilities on site		
5- D. A. between 1 & 5 sq	. mi.		5 - Utilities but not within restoration at	rea	
1 - D. A. greater than 3 sq	. mi.		1 - Otilities within potential restoration	area	
Describe:			Describe:		
Less than 1 sqmi			Sewer crossing (fishblockage) at downs	tream section	
			₹-4-		
			lota	1 SCOLE OUT OF TOO 66	





Page 2 of 3

	Str	eam Mitigation	Field Site Assessment Form	
		Pro	<u>pject Details</u>	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	SSS-160066
Projects Estimated Strea	m Mitigation Needs (LF):	TBD	_	
Data of Field Assessments	6/14/2010		Consultant Firm (Investigator(c))	
Date of Field Assessment:	6/14/2019	Location Datail	consultant Firm/investigator(s):	CRI-SIN/DS
County:	Prince George's	Cross Roads	· 2nd Ave and	Tanglewood Dr
Basin (HUC 8):	Middle Potomac-Ana	costia-Occoquan	MDE Watershed (8 digit):	02140205
Proximity to Impacted St	tream (mi.):	2.6	Lat/Long:	38.955864 -76.926032
			Site Data	
Parcel Size (ac):	38.3		Potential Restoration Reach (LF):	: 1,552
Site Opportunities:	XChannel Restoration	Livestock Exclusion	nRiparian Buffer Planting	Habitat EnhancementFish Passage
Stream Order:	1st	Stream Hydrology	Perennial	Stream Use:
Drainage Area to Reach	(sq. mi.)	0.08		-
Land Use:	Forest, Open space		Mapped Soils:	_Issue-Urban land complex, occasionally
Property Address:	5671 Tanglewood Dr, Riv	erdale, MD 20737		_flooded
Property Owner(s):	IVI-INCPPC			
la those ovidence that th	o stroom has been distur	<u>General I</u>	Field Observations	ably done within the confines of the
s there evidence that the stream has been disturbed by some kind			Can the stream restoration be reason	ably done within the confines of the
of numan action, like grading, dumping, livestock, culvert, etc?			parcel or does it require connections	beyond the parcel limits? Explain
-Xplain: Vec. leaks to be straightened (ditched, originates at an outfoll		Explain:		
res, looks to be straighte	ned/ditched, originates a	an outrail	Yes- within M-NCPPC property	
		Mitiga	tion Site Rating	
Criteria		Score	ICriteria	Score
Estimated Bank erosion	within reach		Vegetation	5
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
20% actively eroding, his	torical downcutting and d	itching	Mostly mowed grass with ocassional t	rees, limited herbaceous and shrub
			buffer	
Degree of Channel Insisi				
10 Bank Hoight groater	than 10 foot		10 Agricultural or Open Space	5
5 - Bank Height hetween	3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested	
Describe:			Describe:	
Approximately 5-6' in the	e upper section and 3-4' in	the lower section	Mostly open park with a few trees	
,				
Evisting Electrolein Acces		10	On northwrith: fan Faalaniaal Lift	
Existing Floodplain Acces	ss of bank flooding	10	10 Conditions exist for several aspect	C of lift to be achieved and sustained
5- Ves (Infrequent out of	hank flow)		5 - Lift limited to one or few aspects	is of fire to be achieved and sustained
1 - Yes (evidence of frequ	ient flooding)		1 - Conditions are such that Lift is diffi	cult to achieve and sustain
Describe [.]			Describe:	
No existing floodplain ac	Cess		Vertical stability, lateral stability, flood	Iplain access, habitat enhancement
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Opportunity for Floodpla	ain Development	10	Ease of Access	10
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular	access to potential site)
5 - Existing space for floo	dplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular	access)
1 - Little to no space for f	loodplain development		1 - No (no vehicular access, clearing ne	eded)
Describe:			Describe:	· · ·
Sape exists for ten times	the stream width		Access form the park parking lot or ad	Jacent roadway
Drainage Area Evaluation	n	10	Utilities Present	10
10 -D.A. less than 1 sa. m	i.		10 - No utilities on site	
5- D. A. between 1 & 3 so	ą. mi.		5 - Utilities but not within restoration	area
1 - D. A. greater than 3 so	ą. mi.		1 - Utilities within potential restoration	n area
Describe:			Describe:	
Less than 1 sami			No utilities visible	
			Tota	al Score out of 100 75



Site Photos



	Str	eam Mitigation	Field Site Assessment Form
		Pro	oject Details
Project Name: I-495/I-2	270 Managed Lan	es Study	Mitigation Site Number: SSS-160068
Projects Estimated Stream Mitig	ation Needs (LF):	TBD	
	6/11/2010		Consultant Firm (Investigator(a))
Date of Field Assessment:	6/11/2019	Location Dotail	Consultant Firm/investigator(s): CRI-CN, SJ
County: Brinco G	Soorgo's	<u>LOCATION Details</u>	Polandor St/22nd Placo
Basin (HUC 8): Mide	dle Potomac-Ana	ciuss Ruaus.	MDF Watershed (8 digit): 2140205
Proximity to Impacted Stream (m	ni.):	1.3	Lat/Long: 38.997809 -76.967345
			Site Data
Parcel Size (ac):	43.2	2	Potential Restoration Reach (LF): 663
Site Opportunities: X Cha	annel Restoration	Livestock Exclusion	Riparian Buffer Planting X Habitat Enhancement Fish Passage
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use: IV
Drainage Area to Reach (sq. mi.)		0.25	
Land Use: Forest, M	Medium Density F	Residential	Mapped Soils: Manor loam
Property Address: Main Pa	rcel: 2405 Tecum	seh St, Adelphi, MD	0 20783
Property Owner(s): Marylan	id National Capita	il Park & Planning C	ommission
		General F	ield Observations
Is there evidence that the stream	i has been disturi	bed by some kind	Can the stream restoration be reasonably done within the confines of the
of human action, like grading, du	imping, livestock,	, culvert, etc?	parcel or does it require connections beyond the parcel limits? Explain
Explain:			Explain:
Yes, riprap dumped in stream, pipe outfall into stream		eam	res, can be done within parcel
		Mitiga	tion Site Rating
Criteria		Score	Criteria Score
Estimated Bank erosion within re	each	10	Vegetation 1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)
1 - Less than 10%			1 - Mostly forested and/or wetland
Describe:			Describe:
Severe erosion on outer meander	rbends throughou	it reach, stream	Mature forest w/ thick understory
very sinuous			
Degree of Channel Insision		F	Land Lisa 1
10 - Bank Height greater than 101	foot	5	10 - Agricultural or Open Space
5 - Bank Height between 3 and 10) feet		5 - Marginal Pasture
1 - Bank Height less than 3 feet			1 - Old field/ Developed/Forested
Describe:			Describe:
6-7' eroded banks			Mature forest
Evicting Floodploip Access		10	Opportunity for Ecological Lift
Existing Floodplain Access	ooding	10	10 Conditions exist for several aspects of lift to be achieved and sustained
5- Yes (Infrequent out of bank flow	w)		5 - Lift limited to one or few aspects
1 - Yes (evidence of frequent floor	ding)		1 - Conditions are such that Lift is difficult to achieve and sustain
Describe:			Describe
Stream verv incised, no evidence	of FP access		FP connection, lateral stability, habitat availability, flow diversity
			······································
Opportunity for Floodplain Deve	lopment	10	Ease of Access 1
10 - Existing space for floodplain g	greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site)
5 - Existing space for floodplain 3	to 10 times stream	m width	5- yes (open but no existing vehicular access)
1 - Little to no space for floodplair	n development		1 - No (no venicular access, clearing needed)
Describe:	6		Describe:
Plenty of room but would require	e forest impacts		Forested, no existing access
Drainage Area Evaluation	I	10	Utilities Present 5
10 -D.A. less than 1 sq. mi.		-	10 - No utilities on site
5- D. A. between 1 & 3 sq. mi.			5 - Utilities but not within restoration area
1 - D. A. greater than 3 sq. mi.			1 - Utilities within potential restoration area
Describe:			Describe:
0.25 sq mi			Sewer present on LB
			l
			Total Score out of 100 63





Stream Mitigation Field Site Assessment Form					
		Pro	oject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: SSS-160070		
Projects Estimated Strea	m Mitigation Needs (LF):	TBD			
Data of Field Assessments	12/12/2010		Consultant Firm (Investigator(c))		
Date of Field Assessment.	12/13/2018 Site	Location Details	staken from deskton review		
County:	Prince George's	Cross Roads:	Carrollton Pky & Lamont Dr		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoguan	MDE Watershed (8 digit): 02140205		
Proximity to Impacted	Stream (mi.):	0.1	Lat/Long: 38.969981	-76.878142	
			Site Data		
Parcel Size (ac):	N/A, completely within R	ow	Potential Restoration Reach (LF): 4,332		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer PlantingHabitat Enhancement	Fish Passage	
Stream Order:	4th	Stream Hydrology:	Perennial Stream Use:	I	
Drainage Area to Reach	(sq. mi.)	10.5			
Land Use:	Medium Density Residen	tial, Institutional	Mapped Soils: Issue-Urban lar	id complex	
Property Address: Property Owner(s):	SHA (Completely within F	(SVIIIE, IVID 20784			
	Shirt (completely within t	Conoral E	ield Observations		
Is there evidence that t	he stream has been distur	bed by some kind	ICan the stream restoration be reasonably done within the co	onfines of the	
of human action. like g	rading, dumping, livestock	. culvert. etc?	parcel or does it require connections beyond the parcel limit	s? Explain	
Explain:	,		Explain:		
Yes; Site is confined by r	roads on both sides. Stream	n has been	Yes; Site is within the confines of top roads.		
historically straightened	1.				
, ,					
- ·· ·		Mitigat	tion Site Rating		
<u>Criteria</u>		Score	<u>Criteria</u>	Score	
Estimated Bank erosion	ı within reach	10	Vegetation	10	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% 10 50% 1 - Less than 10%			5 - Scrub-Strub cover (non-wetland)		
Describe:					
Approximately 65% of b	anks are eroded. Banks are	highly incised in	Vegetation consists of mostly mowed grass with some trees a	long banks	
several areas with heigh	its ranging from ~2-6 ft. tal	I.	(specifically downstream end).		
several areas with heigh		•			
Degree of Channel Incis	ion	5	Land Use	1	
10 - Bank Height greater	r than 10 feet		10 - Agricultural or Open Space	_	
5 - Bank Height betweer	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Average bank height is ^	°4 ft. tall.		Land use is developed, stream is located between two resider	ntial roads.	
Existing Floodplain Acce	ess	5	Opportunity for Ecological Lift	5	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5- Yes (Infrequent out o	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sust	ain	
Describe:			Describe:		
Some fine sediment dep	osits and rack lines observ	ed in a few areas	Potential to increase geomorphic stability, treat stormwater i	nputs to slow	
along benches.			release.		
Opportunity for Eloodo	lain Davalanmant	5	Ease of Access	10	
10 - Existing space for fl	oodplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site	10	
5 - Existing space for flo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)	,	
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Floodplain is limited by	two roadways, thus highly	confined. Possible	Roadways are present parallel to site, areas marked for possil	ole stockpiles.	
to develop floodplain ~3	3-5 times stream width.				
Drainage Area Evaluatio	on	5	Utilities Present	1	
10 -D.A. less than 1 sq. r	ni.	<u>.</u>	10 - No utilities on site		
5- D. A. between 1 & 3 s	sq. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	sq. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
Drainage area - 1.05 squ	Jare miles.		Few overhead line crossings present, possible sewer crossings	š.	
				_	
			Total Score out of 100	57	





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	oject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: S	SSS-160075	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD	_		
		C /11 /2010			
Date of Field Assessment:	Sito	6/11/2019	consultant Firm/investigator(s):	CRI - CN, SJ	
County:	Brinco Goorgo's	Cross Poads	East Wost Hww/W Par	k Dr/Highviow Torraco	
County. Basin (HUC 8):	Middle Potomac-Anar	cross Rodus.	MDE Watersbed (8 digit):	21/0205	
Proximity to Impacted St	tream (mi.):	2.5	Lat/Long:	38.972272	-76.964481
,		-	Site Data		
Parcel Size (ac):	2 Parcels: 6	081	Potential Restoration Reach (LE):	4 806	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	X Riparian Buffer Planting	X Habitat Enhancement	Fish Passage
Stream Order:	4th	Stream Hydrology	Perennial	Stream Use: IV	
Drainage Area to Reach	(sq. mi.)	35.1			
Land Use:	Forest		Mapped Soils:	Codorus and Hatboro soils	
Property Address:	Main Parcel: 7601 W Park	Dr, Adelphi, MD 2	0783		
Property Owner(s):	Maryland National Capita	I Park & Planning C	ommission		
		<u>General F</u>	ield Observations		.
Is there evidence that th	e stream has been disturb	bed by some kind	Can the stream restoration be reasonal	bly done within the confir	nes of the
of human action, like gra	iding, dumping, livestock,	culvert, etc?	parcel or does it require connections be	eyond the parcel limits? E	xplain
Explain:			Explain:		
Yes, bank armoring in sor	me places, bridge at DS en	d	Yes, but might be close at development	along Highview Terrace	
		Mitiga	tion Site Pating		
Criteria		Score	ICriteria		Score
Estimated Bank erosion	within reach	5	Vegetation		1
10 - Greater than 50%	Within reach	5	10 - Herbaceous cover (non-wetland)		1
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Mostly stable, some stre	tches of high-very high erc	sion and vertical	Mostly mature forest, some areas lackin	ng buffer (along Highview 1	Terrace)
banks					
					4
Degree of Channel Incision	on them 10 feat	5	Land Use		1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:	51000		Describe:		
US half of site more incis	ed and overwidened. Som	e benches. Few	Mostly forested, some development add	iacent to stream	
signs of FP access. DS hal	f of site has lower FP. mor	e signs of FP	,,,,		
access, better benches a	nd bars				
Existing Floodplain Acces	ss	5	Opportunity for Ecological Lift		5
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspects	of lift to be achieved and	sustained
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		sustanted
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficu	Ilt to achieve and sustain	
Describe:			Describe:		
More frequent FP access	at DS end of site than US	end	Bank stabilization, habitat, FP access, flo	ow diversity, geomorph	
Opportunity for Floodpla	ain Development	5	Ease of Access		5
10 - Existing space for flo	odplain greater than 10 til	mes stream width	10 - Yes (with <u>existing</u> direct venicular at	ccess to potential site)	
1 - Little to no snace for f	floodnlain develonment		1 - No (no vehicular access clearing nee	ided)	
Describe:			Describe:	acuj	
Changes throughout read	ch depending on developm	nent/vallev walls.	Access from park without extensive fore	est impacts	
but some snace to recon	nect to FP				
Drainage Area Evaluatio	n	1	Utilities Present		5
10 -D.A. less than 1 sq. m	ıi.		10 - No utilities on site		
5- D. A. between 1 & 3 sc	μ. mi.		5 - Utilities but not within restoration ar	еа	
I - D. A. greater than 3 so	μ . mi.		1 - Utilities within potential restoration	area	
Describe:			Describe:		
35.1 sq mi			Sewer along RB, 1 utility crossing at app	roximate mid point of read	ch
			L		
			<u>Total</u>	Score out of 100	38





<u>Map</u>

	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: SSS-160081		
Projects Estimated Strear	m Mitigation Needs (LF):	TBD	-		
Date of Field Assessment:	12/14/2018		Consultant Firm/Investigator(s): CRI/MD. DS		
	Site	Location Details	s-taken from desktop review		
County:	Prince George's	Cross Roads:	Metzerott Rd & Riggs Rd		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 02140205		
Proximity to Impacted S	Stream (mi.):	0.85	Lat/Long: 39.002885	-76.975103	
		<u>.</u>	Site Data		
Parcel Size (ac):	2 parcels - 21.1, 5.7		Potential Restoration Reach (LF): 973		
Site Opportunities:	<u>X</u> Channel Restoration	Livestock Exclusion	Correspondent Contraction Buffer PlantingXHabitat Enhancement	Fish Passage	
Stream Order: Drainage Area to Reach	(sa mi)	0 92	Stream Use: 1	V	
Land Use:	Institutional, Forest	0.52	Mapped Soils: Codorus and Hat	thoro soils	
Property Address:	Main Parcel - 8910 Riggs	Road, Hyattsville, N	ID 20783		
Property Owner(s):	Board of Education, 1811	Metzerott Rd LLC			
		General F	ield Observations		
Is there evidence that the	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the co	nfines of the	
of human action, like gr	ading, dumping, livestock,	culvert, etc?	parcel or does it require connections beyond the parcel limits	s? Explain	
Explain:		<u> </u>	Explain:		
Yes; Lots of discarded co	oncrete located downstreal	m of road and	Yes; Access permitted.		
bridge apron. Remnants	of old dam in reach.				
		Mitiga	tion Site Rating		
Criteria		Score	Criteria	Score	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Approximately 15% of ba	anks are eroded, primarily	near the upstream	Mature deciduous trees present adjacent to stream.		
end of site.					
Dograp of Channel Incisi	ion	5	Land Lise	1	
10 - Bank Height greater	than 10 feet	5	10 - Agricultural or Open Space	I	
5 - Bank Height between	and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Bank heights range from	n ~3-10 ft. tall with an avera	age of ~5 ft. tall.	Land use is developed/residential.		
Existing Floodplain Acce	255	10	Opportunity for Ecological Lift	5	
10 - No evidence of out	of bank flooding	-	10 - Conditions exist for several aspects of lift to be achieved a	and sustained	
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:	· • · · · · · ·		Describe:		
No evidence of out of ba	ank flooding, despite down	stream bank height	Potential exists for habitat enhancement and increasing geom	orphic stability.	
being lower.					
Opportunity for Eloodal	ain Develonment	5	Fase of Access	1	
10 - Existing space for flo	podplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site)	i	
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Confined stream valley is	s present, especially upstre	eam, but potential	No access road present. Lots of clearing would be required or	possible lane	
to develop floodplain ex	ists.		closure needed as site is a steep valley.		
Drainage Area Evaluatio	on	10	Utilities Present	1	
10 -D.A. less than 1 sq. n	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area		
Describe:					
Drainage area - 0.92 squ	are mile.		Sewer crossing stream (exposed) with sewer parallel to stream	i for much of	
			reach.		
			Page 1 of 3 I Otal Score out of 100	44	





	Stre	eam Mitigation F	Field Site Assessment Form			
		Pro	ject Details			
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number:	MO_00013A		
Projects Estimated Stre	eam Mitigation Needs (LF):	TBD	-			
			-			
Date of Field Assessment:	: 11/20/2018		Consultant Firm/Investigator(s):	RK&K/KJH,	, BDM	
	Site	Location Details	-taken from desktop review			
County:	Montgomery	Cross Roads:	Woodfield	Rd. & Watkins Rd.		
Basin (HUC 8):	Middle Potomac-Catoctin	E A	MDE Watershed (8 digit):	021402	77 1975 2066	
Proximity to impacted	Stream (mi.):	0.4		39.23201509	-//.18/53000	
		<u>S</u>	<u>lite Data</u>			
Parcel Size (ac):	2 parcels - 42.01, 24.44		Potential Restoration Reach (LF):	2,934		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	XRiparian Buffer Planting	X_Habitat Enhancement	X_Fish Passage	
Stream Order:	2nd	Stream Hydrology:	Perennial	- Stream Use:		
Drainage Area to Reach	n (sq. mi.)	3.48	Manuard Caller	Listhans silt lasm		
Land Use: Proporty Addross:	Agriculture		Mapped Solis:	Hatboro silt loam		
Property Address. Property Owner(s):	Maryland National Capita	Park & Planning Co	ommission			
Troperty owner(s):						
le there evidence that t	ho stroom has been disturb	General Fi	leid Observations	anably dana within the	confines of the	
is there evidence that t		lea by some kind of		Shabiy uone within the	ite 2 Fundain	
numan action, like grad	aing, dumping, livestock, cu	ivert, etc? Explain	parcel or does it require connection	is beyond the parcel lim	its? Explain	
Explain:	d of site one stine field blocks	- Africt during	Explain:			
Culvert at upstream end	d of site creating fish blocka	ge - 1 foot drop.	Restoration and access is feasible wi	ithin 2 M-NCPPC parcels		
		Mitigat	ion Sito Poting			
Criteria		Score	ICriteria		Score	
Estimated Bank erosion	n within roach	<u>50010</u>	Vegetation		10	
10 Croater than FOW	h within reach	5	10 Horbassous source/non-wetland	1/	10	
10 - Greater than 50%			5 - Scrub shrub cover (non-wetland)	1) N		
1 - 10% 10 - 50%			1 - Mostly forested and/or wetland			
Describer			Describe:			
Moderate to sovere ere	sion on outside banks. Poor	l capary grass	Describe. Site dominated by read capary grass	with scattored black w	lout troos	
	Sion on outside ballks. Reet	i Callal y glass	Site dominated by reed canaly grass	WITH SCALLEFED DIACK WA	iniut trees.	
stabilizing some areas.	Freeze thaw evident. Tortur	ous meanders.				
Degree of Channel Incis	sion	5	Land Use		5	
10 - Bank Height greate	er than 10 feet		10 - Agricultural or Open Space			
5 - Bank Height betwee	n 3 and 10 feet		5 - Marginal Pasture			
1 - Bank Height less tha	n 3 feet		1 - Old field/ Developed/Forested			
Describe:			Describe:			
3-4 foot tall banks			Located in Lower Magruder Branch	Located in Lower Magruder Branch Park. Site dominated by reed canary grass		
			with scattered black walnut trees. P	rovides limited habitat.		
Existing Floodalain Acc	220	5	Opportunity for Ecological Lift	-	10	
10 - No evidence of out	of bank flooding	5	10 - Conditions exist for several aspe	ects of lift to be achieved	and sustained	
5- Yes (Infrequent out o	of bank flow)		5 - Lift limited to one or few aspects			
1 - Yes (evidence of free	quent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain			
Describe:			Describe:			
Some evidence of out-c	of-bank flows in floodplain n	ear channel-	High potential for reducing erosion.	improving instream hab	itat, floodplain	
matted down yeg			connection wetland creation/enhancement & improving water quality			
mattea aown veg.			connection, wettand creation, enhal	icement & improving we	iter quanty.	
Opportunity for Flood	plain Development	10	Ease of Access		5	
10 - Existing space for f	loodplain greater than 10 tir	nes stream width	10 - Yes (with existing direct vehicula	ar access to potential sit	e)	
5 - Existing space for flo	odplain 3 to 10 times strear	n width	5- yes (open but no existing vehicula	ar access)		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing	needed)		
Describe:			Describe:			
Broad, flat floodplain greater than 10 times stream width.		No existing access into site from Wa	tkins Road. Majority of s	ite is open field		
			dominated by reed canary grass.		·	
			, ,,,,			
Drainage Area Evaluati	on	1	Utilities Present		5	
10 -D.A. less than 1 sq.	mi.		10 - No utilities on site			
5- D. A. between 1 & 3 sq. mi.			5 - Utilities but not within restoration area			
1 - D. A. greater than 3	sq. mi.		1 - Utilities within potential restoration area			
Describe: D			Describe:			
Drainage area - 3.48 so	uare miles.		Powerlines along Watkins Rd. just no	orth of site.		
				tal Score out of 100	61	



Site Photos



Stream Mitigation Field Site Assessment Form						
Project Details						
Project Name:	I-495/I-270 Manage	ed Lanes Study	Mitigation Site Number: MO_00013B			
Projects Estimated Stre	am Mitigation Needs (LF)	TBD	-			
Date of Field Assessment:	11/20/2018		Consultant Firm/Investigator(s): RK&K/KJH	I. BDM		
	Site	Location Details	s-taken from desktop review	.,		
County:	Montgomery	Cross Roads:	Woodfield Rd. & Watkins Rd.			
Basin (HUC 8):	Middle Potomac-Catoctin	้า	MDE Watershed (8 digit): 021402	208		
Proximity to Impacted S	Stream (mi.):	6.4	Lat/Long: 39.23579123	-77.18752835		
			Site Data			
Parcel Size (ac):	2 Parcels - 24.7, 16.3		Potential Restoration Reach (LF): 1,053	_		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	XRiparian Buffer PlantingX_Habitat Enhancement	X_Fish Passage		
Stream Order: Drainage Area to Beach	2nd	Stream Hydrology:	Perennial Stream Use:	l		
Land Use:	Forest & Agriculture	5.55	Mapped Soils: Hatboro silt loam			
Property Address:	0-0000 Watkins Rd.					
Property Owner(s):	Maryland National Capita	al Park & Planning C	ommission			
		General F	ield Observations			
Is there evidence that t	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the c	onfines of the		
of human action, like gr	rading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limi	ts? Explain		
Explain:			Explain:			
Culvert at downstream	end of site is creating fish b	olockage - 1 foot	Restoration and access is feasible within 2 M-NCPPC parcels.			
drop.						
		Mitiga	tion Site Bating			
Criteria		Score	Criteria	Score		
Estimated Bank erosion	within reach	5	Vegetation	10		
10 - Greater than 50%		-	10 - Herbaceous cover (non-wetland)			
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)			
1 - Less than 10%			1 - Mostly forested and/or wetland			
Describe:			Describe:			
Moderate bank erosion	throughout most of site. R	eed canary grass	Site dominated by reed canary grass with scattered red mapl	e & black willow		
stabilizing some areas.			trees.			
Degree of Channel Incid	ion	Г	Land Lise			
10 - Bank Height greater	r than 10 feet	5	10 - Agricultural or Open Space	5		
5 - Bank Height betweer	n 3 and 10 feet		5 - Marginal Pasture			
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested			
Describe:			Describe:			
2-4 foot tall banks			Located in Lower Magruder Branch Park. Site dominated by r	eed canary grass		
			with scattered red maple & black willow trees. Provides limit	ed habitat.		
Existing Floodplain Acce	ess	5	Opportunity for Ecological Lift	10		
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved and sustained			
5- Yes (Infrequent out o	f bank flow)		5 - Lift limited to one or few aspects			
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain			
Describe:			Describe:			
Some evidence of out-o	t-bank flows in floodplain r	hear channel-	High potential for reducing erosion, improving instream habit	tat, floodplain		
matted down veg.			connection, wetland creation/enhancement & improving wa	ter quality.		
Opportunity for Floodn	lain Develonment	10	Fase of Arcess	5		
10 - Existing space for flo	oodplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site	2) 2)		
5 - Existing space for flo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)	,		
1 - Little to no space for floodplain development			1 - No (no vehicular access, clearing needed)			
Describe:			Describe:			
Broad, flat floodplain greater than 10 times stream width.			No existing access into site from Watkins Road. Majority of si	te is open field		
			dominated by reed canary grass.			
Droinago Area Evoluati		1	Litilities Dresent	10		
10 -D A less than 1 sq. r	ni	1	10 - No utilities on site	10		
5- D. A. between 1 & 3 s	 a. mi.		5 - Utilities but not within restoration area			
1 - D. A. greater than 3 sq. mi.			1 - Utilities within potential restoration area			
Describe:			Describe:			
Drainage area - 3.35 square miles. No utilities observed within or adjacent to site.						
<u> </u>						
			Total Score out of 100	66		
				00		





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	oject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: MO_00018		
Projects Estimated Strea	m Mitigation Needs (LF)	TBD	_		
Date of Field Assessment:	11/8/2018		Consultant Firm/Investigator(s): RK&K/KIH_DB		
bute of field Assessment.	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Falls Road & Falls Bridge Lane		
Basin (HUC 8):	Middle Potomac-Catoctin		MDE Watershed (8 digit): 2140202		
Proximity to Impacted S	tream (mi.):	3.0	Lat/Long: 39.01127779	-77.21091459	
		(Site Data		
Parcel Size (ac):	4 parcels - 6.4, 6.4, 3.4, 5.	6	Potential Restoration Reach (LF):3,723		
Site Opportunities:	X_Channel Restoration	Livestock Exclusion	XRiparian Buffer PlantingX_Habitat Enhancement	_XFish Passage	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:		
Drainage Area to Reach	(sq. mi.)	1.13	Mannad Sails:	2 parcent clanes	
Lanu Use. Property Address	Falls Bridge Lane 0-0000		Hatboro sin loani, o to	s percent slopes	
Property Owner(s):	Maryland National Capita	l Park & Planning C	ommission		
	.,	General F	ield Observations		
Is there evidence that th	e stream has been disturl	bed by some kind	Can the stream restoration be reasonably done within the co	onfines of the	
of human action. like gra	ading, dumping, livestock,	, culvert. etc?	parcel or does it require connections beyond the parcel limit	ts? Explain	
Explain:	,		Explain:	•	
Sewer crossing and old b	oridge foundation within st	ream at northern	Restoration is feasible within 4 M-NCPPC parcels.		
end of site. Bank just ups	stream of Logan Dr. has be	en stabilized with			
boulders.					
		Mitiga	tion Site Rating		
<u>Criteria</u>		Score	Criteria	<u>Score</u>	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Minor to moderate bank	erosion. Low bank erosior	n at downstream	Entire site consists of mid-successional tulip poplar forest. Sev	veral PFO	
end of site. Bank erosion	increases at upstream end	d.	wetlands east of stream.		
		_			
Degree of Channel Incisi	on	5	Land Use	1	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 reet		5 - Marginal Pasture		
1 - Balik Height less than	3 feet				
Describe:			Describe:	a park land	
Daliks ale 1-5 it. tall.			Site consists of find-successional tunp popular forest located of	i park lanu.	
Existing Floodplain Acce	SS	5	Opportunity for Ecological Lift	10	
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5-Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sust	ain	
Describe:			Describe:		
Floodplain is broad and f	lat. Some segments appea	r to be connected	Potential in reducing bank erosion, improving floodplain conn	lection, providing	
to floodplain with minor	evidence of out of bank flo	ows.	fish passage, and improving fish/benthic habitat.		
Opportunity for Eloodal	ain Dovelonment	5	Ease of Access	5	
10 - Existing space for flo	and Development	mes stream width	10 - Yes (with existing direct vehicular access to notential site)		
5 - Existing space for floo	dolain 3 to 10 times stream	n width	5- ves (open but no existing vehicular access)	/	
1 - Little to no space for floodplain development			1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Floodplain is broad and flat. Floodplain development is limited in			Potential access through old sewer line clearing east of stream	n. Some tree	
some segments by adjacent landowners and valley slopes.			clearing would likely be required to access stream.		
	,				
Drainage Area Evaluatio	n	5	Utilities Present	1	
10 -D.A. less than 1 sq. m	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 sq. mi.		5 - Utilities but not within restoration area			
1 - D. A. greater than 3 sq. mi.			1 - Utilities within potential restoration area		
Describe:			Describe:		
Drainage area is 1.13 sq.	Drainage area is 1.13 sq. mi. Sewer line runs parallel to stream in eastern floodplain.				
			Total Score out of 100	43	



Site Photos



	Str	eam Mitigation	Field Site Assessment Form		
		Pro	oject Details		
Project Name: I-495/I-270 Managed Lanes Study			Mitigation Site Number: MO-00037		
Projects Estimated Stream Mitigation Needs (LF): TBD					
			Course the set Firms (Income this set of (a)) CDI (MAD, CA)		
Date of Field Assessment:	11/19/2018	Leastion Dataile	Consultant Firm/Investigator(s): CRI/MD, CN		
Country	Mantgomory	Location Details	S-TAKEN TROM DESKTOP REVIEW		
Basin (HUC 8)	Middle Potomac-Catoctir	Cross Rodus.	MDE Watershed (8 digit): 21/0207		
Proximity to Impacted S	Stream (mi.):	0	Lat/Long: 38.985373	3 -77.151998	
· · · · · · · · · · · · · · · · · · ·		-	Site Data		
Parcel Size (ac):	6 narcels - 4 8 6 0 5 8 4	7 2 1 0 4	Dite Data Potential Restoration Reach (LE): 4.033)	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	X Riparian Buffer Planting X Habitat Enhancemen	t Fish Passage	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use	:	
Drainage Area to Reach	(sq. mi.)	4.3			
Land Use:	Low Density Residential, Institutiona	I, Transportation	Mapped Soils: Baile silt loam, Co	odorus silt loam	
Property Address:	Middle Parcel - Royal Dor	minion Court, Bethe	sda, MD 20817		
Property Owner(s):	Maryland National Capita	al Park & Planning C	ommission		
		General F	ield Observations		
Is there evidence that the	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the	confines of the	
of human action, like gr	ading, dumping, livestock,	, culvert, etc?	parcel or does it require connections beyond the parcel lim	its? Explain	
Explain:			Explain:		
Yes; Culverts present at	upstream and downstream	n ends, previous	Yes; Well within M-NCPPC property.		
restoration throughout r	reach.				
		N A ! ! ! : . . .	tion City Dating		
Critoria		<u>iviitiga</u>	tion Site Rating	Scoro	
Criteria Estimated Dank anacien	ithin we ch	Score	Criteria	<u>3001e</u>	
Estimated Bank erosion	within reach	5	vegetation	Ţ	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% 10 50% 1 - Lecc than 10%			1 - Mostly forested and/or wetland		
Describe			Describe:		
Approximately 25% of ba	anks eroded ranging from	2-9 ft /6 ft	Mostly forested on both sides of stream.		
Approximately 2070 0. 2.		5-511. (511.	Mostly forested on beth sides of stream.		
averagej.					
Degree of Channel Incisi	ion	5	Land Use	1	
10 - Bank Height greater	than 10 feet	5	10 - Agricultural or Open Space	-	
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Banks are ~3-8 ft. tall. Av	verage bank height is ~5 ft.		Forested land use in immediate vicinity, residential land use	adjacent to	
			property.		
Fuisting Flagdulain Asso		E	One outwrite for Foological Life	10	
Existing Floodplain Acce	ess of bank flooding	5	Opportunity for Ecological Lift	10 and sustained	
5- Yes (Infrequent out of	f hank flow)		5 - Lift limited to one or few aspects	and sustained	
1 - Yes (evidence of frequence)	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:	aent 1100an.8)		Describe		
Inset floodplain in some	areas of the incised chann	el. evidence of	Increase bank stability, provide low benches for storm relief	. increase available	
flows on top of low benc	⁻ hes		habitat increase vegetative cover in areas	,	
Opportunity for Floodpl	ain Development	5	Ease of Access	10	
10 - Existing space for flo	oodplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site	e)	
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development			1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Area exists to narrow flows and provide inset floodplain benches.			Access paths from previous restoration can be used, off of C	abin John Parkway	
			and off of Helmsdale Road.		
Drainage Area Evaluatio	on	1	Utilities Present	1	
10 -D.A. less than 1 sq. n	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
Drainage area - 4.3 squa	Drainage area - 4.3 square miles. Exposed manholes along streambank; One observed crossing exposed.				
·					
			Total Score out of 100	44	





Stream Mitigation Field Site Assessment Form					
		Pro	oject Details		
Project Name: I-495/I-270 Managed Lanes Study			Mitigation Site Number: MO_00047A		
Projects Estimated Stream Mitigation Needs (LF): TBD					
D . (
Date of Field Assessment:	11/8/2018 Sito	Location Dotails	taken from deskton review		
County:	Montgomery	Cross Boads:	Clopper Rd. & Allspice Dr.		
Basin (HUC 8):	Middle Potomac-Catoctir		MDE Watershed (8 digit): 0214	0208	
Proximity to Impacted S	Stream (mi.):	2.36	Lat/Long: 39.1585305	5 -77.26036442	
			Site Data		
Parcel Size (ac):	2 Parcels - 9.8. 28.8	-	Potential Restoration Reach (LF): 3.13	1	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	n X Riparian Buffer Planting X Habitat Enhanceme	nt X Fish Passage	
Stream Order:	2nd	Stream Hydrology:	: Perennial Stream Use	e:	
Drainage Area to Reach	ı (sq. mi.)	2.92			
Land Use:	Forest & Institutional		Mapped Soils: Hatboro silt loam		
Property Address:	Main Parcel - 0-000 Clopp	per Rd.			
Property Owner(s):	Maryland National Capita	al Park & Planning C	ommission		
		General F	ield Observations		
Is there evidence that t	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the	confines of the	
of human action, like gr	ading, dumping, livestock,	, culvert, etc?	parcel or does it require connections beyond the parcel lir	nits? Explain	
Explain:			Explain:		
Old riprap bank stabiliza	ition near foot bridge. Railr	oad	Restoration is feasible within 2 M-NCPPC parcels.		
crossing/culvert at upstr	ream end of site.				
		Mitigot	tion Site Pating		
Criteria		Score	ICriteria	Score	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%	within reach	5	10 - Herbaceous cover (non-wetland)	1	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Moderate bank erosion	throughout most of site.		Majority of site is surrounded by mid-successional forest or	PEM/PSS wetlands.	
Degree of Channel Incis	ion	5	Land Use	1	
10 - Bank Height greater	r than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height betweer	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less thar	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Banks are ~3 -5 foot tall			Stream is surrounded by mid-successional forest or PEM/PS	S wetlands located	
			on park land.		
Existing Floodplain Acce	ess	5	Opportunity for Ecological Lift	5	
10 - No evidence of out	of bank flooding	-	10 - Conditions exist for several aspects of lift to be achieve	d and sustained	
5- Yes (Infrequent out o	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	juent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
Some evidence of matte	ed down vegetation near to	p of bank.	Some opportunity for sediment reduction, wetland creation	n/enhancement,	
			riparian plantings, aquatic habitat improvements, and fish p	bassage.	
				_	
Opportunity for Floodp	lain Development	5	Ease of Access	10	
10 - Existing space for flo	oodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential si	te)	
5 - Existing space for floodplain 3 to 10 times stream width			5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development			1 - NO (NO VENICULAR ACCESS, Clearing needed)		
Describe. Electricitation development limited in costain procedure to edicate the sub-			Describe.		
recreation areas and parking lots			Existing access route from sewer line repairs.		
recreation areas and pai	rking lots.				
Drainago Aroa Evaluatio	on	5	Litilities Present	1	
10 -D A less than 1 car	ni	5	10 - No utilities on site		
5- D. A. between 1 & 3 c	 a. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. mi.			1 - Utilities within potential restoration area		
			Describe		
Drainago Aroa - 2.02 square miles			Sewer line runs narallel to stream in wostorn floodnlain		
Siamage Area - 2.32 Sqt	zure miles.		sewer mie runs paraner to stream in western noouplain.		
			Total Score out of 10	0 42	





Stream Mitigation Field Site Assessment Form					
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Land	es Study	Mitigation Site Number:	MO_00047B	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD	-		
	44 44 6 12 0 4 0				
Date of Field Assessment:	11/16/2018		Consultant Firm/Investigator(s):	RK&K/KJH, DB	
Country	Site	e Location Details	-taken from desktop review		
County: Basin (HUC 8):	Middle Detemac Catestin	Cross Roads:	Clopper Rd. & Allspice Dr.	02140209	
Provimity to Impacted St	tream (mi):	2 36	Intervalershed (8 digit):	39 15113494	-77 26403347
	ireann (nni.).	2.50	ite Date	55.15115454	77.20403347
Darcal Siza (ac):		1 411 20	Dite Data	E 222	
Site Opportunities:	V Channel Bastaration	1,411.39	Potential Restoration Reach (LF):	J,232	V. Fish Dessage
Stream Order	2nd	Stream Hydrology	ANiparian burier Flanting	Stream Lise	A_FISH Fassage
Drainage Area to Reach	(sa. mi.)	4 35		-	<u> </u>
Land Use:	Forest		Mapped Soils:	Hatboro silt loam	
Property Address:	11900 Clopper Rd.				
Property Owner(s):	Maryland Department of	Natural Resources			
		General F	ield Observations		
Is there evidence that th	e stream has been disturb	ed by some kind of	Can the stream restoration be reason	ably done within the co	nfines of the
human action, like gradi	ng, dumping, livestock, cu	lvert, etc? Explain	parcel or does it require connections l	peyond the parcel limits	s? Explain
Explain:			Explain:		
Sewer encroaches into st	ream in several locations.	Bank stabilization	Restoration is feasible within DNR parc	el - Strider Wildlife Mar	nagement Area.
(riprap) is evident in one	area to protect the sewer	line.			
		Mitigat	ion Site Rating		
Criteria		Score	Criteria		Score
Estimated Bank erosion	within reach	5	Vegetation		1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%					
Describe:			Describe: Majority of cito is currounded by mid successional fleedulain forest. Unstream		
Some Dank sections are s	admized with vegetation,	while others have	inajonity of site is suffounded by mid-s	uccessional noouplain in	brest. Opstream
moderale erosion.			end of site has extensive PEIVI/PSS wet	Idrius.	
Degree of Channel Incisio	on	5	Land Lise		1
10 - Bank Height greater	than 10 feet	5	10 - Agricultural or Open Space		1
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
3-5' tall vertical banks.			Majority of site is surrounded by mid-s	uccessional floodplain f	orest located on
			parkland. Upstream end of site has ext	ensive PEM/PSS wetlan	ds.
Evisting Floodulain Acces		-	One entruite for Foological Life		F
Existing Floodplain Acces	55 Shank flooding	5	Opportunity for Ecological Lift	a of lift to be achieved a	C D
5. Vos (Infroquent out of	hank flow)		10 - Conditions exist for several aspects of lift to be achieved and sustained		
1 - Yes (evidence of frequ	ient flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:					
Some wrack lines observe	ed in floodplain near top o	f hank	Some potential for reducing erosion and improving aquatic habitat and		
		, burne	floodplain connection		
Opportunity for Floodpla	ain Development	5	Ease of Access		5
10 - Existing space for flo	odplain greater than 10 tin	nes stream width	10 - Yes (with <u>existing</u> direct vehicular a	access to potential site)	
5 - Existing space for floo	dplain 3 to 10 times stream	n width	5- yes (open but no existing vehicular a	access)	
1 - Little to no space for floodplain development			1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Floodplain development in center and downstream sections of site are		Existing sewer line access for northern section of site. Center and downstream			
limited by adjacent neighborhoods and valley slopes. Some floodplain s			sections would require tree clearing.		
development potential at	t upstream end of site.				
Drainage Area Evaluation	n	1	Utilities Present		1
10 -D.A. less than 1 sg. m	ii.		10 - No utilities on site		<u>.</u>
5- D. A. between 1 & 3 sq. mi. 5 - Utilities but not within restoration area					
1 - D. A. greater than 3 sc	ą. mi		1 - Utilities within potential restoration area		
Describe:			Describe:		
Drainage area - 4.35 squa	are miles		Sewer line runs parallel to stream in w	estern floodplain.	
			Tot	al Score out of 100	34




	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	ed Lanes Study	Mitigation Site Number:	MO_00048	
Projects Estimated Strea	am Mitigation Needs (LF)	TBD	-		
Data of Field Assessments	11/20/2019		Consultant Firm (Investigator(a))		
Date of Field Assessment:	11/20/2018 Site	Location Dotail	consultant Firm/investigator(s):	RK&K/KJH, BDIVI	
County:	Montgomory	<u>LOCATION Details</u>	Game Proserve Rd & 1 270		
Basin (HUC 8):	Middle Potomac-Catoctir		MDF Watershed (8 digit):	02140208	
Proximity to Impacted S	Stream (mi.):	1.89	Lat/Long:	39.15680585	-77.23925466
.,	()		Site Data		
Parcel Size (ac):	213 5	<u>:</u>	Potential Restoration Reach (LE):	1 489	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	- Riparian Buffer Planting	Habitat Enhancement	Fish Passage
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	115111 u55uge
Drainage Area to Reach	(sq. mi.)	0.0002			
Land Use:	Forest		Mapped Soils:	Hatboro silt loam	
Property Address:	11131 Game Preserve Ro	, Gaithersburg 2087	8-0000		
Property Owner(s):	Maryland Department of	Natural Resources			
		General F	ield Observations		
Is there evidence that the	ne stream has been distur	bed by some kind	Can the stream restoration be reason	ably done within the co	nfines of the
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections	beyond the parcel limits	? Explain
Explain:			Explain:		
Rip-rap slope/bank stabi	lization next to roadway.		Restoration access is feasible within M	DNR property. Upstream	n segment on
			private properties has been removed f	irom site.	
		<u>Mitiga</u>	tion Site Rating		_
Criteria		Score	Criteria		Score
Estimated Bank erosion	within reach	1	Vegetation		1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Majority of site has mind	or erosion. Localized areas	with moderate to	Site is surrounded by high quality, mid	-successional forest.	
severe erosion.					
		F		r	
Degree of Channel Incisi	ion uther 10 feet	5	Land Use		1
10 - Bank Height greater	than 10 feet		10 - Agricultural of Open Space		
5 - Bank Height between 1 Bank Height loss than	a foot		5 - Marginal Pasture		
Describer	151661		Describe:		
3-8 foot tall banks that a	re mostly stable		Site consists of high quality mid-succe	ssional forest in Seneca	Creek State Park
	ine mostry stable.		Site consists of high quality, find succe	ssional forest in serieda	creek state i ark.
Existing Floodplain Acce	ess	5	Opportunity for Ecological Lift		1
10 - No evidence of out of	of bank flooding		10 - Conditions exist for several aspect	s of lift to be achieved a	nd sustained
5-Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is diffic	cult to achieve and sustain	in
Describe:			Describe:		
Incised channel. Some of	ut-of-bank flows is evident	at top of bank.	Limited potential for improving instrea	im habitat , reducing ero	sion and
			floodplain development. Existing instre	eam habitat is good. Mos	st of site has
Our entry it. for the educ	- in Development	1	minor erosion and floodplain is restrict	ted by steep/narrow vall	<u>ev.</u>
Opportunity for Floodpl	ain Development	L mas stroom width	Ease of Access	accoss to notontial site)	T
5 Existing space for floo	odulain 2 to 10 timos stroa	mwidth	5 yos (open but no existing vehicular		
1 - Little to no snace for	floodnlain develonment		1 - No (no vehicular access clearing ne	veded)	
Describe:			Pescribe:	.cucu,	
Steen/narrow forested y	alley and adjacent roadwa	v limit notential for	Forest clearing would be required for t	the majority of the site	
floodalain development	Bedrock outcrons observ	ad in floodnlain	rorest cleaning would be required for t	ine majority of the site.	
Ducine and Auge Fuelwetic		10	Litilities Dresent	r	F
Drainage Area Evaluatio	201	TÜ	10 No utilities on site		Э
5 - D A between 1 8.2 c	ni. a mi		5 - Itilities but not within restaration	area	
$1 - D \Delta$ greater than $2 c$	η α mi		1 - Utilities within potential restoration	n area	
	۲· ·'''·		Describe:		
				anth of -!+-	
Drainage area - 0.0002 s	quare miles.		Gas line and overnead powerlines just	South of Site.	
				10	
			Tota	al Score out of 100	31



Site Photos



Stream Mitigation Field Site Assessment Form				
	<u>Pro</u>	bject Details		
Project Name: I-495/I-270 Managed L	anes Study	Mitigation Site Number: MO_00050		
Projects Estimated Stream Mitigation Needs (L	F):TBD	-		
Data of Field Association 11/8/2018				
Site of Field Assessment. 11/0/2010	e Location Detail	s-taken from deskton review		
County: Montgomery	Cross Roads	River Rd. & Lake Potomac Dr.		
Basin (HUC 8): Middle Potomac-Catoc	tin	MDE Watershed (8 digit): 0214020)2	
Proximity to Impacted Stream (mi.):	6.06	Lat/Long: 39.04313403	-77.25399448	
		Site Data		
Parcel Size (ac): 3 Parcels - 1.1	4, 3.84, 6.26	Potential Restoration Reach (LF): 923		
Site Opportunities:X_Channel Restoration	Livestock Exclusion	XRiparian Buffer PlantingX_Habitat Enhancement	Fish Passage	
Stream Order: 3rd	Stream Hydrology:	Perennial Stream Use: 1		
Drainage Area to Reach (sq. mi.)	16.6		h	
Land Use: Forest	ko Potomac Dr	Mapped Solis: Codorus silt loam & Hat	boro silt loam	
Property Owner(s): Main Parcel - 0-0000 La	ital Park & Planning C	Commission & Montgomery County		
	General F	Field Observations		
Is there evidence that the stream has been dist	urbed by some kind	ICan the stream restoration be reasonably done within the co	nfines of the	
of human action, like grading, dumping, livesto	ck. culvert. etc?	parcel or does it require connections beyond the parcel limits	? Explain	
Explain:	, ca, c.c.	Explain:		
Bank armoring is evident just downstream of poy	werlines.	Restoration is feasible within two M-NCPPC parcels and one M	ontgomery	
		County parcel.		
	Mitigo	tion Site Dating		
Criteria	Score	ICriteria	Score	
Estimated Bank erosion within reach	1	Vegetation	1	
10 - Greater than 50%	1	10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%		5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%		1 - Mostly forested and/or wetland		
Describe		Describe:		
Majority of banks are stabilized with vegetation	& bedrock. Section	Majority of site is surrounded by mid-successional forest. Large	PEM wetland &	
downstream of powerlines has been stabilized w	ith rip-rap.	recent tree plantings just west of Lake Potomac Dr.		
Degree of Channel Incision	5	Land Use	1	
10 - Bank Height greater than 10 feet	Ū	10 - Agricultural or Open Space		
5 - Bank Height between 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than 3 feet		1 - Old field/ Developed/Forested		
Describe:		Describe:		
Banks are 6-8 ft. tall, but appear mostly stable.		Majority of site is surrounded by mid-successional forest on Pa	rk land. Open	
		field under powerlines & PEM wetland just west of Lake Potomac Dr.		
Existing Floodplain Access	5	Opportunity for Ecological Lift	1	
10 - No evidence of out of bank flooding		10 - Conditions exist for several aspects of lift to be achieved as	nd sustained	
5- Yes (Infrequent out of bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequent flooding)		1 - Conditions are such that Lift is difficult to achieve and susta	in	
Describe:		Describe:		
Some evidence of matted down vegetation at to	p of banks.	Majority of banks appear stable. Large stream with existing aqu	uatic habitat.	
		Limited opportunity for floodplain development due to utilities	and valley	
		slope. Short segment on public property.		
Opportunity for Floodplain Development	1	Ease of Access	10	
10 - Existing space for floodplain greater than 10	times stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site)		
5 - Existing space for floodplain 3 to 10 times stre	eam width	5- yes (open but no existing venicular access)		
		1 - No (no veniculai access, clearing needed)		
Describe: Elegendelain development limited due to utilities a	nd vallov clono	Describe:	Accoss passas	
noouplain development innited due to utilities a	na vancy slope.	through DEM wetland	. Access passes	
Drainage Area Evaluation	1	Litilities Procent	1	
10 -D A less than 1 sq mi	1	10 - No utilities on site	L	
		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. mi.		1 - Utilities within potential restoration area		
Describe:		Describe:		
Drainage area - 16.6 square miles		Overhead powerlines and underground gas lines at downstroat	m and of site	
Brande area 10.0 square miles.		Likely sewer line along stream, however no manholes were ob	arved	
		Likely server fine along scream, however no mannoles were obs		
		Total Score out of 100	27	





	Str	eam Mitigation	Field Site Assessment Form	
		Pro	oject Details	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MO-00051	
Projects Estimated Stream	n Mitigation Needs (LF):	TBD		
	11/10/0010		Consultant Firm (Investigate data -	
Date of Field Assessment:	11/16/2018	Location Dataila	Consultant Firm/Investigator(s): CRI/MD, SJ	
Country	Montgomony	Location Details	S-TAKEN TROM GESKTOP REVIEW	
County: Basin (HUC 8)	Middle Potomac-Catoctic	Cross Roads:	MDE Watershed (8 digit): 21/0202	
Proximity to Impacted S	tream (mi.):	2.3	Lat/Long: 38.974004	-77.102571
,		(Site Data	
Parcel Size (ac):	8 narcels - 32 1 39 4 0 3 0	≤ 3 0 3 0 3 0 4 0 5	Potential Restoration Reach (LE): 2 160	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	X Riparian Buffer Planting Habitat Enhancement	Fish Passage
Stream Order:	 1st	Stream Hydrology:	Perennial Stream Use: 1	
Drainage Area to Reach	(sq. mi.)	0.48		
Land Use:	Forest		Mapped Soils: Glenelg-Urban land cor	nplex, Gaila silt
Property Address:	Main Parcel - Little Falls F	arkway, Bethesda, I	MD 20814 loam	•
Property Owner(s):	Maryland National Capita	al Park & Planning Co	ommission & Mo. County RO	
		General F	ield Observations	
Is there evidence that the	ie stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the con	ifines of the
of human action, like gra	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limits	? Explain
Explain:			Explain:	
Yes, rip-rap placed down	stream of culvert at the to	op of the study	Site located on M-NCPPC parkland & Mo. County ROW. Can acc	ess directly
reach. Riffle grade contro	ol and other grade control	structures	from Little Falls Parkway.	
observed near trail cross	ing at downstream end			
		<u>Mitigat</u>	tion Site Rating	
<u>Criteria</u>		<u>Score</u>	Criteria	<u>Score</u>
Estimated Bank erosion	within reach	5	Vegetation	1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
Approximately 30% of ba	anks are eroded.		Mowed lawn present on left bank for 2/3 of reach; inadequate	buffer.
Degree of Channel Incisi	on	5	Land Use	1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space	
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less than Describe:	3 leet		1 - Old Held/ Developed/Forested	
Banks are ~2 E ft tall			Earost graater than 100 ft on right bank left bank is developed	(recidential
Baliks ale 5-5 It. tall.			Polest greater than 100 ft. of fight bank, left bank is developed	/iesidential.
Existing Floodplain Acce	SS	5	Opportunity for Ecological Lift	5
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved an	id sustained
5-Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of frequence of frequence)	Jent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain Described	n
Describe:				
Areas of low bank storm	relief.		Upstream section is highly developed, constrained on left bank	by road,
			channel elevation controlled upstream/downstream by culverts	s, possible
Onnortunity for Floodal	ain Davalanmant	5	floodplain reconnection.	5
10 Existing space for flo	am Development	mos stroom width	Lase of Access	J
5 - Existing space for floo	udplain 3 to 10 times strea	m width	5- ves (open but no existing vehicular access)	
1 - Little to no space for	floodolain development		1 - No (no vehicular access clearing needed)	
Describe:			Describe:	
2/3 of stream can be acc	essed with tree impacts. T	op 1/3 constrained	Mapped out potential access from previous work from Little Fal	lls Pkwv.
by valley and road. Poter	ntial exists to make low he	nches		
by valley and road. Poter		nones.		
	-	10		1
Urainage Area Evaluatio	n	10	Utilities Present	1
10 - D.A. less than 1 sq. m	II. n mi		10 - NO UTITIES ON SITE	
J = D. A. Delweell I & 3 S(1 = D A greater than 2 $c_{\rm e}$	4 a mi		1 - Utilities within notential restoration area	
Describe:	1			
	ara mila		Describe:	
Drainage area - 0.48 squ	are mile.		Runs parallel to stream. Possible crossings.	
			Total Score out of 100	43





	Str	eam Mitigation	Field Site Assessment Form	
		Pro	bject Details	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MO_00060	
Projects Estimated Stream	n Mitigation Needs (LF):	TBD	-	
Date of Field Assessment:	2/25/2019		Consultant Firm/Investigator(s): CRI/DS_IG_LE	
Date of field Assessment.	Site	Location Details	s-taken from deskton review	
County:	Montgomery	Cross Roads:	victory Farm Dr. & Belle Grove Rd.	
Basin (HUC 8):	Middle Potomac-Catoctir	1	MDE Watershed (8 digit): 02140208	
Proximity to Impacted S	tream (mi.):	1.57	Lat/Long: 39.14979	94 -77.184313
			Site Data	
Parcel Size (ac):	2 parcels - 5.3, 27.9		Potential Restoration Reach (LF): 1,93	34
Site Opportunities:	XChannel Restoration	Livestock Exclusion	XRiparian Buffer PlantingXHabitat Enhanceme	ent
Stream Order:	1st	Stream Hydrology:	Perennial Stream Us	e:
Drainage Area to Reach	(sq. mi.) Modium Donsity Posidon	0.78 tial Forest	Mannad Saila	
Land Use: Property Address	Main Parcel - Victory Far	nal, Foresi ns Drive Gaithersh	Hatboro	silt loam
Property Owner(s):	City of Gaithersburg	ns brive, Gaithersb		
	, 0	General F	ield Observations	
Is there evidence that th	ne stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the	e confines of the
of human action, like gra	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel lin	mits? Explain
Explain:			Explain:	
Yes; Culverts, stream cro	ssing present.		Yes; Can be done within parcel, City of Gaithersburg land/p	oark.
Critoria		<u>Mitiga</u>	tion Site Rating	Scoro
Criteria Estimated Bank areaion	within roach	<u>3001e</u>	Vegetation	<u>3core</u>
10 Greater than 50%	within reach	5	Vegetation	5
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
Approximately 40-50% o	of banks are eroded, more	frequent further	Left bank consists of sparse planted trees with wetland and	d constructed
downstream in reach.			wetland ponds. Right bank small riparian forest, one wetland	nd with mostly
			shrub cover.	
Degree of Channel Incisi	ion	5	Land Use	1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space	-
5 - Bank Height between	a 3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested	
Describe:			Describe:	
Banks are ~4-5 ft. tall on	average, but range from 2	2-6 ft.	Small riparian forest development within site. Open trail (p	aved) lined with
			shrubs.	
Existing Floodplain Acce	:SS	5	Opportunity for Ecological Lift	5
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	ed and sustained
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of frequence of frequence)	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and si	Jstain
Describe:	low in areas where channy	l is loss incised	Describe:	Loustainad
		er is less incised.	Hydraulics, hydrology, geomorphic int can be achieved and	sustameu.
Opportunity for Floodpl	ain Development	5	Ease of Access	10
10 - Existing space for flo	podplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential s	ite)
5 - Existing space for floc	odplain 3 to 10 times stream	m width	5- yes (open but no existing vehicular access)	
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)	
Describe:			Describe:	
Most existing space alon	g right bank, limited by sev	wer utility and	Clearing needed in some areas, existing paved path paralle	ls stream for entire
wetland on left bank.			reach.	
Drainage Area Evaluatio	n	10	Utilities Present	1
10 -D.A. less than 1 sq. m	ni		10 - No utilities on site	
5- D. A. between 1 & 3 so	q. mi.		5 - Utilities but not within restoration area	
I - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area	
Describe:				
Drainage area - 0.78 squ	are mile.		Sewer parallel to site, potential crossing.	
			Total Score out of 10	0 52





Stream Mitigation Field Site Assessment Form				
		Pro	pject Details	
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: MO 00063	
Projects Estimated Strean	n Mitigation Needs (LF):	TBD		
-	• • •		_	
Date of Field Assessment:	11/16/2018		Consultant Firm/Investigator(s): RK&K/KJH	<i>,</i> DB
	Site	Location Details	s-taken from desktop review	
County:	Montgomery	Cross Roads:	: Morning Light Ter. & Morning Light Ct.	
Basin (HUC 8):	Middle Potoma	c-Catoctin	MDE Watershed (8 digit): 0214020)8
Proximity to Impacted Str	eam (mi.):	2.64	Lat/Long: 39.13487705	-77.26027051
		(Site Data	
Parcel Size (ac):	1 411 3	<u>.</u>	Potential Restoration Reach (IF): 2 240	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	Pinarian Ruffer Planting X Habitat Enhancement	Y Eich Dassage
Stream Order:		Stream Hydrology	· Nparian burier Flancing nabitat Enhancement	AFISH Fassage
Drainage Area to Reach (0.16		
Land Lice.	Forest	0.10	Manned Soils: Brinklow blocktown cha	annery silt loam
Property Address	FUIESL	;	11900 Clopper Pd	siniery site ioani
Property Owner(s)		Maryland De	nartment of Natural Resources	
Property Owner(s).				
		General F	Field Observations	6 6 1
Is there evidence that the	stream has been disturb	ed by some kind	Can the stream restoration be reasonably done within the co	nfines of the
of human action, like grac	ling, dumping, livestock,	culvert, etc?	parcel or does it require connections beyond the parcel limits	? Explain
Explain:			Explain:	
No direct evidence of hum	nan impacts to stream, ho	owever the site	Restoration and access is feasible within MDNR parcel.	
originates at a wet stormw	vater pond			
onginates at a wet storm				
		Mitiga	tion Site Rating	
Criteria		Score	ICriteria	Score
Estimated Bank erosion w	vithin reach	10	Vegetation	1
10 Croater than 50%		10	10 Herbassous sour (non-wetland)	L
			10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%			5 - Scrup-snrup cover (non-wettand)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:			Describe:	
Moderate to severe erosic	on throughout most of sit	e. Torturous	Entire site surrounded by mid-successional good quality forest	. Potential
meanders & meander brea	akthroughs.		specimen tree impacts along channel. No wetlands observed.	
Degree of Channel Incisio	~	5	Land Lico	1
10 Ponk Hoight groater th	ll han 10 faat	J	10 Arrigultural or Open Space	±
10 - Balik Height between 2			10 - Agricultural of Open Space	
5 - Bank Height between 5	and to reet		5 - Marginai Pasture	
1 - Bank Height less than 5	feet		1 - Old field/ Developed/Forested	
Describe:			Describe:	
Banks are 3-10 feet tall.			Entire site surrounded by mid-successional good quality forest	in Seneca Creek
			State Park. Potential specimen tree impacts along channel.	
Fuisting Floodulain Assoc			One ontenity for Foological Life	10
Existing Floodplain Access) head flooding	5	Opportunity for Ecological Lift	UL De di su stalina d
10 - No evidence of out of	bank flooding		10 - Conditions exist for several aspects of lift to be achieved a	nd sustained
5- Yes (Infrequent out of b	ank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of freque	ent flooding)		1 - Conditions are such that Lift is difficult to achieve and susta	in
Describe:			Describe:	
Some evidence of out-of-b	bank flow in localized area	as.	Good potential for reducing erosion, improving instream habit	at, and providing
			fish passage.	
Opportunity for Floodplai	in Development	5	Ease of Access	10
10 - Existing space for floo	dplain greater than 10 tir	mes stream width	10 - Yes (with existing direct vehicular access to potential site)	
5 - Existing space for flood	Iplain 3 to 10 times strear	n width	5- ves (open but no existing vehicular access)	
1 - Little to no space for flo	oodplain development		1 - No (no vehicular access, clearing needed)	
Some opportunity for floo	dalain development, hov	vever sections of	Existing sewer line access for majority of site. Northern section	may require
			Existing sewer line access for majority of site. Northern section	inay require
the site are limited by the	narrow/steep valley and	sewerine	some scrub/snrub clearing.	
constraints.				
Drainage Area Evaluation		10	Utilities Present	1
10 -D.A. less than 1 sq. mi.			10 - No utilities on site	
5- D. A. between 1 & 3 sg.	mi.		5 - Utilities but not within restoration area	
1 - D. A. greater than 3 sq.	. mi.		1 - Utilities within potential restoration area	
Describe.			Describe:	
Drainage Area - 0.78 squai	re miles		Sewer line runs parallel to stream along northern hillslope.	
			Total Score out of 100	58











	Stream Mitigation Field Site Assessment Form				
		Pro	oject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	MO_00064	
Projects Estimated Strea	am Mitigation Needs (LF)	TBD	_		
Data of Field Assessments	11/16/2019		Concultant Firm (Investigator(c))	סק חוא/איא	
Date of Field Assessment:	11/10/2010 Sito	Location Detail	s-taken from deskton review	rrary rjn, Db	
County:	Montgomery	Cross Roads	Bradbury Dr. & Suffolk Terrace		
Basin (HUC 8):	Middle Potomac-Catoctir		MDE Watershed (8 digit):	02140208	
Proximity to Impacted S	Stream (mi.):	2.64	Lat/Long:	39.13030063	-77.25646132
	· ·	1	Site Data		
Parcel Size (ac):	3 parcels - 1.411.3, 16.3 8	2 9.3	Potential Restoration Reach (LF):	6.945	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	Riparian Buffer Planting	X Habitat Enhancement	Fish Passage
Stream Order:	2nd	Stream Hydrology	Perennial	Stream Use:	
Drainage Area to Reach	(sq. mi.)	1.05			
Land Use:	Fores	t	Mapped Soils:	Codorus silt loam & Bai	ile silt loam
Property Address:	Main Parcel - 11900 Clop	per Rd.	-		
Property Owner(s):	Maryland Department of	Natural Resources	& Maryland National Capital Park & Pla	nning Commission	
		<u>General F</u>	ield Observations		
Is there evidence that t	he stream has been distur	bed by some kind	Can the stream restoration be reason	ably done within the co	onfines of the
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections	beyond the parcel limit	s? Explain
Explain:			Explain:		
Several sewer crossings.	Instream stormwater stru	cture just	Restoration is feasible within one MDN	IR parcel and two M-M(CPC parcels.
upstream along trib that flows into site mainstem. Footbridge					
crossing at northern end	d of site.				
		<u>Mitiga</u>	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	Criteria		<u>Score</u>
Estimated Bank erosion	within reach	10	Vegetation		1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Moderate to severe ban	k erosion throughout site.	Torturous	Site is dominated by mid-successional	tulip poplar forest. Cour	ple of scattered
meanders.			PFO wetlands in northern floodplain.		
Degree of Channel Incis	ion	5	Land Use		1
10 - Bank Height greater	r than 10 feet		10 - Agricultural or Open Space	Ł	
5 - Bank Height betweer	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Banks are 3-6 feet tall.			Majority of site is dominated by mid-se	uccessional tulip poplar	forest located in
			Seneca Creek State Park & Quince Orc	hard Valley Park.	
Existing Eloodalain Acce	266	5	Opportunity for Ecological Lift	ī	10
10 - No evidence of out	of hank flooding	5	10 - Conditions exist for several aspect	s of lift to be achieved a	and sustained
5- Yes (Infrequent out of	f hank flow)		5 - Lift limited to one or few aspects	.3 OF INT TO DE ACINEVEU A	ina sastamea
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
Minor evidence of out-o	f-hank flows near top of h	ank	Good potential for reducing erosion in	ostream habitat improve	ements and
			improving downstream floodplain acco		inches, and
					10
Opportunity for Floodp	lain Development	5	Ease of Access		10
10 - Existing space for fig	bodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct venicular	access to potential site)	
5 - Existing space for floo	floodplain 3 to 10 times strea	m width	5- yes (open but no existing venicular a	access)	
			1 - NO (NO VENICULAI ACCESS, Clearing he	eueu)	
Describe:	d by parrow (steep valley 1	Detential for	Describe:	mast of site May requir	o cloaring como
	u by narrow/steep valley.			most of site. May requir	e clearing some
floodplain access improv	vements in downstream se	ction where	smaller trees and stream crossings.		
tioodplain is wider and v	alley is less steep.				
Drainage Area Evaluatio	on	5	Utilities Present		1
10 -D.A. less than 1 sq. r	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration a	area	
1 - D. A. greater than 3 s	iq. mi.		1 - Utilities within potential restoration	1 area	
Describe:			Describe:		
Drainage area - 1.05 squ	are miles.		Sewer line runs parallel to stream and	crosses the stream in a	couple locations.
			Manhole observed in center of channe	<u></u>	
			- Tota	al Score out of 100	52
			100		55



Site Photos



	Stream Mitigation Field Site Assessment Form				
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: MPOC0003		
Projects Estimated Stre	am Mitigation Needs (LF):	TBD	-		
Date of Field Assessment:	4/23/2019		Consultant Firm/Investigator(s): RK&K/KIH, DB		
	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Game Preserve Road and Frederick Road		
Basin (HUC 8):	Middle Potomac-Catoctin	I	MDE Watershed (8 digit): 020700)08	
Proximity to Impacted S	Stream (mi.):	2.03	Lat/Long: 39.163101	-77.229916	
		9	<u>Site Data</u>		
Parcel Size (ac):	83		Potential Restoration Reach (LF): 207		
Site Opportunities:	X_Channel Restoration	Livestock Exclusion	XRiparian Buffer PlantingHabitat Enhancement	Fish Passage	
Stream Order: Drainage Area to Reach	(sq. mi)	Stream Hydrology:	Perennial Stream Use:	1	
Land Use:	Parkland (Forested)	<1 1	Mapped Soils: 16D. 17C. 54A		
Property Address:	Game Preserve Road, Gai	thersburg, MD			
Property Owner(s):	State of MD DNR				
		<u>General F</u>	ield Observations		
Is there evidence that t	he stream has been distur	oed by some kind	Can the stream restoration be reasonably done within the c	onfines of the	
of human action, like gr	ading, dumping, livestock,	culvert, etc?	parcel or does it require connections beyond the parcel limi	ts? Explain	
Explain:			Explain:		
Yes, perched culvert wit	h rip-rap revetment		Yes - all DNR parkland.		
		Mitigo	tion Cito Dating		
Criteria		Score	lCriteria	Score	
Estimated Bank erosion	within reach	10	Vegetation	1	
10 - Greater than 50%	Within reach	10	10 - Herbaceous cover (non-wetland)	-	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Entire reach degraded			Scattered trees connected to forest		
		_			
Degree of Channel Incis	ion	5	Land Use	1	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height betweer 1 - Bank Height less thar	n 3 drid 10 reet		5 - Marginal Pasture		
Describe:	151661				
8-10' tall banks			Parkland - forested floodplain.		
Existing Eloodalain Acc	255	10	Opportunity for Ecological Lift	1	
10 - No evidence of out	of bank flooding	10	10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5- Yes (Infrequent out o	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sust	ain	
Describe:			Describe:		
Incised short channel			Limited opportunity. Mostly mitigate for erosion. Small tribut	ary, no habitat	
			potential.		
Opportunity for Floodp	lain Development	1	Ease of Access	5	
10 - Existing space for flo	bodplain greater than 10 til	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site)	
5 - Existing space for floo	floodplain 3 to 10 times stream	n width	5- yes (open but no existing venicular access)		
Tributary to larger syste	m. Steep reach		Adjacent to an old cleared road. May involve some tree remo	val.	
in butting to larger syste				•	
Drainage Area Evaluatio	on	10	Utilities Present	1	
10 -D.A. less than 1 sq. r	ni.	-	10 - No utilities on site	<u>.</u>	
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	iq. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
<1 sq. mi.			Sewer in downstream section runs parallel to Seneca Creek.		
			Total Score out of 100	45	





	Str	eam Mitigation	Field Site Assessment Form	
		Pro	ject Details	
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: MPOC0004	
Projects Estimated Strea	am Mitigation Needs (LF):	TBD	-	
Date of Field Assessment:	4/23/2019		Consultant Firm/Investigator(s): RK&K/KIH, DB	
bate of field / socionienti	Site	Location Details	s-taken from desktop review	
County:	Montgomery	Cross Roads:	Game Preserve Road and Frederick Road	đ
Basin (HUC 8):	Middle Potomac-Catoctin	I	MDE Watershed (8 digit): 0207	0008
Proximity to Impacted S	Stream (mi.):	1.98	Lat/Long: 39.16343	6 -77.230249
		<u>.</u>	Site Data	
Parcel Size (ac):	83		Potential Restoration Reach (LF): 2,50	3
Site Opportunities:	XChannel Restoration	Livestock Exclusion	XRiparian Buffer PlantingHabitat Enhanceme	ntFish Passage
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Use	3: IV
Drainage Area to Reach	(sq. mi.) Parkland (Forested)	41	Manned Soils: 544	
Property Address:	Game Preserve Road, Gai	thersburg, MD		
Property Owner(s):	State of MD DNR			
		General F	ield Observations	
Is there evidence that t	he stream has been disturl	ped by some kind	Can the stream restoration be reasonably done within the	confines of the
of human action, like gr	ading, dumping, livestock,	culvert, etc?	parcel or does it require connections beyond the parcel lin	nits? Explain
Explain:			Explain:	
Yes, bridge spans upstre	am side		Yes - all DNR parkland.	
		Mitigat	tion Site Rating	
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>
Estimated Bank erosion	within reach	10	Vegetation	1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)	
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)	
1 - Less than 10%			1 - Mostly forested and/or wetland	
Describe:	aut waa ah		Describe:	
Severe erosion through	but reach.		Forested riparian hoodplain	
Degree of Channel Incis	ion	5	l and Lise	1
10 - Bank Height greater	r than 10 feet	5	10 - Agricultural or Open Space	-
5 - Bank Height betweer	n 3 and 10 feet		5 - Marginal Pasture	
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested	
Describe:			Describe:	
3-4' tall banks			Parkland - forested.	
Existing Floodplain Acce	200	1	Opportunity for Ecological Lift	1
10 - No evidence of out	of bank flooding	-	10 - Conditions exist for several aspects of lift to be achieve	d and sustained
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects	
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and su	stain
Describe:			Describe:	
Evidence of sediment de	eposition in floodplain.		Potential for reducing bank erosion. Limited potential for ha	abitat improvement
			and floodplain access.	
Opportunity for Floodp	lain Development	1	Ease of Access	1
10 - Existing space for flo	podplain greater than 10 til	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential si	te)
5 - Existing space for floo	odplain 3 to 10 times stream	m width	5- yes (open but no existing vehicular access)	
1 - Little to no space for	noouplain development		1 - NO (NO VENICULAI ACCESS, Cleaning needed)	
Describe:	onnected to floodalain		Describe:	
Large Stream - arreauy o			Forested hoodplain. No existing access.	
Drainage Area Evaluatio	on	1	Utilities Present	1
IU-D.A. less than 1 sq. r	ni.		10 - NO UTILITIES ON SITE	
J- D. A. Delween I & 3 S 1 - D A greater than 2 c	y. mi. sa mi		 - other sour not within restoration area 1 - Utilities within notential restoration area 	
Describe:	<u>'Y</u> • ''''•			
41 caupro milos			Utilities procent in floodalain, conitary courses	
41 Square miles			otilities present in hoodplain - sanitary sewer.	
			<u> </u>	0
			Total Score out of 10	U 23



Site Photos



	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: MPOC0005		
Projects Estimated Strea	am Mitigation Needs (LF):	TBD			
Date of Field Assessment:	4/23/2019	Levelien Deteile	Consultant Firm/Investigator(s): RK&K/KJH, DB		
Country	<u>Site</u>	Location Details	S-taken from desktop review		
	Middle Detemac Categorie	Cross Roads:	MDE Watershed (9 digit): 0207(1008	
Proximity to Impacted S	itream (mi.):	3.05	Lat/Long: 39.13313	-77.267205	
		0.00	Sito Data		
Parcel Size (ac):	229	<u>-</u>	Dice Data Potential Restoration Reach (IF):	8	
Site Opportunities:	X Channel Restoration	Livestock Exclusion	X Riparian Buffer Planting Habitat Enhancemen	<u>-</u> It Fish Passage	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use	:	
Drainage Area to Reach	(sq. mi.)	44			
Land Use:	Parkland (Forested)		Mapped Soils: 54A		
Property Address:	Riffle Ford Road, Seneca	Creek State Park			
Property Owner(s):	State of MD DNR				
		General F	ield Observations		
Is there evidence that the	ie stream has been distur	ed by some kind	Can the stream restoration be reasonably done within the	confines of the	
of human action, like gra	ading, dumping, livestock	. culvert, etc?	parcel or does it require connections beyond the parcel lim	its? Explain	
Explain:			Explain:		
Yes, imbricated stone wa	all at upstream end. Bridge	crossing	Yes - all DNR parkland.		
downstream					
a		Mitigal	tion Site Rating		
Criteria		Score		Score	
Estimated Bank erosion	within reach	10	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
2 4' vortical and raw ban	Describe:		Describe. Mostly forested riparian area. Some open meadow		
5-4 Vertical and raw ban	iks. Severe ballk erosion		Nostly forested fiparial area. Some open meadow		
Degree of Channel Incisi	ion	5	land lise	1	
10 - Bank Height greater	than 10 feet	5	10 - Agricultural or Open Space	±	
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Most banks 5-6' tall			Parkland - forested.		
Existing Eloodalain Acco		1	Opportunity for Ecological Lift	1	
10 - No evidence of out (of bank flooding	I	10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5-Yes (Infrequent out of	hank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freat	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:					
Large system. Evidence o	of sediment deposition in f	loodplain	Potential for reducing bank erosion. No potential for habitat	; improvement.	
			Floodplain is already set and accessed		
Opportunity for Floodpl	ain Development	1	Ease of Access	5	
10 - Existing space for flo	oodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential sit	e)	
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Floodplain access limited	d by adjacent road and trai	l.	Good trail adjacent to site with some forest impacts from the	e trail.	
Drainage Area Evaluatio	in	1	Utilities Present	1	
10 -D.A. less than 1 sq. m	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 so	q. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
44 square miles			Mostly sanitary sewer and overhead powerlines.		
			Total Score out of 100	27	





	Str	ream Mitigation	Field Site Assessment Form		
		Pro	oject Details		
Project Name:	i495/270 Manage	d Lane Study	Mitigation Site Number: MPOC0006		
Projects Estimated Strea	am Mitigation Needs (LF)	: TBD			
Data of Field Assessments	7/20/2010				
Date of Field Assessment:	//30/2019 Site	Location Datail	Consultant Firm/Investigator(s): CRI - DS/SN		
County:	Montgomory	<u>Cross Poods</u>	Hillendale Drive and Little Falls Parkway		
Basin (HLIC 8).	Middle Potomac-Catocti		MDE Watershed (8 digit): 21/0202		
Proximity to Impacted S	Stream (mi.):	2.2	2 Lat/Long: 38.975032 -	-77.099841	
,			Site Data		
Parcel Size (ac):	2 narcels (1 79 32 1)		Potential Restoration Reach (LE): 673		
Site Opportunities:	X Channel Restoration	Livestock Exclusion	n X Riparian Buffer Planting Habitat Enhancement X	Fish Passage	
Stream Order:	xendimentestoration	Stream Hydrology	/: Perennial Stream Use:		
Drainage Area to Reach	(sg. mi.)	0.53			
Land Use:	Parkland		Mapped Soils: Brinklow-Blockton channery	silt loams,	
Property Address:	6300 Hillandale Rd, Beth	esda, MD 20815	Glenelg-Urban land Complex		
Property Owner(s):	MNCPPC & Mo. County F	ROW			
		General F	Field Observations		
Is there evidence that the	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the confines	s of the	
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limits? Exp	lain	
Explain:			Explain:		
Yes; culverts upstream a	and downstream; utility cro	ossing on bank	Site located on M-NCPPC parkland and Mo. County ROW. Restoratio	n could be	
protection.			combined with MPOC0010/MPOC0011		
			·		
		<u>Mitiga</u>	ation Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Estimated Bank erosion	within reach	5	5 Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Approximately 30%-40%	; But some had protectior	ו	Forest		
Degree of Channel Incis	ion	5	5 Land Lise	1	
10 - Bank Height greater	r than 10 feet	5	10 - Agricultural or Open Space		
5 - Bank Height between	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Approximately 6-8 feet			Forested		
<i>,</i> ,					
Existing Floodplain Acce	ess - f h - n h fl - n din -	5	5 Opportunity for Ecological Lift	5	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved and sus	stained	
5- Yes (Infrequent out of	r bank now)		5 - Lift limited to one or rew aspects		
1 - Yes (evidence of freq	uent noouing)				
Describe:	f maandara provida flaadu		Describe:		
Lower banks on inside o	in meanders provide nood	Jidili decess.	Bank stability; habitat; fish blockage; lateral and vertical stability		
Opportunity for Floodp	lain Development	5	5 Ease of Access	5	
10 - Existing space for flo	oodplain greater than 10 ti	imes stream width	10 - Yes (with existing direct vehicular access to potential site)		
5 - Existing space for floo	odplain 3 to 10 times strea	ım width	5- yes (open but no existing vehicular access)		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Limited by trail, road, an	nd valley; lower end 3-4 tin	nes of the stream	Road/trail on upstream end; steep slopes downstream old access fro	om	
width			restoration		
Drainage Area Evaluatio	on	10	0 Utilities Present	1	
10 -D.A. less than 1 sq. n	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 s	iq. mi.		5 - Utilities but not within restoration area		
I - D. A. greater than 3 s	iq. mi.		1 - Otilities within potential restoration area		
Describe:			Describe:		
Drainage area - 0.53 squ	iare miles		Utility Crossing present		
			Total Score out of 100	43	





	St	ream Mitigation	I Field Site Assessment Form		
		Pr	oject Details		
Project Name: Projects Estimated Strea	I-495/I-270 Manage m Mitigation Needs (LF):	d Lanes Study	Mitigation Site Number: MPOC0008 (combined	with MPOC0007)	
Date of Field Assessment:	7/17/2019		Consultant Firm/Investigator(s): RK&K KJH, AJN		
	<u>Sit</u>	e Location Detai	ls-taken from desktop review		
County:	Montgomery	Cross Roads:	Glen Road and Travilah Road		
Basin (HUC 8):	Middle Potomac-Catoctin		MDE Watershed (8 digit): 02140	202	
Proximity to Impacted S	tream (mi.):	4.67	Lat/Long: 39.069438	-77.258469	
			Site Data		
Parcel Size (ac):	15.8		Potential Restoration Reach (LF): 2,419		
Site Opportunities:	X_Channel Restoration	Livestock Exclusion	Riparian Buffer PlantingHabitat Enhancement	_X_Fish Passage	
Stream Order:	1st	Stream Hydrology:	Perennial Stream Use:	I	
Drainage Area to Reach	(sq. mi.)	0.25			
Land Use:	Forested		Mapped Soils: Baile silt loam		
Property Address:	Glen Road				
Property Owner(s):	M-NCPPC				
		General	Field Observations		
Is there evidence that th	e stream has been disturb	ed by some kind of	Can the stream restoration be reasonably done within the co	nfines of the parcel	
human action, like gradi	ng, dumping, livestock, cu	lvert, etc? Explain	or does it require connections beyond the parcel limits? Expl	ain	
Explain:			Explain:		
No evidence. Bedrock th	roughout majority of stream	mbed. Combine	Two small segments on private property. MNCPPC recommen	dation	
with MPOC0007					
		Mitiga	ation Site Rating		
Criteria		Score	Criteria	Score	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%		_	10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Moderate bank erosion t	brougbout		Ecrested parkland Mid-successional: red manle sycamore pe	arsimmon	
	in oughout				
Degree of Channel Incisi	on	5	Land Use	1	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
3-6' tall banks			Forested parkland		
				-	
Existing Floodplain Acces	ss	5	Opportunity for Ecological Lift	5	
10 - No evidence of out c	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved a	nd sustained	
5-Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequ	lent flooding)		1 - Conditions are such that Lift is difficult to achieve and susta	in	
Describe:			Describe:		
Matted down vegetation	at top of bank		Opportunity for sediment reduction throughout. In-stream ha	bitat limited by	
			bedrock. Riparian invasive treatment needed.		
Opportunity for Floodpla	ain Development	1	Ease of Access	1	
10 - Existing space for flo	odplain greater than 10 tin	nes stream width	 Yes (with <u>existing</u> direct vehicular access to potential site) 		
5 - Existing space for floo	dplain 3 to 10 times strean	n width	5- yes (open but no existing vehicular access)		
1 - Little to no space for f	loodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Limited by steep valley sl	opes and adjacent private	properties	Clearing of trees would need to occur.		
Drainago Aroa Fueluetta	n	10	Utilition Procent	10	
10 DA loss then 1 to 1		10	10 No utilities on site	10	
IU-U.A. less than I sq. m	II. . mi		LU - IND ULIIILLES OIL SILE		
J- D. A. Delween I & 3 SC	4. 1111. Nami		5 - Other of the solution of the state of the solution of the		
I - D. A. greater than 3 St	4				
Describe:			Describe:		
0.25 square miles			None observed		
			Total Score out of 100	44	



Site Photos



	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: MPOC-0009		
Projects Estimated Strea	am Mitigation Needs (LF):	TBD			
	- 10- 10010				
Date of Field Assessment:	7/25/2019		Consultant Firm/Investigator(s): RKK KJH&AJN		
	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross koads:	Goshen Koad and Kock Lim Way	000	
Basin (HUC oj. Provimity to Impacted S	Mildule Potomac-Catocum	2 13	I at / Long	-77 186706	
	Stream (mi.).	2.13		-//.100/00	
	25.0		Site Data		
Parcel Size (ac):	25.8	the stand reader to	Potential Restoration Reach (LF): 3,457	r'sh Passas	
Site Opportunities:	XChannel Restoration	Livestock Exclusion	XRiparian Buffer PlantingXHabitat Enhancement	Fish Passage	
Drainage Area to Reach		2 01		1	
Land Use:	Park floodplain	2.91	Manned Soils: Hathoro silt loam		
Property Address:	Goshen Road				
Property Owner(s):	MNCPPC and Montgomer	y County ROW			
- F / (-/		General E	ield Observations		
Is there evidence that th	he stream has been disturb	bed by some kind	ICan the stream restoration be reasonably done within the c	onfines of the	
of human action like gr	ading dumning livestock		narcel or does it require connections beyond the parcel limit	ts? Evolain	
Curlaine	aung, uumping, investock,		Fundamental Connections beyond the parcer inni		
Explain: Vos irin ran at sower cro	ssings and bridge at downs	troom and	Explain: MNCPPC property and Montgomery Co. POW/ MNCPPC reco	mmondation	
res, rip-rap at sewer cro	issings and bridge at downs	di eani enu.	inincerc property and montgomery co. Now. Mincerc record	IIIIIeiluation	
		Mitigat	tion Site Bating		
Criteria		Score	ICriteria	Score	
Estimated Bank erosion	within reach	10	Vegetation	1	
10 - Greater than 50%	Within reach	10	10 - Herbaceous cover (non-wetland)	-	
5 - 10% to $50%$			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Severe erosion through	out reach. Deenly incised ch	nannel	Mid successional forest: Black Walnut Sycamore Downstread	m section is onen	
Severe crosion in oughe	but reach. Deeply melsed er	lamici.	moodow	in section is open	
			meadow.		
Degree of Channel Incisi	ion	5	Land Lise	1	
10 Pank Hoight groator	than 10 foot	5	10 Agricultural or Open Space	L	
5 Pank Hoight botwoor	and 10 feet		5 Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Doscribo:	151000				
Bank Height 3-6'			Ecrested parkland unstream and old field downstream		
Dalik Height 5-0			Torested parkiand upstream and old neid downstream		
Existing Floodplain Acce	ess	10	Opportunity for Ecological Lift	10	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sust	ain	
Describe:			Describe:		
No evidence of out of ba	ank flooding		Opportunities for sediment reduction, floodplain connectivity	, aquatic habitat,	
			wetland creation, water quality, an riparian buffer planting.		
Opportunity for Floodpl	ain Development	5	Ease of Access	5	
10 - Existing space for flo	podplain greater than 10 tir	mes stream width	10 - Yes (with existing direct vehicular access to potential site)	
5 - Existing space for floo	odplain 3 to 10 times stream	n width	5- yes (open but no existing vehicular access)		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Some restrictions due to	valley slopes and resident	ial housing	DS - open meadow and existing path. US - forested.		
Drainage Area Evaluatio	an an	5	Utilities Present	1	
10 D A loss than 1 cg n		5	10 No utilities en site	T	
5_{-} D A between 1 & 3 c	a mi		5 - Itilities but not within restoration area		
J = D. A. between 1 & $J = D1 = D A greater than 3 s$	a mi		1 - Utilities within notential restoration area		
Describe:	9		Describe:		
Describe.					
2.91 square miles			Sewer line runs parallel to stream.		
			l		
			Total Score out of 100	53	





	Str	eam Mitigation	Field Site Assessment Form			
		Pro	oject Details			
Project Name:	1-495/I-270 Manage	ed Lanes Study	Mitigation Site Number: M	POC0010		
Projects Estimated Strea	m Mitigation Needs (LF):	TBD				
	- / /					
Date of Field Assessment:	7/30/2019		Consultant Firm/Investigator(s):	CRI - DS/SN		
	Site	Location Details	s-taken from desktop review			
County:	Montgomery	Cross Roads:	Hillandale and Littl	e Falls Parkway		
Basin (HUC 8):	Middle Potomac-Catoctin	2.4	MDE Watershed (8 digit):	2140202		
Proximity to Impacted S	tream (mi.):	2.4	Lat/Long:	38.9/123 -//.098/12		
			<u>Site Data</u>			
Parcel Size (ac):	19.5		Potential Restoration Reach (LF):	1,203		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	X_Riparian Buffer Planting	X_Habitat EnhancementX_Fish Passage		
Stream Order:	2nd	Stream Hydrology:	Perennial	Stream Use:		
Drainage Area to Reach	(sq. mi.)					
Land Use:	Park/Open Space		Mapped Soils: Glenelg-Urban land comple	2X		
Property Address:	6300 Hillandale Dr, Bethe	sda, MD 20815				
Property Owner(s):	MNCPPC					
		<u>General F</u>	-ield Observations			
Is there evidence that the	ne stream has been disturb	ed by some kind of	Can the stream restoration be reasonably	y done within the confines of the		
human action, like gradi	ing, dumping, livestock, cul	vert, etc? Explain	parcel or does it require connections bey	ond the parcel limits? Explain		
Explain:			Explain:			
Concrete channel			Only feasible if it extends to natural chann	iel at downstream end, extend upstrea		
		<u>Mitiga</u>	tion Site Rating			
<u>Criteria</u>		Score	Criteria	<u>Score</u>		
Estimated Bank erosion	within reach	1	Vegetation	5		
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)			
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)			
1 - Less than 10%			1 - Mostly forested and/or wetland			
Describe:			Describe:	Describe:		
Concrete channel			Some forest but mostly vines			
			,,			
Degree of Channel Incisi	ion	5	Land Use	10		
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space	_		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture			
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested			
Describe:			Describe:			
Concrete 2:1; Approxima	ately 4 feet		Mostly mowed parkland			
		10		10		
Existing Floodplain Acce	SS	10	Opportunity for Ecological Lift	10		
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspects of	lift to be achieved and sustained		
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects	to a shirt of a state in		
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficult	to achieve and sustain		
Describe:			Describe:			
No evidence of grass			Habitat enhancement; floodplain reconnection; bedform diversity			
Ownerstandten fan Flandel		F	F			
Opportunity for Floodpl	ain Development	5	Ease of Access	5		
10 - Existing space for flo	odplain greater than 10 tin	hes stream width	10 - Yes (with <u>existing</u> direct venicular acce	ess to potential site)		
5 - Existing space for floodplain 3 to 10 times stream width			5- yes (open but no existing vehicular access)			
1 - Little to no space for floodplain development			1 - No (no vehicular access, clearing needed)			
Describe:		Describe:				
Closer to 3, but concrete	channel is significantly ove	r widened	Recent utility access from upstream road of	crossing		
Drainage Area Fuelust			Litilities Present	I		
		5	10 No utilitios en site	I		
IU-D.A. less than 1 sq. m	11. a. mi		10 - NO UTILITIES ON SITE			
D - D . A. between 1 & 3 so	4. []]]. a. mi		 Otilities but not within restoration area Utilities within netential actionation 	1		
ים - D. A. greater than 3 so	ų. IIII.		1 - Oundes within potential restoration are	Ed		
Describe:			Describe:			
Drainage area - 1.259 mi	les		Sewer along stream bank and could cross			
			Total	Score out of 100 57		



Site Photos



	Sti	ream Mitigation	Field Site Assessment Form		
		Pro	oject Details		
Project Name:	1-495/I-270 Manag	ed Lane Study	Mitigation Site Number:	MPOC0011	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD	-		
			-		
Date of Field Assessment:	7/30/2019		Consultant Firm/Investigator(s):	CRI - DS/S	5N
-	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Hillendale Rd and	Little Falls Parkway	
Basin (HUC 8):	Middle Potomac-Catoctin	2.4	MDE Watershed (8 digit):	2140202	77.00017
Proximity to impacted St	ream (mi.):	2.4	Lat/Long:	38.97293	-77.09917
			Site Data		
Parcel Size (ac):	19.5		Potential Restoration Reach (LF):	709	
Site Opportunities:	X_Channel Restoration	Livestock Exclusion	XXRiparian Buffer Planting	_X_Habitat Enhancement	_X_Fish Passage
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	
Drainage Area to Reach (sq. mi.)	0.56 sq mi		1	
Land Use:	Parkland		Mapped Soils: Glenelg-Urban land comp	olex	
Property Address:	6300 Hillendale Drive, Be	thesda, MD 20815			
Property Owner(s):	MINCPPC				
		<u>General F</u>	Field Observations		
Is there evidence that the	e stream has been disturb	ed by some kind of	Can the stream restoration be reasonal	bly done within the conf	fines of the
human action, like gradir	ng, dumping, livestock, cu	lvert, etc? Explain	parcel or does it require connections be	eyond the parcel limits?	Explain
Explain:			Explain:		
Yes; culverts, trail adjacer	nt; Downstream channel b	ecomes concrete	Combine with MPOC0010 and MPOC000	06	
channel					
		Mitiga	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	Criteria		<u>Score</u>
Estimated Bank erosion	within reach	5	Vegetation		1
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
40%-50% of eroded bank	s. Annroximately 4-6		Forest with some clearing near road		
	s, Approximately . c		Torest with some searing near real		
Degree of Channel Incisio	on	5	Land Use		1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Approximately 4-6 feet			Forested parkland		
Existing Floodplain Acces	S	10	Opportunity for Ecological Lift		5
10 - No evidence of out o	f bank flooding		10 - Conditions exist for several aspects	of lift to be achieved and	d sustained
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequ	ent flooding)		1 - Conditions are such that Lift is difficu	It to achieve and sustain	1
Describe:			Describe:		
No obvious evidence of fl	ooding.		Bank stability; floodplain reconnection;	habitat	
Opportunity for Floodpla	in Development	5	Ease of Access		5
10 - Existing space for floo	odplain greater than 10 tir	nes stream width	10 - Yes (with <u>existing</u> direct vehicular ad	ccess to potential site)	
5 - Existing space for floo	dplain 3 to 10 times strear	n width	5- yes (open but no existing vehicular ac	cess)	
1 - Little to no space for f	loodplain development		1 - No (no vehicular access, clearing nee	ded)	
Describe:			Describe:		
More forest but plenty of	space		MNCPPC trail along stream but clearing	needed	
Drainage Area Evaluation	ı	10	Utilities Present		1
10 -D.A. less than 1 sq. m	i.		10 - No utilities on site		
5- D. A. between 1 & 3 sq	. mi.		5 - Utilities but not within restoration ar	ea	
1 - D. A. greater than 3 so	. mi.		1 - Utilities within potential restoration	area	
Describe:			Describe:		
Drainage area - 0.56 squa	ire miles		Multiple utility crossings		
			Tota	IL SCORE OUT OF 100	48



Site Photos



Stream Mitigation Field Site Assessment Form					
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	ed Lanes Study	Mitigation Site Number: MPOC0012		
Projects Estimated Strea	m Mitigation Needs (LF):				
Data of Field Accoremonts	7/17/2010		Consultant Firm (Investigator(s): RK8.K: KIH AIN		
Date of Field Assessment:	/1//2019	Location Details	taken from deskton review		
County:	Montgomery	Cross Roads:	Democracy Blvd, and Seven Locks Rd		
Basin (HUC 8):	Middle Potomac-Catoctir		MDE Watershed (8 digit): 02140	0207	
Proximity to Impacted St	tream (mi.):	. 0.77	Lat/Long: 39.024472	2 -77.158008	
		(Site Data		
Parcel Size (ac):	34	<u>-</u>	Potential Restoration Reach (LF): 93	9	
Site Opportunities:	Channel Restoration	Livestock Exclusion	Riparian Buffer Planting Habitat Enhancemen	T X Fish Passage	
Stream Order:	1st	Stream Hydrology:	Ephemeral Stream Use	:	
Drainage Area to Reach	(sq. mi.)	0.06			
Land Use:	Forested parkland		Mapped Soils: Blocktown channery	silt loam	
Property Address:	Democracy Blvd.				
Property Owner(s):	M-NCPPC				
		General F	ield Observations		
Is there evidence that th	e stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the	confines of the	
of human action, like gra	ding, dumping, livestock,	, culvert, etc?	parcel or does it require connections beyond the parcel lim	nits? Explain	
Explain:			Explain:		
No.			Ephemeral channel draining to a wetland, that drains back in	nto the ephemeral	
			channel. All on MNCPPC property. MNCPPC recommendation	on.	
		<u>Mitigat</u>	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Minor to moderate erosi	on throughout		Mid successional forest. Middle portion of site is an open m	eadow/potential	
			wetland		
Degree of Channel Incision	on	1	Land Use	1	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space	•	
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
0.5 - 3' tall banks			Forested parkland		
Fuisting Flagshals in Assoc		10	One entropite for Foolshield	1	
Existing Floodplain Acces	SS of hank flooding	10	Opportunity for Ecological Lift		
5. Vos (Infroquent out of	hank flow)		5 Lift limited to one or few aspects	a and sustained	
1 - Ves (evidence of freque	uent flooding)		5 - LITE limited to one or few aspects		
Describer	ient hooding/		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
No evidence of flooding			No opportunites - epitemeral channel.		
One out we the four Floodel	in Development	1	Face of Assass	10	
10 Existing space for flood	ain Development	T mos stroam width	Ease of Access 10 - Ves (with existing direct vehicular access to potential sit	10	
5 - Existing space for floo	dupian greater than 10 tr dupian 3 to 10 times stres	m width	5- ves (open but no existing vehicular access)	.e)	
1 - Little to no snace for f	Ioodolain development		1 - No (no vehicular access, clearing needed)		
No opportunity - steep valley that drains to an open meadow			Existing 15' wide nath. Would require tree clearing to get to channel		
			Existing 15 while path. Would require thee cleaning to get to	channer	
				_	
Drainage Area Evaluation	n	10	Utilities Present	10	
10 -D.A. less than 1 sq. m	i.		10 - No utilities on site		
5- D. A. between 1 & 3 sc	ι. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 sq. mi.			1 - Utilities within potential restoration area		
Describe:			Describe:		
0.06 square miles			None observed within site		
			±		





Stream Mitigation Field Site Assessment Form					
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: SSS-150006		
Projects Estimated Strea	am Mitigation Needs (LF):	TBD	-		
Date of Field Assessment:	11/20/2018		Consultant Firm/Investigator(s): RK&K/KIH, BDM		
	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Woodfield Rd. & Watkins Rd.		
Basin (HUC 8):	Middle Potomac-Catoctir	1	MDE Watershed (8 digit): 02140208		
Proximity to Impacted S	tream (mi.):	6.4	Lat/Long: 39.23314874	-77.18283808	
		0	Site Data		
Parcel Size (ac):	48.28		Potential Restoration Reach (LF): 3,529		
Site Opportunities:	Channel Restoration	Livestock Exclusion	Riparian Buffer PlantingHabitat Enhancement	Fish Passage	
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Use:		
Land Use:	Forest - Existing Wetland	9.01 Mitigation Site	Manned Soils: Hathoro silt loam & Cod	lorus silt loam	
Property Address:	Woodfield Rd., Gaithersb	urg 20882			
Property Owner(s):	State Highway Administra	ation			
		General F	ield Observations		
Is there evidence that the	ne stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the cor	nfines of the	
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limits	? Explain	
Explain:			Explain:		
The site consists of an ex	kisting ICC wetland mitigat	ion site (SC-19). Site	NA - Existing mitigation site. SHA EPD stated in a meeting on 1/	28/19 that this	
surrounded by wetland	creation/tree planting area	is. Some rock toe	site should not be pursued for stream mitigation.		
protection structures alo	ong channel.				
		<u>Mitigat</u>	tion Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50% 1 Loss than 10%			5 - Scrub-snrub cover (non-wetland)		
Describe:					
Localized sections with r	ninor to moderate bank er	osion Sections	Describe. Recent tree plantings throughout site. Majority of site is wetlar	nd creation area	
have been stabilized with	h rock toe protection	Usion. Sections	Recent tree plantings throughout site. Majority of site is wetland		
nave been stabilized wit					
Degree of Channel Incisi	ion	1	Land Use	1	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
1-3 foot tall banks			Reforestation plantings in old field & wetland creation areas.		
Existing Floodplain Acce	SS	1	Opportunity for Ecological Lift	1	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved an	nd sustained	
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe: Evidence of out of bank	flooding in coveral areas t	aroughout site	Describe:	an and habitat	
Evidence of out-of-bank	mooding in several areas the	nrougnout site -	Existing restoration site with little potential for erosion reduction	on and nabitat	
woody debris plies, sedi	ment deposition & matted	down veg.	improvements.		
Opportunity for Floodpl	ain Development	1	Ease of Access	5	
10 - Existing space for flo	podplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site)	_	
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for floodplain development		1 - No (no vehicular access, clearing needed)			
Describe:			Describe:		
Plenty of space for floodplain, however stream is already connected		Existing access from previous restoration at northern end of sit	e, however		
to the adjacent floodplain. Low banks, evidence of out-of-bank flows, acce			access to the stream would require removal of recent tree plan	itings.	
and existing floodplain w	vetlands.				
Drainage Area Evaluatio	on	1	Utilities Present	5	
10 -D.A. less than 1 sq. n	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
Drainage area - 9.01 squ	are miles.		Overhead powerlines along road just outside site.		
			Total Score out of 100	22	







Stream Mitigation Field Site Assessment Form					
		Pro	ject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	SSS-150017	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD			
Date of Field Assessment:	11/8/2018		Consultant Firm/Investigator(s):	RK&K/KIH DB	
	Site	Location Details	s-taken from desktop review		
County:	Montgomery	Cross Roads:	Carderock Springs Dr. & Fenway Rd.		
Basin (HUC 8):	Middle Potomac-Catoctin	1	MDE Watershed (8 digit):	2140207	
Proximity to Impacted S	tream (mi.):	0.6	Lat/Long:	38.99502015	-77.17030611
		<u>.</u>	<u>Site Data</u>		
Parcel Size (ac):	3 parcels - 1.7, 5.8 & 6.5		Potential Restoration Reach (LF):	1,084	
Site Opportunities:	X_Channel Restoration	Livestock Exclusion	XRiparian Buffer Planting	Habitat Enhancement	_XFish Passage
Stream Order:	2nd	Stream Hydrology:	Perennial	Stream Use:	
Land Lise	(sq. m.) Medium density resident	0.78 ial	Manned Soils:	Blocktown channery silt	loam
Property Address:	Main Parcel - Steamboat	Rd. Bethesda 20817		blocktown channery site	loann
Property Owner(s):	Maryland National Capita	I Park & Planning C	ommission		
		General F	ield Observations		
Is there evidence that th	ie stream has been distur	bed by some kind	Can the stream restoration be reasona	ably done within the con	fines of the
of human action, like gra	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections b	peyond the parcel limits?	? Explain
Explain:			Explain:		
Boulder armoring is evid	ent along the banks in the	lower section of	Restoration is feasible within 3 M-NCP	PC parcels, however may	require access
the site. Possible past flo	odplain fill for adjacent ro	adway.	through a private property at the north	nern end of the site.	
		Nitian	tion Site Dating		
Criteria		Score	ICriteria		Score
Estimated Bank erosion	within reach	5	Vegetation		1
10 - Greater than 50%	Within reach	5	10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Moderate bank erosion t	chroughout most of site. A	few localized areas	Stream is surrounded by mid-succession	onal upland forest. Small p	potential PFO
of severe bank erosion. S	Some bank sections are sta	bilized with	wetland at upstream end of site.		
vegetation.					
Degree of Channel Incisi	on	5	Land Use		1
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:	am vallov park consisting	ofmid
Ddilks die 4-0 it. tall.			successional forest		
			successional forest.		
Existing Floodplain Acce	SS	10	Opportunity for Ecological Lift		5
10 - No evidence of out o	of bank flooding		10 - Conditions exist for several aspect	s of lift to be achieved an	d sustained
5- Yes (Infrequent out of 1 Vos (ovidence of frequ	Dank now)		5 - Lift limited to one or few aspects		
Describe:			Describe:		
Deenly incised channel	No evidence of out of bank	flooding	Some potential in reducing bank erosic	n however fish/benthic	habitat and
	to evidence of out of bank	chooding.	water quality improvements are limite	d due to existing good ha	hitat and
			constricted floodplain	a add to existing good na	Situt una
Opportunity for Floodpl	ain Development	1	Ease of Access		5
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular a	access to potential site)	
5 - Existing space for floo	odplain 3 to 10 times stream	m width	5- yes (open but no existing vehicular a	access)	
1 - Little to no space for f	floodplain development		1 - No (no vehicular access, clearing ne	eded)	
Describe:			Describe:		
Floodplain is narrow and constricted by a roadway to the north and			Potential access through cleared area i	n center of site and priva	te property at
steep valley slopes to the	e south.		upstream end of site that appears to h	ave been cleared in the p	ast for sewer
			repairs.		
Drainage Area Evaluatio	n	10	Utilities Present		1
10 -D.A. less than 1 sq. m	1i.		10 - No utilities on site		
5- D. A. between 1 & 3 so	η. mi. α. mi		5 - Utilities but not within restoration a	irea	
1 - D. A. greater than 3 so	y. IIII.		1 - Utilities within potential restoration	i drea	
Describe:					
Drainage area - 0.78 squa	are miles.		Sewer line runs parallel to stream.		
			- Tota	al Score out of 100	44





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	bject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: PG_00008		
Projects Estimated Strea	am Mitigation Needs (LF):	IBD	-		
Date of Field Assessment:	11/27/2018		Consultant Firm/Investigator(s): RK&K/KJ	H, BDM	
	Site	Location Details	s-taken from desktop review	,	
County:	Prince George's	Cross Roads:	Harry S Truman Dr. N. & Shoppers Way		
Basin (HUC 8):	Patuxe	nt	MDE Watershed (8 digit): 02131	103	
Proximity to Impacted S	tream (mi.):	0.09	Lat/Long: 38.90121886	-/6.84465/43	
	2 Demode 40	10. 20	Site Data		
Parcel Size (ac): Site Opportunities:	2 Parcels - 16.	28, 49.39	Potential Restoration Reach (LF): 1,682		
Stream Order:		Stream Hydrology	Perennial Stream Use	:	
Drainage Area to Reach	(sq. mi.)	0.2		-	
Land Use:	Commercial		Mapped Soils: Urban land-Collington	1-Wist complex	
Property Address:	801 Capital Centre Blvd, I	Jpper Marlboro 20	774-0000		
Property Owner(s):	Washington Metro Area	Iransit Authority, R	PAI Capital Centre II LLC		
le thoro ovidonco that th	o stroom has been distur	<u>General F</u>	ield Observations	confines of the	
of human action like gr	ading dumping livesteck	culvert etc?	can the stream restoration be reasonably done within the operations beyond the parcel lim	ite2 Evoluin	
Evolution	aunig, auniping, investork	culvert, etc:	Explain:		
Explain. Active construction just i	north of site in commercia	l development. Rip-	Site restoration would require access from WMATA & comm	ercial	
rap in portions of the str	eam. Turbid water		development.		
		<u>Mitiga</u>	tion Site Rating		
<u>Criteria</u>		Score	Criteria	Score	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
3 - 10% to 50% 1 - Less than 10%			5 - Scrub-Snrub cover (non-wetland) 1 - Mostly forested and/or wetland		
Describe:					
Minor to moderate bank	erosion throughout site.		Narrow strip of forest surrounds site.		
	0				
Degree of Channel Incisi	on	1	Land Use	1	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe: 1-3 foot tall banks			Narrow forested strip on WMATA and commercial properties.		
			Narrow forested strip on which and commercial propertie	5.	
		4		-	
Existing Floodplain Acce	SS of bank flooding	L	Opportunity for Ecological Lift	5 and sustained	
5-Yes (Infrequent out of	hank flow)		5 - Lift limited to one or few aspects	and sustained	
1 - Yes (evidence of frequ	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sus	tain	
Describe:	0/		Describe:		
Evidence of wrack lines,	matted down veg, and tra	sh in narrow	Some potential for improving instream habitat and reducing erosion. No		
floodplain.			potential for floodplain development or improving water quality.		
Opportunity for Floodpl	ain Development	1	Ease of Access	1	
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site)		
1 - Little to no space for f	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
No potential for floodplain improvements due to the site being			Site surrounded by narrow strip of forest.		
surrounded by development.					
Drainage Area Evaluatio	n	10	Utilities Present	5	
10 -D.A. less than 1 sq. m	ni.		10 - No utilities on site	Ē	
5- D. A. between 1 & 3 sq. mi. 5- Utilities but not within restoration area					
1 - D. A. greater than 3 so	q. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
Drainage Area - 0.2 squa	re miles		Storm drains located just outside site.		
			Total Score out of 100	21	
				51	








	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: PG00017		
Projects Estimated Strea	am Mitigation Needs (LF):	TBD	<u>.</u>		
Data of Field Accorrmont:	6/11/2010		Consultant Firm (Investigator(s): DK&K/KIH CAS		
Date of Field Assessment.	Site	Location Details	consultant rinny investigator(s). RRARY KIT, CAS		
County:	Prince George's	Cross Roads	Croom Road and Grandbaven Ave		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit): 02060)006	
Proximity to Impacted S	itream (mi.):	6.25 miles	Lat/Long: 38.778987	-76.774976	
			Site Data		
Parcel Size (ac):	15.2		Potential Restoration Reach (LF): 2,935	5	
Site Opportunities:	XChannel Restoration	Livestock Exclusion	Riparian Buffer PlantingHabitat Enhancemen	tFish Passage	
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Use	:1	
Drainage Area to Reach	(sq. mi.)	13			
Land Use:	Forested Parkland		Mapped Soils: Widewater and Issue	soils	
Property Address:	Croom Road, Upper Marl	ono			
Property Owner(s):	MINCPPC - PG County				
la thang avidance that th	a atua ana kao kao a diatum	<u>General F</u>	ield Observations		
is there evidence that tr	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the	contines of the	
of human action, like gra	ading, dumping, livestock,	culvert, etc?	parcel or does it require connections beyond the parcel lim	its? Explain	
<u>Explain:</u> Old bridge formalation	fl		Explain:	atial as MAICODC	
Old bridge foundation ne	ear confluence.		inay require access/work on private property. 1,800 LF pote	ntial on IVINCPPC	
			property.		
		Mitigat	tion Site Rating		
Criteria		Score	Criteria	Score	
Estimated Bank erosion	within reach	10	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Old severe erosion stabil	lized by vegetation. Mostly	localized active	Mid-successional forest. Dense understory of spicebush. River birch, box elder,		
severe erosion.			tulip poplar, sycamore. One PFO wetland.		
Degree of Channel Incisi	ion	5	Land Use	1	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
8-10' tall banks			Forested parkland		
Existing Floodplain Acce	SS	10	Opportunity for Ecological Lift	5	
10 - No evidence of out of	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequence of frequence of frequence of the second	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
No evidence of flooding			Opportunities for sediment reduction, floodplain connectivity, water quality.		
			Existing good instream woody habitat.		
Opportunity for Floodpl	ain Development	5	Ease of Access	1	
10 - Existing space for flo	bodplain greater than 10 til	nes stream width	10 - Yes (with <u>existing</u> direct venicular access to potential sit	e)	
5 - Existing space for floc	floodolain 3 to 10 times stream	n width	5- yes (open but no existing venicular access)		
~ 200' on both sides for t	floodalain development		Mid-successional forest with dense understory - no existing	access	
				access.	
				-	
Drainage Area Evaluatio	on	1	Utilities Present	1	
IU-D.A. less than 1 sq. m	nı. Almi		10 - NO UTILITIES ON SITE		
5- D. A. Detween I & 3 St 1 - D. A. groater than 3 of	y. mi		 Definition of the second second		
1 - D. A. greater than 3 S	y. iiii.				
13 square miles			Sewerline along smaller tributary. Overhead powerline along	g tributary.	
				1	
			Total Score out of 100	40	





	Str	eam Mitigation	Field Site Assessment Form			
		Pro	oject Details			
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: PG_00049A			
Projects Estimated Stre	am Mitigation Needs (LF):	TBD				
Date of Field Assessment:	12/12/2018		Consultant Firm/Investigator(s): RK&K/KJ	H, BDM		
0t	<u>Site</u>	Location Details	s-taken from desktop review	-		
County:	Prince George's	Cross Roads:	Stepnanie Roper Hwy & Pennsylvania Av	e 1102		
Provimity to Impacted S	Stream (mi):	6 38	Lat/Long: 38 8071679	1103 2 -76 74881669		
	Stream (mi.).	0.50		2 70.74001005		
		26 44 7	Site Data	1		
Parcel Size (ac):	147.7, 23.8, 3.3	3.6, 11.7	Potential Restoration Reach (LF): 4,23	1		
Site Opportunities:	X_Channel Restoration	Livestock Exclusion	XRiparian Buffer PlantingX_Habitat Enhancemen	itFish Passage		
Drainage Area to Reach	(sa mi)	91 2				
Land Use:	Commercial & Forest	51.2	Mapped Soils: Widewater and Issue	e Soils		
Property Address:	PG County Address - 1490	0 Pennsylvania Ave	e, Upper Marlboro 20772-0000			
Property Owner(s):	Prince George's County &	4 Private Property	Owners			
	General Field Observations					
Is there evidence that t	he stream has been disturl	bed by some kind	Can the stream restoration be reasonably done within the	confines of the		
of human action, like gr	rading, dumping, livestock,	culvert, etc?	parcel or does it require connections beyond the parcel lin	nits? Explain		
Explain:			Explain:			
Bridge & rip-rap bank st	abilization at upstream end	of site. Large	Stream restoration at the site would require access to four	private properties		
pond that runs parallel t	to the stream may be man-	made.	along the west and south sides of the channel.			
		<u>Mitiga</u>	tion Site Rating			
<u>Criteria</u>		<u>Score</u>	Criteria	<u>Score</u>		
Estimated Bank erosion	within reach	10	Vegetation	5		
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)			
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)			
1 - Less than 10%			1 - Mostly forested and/or wetland			
Describe:			Describe:			
Moderate to severe eros	sion throughout majority o	f site. Vertical,	Riparian zone north of the channel consists mostly of maint	ained grass areas		
sandy banks.			with scattered trees. Riparian zone south of the channel con	nsists of mid-		
			successional forest with extensive PFO wetlands.			
Degree of Channel Incis	ion	10	Land Use	5		
10 - Bank Height greater	r than 10 feet		10 - Agricultural or Open Space			
5 - Bank Height betweer	n 3 and 10 feet		5 - Marginal Pasture			
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested			
Describe:			Describe:			
6 - 12 foot tall banks. Ba	inks in majority of site are 1	0 feet tall.	Park land used for events & equestrian services. Northern r	iparian zone is open		
			grass. Southern riparian zone is mid-successional forest.			
Existing Floodplain Acce	ess	5	Opportunity for Ecological Lift	5		
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieve	d and sustained		
5- Yes (infrequent out of 1 Vos (ovidonco of frog	r bank now)		5 - Lift limited to one or few aspects			
Describe:	uent nooung)					
Some evidence of sand (denosition at ton of stream	hanks	Opportunity for reducing bank erosion. Limited potential fo	r improvements to		
Some evidence of Sand G		Dariks.	instream habitat and floodalain development	i improvements to		
Opportunity for Floodal	lain Davalanment	1		5		
10 Existing space for flood	an Development	L nos stroam width	Ease of Access	J to)		
5 - Existing space for flor	odulain 3 to 10 times stream	n width	5- ves (open but no existing vehicular access)			
1 - Little to no space for	floodplain development	ii widtii	1 - No (no vehicular access, clearing needed)			
Floodplain development	t limited by valley wall sout	h of site and park	Open access north of site. Access and work south of site ma	av require tree		
amenities north of site			clearing	, equile ties		
Drainago Area Evoluctio	on	1	Litilities Present	1		
10 -D A less than 1 co. r	ni	T	10 - No utilities on site	1		
5- D A hetween 1 $\&$ 2 c	m. a mi		5 - Utilities but not within restoration area			
1 - D. A. greater than 3 g	sa. mi.		1 - Utilities within potential restoration area			
Describe:			Describe			
Drainage area 01.2	iaro milos		Sower and gas lines within site			
ית amage area - 91.2 squ	are miles		sewer and gas lines within site.	_		
			Total Score out of 10	0 48		





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	ject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: PG	6_00049B	
Projects Estimated Strea	am Mitigation Needs (LF):	TBD	-		
Date of Field Assessment:	12/12/2018		Consultant Firm/Investigator(s):		
Date of Field Assessment.	Site	Location Details	s-taken from deskton review		
County:	Prince George's	Cross Roads:	Marlboro Pike & Marlb	ooro Race Track Rd.	
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit):	02131103	
Proximity to Impacted S	Stream (mi.):	6.38	Lat/Long:	38.81456046 -76.74699715	
			Site Data		
Parcel Size (ac):	147.7, 5.2, 5.7, 6.3, 0.4, 2	.9, 1.3, 1.6, 0.1, 7.6	Potential Restoration Reach (LF):	4,260	
Site Opportunities:	XChannel Restoration	Livestock Exclusion	XRiparian Buffer PlantingX	(_Habitat EnhancementFish Passage	
Stream Order:		Stream Hydrology:	Perennial	Stream Use:	
Drainage Area to Reach	(sq. mi.)	90.6			
Land Use:	Forest		Mapped Soils: Wi	idewater and Issue Soils	
Property Address:	14900 Pennsylvania Ave,	Upper Marlboro M	D, 20772		
Property Owner(s):	Prince George's County, I	own of Upper Marl	boro, Marlboro Volunteer Fire Dept., and 2	1 Private Property	
		General F	ield Observations		
Is there evidence that the	he stream has been distur	oed by some kind	Can the stream restoration be reasonably	y done within the confines of the	
of human action, like gr	ading, dumping, livestock,	culvert, etc?	parcel or does it require connections bey	ond the parcel limits? Explain	
Explain:			Explain:		
Rock toe bank protectio	n at upstream end of site.	Timber mats from	Majority of site on PG County property, he	owever portions of site extend onto	
construction washed do	wn and scattered througho	out site.	Town of Marlboro, Fire Dept, and one priv	vate property.	
		6 4*1*			
Critoria		<u>IVIItigat</u>	tion Site Rating	(corre	
		<u>Score</u>		<u>Score</u>	
Estimated Bank erosion	within reach	10	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Moderate to severe eros	sion throughout most of sit	e. Vertical, sand	Majority of site is mid-successional forest.	. Section DS of Water St. is open	
banks. Some bank sectio	ons are vertical, yet appear	stable.	grass. Several large floodplain wetlands th	nroughout site.	
	ien.	10	Land Lies	1	
Degree of Channel Incis	ion then 10 feet	10	Land Use	1	
10 - Bank Height greater	r than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height betweer	a 3 and 10 reet		5 - Marginai Pasture 1 - Old field/ Developed/Forested		
1 - DdllK Height iess that	131661		Describe:		
Describe: 9 11 foot tall banks			Majority of site is mid-successional forest on park land. Section DS of Water St		
			in agon gross. Covered large fleedulein wet	on park land. Section DS of Water St.	
			is open grass. Several large floodplain wet	tiands throughout site.	
Existing Floodplain Acce	255	1	Opportunity for Ecological Lift	5	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of	f lift to be achieved and sustained	
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
Extensive sand deposition	on throughout majority of f	loodplain. Timber	Opportunity for reducing bank erosion. Li	mited potential for improvements to	
mats from upstream cor	nstruction scattered throug	hout floodplain.	instream habitat and floodplain developm	nent.	
•	C C	•			
Opportunity for Floodpl	lain Development	1	Ease of Access	1	
10 - Existing space for flo	oodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular acc	ess to potential site)	
5 - Existing space for floo	odplain 3 to 10 times stream	m width	5- yes (open but no existing vehicular acce	ess)	
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing neede	ed)	
Describe:			Describe:		
Narrow floodplain confi	ned by steep valley slopes.	Stream already	Majority of site is forested and surrounde	d by steep valley slopes. Several large	
appears to be connected	d to majority of floodplain.		floodplain wetlands throughout site. Secti	ion DS of Water St. is open grass.	
			. 2		
Drainage Area Evaluatio	n	1	l Itilities Present	1	
10 -D A less than 1 sq n	ni	1	10 - No utilities on site	-	
5- D Δ hetween 1 & 3 s	n mi		5 - Utilities but not within restoration area	a	
1 - D A greater than 3 s	a mi		1 - Utilities within potential restoration are	rea	
Describe:	· · · · · ·		Describe:		
	ara milas		Course and goe lines within the Floor to the	ac arrace Water Ct. build	
Drainage area - 90.6 squ	lare miles		Sewer and gas lines within site. Electric lin	ies across water St. bridge.	
			<u>Total S</u>	Score out of 100 32	





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	pject Details		
Project Name:	I-495/I-270 Manage	d Lanes Study	Mitigation Site Number: PG_00149		
Projects Estimated Strea	m Mitigation Needs (LF):	TBD	_		
Data of Field Accorrents	1/2/2010		Concultant Firm (Investigator(c):		
Date of Field Assessment.	1/2/2019 Site	Location Detail	s-taken from deskton review		
County:	Prince George's	Cross Boads	Central Ave & Enterprise Rd		
Basin (HUC 8):	Patuxent	cross nodus.	MDE Watershed (8 digit): 02131	103	
Proximity to Impacted St	tream (mi.):	2.5	Lat/Long: 38.89810854	-76.79590878	
		1	Site Data		
Parcel Size (ac):	3.1		Potential Restoration Reach (LF): 1.995		
Site Opportunities:	X Channel Restoration	Livestock Exclusion	Riparian Buffer Planting X Habitat Enhancement	- Fish Passage	
Stream Order:	3rd	Stream Hydrology	Perennial Stream Use:	: I	
Drainage Area to Reach	(sq. mi.)	8.56			
Land Use:	Forest	:	Mapped Soils:Widewater and Issue	Soils	
Property Address:	Central Ave, Upper Marlb	oro 20774-0000			
Property Owner(s):	Prince George's County				
		<u>General F</u>	ield Observations	C C 1	
is there evidence that the	e stream has been disturi	bed by some kind	Can the stream restoration be reasonably done within the o	contines of the	
of human action, like gra	ding, dumping, livestock,	culvert, etc?	parcel or does it require connections beyond the parcel limit	its? Explain	
Explain:			Explain:		
Stormwater Pond retrofit	: under construction drain	s to the site.	Access and restoration is feasible within PG County property		
Majority of site is within	wetlands of special state of				
		Mitiga	tion Site Bating		
Criteria		Score	ICriteria	Score	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%	within reach	5	10 - Herbaceous cover (non-wetland)		
5 - 10% to $50%$			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
Moderate to severe erosi	ion throughout most of si	e. Trees roots	Mid-successional forest surrounding most of site dominated by red maple,		
stabilizing some portions.			sweet gum, sycamore and American elm, Extensive PFO wet	ands throughout	
0			floodplain. High quality sphagnum moss wetland within site.		
Degree of Channel Incisio	on	5	Land Use	1	
10 - Bank Height greater	than 10 feet	-	10 - Agricultural or Open Space		
5 - Bank Height between	3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
6 foot tall sandy banks			Mid-successional forest and PFO wetlands located on County	/ property. Two	
			stormwater facilities within site.		
Existing Eloodalain Accor		5	Opportunity for Ecological Lift	5	
10 - No evidence of out o	if hank flooding	5	10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of frequ	ient flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe		
Some evidence of sand d	eposition and matted dov	n vegetation at	Ecological lift limited to reducing erosion. Limited potential for improvements		
top of banks.		-0	to fish habitat and floodplain development.		
Opportunity for Floodpla	ain Development	5	Ease of Access	1	
10 - Existing space for flo	odplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site	<u>)</u>	
5 - Existing space for floo	dplain 3 to 10 times stream	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for f	loodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Potential for floodplain d	evelopment north of char	nel. Floodplain	Site surrounded by mid-successional forest, PFO wetlands an	d steep slopes.	
development south of ch	levelopment south of channel is limited by steep valley slopes,				
adjacent residential com	munity, and stormwater fa	acility.			
Drainage Area Evaluation	n	1	Utilities Present	1	
10 -D.A. less than 1 sq. m	i.		10 - No utilities on site	Ē	
5- D. A. between 1 & 3 sq	Į. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 so	μ. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
Drainage area - 8.56 squa	are miles		Sewer line along north side of channel.		
			Total Score out of 100	30	





	Str	eam Mitigation	Field Site Assessment Form		
		Pro	oject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: PG00160		
Projects Estimated Stre	am Mitigation Needs (LF):	TBD	-		
Data of Field Assessments	12/12/2010		Consultant Firm (Investigator(c))		
Date of Field Assessment:	12/12/2018	Location Dotails	taken from deskton review		
County:	Prince George's	Cross Roads:	Brooke In & Brown Station Rd		
Basin (HUC 8):	Patuxent	cross noaus.	MDF Watershed (8 digit): 02131103		
Proximity to Impacted	Stream (mi.):	3.55	Lat/Long: 38.83722883	-76.78668749	
, ,	. ,	(Site Data		
Parcel Size (ac):	261 7 56 1 15 0 14 8 54	<u> </u>	Potential Restoration Reach (LF): 6 742		
Site Opportunities:	X Channel Restoration	Livestock Exclusion	Riparian Buffer Planting X Habitat Enhancement	Fish Passage	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:		
Drainage Area to Reach	ı (sq. mi.)	2.67			
Land Use:	Forest, Landfill, Education	ı	Mapped Soils: Widewater and Issue	soils	
Property Address:	3210 Brown Station Rd, U	Ipper Marlboro 207	74-0000		
Property Owner(s):	Prince George's County (4	I parcels), Board of	Education (1 parcel) & 2 Private Properties		
		General F	ield Observations		
Is there evidence that t	he stream has been distur	oed by some kind	Can the stream restoration be reasonably done within the c	onfines of the	
of human action, like g	ading, dumping, livestock,	. culvert, etc?	parcel or does it require connections beyond the parcel limi	ts? Explain	
Explain:			Explain:		
Evidence of instream du	Imping & old bridge founda	tion. Site is located	Majority of site is located on PG County and board of educati	on property. Two	
in forested area betwee	n high school and landfill.		small sections are located on private properties.		
Mitigation Site Rating					
		Score		Score	
Estimated Bank erosion	within reach	5	Vegetation	1	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
I - Less triair 10%					
Describe: Moderate to severe ere	sion along outor banks. Tor	turous moondors	Describe.		
	sion along outer barks. To	turous meanuers.	tulin penlar white ack and parthern red ack	American beech,	
			tulip poplar, white oak, and northern red oak.		
Degree of Channel Incis	ion	5	Land Lise	1	
10 Pank Height groate	r than 10 feat	5	Land Use	1	
5 - Bank Height hetwee	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less that	n 3 feet		1 - Old field/ Developed/Forested		
Describe:					
3-5 foot tall banks.			Site consists of mid-successional forest on board of education	n. PG county, and	
			two private properties.	, , ,	
				10	
Existing Floodplain Acco	ess	10	Opportunity for Ecological Lift	10	
10 - No evidence of out	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved	and sustained	
5- Yes (Infrequent out o	f bank flow)		5 - LITE limited to one or few aspects		
1 - Yes (evidence of fred	uent hooding)		1 - Conditions are such that Lift is difficult to achieve and sust	tain	
Describe:	and flooding		Describe:	t flaadulain	
No evidence of out-of-b	ank nooding.		Potential for reducing erosion and improving instream nabita	it, noodplain	
			connection, and water quality.		
Opportunity for Eloodn	lain Dovelenment	5	Ease of Access	1	
10 - Existing space for fl	oodplain greater than 10 ti	mes stream width	10 - Yes (with existing direct vehicular access to potential site	·) -	
5 - Existing space for flo	odplain 3 to 10 times stream	m width	5- ves (open but no existing vehicular access)		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:	i i		Describe:		
Floodplain development	t limited in some areas by s	teep valley slopes.	Site surrounded by mid-successional forest that would requir	e clearing.	
		. , .	Potential access points from adjacent County landfill roads.	0	
Drainage Area Fueluet		5	Litilities Present	1	
	ni mi	J	10 No utilities on site	1	
$5-D$ Δ hotwoon 1 8.2 c	in. Sa mi		5 - Itilities but not within restoration area		
1 - D. A. greater than ? o	sa. mi.		1 - Utilities within potential restoration area		
	·····		Describe:		
	uara milas		Cower line runs nerallel to the streets		
oralinage area - 2.67 sqt	and miles.		sewer line runs parallel to the stream.		
			Total Score out of 100	ЛЛ	





Stream Mitigation Field Site Assessment Form					
		Pro	oject Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: SSS-160023		
Projects Estimated Strea	am Mitigation Needs (LF)	TBD			
			- 	-	
Date of Field Assessment:	6/14/2019		Consultant Firm/Investigator(s): CRI - SN/D	DS	
	Site	Location Details	s-taken from desktop review		
County:	Prince George's	Cross Roads:	Cleary Lane and Bald Hill Terrace		
Basin (HUC 8):	Patuxent	0.05	MDE Watershed (8 digit): 2131103	76.9205	
Proximity to impacted S	stream (ml.):	0.05	Lat/Long: 38.9446	-76.8395	
		<u>-</u>	<u>Site Data</u>		
Parcel Size (ac):	M-NCPPC- 19.25, 6.4	3 Private-84.22	Potential Restoration Reach (LF): 1,513		
Site Opportunities:	XChannel Restoration	Livestock Exclusion	XRiparian Buffer PlantingX_Habitat Enhancement	_XFish Passage	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:		
Drainage Area to Reach	(sq. mi.)	4.51			
Land Use:	Forest, wetland, resident	ial	Mapped Soils: Zekiah and Issue soils		
Property Address:	Cleary Lane, Mitchellville	, MD 20721			
Property Owner(s):	wi-NCPPC, private owner				
		General F	ield Observations		
Is there evidence that the	he stream has been distur	bed by some kind	Can the stream restoration be reasonably done within the con	fines of the	
of human action, like gr	ading, dumping, livestock	, culvert, etc?	parcel or does it require connections beyond the parcel limits?	? Explain	
Explain:			Explain:		
Small tributary near US s	sectionwith culvert and fisl	n blocakge. Sewer	Yes, all within M-NCPPS property. Could extend downstream to	one additional	
crossing observed with f	reshly palced riprap at cro	ssing	private property owner to extend approx 1000 lf		
_		-			
	Mitigation Site Rating				
<u>Criteria</u>		<u>Score</u>	Criteria	<u>Score</u>	
Estimated Bank erosion	within reach	10	Vegetation	5	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)		
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)		
1 - Less than 10%			1 - Mostly forested and/or wetland		
Describe:			Describe:		
A lot of fresh erosion alo	og both banks		Sewer crossing/ROW may limit plating forest buffer, existing ve	getation is	
			scrub-shrub and invasive herbaceous	8	
Degree of Channel Incisi	ion	5	Land Use	10	
10 - Bank Height greater	than 10 feet		10 - Agricultural or Open Space		
5 - Bank Height between	n 3 and 10 feet		5 - Marginal Pasture		
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested		
Describe:			Describe:		
Bank heights ranging fro	m 3-7', average at 5'		M-NCPPC stream parcel, open space near US 50, residential		
0 00	, 0				
		_			
Existing Floodplain Acce	ess	5	Opportunity for Ecological Lift	5	
10 - No evidence of out of	of bank flooding		10 - Conditions exist for several aspects of lift to be achieved an	nd sustained	
5- Yes (Infrequent out of	f bank flow)		5 - Lift limited to one or few aspects		
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is difficult to achieve and sustain		
Describe:			Describe:		
High banks with establis	hed invasive herbaceous, e	evidence of flow in	Vertial stability, lateral stability, floodplain access, habitat		
side channels					
Opportunity for Floodpl	ain Development	10	Ease of Access	10	
10 - Existing space for flo	oodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular access to potential site)		
5 - Existing space for floor	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular access)		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing needed)		
Describe:			Describe:		
Wide ope valley with roo	om for expansive floodplai	n access	Recent utility work in potential restoration, M-NCPPS ROW with	n low gradient	
Drainage Area Evaluatio	on	1	Utilities Present	1	
10 -D.A. less than 1 sq. n	ni.		10 - No utilities on site		
5- D. A. between 1 & 3 s	q. mi.		5 - Utilities but not within restoration area		
1 - D. A. greater than 3 s	q. mi.		1 - Utilities within potential restoration area		
Describe:			Describe:		
4.51 ac			Sewer manhole present in Floodplain, stream croses sewer ROV	N, sewer	
			annears to run parallel to stream	,	
	Total Score out of 100 62				





Page 2 of 3

	Stream Mitigation Field Site Assessment Form					
		Pro	oject Details			
Project Name:	I-495/I-270 Managed Lar	ies Study	Mitigation Site Number:	SSS-160034		
Projects Estimated Strea	am Mitigation Needs (LF)	TBD	-			
Data of Field Assessments	11/27/2010		Consultant Firm (Investigator(a))			
Date of Field Assessment:	11/2//2018 Site	Location Dotail	consultant Firm/investigator(s):	KK&K/KJH, BDIVI		
County:	Prince George's	Cross Roads	Kipling Phys. & Mason St			
Basin (HUC 8):	Patuxent	cross noaus.	MDF Watershed (8 digit):	02131103		
Proximity to Impacted S	Stream (mi.):	1.3	Lat/Long:	38.85702841	-76.88380062	
,			Site Data			
Parcel Size (ac):	NΛ	<u>-</u>	Dotential Restoration Reach (LE):	2 868		
Site Opportunities:	V Channel Pestoration	Livesteck Exclusion	Potential Restoration Reach (LF).	Z,000	V Eich Dassage	
Site Opportunities. Stream Order		Livestock Exclusion			A_FISH Passage	
Drainage Area to Reach	(sq. mi.)	0.52		-		
Land Use:	Medium Density Residen	tial	Mapped Soils:	Croom-urban land com	plex	
Property Address:	Kipling Pkwy. District Hei	ghts. MD 20747			[····	
Property Owner(s):	State Highway Administr	ation - Right-of-way				
	<u> </u>	General F	ield Observations			
Is there evidence that the	ne stream has been distur	bed by some kind	ICan the stream restoration be reason	ably done within the co	nfines of the	
of human action, like gr	ading, dumping, livestock	. culvert. etc?	parcel or does it require connections	beyond the narcel limit	s? Explain	
Evolain:	dunis, duniping, investoer	, curvert, etc.	Evolution	beyond the pareer line		
Expidin. Entire site consists of cou	ncrete lined channel		Explain: Restoration and access is feasible with	in SHA right-of-way		
				III SHA fight-of-way.		
		Mitiga	tion Site Rating			
<u>Criteria</u>		<u>Score</u>	Criteria		<u>Score</u>	
Estimated Bank erosion	within reach	1	Vegetation		10	
10 - Greater than 50%			10 - Herbaceous cover (non-wetland)			
5 - 10% to 50%			5 - Scrub-shrub cover (non-wetland)			
1 - Less than 10%			1 - Mostly forested and/or wetland			
Describe:			Describe:			
Very minor erosion. Enti	re site consists of concrete	e lined channel.	Site is dominated by grass lawn with so	cattered mature trees.		
Degree of Channel Incisi	ion	1	Land Lise		10	
10 - Bank Height greater	than 10 feet	1	10 - Agricultural or Open Space		10	
5 - Bank Height hetween	3 and 10 feet		5 - Marginal Pasture			
1 - Bank Height less than	n 3 feet		1 - Old field/ Developed/Forested			
Describe:			Describe:			
1-3 foot tall banks			Site is within SHA right-of-way and dor	minated by grass lawn w	vith scattered	
			mature trees.			
			mature trees.			
Existing Floodplain Acce	ess	5	Opportunity for Ecological Lift		1	
10 - No evidence of out of	of bank flooding		10 - Conditions exist for several aspect	s of lift to be achieved a	ind sustained	
5- Yes (Infrequent out of	bank flow)		5 - Lift limited to one or few aspects			
1 - Yes (evidence of freq	uent flooding)		1 - Conditions are such that Lift is diffic	cult to achieve and susta	ain	
Describe:			Describe:			
Some evidence of out-of	f-bank flows at top of conc	rete lined channel.	Limited potential for improving instrea	im habitat. No potential	for floodplain	
			development, improving water quality	, or reducing erosion.		
Opportunity for Floodpl	ain Development	1	Ease of Access		10	
10 - Existing space for flo	oodplain greater than 10 ti	mes stream width	10 - Yes (with <u>existing</u> direct vehicular	access to potential site)		
5 - Existing space for floo	odplain 3 to 10 times strea	m width	5- yes (open but no existing vehicular a	access)		
1 - Little to no space for	floodplain development		1 - No (no vehicular access, clearing ne	eded)		
Describe:			Describe:			
No opportunity for flood	lplain development. Site is	surrounded by	Majority of site is open and dominated	d by grass lawn with scat	tered trees.	
roads and residential ho	using.					
Drainage Area Evaluatio	n	10	l Itilities Present		1	
10 -D A less than 1 sq n	ni	10	10 - No utilities on site		-	
$5 - D \Delta$ between 1 & 3 s	a mi		5 - Utilities but not within restoration	area		
1 - D. A. greater than 3 s	a. mi.		1 - Utilities within potential restoration	n area		
Describe:	אייייי		Describe:			
Describe.						
Drainage area - 0.52 squ	are miles.		Overnead powerlines and possible sew	ver crossings.		
			Tota	al Score out of 100	50	



Site Photos





FISH PASSAGE RATING CRITERIA & FIELD SITE ASSESSMENT FORMS

Functional Upstream Network

The functional upstream network is the length of stream (mi.) between the fish blockage being investigated and the next upstream fish blockage. The functional upstream network consists of the length upstream of the blockage that would be accessible to downstream fish once the blockage has been removed. This value can be referenced from the Chesapeake Fish Passage Prioritization (CFPP) online database (http://maps.freshwaternetwork.org/chesapeake/#) or determined in the field.

Number of Downstream Fish Blockages

Determine the number of downstream fish blockages based on a GIS analysis or the Chesapeake Fish Passage Prioritization (CFPP) online database (http://maps.freshwaternetwork.org/chesapeake/#).

NAACC Diadromous Fish HUC 12 Watershed Score

Reference the North Atlantic Aquatic Connectivity Collaborative (NAACC) diadromous fish score (3-61) based on the HUC12 watershed where the site is located (http://tnc.maps.arcgis.com/apps/webappviewer/index.html?id=f64c9c61e01d4befafdb63afa638511f).

Percentage of Upstream Impervious Surface

Calculate the percentage of impervious surface in the watershed upstream of the fish blockage. This percentage can be calculated from a GIS analysis or referenced from the Chesapeake Fish Passage Prioritization (CFPP) online database (http://maps.freshwaternetwork.org/chesapeake/#).

Fish Habitat Diversity

Describe/list the different fish habitat types upstream and downstream of the blockage based on stream segments that are visible form the road right-of-way. Habitat types include large woody debris, riffles, deep pools, overhanging vegetation, boulders/cobble, undercut banks, thick root mats, submerged aquatic vegetation, isolated/backwater pools.

Fish Blockage Height - Ecological Benefits of Removal

Measure and record the height of the fish blockage (ft.) in the field. This criteria rates the ecological benefits that would be provided from removal of the blockage based on height. Take photographs of the fish blockage (facing upstream) and the culvert/dam inlet upstream of the blockage (facing downstream).

Adjacent Land Use

Describe the land use adjacent to the fish blockage site where construction/access would take place. Describe any challenges (vegetation, wetlands, development) may play in accessing the site for construction. Take a representative photo of the adjacent landuse.

Ease of Construction

Rate how difficult/easy it would be to successfully remove the fish blockage based the blockage type and height in the following table.

Ease of Construction Rating Criteria

Disakaga Tura	Blockage Height & Ease of Construction Score				
BIOCKage Type	No Blockage	< 1 foot	1-5 foot	> 5 foot tall	
Small Pipe (12-48" diameter)	0	10	5	1	
Large Pipe (>48" diameter)	0	5	1	1	
Small Box Culvert (12-48" width)	0	10	5	1	
Large Box Culvert (>48" width)	0	5	1	1	
Small Dam/Weir (< 20' long)	0	10	1	1	
Large Dam/Weir (>20' long)	0	5	1	1	
Sewer Crossing	0	10	5	1	
Natural Blockage	0	10	5	1	

Ease of Access

Consider how easy/difficult it may be to access the site for construction and restoration of fish passage. Does considerable clearing or access road construction need to be performed? Are there steep slopes surrounding the site that will make access/construction a challenge or is the surrounding area relatively flat and easy to access?

Utilities Present

Do utilities exist within or nearby the stream and do they present an issue that may effect construction, access, or reforestation efforts. Describe what utilities are seen such as overhead wires vs. underground utilities such as sewer lines, gas lines or cables.

	I-495/I-270 Mai	naged Lanes Study - Fi	ish Passage Field Site Assessment Form		
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MD_AN015		
Projects Estimated Strea	Mitigation Needs (LF):	TBD			
Date of Field Assessmen	t: 2/25/2019	to Location Dotails to	Consultant Firm/Investigator(s) CRI; JG, DS, LE		
County:	Prince George's	Cross Boads:	MD 193 (Greenhelt Rd.) E of Greenhelt Station Pkww		
Basin (HUC 8):	Middle Potomac-Anacosti	ia-Occoquan	MDE Watershed (8 digit): 2140205		
Proximity to Impacted S	tream (mi.):	0.9	Lat/Long: 38.998348	-76.917222	
, ,		Site	Data		
Parcel Size (ac):	Within SHA ROW	<u>5110</u>	Drainage Area to Reach (sg. mi. 27.9		
Site Opportunities:	Fish Passage	Channel Restoration	Habitat EnhancementRiparian Buffer Planting	i.	
Stream Order:	4th	Stream Hydrology:	Perennial Stream Use:	I	
Culvert/Dam Type:	Box Culvert x4	Culvert/Dam Dimensions	Blockage Type: Com	olete Partial X None	
USGS Gage Station #:	01649500	USGS Gage Discharge (fs3	(s): 4.2 *high, but only gage nearby with similar DA		
USGS Gage Daily, Discha	rge Percentile: 0-25%	<pre>% 25-50% 50-75%</pre>	X 75-100%		
Property Address:	SHA ROW - MD 193. Berw	/vn Height MD 20740	<u></u> /9 100/		
Property Owner(s):	SHA	<u>,</u>			
		General Field	Observations		
Are there records for dia	dromous fish. mussels. RTI	E cravfish. or other RTE	Can the fish blockage be removed within the road right	-of-way or does it	
species within or in close	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	olain	
Explain:	- p		Explain:	P	
RTE coordination with ag	encies pending.		No blockage		
		Fish Passag	e Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Functional Upstream Ne	twork	10	Fish Blockage Height - Ecological Benefits of Removal	0	
10 - Greater than 4 miles			10 - Greater than 5'		
5 - 1 to 4 miles			5-1' to 5'		
I - Less than I mile			1 - Less tildil 1 0 - No Blockage		
Doscribo:			Describe		
12 12			No blockage		
72			No blockage		
Number of Downstream	Fish Blockages	5	Adjacent Land Use	5	
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground		
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
1 blockage			US - Forest. DS - Field		
NAACC Diadromous Fish	HUC 12 Watershed Score	5	Ease of Construction	0	
10 - 3 to 22			10 - Easy	Ű	
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
			0 - No Blockage		
Describe:			Describe:		
23			No height, large box culvert >48"		
				-	
Percentage of Upstream	Impervious Surface	5	Ease of Access	5	
10 - Less than 10%			10 - Yes (with <u>existing</u> direct vehicular access to potentia	i site)	
5 - 10 to 25% 1 - Greater than 25%			5- Yes (open but no existing venicular access)	s surrounding site)	
Describe			1 - No (no venicular access, cleaning needed, steep slope Describe:	s surrounding site)	
15.60%			DS - forest no direct access clearing and grading needer	1 US - Field no direct	
15.00%			access	1. 05 - Held, no direct	
				4	
Fish Habitat Diversity		1	Utilities Present	1	
10 - Greater than 5 cover	types		10 - NO UTILITIES ON SITE		
1 - Less than 3 cover types	26		1 - Utilities within notential site		
Describe:			Describe:		
DS riffle doon real US	doop pool woody dobate		Doworlings procent in BOW Mater sizeling		
ינט - mile, deep pool. US	- ueep pool, woody debris		rowenines present in KOW. Water pipeline		
			Total Score out of 100	37	





Looking downstream at culvert from right bank



Downstream of culvert - facing upstream

Channel overview upstream of culvert - facing upstream



Channel overview downstream of culvert - facing downstream

	I-495/I-270 Ma	anaged Lanes Study - Fis	h Passage Field Site Assess	ment Form	
		Project	Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number	: MPAO0033	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD	_		
Date of Field Assessmen	it: 8/14/2019		Consultant Firm/Investigator(s): RKK; KJH & AJN	
		Site Location Details-tak	en from desktop review		
County:	Prince George's	Cross Roads	: 1-495 & 1-95 Interchange	. 2140205	
Basin (HUC 8): Provimity to Impacted S	tream (mi): 0	la-Occoquan	INDE Watershed (8 digit)	· 20 021025	-76 0/565/
Froximity to impacted 5				. 59.021055	-70.943034
Deveal Cine (ea):	200.2	Site	<u>Data</u> Desiress Ares to Beach (en. mi	16 4	
Parcel Size (ac):	366.3		_ Drainage Area to Reach (sq. mi	. 10.4	
Site Opportunities:	XFISH Passage	XChannel Restoration	hXHabitat Enhancement	Riparian Buffer Planting	
Stream Order:	3rd	Stream Hydrology:	Perennial	Stream Use:	
Culvert/Dam Type:	Quadruple Box Culvert	Culvert/Dam Dimensions:	10' wide. 14' tall	BIOCKAGE Type: _XCom	plete PartialNone
USGS Gage Station #:	1649190	USGS Gage Discharge (fs3/s)	: 4.3		
USGS Gage Daily Discha	rge Percentile:0-25%	% _X25-50%50-75% _	75-100%		
Property Address:	Lodge Road				
Property Owner(s):	BARC				
		General Field	<u>Observations</u>		
Are there records for dia	adromous fish, mussels, RTI	E crayfish, or other RTE	Can the fish blockage be remov	ed within the road right-	of-way or does it
species within or in close	e proximity to the fish blocl	kage site? Explain	require access to parcels beyor	nd right-of-way limits? Ex	plain
Explain:			Explain:		
RTE coordination with ag	gencies is pending. Americar	n Eel and Sea Lamprey	Site recommended by SHA-EPD	. Requires work on BARC S	South Farm Parcel.
documented by MBSS ne	ear the site.				
		Fich Dassage	Site Pating		
Criteria		<u>FISH Fassage</u> Score	<u>Criteria</u>		Score
Eunctional Unstream Ne	atwork	10	Eish Blockage Height - Ecologic	al Benefits of Removal	5
10 - Greater than 4 miles		10	10 - Greater than 5'	ai benenits of Kenioval	5
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
Full re-establishment - 0.	.64 miles US. Partially restor	re 26 miles US.	3 blockages: 12", 10", and 14"		
			o oloonageo, 12 , 20 , and 11		
Number of Downstream	Fish Blockages	10	Adiacent Land Use		5
10 - 0 Blockages	5		10 - Commercial/Agriculture/Ba	are Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
0 downstream blockages	5		Mix of forest and scrub/shrub		
NAACC Diadromous Fish	HUC 12 Watershed Score	1	Ease of Construction		1
10 - 3 to 22	THOC IZ Watershed Store	1			1
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
52			Ouadruple box culvert - each 10)' wide	
-					
Percentage of Upstream	Impervious Surface	1	Ease of Access		1
10 - Less than 10%			10 - Yes (with existing direct veh	nicular access to potential	site)
5 - 10 to 25%			5- Yes (open but no existing veh	nicular access)	
1 - Greater than 25%			1 - No (no vehicular access, clea	ring needed, steep slopes	surrounding site)
Describe:			Describe:		
31%			Forest and scrub/shrub clearing	g required.	
Fish Habitat Diversity		5	Utilities Present		1
10 - Greater than 5 cover	r types		10 - No utilities on site		
5 - 3-5 cover types	<i></i>		5 - Utilities but not within site		
1 - Less than 3 cover type	es		1 - Utilities within potential site		
Describe:			Describe:		
Riffles deen nools over	hanging vegetation boulder	s/cobble	Sewerline parallels stream		
		0,0020101			
			To	otal Score out of 100	40



Site Photos



	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		Projec	<u>t Details</u>		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	MPAO0034	
Projects Estimated Strea	am Mitigation Needs (LF):	TBD			
Date of Field Assessmen	it: 8/14/2019		Consultant Firm/Investigator(s)	RKK; KJH & AJN	
Country	Drinco Goorgo's	te Location Details-ta	AKEN FROM DESKTOP FEVIEW		
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDF Watershed (8 digit):	2140201	
Proximity to Impacted S	Stream (mi.):	C	Lat/Long:	38.825498 -76	6.880549
· · · · · · · · · · · · · · · · · · ·		Site			
Parcel Size (ac):	16.4	510	Drainage Area to Reach (sq. mi.	0 11	
Site Opportunities:	X Fish Passage	X Channel Restoration	X Habitat Enhancement	Riparian Buffer Planting	
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	
Culvert/Dam Type:	CMP - Concrete Bottom	Culvert/Dam Dimensions	9' wide. 6' tall	Blockage Type: X Comple	te Partial None
USGS Gage Station #	159/526	USGS Gage Discharge (fs	3 215		
USGS Gage Daily Discha	arge Percentile: 0-25%	× 25-50% 50-75%	75-100%		
Property Address:	4400 Rena Rd. Suitland. N	и <u>_,, 25 56</u> , 2 <u></u> 56 75, 6 ЛD 20746	/3 100/0		
Property Owner(s):	Forest Village United LLC				
		General Fiel	d Observations		
Are there records for dia	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be remove	ed within the road right-of-	way or does it
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyon	d right-of-way limits? Expla	, in
Explain:	<u> </u>	` _	Explain:		
Orconectes limosus docu	umented within close proxir	nity.	Recommended by USACE and M	DE	
Cuitouio		Fish Passag	ge Site Rating		C.como
<u>Criteria</u>		<u>score</u>	Criteria		<u>score</u>
Functional Opstream Ne	etwork	1	FISH BIOCKage Height - Ecologica	Benefits of Removal	10
10 - Greater than 4 miles	\$		10 - Greater than 5 5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
0.51 miles			6' tall blockage		
Number of Downstream	1 Fish Blockages	1	Adjacent Land Use		1
10 - 0 Blockages			10 - Commercial/Agriculture/Ba	re Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
3 downstream blockages	5		Forest - mid successional: Red m	apie, eim, tulip popiar, busr	1 noneysuckie.
NAACC Diadromous Fish	1 HUC 12 Watershed Score	5	Ease of Construction		1
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 to 61					
Describe:			Describe: 9' wide CMP		
25			5 wide civir		
Percentage of Upstream	1 Impervious Surface	5	Ease of Access		1
10 - Less than 10%	· ·		10 - Yes (with existing direct veh	icular access to potential sit	te)
5 - 10 to 25%			5- Yes (open but no existing vehi	icular access)	
1 - Greater than 25%			1 - No (no vehicular access, clear	ring needed, steep slopes su	rrounding site)
Describe:			Describe:		
25%			Forested downstream of blockage	ze.	
Fish Habitat Diversity		5	Utilities Present		1
10 - Greater than 5 cove	r types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover type	es		1 - Utilities within potential site		
Describe:					
Rittles, deep pools, over	nanging vegetation, thick ro	ot mats.	Sewerline downstream of blocka	ige.	
			То	tal Score out of 100	31





	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		Projec	<u>t Details</u>		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	MPAO0035	
Projects Estimated Stream	Im Mitigation Needs (LF):	TBD			
Date of Field Assessmen	t: 6/11/2019	ita Location Dotails to	Consultant Firm/Investigator(s)	KK&K KJH/CAS	
County:	Prince George's	Cross Roads	Greenbelt Metro Drive and Cher	rywood Lane	
Basin (HUC 8):	Middle Potomac-Anacost	ia-Occoquan	MDE Watershed (8 digit):	02070010	
Proximity to Impacted S	tream (mi.):	14.9	Lat/Long:	39.011219 -	76.90374
· · ·					
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sg. mi.	0.65	
Site Opportunities:	Fish Passage	<u>X</u> Channel Restoration	X Habitat Enhancement	Riparian Buffer Planting	
Stream Order:	4th	Stream Hydrology:	Perennial	Stream Use:	
Culvert/Dam Type:	4 cll box culvert	Culvert/Dam Dimensions	: 17' wide	Blockage Type:Comple	te Partial X_None
USGS Gage Station #:	01649500	USGS Gage Discharge (fs:	3 50cfs		
USGS Gage Daily Discha	rge Percentile: 0-25	% 25-50% X 50-75	% 75-100%	i -	
Property Address:	Greenbelt Metro Drive				
Property Owner(s):	SHA				
		General Fiel	d Observations		
Are there records for dia	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be remove	ed within the road right-o	f-way or does it
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond	d right-of-way limits? Exp	lain
Explain:			Explain:		
3 road crossings/culverts	. Recommended by USACE		Indian Creek. Recommneded	by USACE	
		Fish Passa	ge Site Rating		
<u>Criteria</u>		Score	Criteria		<u>Score</u>
Functional Upstream Ne	twork	10	Fish Blockage Height - Ecologica	Benefits of Removal	1
10 - Greater than 4 miles	5		10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
~42 square miles			No blockage observed. Shallow f	lows in culverts - 4-8" dee	р.
Number of Downstream	Fish Blockages	5	Adjacent Land Lise	r	1
10 - 0 Blockages	TISH DIOCKages	5	10 - Commercial/Agriculture/Bar	re Ground	I
5 - 1 Blockage			5- Field/Scrub-shrub	e oround	
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
2 downstream dams, how	wever 1 has fish passage nc	otch.	Mid successional. Mix of forest and scrub shrub. Mostly forest downstream.		
			Pin oak, Ironwood, Red Maple, B	lackgum	
NAACC Diadromous Fish	HUC 12 Watershed Score	5	Ease of Construction		5
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
HCV12 score - 23			4 cell box culvert. 17' width for each culvert.		
Dercentege of Unstream	Imponyious Surface	E			1
10 Loss than 10%	Impervious Surface	5	Lase of Access	icular access to notential s	
5 - 10 to 25%			5-Yes (open but no existing vehi	icular access)	ite)
1 - Greater than 25%			1 - No (no vehicular access, clear	ring needed, steep slopes s	surrounding site)
Describe:			Describe:		
17.20%			Clearing of forest and scrub-shru	ub required. Access throug	h wetland.
Fish Habitat Diversity		10	Utilities Present		1
10 - Greater than 5 cover	r types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover types			1 - Utilities within potential site		
Describe:			Describe:		
Deep pools, LWD, overha	anging vegetation, root mat	ts, SAV, duckwater pools.	Overhead power lines over down	nstream culvert.	
			<u> </u>	tal Coore and a face	ΛΛ
			10	ital score out of 100	44





	I-495/I-270 Mar	naged Lanes Study - Fi	ish Passage Field Site Assessment Form		
		<u>Projec</u>	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MD_12066		
Projects Estimated Strea	m Mitigation Needs (LF):	TBD			
Date of Field Assessmen	t: 2/25/2019	to Location Datails to	Consultant Firm/Investigator(s) CRI; JG, DS, LE		
County:	Montgomery	Cross Roads:	Montgomery Village Ave NE of Russell Ave		
Basin (HUC 8):	Middle Potomac-Catoctin		MDE Watershed (8 digit): 2140208		
Proximity to Impacted S	tream (mi.):	1.3	Lat/Long: 39.155574	-77.20806	
		Site	Data		
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 0.4		
Site Opportunities:	X_Fish Passage	X_Channel Restoration	X_Habitat Enhancement X_Riparian Buffer Planting		
Stream Order:	1st	Stream Hydrology:	Perennial Stream Use:	1	
Culvert/Dam Type:	RCP	Culvert/Dam Dimensions	4-5' diameter Blockage Type: _X_Com	plete PartialNone	
USGS Gage Station #:	01644372	USGS Gage Discharge (fs3	0.78 cfs		
USGS Gage Daily Discha	rge Percentile:0-25%	625-50%50-75%	75-100% *200% of mean		
Property Address:	SHA ROW - Montgomery	Village Ave., Gaithersburg	MD 20879		
Property Owner(s):	SHA				
		General Field	d Observations	<i>.</i>	
Are there records for dia	dromous fish, mussels, RTI	E crayfish, or other RTE	Can the fish blockage be removed within the road right	-of-way or does it	
species within or in close	e proximity to the fish block	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain	
Explain:	rancias panding		Explain:		
RTE COOLUMATION WITH ag	encies penuing.				
		Fish Passag	se Site Rating		
<u>Criteria</u>		<u>Score</u>	Criteria	<u>Score</u>	
Functional Upstream Ne	twork	1	Fish Blockage Height - Ecological Benefits of Removal	5	
10 - Greater than 4 miles	1		10 - Greater than 5'		
5 - 1 to 4 miles 1 - Less than 1 mile			5-1 [05 1 - Less than 1'		
			1 - Less than 1 0 - No Blockage		
Describe:			Describe:		
0.03 miles of US network	; Culvert drains two retenti	on ponds US. Little/no	Perched RCP, 2-3 feet above water surface. Unable to ac	cess outfall due to	
benefit of removing bloc	kage.		depth.		
Number of Downstream	Fish Blockages	1	Adjacent Land Use	5	
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground		
5 - I BIOCKage			5- Fleia/Scrub-snrub 1 - Forest		
Describe:			Describe:		
2 DS barriers			DS - forest on RB, commercial on LB; US - field/scrub shrub/commercial. A		
			score of 5 was given due to direct access to blockage without tree removal.		
NAACC Diadromous Fish	HUC 12 Watershed Score	1	Easo of Construction	1	
10 - 3 to 22	Hoe 12 watershed Store	Ť	10 - Fasy	1	
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
			0 - No Blockage		
Describe:			Describe:		
50			Large pipe, 1-5 feet in height		
Percentage of Unstream	Impervious Surface	1	Ease of Access	1	
10 - Less than 10%		_	10 - Yes (with existing direct vehicular access to potentia	site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)	/	
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	s surrounding site)	
Describe:			Describe:		
55.70%			DS - steep, clearing needed. US - no direct road, steep		
Fish Habitat Diversity		5	Utilities Present	5	
10 - Greater than 5 cover	types		10 - No utilities on site		
5 - 3-5 COVER TYPES	20		2 - UNITIES DUT NOT WITHIN SITE 1 - Utilities within notential site		
DS - deen nool riffle roo	nts: LIS - nond		Seware manhole well downstroom of culvort		
23 - acep pool, nine, roo	its, 05 - poliu				
			Total Score out of 100	26	





Culvert outfall/blockage - facing upstream



Downstream of blockage - looking at sewer manholes



Channel overview downstream of blockage - facing downstream



Upstream of culvert looking at pond

	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Assessment Form	
		<u>Projec</u>	t Details	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 38347	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD		
Date of Field Assessmen	t: 2/28/2019	ita Location Datails ta	Consultant Firm/Investigator(s) CRI; DS, KS	
County:	<u>S</u> Frederick	Cross Roads:	MD 17 (Burkittsville Rd): NE of Quebec School Rd.	
Basin (HUC 8):	Middle Potomac-Catoctir		MDE Watershed (8 digit): 2140305	
Proximity to Impacted S	tream (mi.):	27.6	Lat/Long: 39.418362	-77.576515
		Site	Data	
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 0.6	
Site Opportunities:	X_Fish Passage	X_Channel Restoration	X_Habitat Enhancement X_Riparian Buffer Planting	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:	III
Culvert/Dam Type:	Box Culvert	Culvert/Dam Dimensions	12.5'x 8' high, 115 feet long Blockage Type: <u>X</u> _Comp	lete PartialNone
USGS Gage Station #:	01637500	USGS Gage Discharge (fs3	220	
USGS Gage Daily Discha	rge Percentile:0-259	%25-50% _X_50-75%	75-100%	
Property Address:	SHA ROW - at MD 17 just	north east of Quebec Scho	ool Rd., Middletown MD 21769	
Property Owner(s):	SHA			
		General Field	d Observations	
Are there records for dia	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be removed within the road right-	of-way or does it
species within or in close	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain
Explain:			Explain:	
RTE coordination with ag	gencies is pending.		Blockage is within ROW, but likely need access to parcel of	downstream of ROW
			since concrete structure is so extensive.	
		Eich Doccor	ro Sito Poting	
Criteria		Score	ICriteria	Score
Functional Upstream Ne	twork	1	Fish Blockage Height - Ecological Benefits of Removal	5
10 - Greater than 4 miles	3	_	10 - Greater than 5'	
5 - 1 to 4 miles			5- 1' to 5'	
1 - Less than 1 mile			1 - Less than 1'	
			0 - No Blockage	
Describe:			Describe:	
0.8 miles of US network			2 step concrete apron. 1st step: 0.4 feet; 2nd step at box	culvert: 1.5 - 1.9 feet
Number of Doumstroom		r -	A dia and the second the second states	r.
Number of Downstream	FISH BIOCKages	5	Adjacent Land Use	5
5 - 1 Blockages			5- Field/Scrub-shrub	
1 - >1 Blockage			1 - Forest	
Describe:			Describe:	
1 blockage DS			Split, forest upstream; bare on LB and forest on RB down	stream. Given average
			rank of 5 to respresent land use at downstream blockage	
NAACC Diadromous Fish	HUC 12 Watershed Score	1	Ease of Construction	1
10 - 3 to 22			10 - Fasy	-
5 - 23 to 41			5- Average	
1 - 42 to 61			1 - Difficult/Complex	
			0 - No Blockage	
Describe:			Describe:	
46			Large box culvert, 1.9 foot blockage height.	
Deveentege of Unstroom		10		1
Percentage of Opstream	i impervious surface	10	Ease of Access	
10 - Less (fiai) 10% 5 - 10 to 25%			5- Ves (open but no existing vehicular access)	sitej
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slopes	s surrounding site)
Describe:			Describe:	
1.71%			Clearing needed, steep slopes, guardrail present	
Fish Habitat Diversitv		5	Utilities Present	5
10 - Greater than 5 cover	r types	-	10 - No utilities on site	-
5 - 3-5 cover types			5 - Utilities but not within site	
1 - Less than 3 cover type	es		1 - Utilities within potential site	
Describe:			Describe:	
Riffle, boulder/cobble, w	oody, roots		None directly within site; overhead utilities adjacent to si	te
				20
I			I otal Score out of 100	39





Culvert outfall - facing downstream



Upstream of culvert looking upstream

Culvert outfall/complete blockage - facing upstream



Left Bank at upstream end looking downstream

	I-495/I-270 Mar	naged Lanes Study - F	ish Passage Field Site Assessment Form	
		<u>Projec</u>	t Details	
Project Name:	I-495/I-270 Managed Land	es Study	Mitigation Site Number: NAACC 38385	
Projects Estimated Stream	am Mitigation Needs (LF):	TBD		
Date of Field Assessmen	it: 2/28/2019	to Location Dotails to	Consultant Firm/Investigator(s) CRI; DS, KS	
County:	Erederick	Cross Roads:	MD 77 (Foxville Rd.): just E of Ouirauk School Rd.	
Basin (HUC 8):	Middle Potomac-Catoctin		MDE Watershed (8 digit): 2140305	
Proximity to Impacted S	tream (mi.):	38.2	Lat/Long: 39.638376	-77.513944
		Site	Data	
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 0.4	
Site Opportunities:	X_Fish Passage	Channel Restoration	Habitat EnhancementRiparian Buffer Planting	1
Stream Order:	1st	Stream Hydrology:	Perennial Stream Use:	III
Culvert/Dam Type:	Box Culvert	Culvert/Dam Dimensions	12'x6.7' and 35 feet long Blockage Type: <u>x</u> _Com	plete PartialNone
USGS Gage Station #:	01637500	USGS Gage Discharge (fs3	220 *no gages nearby with comparable DA	
USGS Gage Daily Discha	arge Percentile:0-25%	625-50% <u>X_</u> 50-75%	75-100%	
Property Address:	SHA ROW - on MD 77 just	east of Quirauk School Ro	d., Sabillasville MD 21780	
Property Owner(s):	SHA			
		<u>General Field</u>	d Observations	
Are there records for dia	adromous fish, mussels, RTF	E crayfish, or other RTE	Can the fish blockage be removed within the road right	-of-way or does it
species within or in clos	e proximity to the fish block	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain
Explain:			Explain:	
RTE coordination with ag	gencies is pending. No diadro	omous species recently	Yes, structure at crossing is starting to fail and concrete i	s actively falling into
documented by MBSS.			the stream.	
		Fish Passag	ze Site Rating	
Criteria		Score	Criteria	Score
Functional Upstream Ne	etwork	1	Fish Blockage Height - Ecological Benefits of Removal	1
10 - Greater than 4 miles	5		10 - Greater than 5'	
5 - 1 to 4 miles			5- 1' to 5'	
1 - Less than 1 mile			1 - Less than 1'	
Describer			U - NO BIOCKage	
Describe:	k		Describe: 0.65 foot drop at concrete aprop	
0.5 miles of 05 network	X		0.05 loot drop at concrete aproli	
Number of Downstream	n Fish Blockages	5	Adjacent Land Use	5
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground	L
5 - 1 Blockage			5- Field/Scrub-shrub	
1 - >1 Blockage			1 - Forest	
Describe:			Describe:	
1 blockage DS			Scrub-shrub in ROW, forest upstream and downstream	
NAACC Diadromous Fish	1 HUC 12 Watershed Score	1	Ease of Construction	5
10 - 3 to 22			10 - Easy	
5 - 23 to 41			5- Average	
1 - 42 to 61			1 - Difficult/Complex	
Describer			U - NO BIOCKAGE	
Describe:			Describe: 12 feet wide her culvert: 0 65 feet high blockage	
22			12 Tool wide box cuivert; 0.65 Tool high blockage	
Percentage of Upstream	1 Impervious Surface	10	Ease of Access	5
10 - Less than 10%			10 - Yes (with existing direct vehicular access to potentia	l site)
5 - 10 to 25%			5- Yes (open but no existing vehicular access)	
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	s surrounding site)
Describe:			Describe:	
0.46%			ROW is open, no clearing needed on downstream end; n	o existing access road
			other than MD-77; Guardrail present	
Fish Habitat Diversity		5	Utilities Present	1
10 - Greater than 5 cove	r types		10 - No utilities on site	
5 - 3-5 cover types	00		5 - Utilities but not within site	
Describe:	C3			
Difflee echle /	roote overheading	on	Descript.	
nines, cobbie/boulder, l	oots, overhanging vegetatio	ווע	Low nanging power lines at both extents of the crossing	
			Total Score out of 100	39





At downstream end of culvert looking downstream



Left bank at downstream end looking at overhead utility



Culvert outfall/complete blockage - facing upstream



Deteriorating concrete on culvert

	I-495/I-270 Mai	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		<u>Projec</u>	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 38455		
Projects Estimated Strea	m Mitigation Needs (LF):	TBD			
Date of Field Assessmen	it: 2/28/2019		Consultant Firm/Investigator(s) CRI; DS, KS		
Country	<u>SI</u> Frederick	te Location Details-ta	ND 17 (Wolfsville Dd.) N of Martin Dood		
County: Basin (HLIC 8):	Middle Potomac-Catoctin	Cross Roads:	MDE Watershed (8 digit): 2140205		
Provimity to Impacted S	tream (mi).	36.5	Lat/Long: 39 591704	-77 558824	
	a cum (maj.	50:5 C: ta	Data	77.556624	
Darcal Siza (ac)	Within SHA DOW	Site	<u>Proinage Area to Boach (sg. mi. 2</u>		
Parcel Size (ac):	Fish Passage	Channel Destaurtion	Drainage Area to Reach (Sq. ml. 2		
Site Opportunities:	FISH Passage	Channel Restoration	Riparian Burler Planting Riparian Burler Planting Riparian Burler Planting Stroom Lico		
Stream Order:	1st	Stream Hydrology:	Perennial Stream Use:	<u> </u>	
Culvert/Dam Type:	Box Culvert	Culvert/Dam Dimensions	EIOCKage Type:Com	olete Partial _X_None	
USGS Gage Station #:	01637500	USGS Gage Discharge (fs3	220		
USGS Gage Daily Discha	rge Percentile:0-25%	625-50%50-75%	75-100%		
Property Address:	SHA ROW - at MD 17 just	north of Martin Rd., Smith	nsburg MD 21783		
Property Owner(s):	ЗПА				
		General Field	d Observations		
Are there records for dia	adromous fish, mussels, RTI	E crayfish, or other RTE	Can the fish blockage be removed within the road right	Can the fish blockage be removed within the road right-of-way or does it	
species within or in close	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain	
Explain:			Explain:		
RTE coordination with ag	gencies is pending.		No blockage		
		Fich Deces	a Cita Dating		
Criteria		FISH Passag	<u>ce Site Rating</u>	Score	
Eunctional Unstream No	atwork	5	Eich Blockage Height - Ecological Benefits of Removal	0	
10 - Greater than 4 miles		5	10 - Greater than 5'	0	
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
			0 - No Blockage		
Describe:			Describe:		
3.1 miles of US network			No blockage		
Number of Downstream	Fish Blockages	1	Adiacent Land Use	5	
10 - 0 Blockages		_	10 - Commercial/Agriculture/Bare Ground	l	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
2 DS barriers			Old field dowstream, forest upstream		
NAACC Diadromous Fish	HIIC 12 Watershed Score	1	Ease of Construction	0	
10 - 3 to 22	THOC IZ Watershed Store	-		0	
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
			0 - No Blockage		
Describe:			Describe:		
55			Large box culvert, no blockage		
Percentage of Upstream	Impervious Surface	10	Ease of Access	5	
10 - Less than 10%			10 - Yes (with existing direct vehicular access to potentia	l site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)		
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	s surrounding site)	
Describe:		Describe:			
0.57%			Old field, fences or guardrail would be compromised		
Fish Habitat Diversity		10	Utilities Present	1	
10 - Greater than 5 cover	r types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover type	es		1 - Utilities within potential site		
Describe:			Describe:		
Riffle, cobble/boulder. ro	oot, woody, deep pool, back	water pools	Powerlines in right of way at both extents of crossing		
. ,,			,		
			Total Score out of 100	38	





Culvert outfall/no blockage - facing upstream



Left bank at downstream edge looking at powerlines and guardrail



Channel overview downstream of culvert - facing downstream



Upstream looking downstream at culvert

	I-495/I-270 Mai	naged Lanes Study - F	ish Passage Field Site Assessment Form	
		<u>Projec</u>	t Details	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 38672	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD		
Date of Field Assessmen	t: 2/28/2019	to Location Dotails to	Consultant Firm/Investigator(s) CRI; DS, KS	
County:	Erederick	Cross Roads:	MD 17 (Wolfsville Rd.), N of Black Rock Road	
Basin (HUC 8):	Middle Potomac-Catoctin	cioss notausi	MDE Watershed (8 digit): 2140305	
Proximity to Impacted S	tream (mi.):	35.6	Lat/Long: 39.578487	-77.556051
		Site	Data	
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 5.9	
Site Opportunities:	Fish Passage	Channel Restoration	Habitat EnhancementRiparian Buffer Planting	
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Use:	
Culvert/Dam Type:	Triple CMP w/ concrete	Culvert/Dam Dimensions	8' diameter, 55 feet long Blockage Type:Comp	blete Partial _X_None
USGS Gage Station #:	01637500	USGS Gage Discharge (fs3	3 220	
USGS Gage Daily Discha	rge Percentile:0-25%	625-50% <u>X_</u> 50-75%	75-100%	
Property Address:	SHA ROW - at MD 17 just	north of Black Rock Rd., N	Iyersville MD 21773	
Property Owner(s):	SHA			
		General Field	d Observations	
Are there records for dia	dromous fish, mussels, RTI	E crayfish, or other RTE	Can the fish blockage be removed within the road right	of-way or does it
species within or in close	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain
Explain:			Explain:	
RTE coordination with ag	gencies is pending.		No blockage, potentially fixed prior as new concrete bott	om on CMP
		Fish Passag	ze Site Rating	
Criteria		Score	Criteria	Score
Functional Upstream Ne	twork	10	Fish Blockage Height - Ecological Benefits of Removal	0
10 - Greater than 4 miles			10 - Greater than 5'	
5 - 1 to 4 miles			5- 1' to 5'	
1 - Less than 1 mile			1 - Less than 1'	
Describer			0 - NO BIOCKage	
5 1 miles of US network			Describe:	
5.1 miles of 05 network			No blockage	
Number of Downstream	Fish Blockages	5	Adjacent Land Use	5
10 - 0 Blockages	<u> </u>		10 - Commercial/Agriculture/Bare Ground	
5 - 1 Blockage			5- Field/Scrub-shrub	
1 - >1 Blockage			1 - Forest	
Describe:			Describe:	
1 DS barrier			Field clear at ROW, forest upstream and downstream	
NAACC Diadromous Fish	HUC 12 Watershed Score	1	Ease of Construction	0
10 - 3 to 22			10 - Easy	
5 - 23 to 41			5- Average	
1 - 42 (0 01			0 - No Blockage	
Describe [.]			Describe:	
55			Three large CMP with concrete bottom, no blockage heig	zht.
Percentage of Upstream	Impervious Surface	10	Ease of Access	5
10 - Less than 10%			10 - Yes (with <u>existing</u> direct vehicular access to potentia	l site)
5 - 10 to 25%			5- Yes (open but no existing vehicular access)	
1 - Greater than 25%			1 - NO (no venicular access, clearing needed, steep slope:	surrounding site)
0 64%		Open ROW, no existing access		
0.0478			open now, no existing access	
Fish Habitat Divorsity		5	Utilities Present	1
10 - Greater than 5 cover	r types	J	10 - No utilities on site	L
5 - 3-5 cover types	types		5 - Utilities but not within site	
1 - Less than 3 cover type	25		1 - Utilities within potential site	
Describe:			Describe:	
Riffle, boulder/cobble. w	oody, roots, deep pool		Overhead lines within potential site	
,,	// ···/ ···/· P==			
			<u>Total Score out of 100</u>	42





Culvert outfall/no blockage - facing upstream



Left bank at downstream end looking at powerlines and guardrail





Upstream of culvert looking upstream

	I-495/I-270 Mai	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		<u>Projec</u>	t Details		
Project Name: I-495/I-270 Managed Lanes Study			Mitigation Site Number: MD LPX15		
Projects Estimated Stre	am Mitigation Needs (LF):	TBD			
Date of Field Assessme	nt: 3/6/2019	to Location Dotails to	Consultant Firm/Investigator(s) CRI; JG, DS		
County:	Howard	Cross Roads:	US 29. S of Little Patuxent Pkwy.		
Basin (HUC 8):	Patuxent	ci ese neudor	MDE Watershed (8 digit): 2131105		
Proximity to Impacted	Stream (mi.):	13.2	Lat/Long: 39.217813	-76.850299	
		Site	Data		
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 0.4		
Site Opportunities:	X_Fish Passage	Channel Restoration	X_Habitat EnhancementRiparian Buffer Planting	-	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:	IV	
Culvert/Dam Type:	Double RCP	Culvert/Dam Dimensions	6', 200 feet long Blockage Type:Com	plete X_ PartialNone	
USGS Gage Station #:	01593500	USGS Gage Discharge (fs3	71.5		
USGS Gage Daily Disch	arge Percentile:0-25%	6 25-50%50-75%	_X_75-100% 78%		
Property Address:	SHA ROW - US 29, Columi	pia MD 21044			
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for d	iadromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be removed within the road right	t-of-way or does it	
species within or in clos	se proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? E	xplain	
Explain:			Explain:		
RTE coordination with a	igencies pending.		Yes, blockage is just minor debris jam within ROW on up	ostream end	
		Eich Doccor	in Sita Pating		
Criteria		Score	Icriteria	Score	
Functional Upstream N	etwork	5	Eish Blockage Height - Ecological Benefits of Removal	1	
10 - Greater than 4 mile	S		10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
			0 - No Blockage		
Describe:			Describe:		
1.4 miles of US network	(Minor debris jam at inlet - 0.8 foot drop		
			• H · · · · · ·	T	
Number of Downstream	n Fish Blockages	1	Adjacent Land Use	1	
10 - 0 Blockages			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
3 DS barriers			Forest US and DS		
NAACC Diadromous Fis	h HUC 12 Watershed Score	1	Easo of Construction	5	
10 - 3 to 22	in moe 12 watershed score	Ĩ	10 - Fasy	5	
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
			0 - No Blockage		
Describe:			Describe:		
48			6 foot double RCP, <1 foot height		
Demonstrate of the store of					
Percentage of Upstream	n Impervious Surrace	2	Ease of Access	L al cita)	
10 - Less linan 10%			5- Yes (open but no existing vehicular access)	an site)	
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	s surrounding site)	
Describe:			Describe:		
10.30%		Clearing needed and soundwall at DS end			
			C C		
Fish Habitat Diversity		5	I Itilities Present	5	
10 - Greater than 5 cove	er types	-	10 - No utilities on site	<u> </u>	
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover typ	bes		1 - Utilities within potential site		
Describe:			Describe:		
Riffle, cobble, backwate	er pool		Sewer/manholes US and DS but not within site		
				1	
			Total Score out of 100	30	




Upstream looking downstream at culvert



Channel overview downstream - facing downstream

At inlet looking upstream at debris jam/ partial blockage



Downstream of culvert facing sewer line on right bank

	I-495/I-270 Mai	naged Lanes Study - Fi	ish Passage Field Site Assessment Form		
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: MD PXM23		
Projects Estimated Strea	m Mitigation Needs (LF):	TBD	-		
Date of Field Assessmen	t: 2/21/2019	to Location Datails to	Consultant Firm/Investigator(s) CRI; DS, LE		
County:	Anne Arundel	Cross Roads	MD 197 N of Boute 50 and S of MD 450		
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit): 2131102		
Proximity to Impacted S	tream (mi.):	11.7	Lat/Long: 38.789336	-76.648663	
		Site	Data		
Parcel Size (ac):	Within SHA ROW	<u></u>	Drainage Area to Reach (sq. mi. 0.62		
Site Opportunities:	X_Fish Passage	<u>X</u> Channel Restoration	X_Habitat Enhancement X_Riparian Buffer Planting	,	
Stream Order:	1st	Stream Hydrology:	Perennial Stream Use:	I	
Culvert/Dam Type:	Box Culvert/Top Flow Spillway	Culvert/Dam Dimensions	W: 9.5' H: 5' (1st blockage) Blockage Type: <u>X</u> Com	plete PartialNone	
USGS Gage Station #: 01649150 USGS Gage Discharge (fs3 2.39					
USGS Gage Daily Discha	rge Percentile:0-25%	625-50%50-75%	75-100%		
Property Address:	SHA ROW - MD 197, Bowi	ie MD 20715			
Property Owner(s):	SHA				
		<u>General Field</u>	d Observations		
Are there records for dia	adromous fish, mussels, RTI	E crayfish, or other RTE	Can the fish blockage be removed within the road right	-of-way or does it	
species within or in close	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain	
Explain:			Explain:		
RTE coordination with ag	gencies pending.		No, need access to additional parcels for blockages 2 and	13; 1st blockage is at	
	box culvert				
		Fish Passag	ze Site Rating		
Criteria		Score	Criteria	Score	
Functional Upstream Ne	etwork	5	Fish Blockage Height - Ecological Benefits of Removal	5	
10 - Greater than 4 miles	5		10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1 0 - No Blockage		
Describer			0 - NO BIOCKAge		
1.2 miles of US network			Describe: 3 blockages 1st: 0.6 feet: 2nd: 3.4 feet: 3rd: 0.8 feet: To:	ral height: 1 8 feet.	
1.2 miles of 05 network			*2nd and 3rd blockages are not in ROW and are part of r	ond dam	
			2nd and ord blockages are not in now and are part of		
Number of Downstream	Fish Blockages	10	Adjacent Land Use	5	
10 - 0 Blockages	0		10 - Commercial/Agriculture/Bare Ground	<u></u>	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
			Field, recreational park and blockage is DS of pond		
				-	
NAACC Diadromous Fish	HUC 12 Watershed Score	5	Ease of Construction	1	
10 - 3 to 22			10 - Easy		
5 - 23 to 41 1 - 42 to 61			5- Average 1 - Difficult/Complex		
1 - 42 (0 01			0 - No Blockage		
Describe:			Describe:		
39			Small dam less than 20 feet wide; 1-5 foot blockage height		
-					
Percentage of Upstream	Impervious Surface	5	Ease of Access	10	
10 - Less than 10%			10 - Yes (with <u>existing</u> direct vehicular access to potentia	l site)	
5 - 10 to 25% 1 - Greater than 25%			5- Yes (open but no existing venicular access)	s surrounding site)	
Describe:			Describe:	s surrounding site	
24.30%			SHA ROW payed to 1st blockage - additional blockages i	ist US across mowed	
2			lawn, but not within ROW		
Fish Habitat Diversity		1	l Itilities Present	1	
10 - Greater than 5 cover	r types	-	10 - No utilities on site	-	
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover type	es		1 - Utilities within potential site		
Describe: Describe:					
Trapazoid channel DS. De	eep pool DS. Pond US - unkr	nown cover/habitat	Low overhead powerlines at site		
				40	
			lotal Score out of 100	48	





Channel overview downstream of 1st blockage in ROW



Upstream of 3rd blockage looking upstream at pond



Upstream at 1st blockage looking upstream at 2nd/3rd blockages



Look upstream at 1st blockage within ROW

	I-495/I-270 Mai	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		<u>Projec</u>	<u>t Details</u>		
Project Name:	1-495/1-270 Managed Lan	es Study	Mitigation Site Number:	MD-PXM-29	
Projects Estimated Strea	im Mitigation Needs (LF):	IBD	Consultant Firm/Investigator(s)	RK&K·KIH DWB	
Date of field Assessmen	Si	te Location Details-ta	ken from desktop review		
County:	Prince George's	Cross Roads:	Median of MD 4/Ritchie Marlbo	ro Rd	
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit):	02131103	
Proximity to Impacted S	tream (mi.):	5.4	Lat/Long:	38.811731	-76.784023
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi.	1.13	·
Site Opportunities:	Fish Passage	Channel Restoration	Habitat Enhancement	Riparian Buffer Planting	(Upstream)
Stream Order:	1st	Stream Hydrology:	Perennial	Blockago Typo:	l
USCS Cage Station #	CMP	USCS Cogo Dischargo (fr		blockage Typecomp	netePartial _XNone
USGS Gage Station #.	rge Percentile: 0-259	0303 Gage Discharge (133	/ 75_100%		
Property Address:	unnamed tributary of Fed	leral Spring Branch in med	ian of MD 4. W of Ritchie Marlbo	ro Rd	
Property Owner(s):	SHA		······································		
		General Field	d Observations		
Are there records for dia	dromous fish, mussels, RTI	E crayfish, or other RTE	Can the fish blockage be remov	ed within the road right.	of-way or does it
species within or in close	e proximity to the fish bloc	kage site? Explain	require access to parcels beyon	d right-of-way limits? Ex	plain
Explain:			Explain:		
According to Chesapeake	e Fish Passage Prioritization,	, alewife, blueback,	No blockage		
American eel, one rare m	nussel species, and one or m	nore anadromous species			
occur nearby.		Fish Desses			
Criteria		FISH Passag Score	<u>se Site Kating</u> ICriteria		Score
Functional Upstream Ne	twork	1	Fish Blockage Height - Ecologica	I Benefits of Removal	0
10 - Greater than 4 miles	;	_	10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:		Describe:			
0.03			No blockage. 6 in water depth a	t culvert outlet.	
Number of Downstream	Fish Blockages	10	Adjacent Land Lise	1	1
10 - 0 Blockages			10 - Commercial/Agriculture/Ba	re Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			interior of divided highway		
NAACC Diadromous Fish	HUC 12 Watershed Score	10	Ease of Construction		0
10 - 3 to 22 5 - 23 to 41			10 - Edsy 5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
12			No blockage		
Dercentage of Unstream	Imponious Surface	10	5 of A		1
10 - Less than 10%	Impervious Surface	10	10 - Yes (with existing direct yeb	icular access to notentia	L site)
5 - 10 to 25%			5- Yes (open but no existing veh	icular access)	site
1 - Greater than 25%			1 - No (no vehicular access, clear	ring needed, steep slope:	s surrounding site)
Describe:			Describe:		
0.56%			Steep slopes, forested, within hi	ghway median	
					-
Fish Habitat Diversity		1	Utilities Present		10
10 - Greater than 5 cover	r types		10 - No utilities on site		
5 - 3-5 cover types	20		5 - Utilities but not within site		
Describe:			Describe		
Root wads overhanging	vegetation: 2 types		Highway median none visible		
Noot waas, overhangling	vegetation, 2 types		ingitway mealan, none visible		
			To	stal Score out of 100	44





Culvert inlet - facing downstream



Culvert outfall - facing upstream

Slopes adjacent to culvert outfall, facing roadway

	I-495/I-270 Mai	naged Lanes Study - Fi	ish Passage Field Site Asses	sment Form	
		<u>Projec</u>	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	MD-PXM-30	
Projects Estimated Stream	m Mitigation Needs (LF):	TBD			
Date of Field Assessment	: 3/ //2019 Si	ite Location Details-ta	consultant Firm/Investigator(s)	KK&K KJH, DWB	
County:	Prince George's	Cross Roads:	MD 4/William Beanes Rd		
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit):	02131103	
Proximity to Impacted St	ream (mi.):	5.4	Lat/Long:	38.811266	-76.783974
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi.	1.11	
Site Opportunities:	XFish Passage	X_Channel Restoration	XHabitat Enhancement	Riparian Buffer Planting	(Upstream)
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	
Culvert/Dam Type:	СМР	Culvert/Dam Dimensions	36 inches	Blockage Type: _XCom	plete PartialNone
USGS Gage Station #:	01594526	USGS Gage Discharge (fs3	s/s):120		
USGS Gage Daily Dischar	ge Percentile:0-25%	%25-50%X_50-75%	675-100%	1	
Property Address:	unnamed tributary of Fed	leral Spring Branch near M	D 4 under William Beanes Rd		
Property Owner(s):	SHA				
		<u>General Field</u>	Observations		
Are there records for diac	dromous fish, mussels, RTI	E crayfish, or other RTE	Can the fish blockage be remove	ed within the road right-	of-way or does it
species within or in close	proximity to the fish bloc	kage site? Explain	require access to parcels beyon	d right-of-way limits? Ex	plain
Explain:			Explain:		
According to Chesapeake	Fish Passage Prioritization,	, alewife, blueback,	May be on private property		
American eel, and one or	more anadromous species	have historically occured			
nearby. One rare mussel s	species was identified in th	e same HUC12.			
Criteria		FISH Passag	<u>le Site Kating</u> ICriteria		Score
<u>Eunctional Unstream Net</u>	work	5	Eish Blockage Height - Ecologica	Benefits of Removal	1
10 - Greater than 4 miles	WOIN	5	10 - Greater than 5'	i benents of Kenioval	L
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
2.01			Depth in culvert = 0.1 ft, thlaweg	g to top = 1.2 ft, Groundw	vater? = 6 inches
					-
Number of Downstream	Fish Blockages	10	Adjacent Land Use		5
10 - 0 Blockages			10 - Commercial/Agriculture/Bai	re Ground	
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Upstream: residential, Downstre	am: forested	
NAACC Diadromous Fish	HUC 12 Watershed Score	10	Ease of Construction		10
10 - 3 to 22		10	10 - Easy		10
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
12			36 in CMP and CMP end section. Small blockage, approximately 6 inches		
Demonstrate of the state of the		10			F
Percentage of Opstream	Impervious Surface	10	Ease of Access	icular access to notantial	Cito)
10 - Less than 10% 5 - 10 to 25%			5- Yes (open but no existing vehi	icular access to potential	site)
1 - Greater than 25%			1 - No (no vehicular access, clear	ring needed, steep slopes	s surrounding site)
Describe:			Describe:	0,	
0.56%			Adjacent driveway		
Fish Habitat Diversity		1	Utilities Present		5
10 - Greater than 5 cover	types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover types	S		1 - Utilities within potential site		
Describe:			Describe:		
Root wads, overhanging v	regetation; 2 types		Adjacent overhead power lines		
			IT^	tal Score out of 100	67









Channel overview - facing downstream



	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	NAACC 27544	
Projects Estimated Strea	am Mitigation Needs (LF):	TBD			
Date of Field Assessmer	nt: 2/15/2019		Consultant Firm/Investigator(s)	RK&K KJH, BM	
Country	Anno Arundol	te Location Details-ta	ken from desktop review	have Station Dd W of Cru	ndall Dd
County: Basin (HLIC 8):	Anne Arunder	Cross Roads:	MDE Watershed (8 digit):		
Proximity to Impacted S	Stream (mi.):	14.2	Lat/Long:	38,782029	-76.633024
				001102020	
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (so mi	0.59	
Site Opportunities:	Fish Passage	X Channel Restoration	Habitat Enhancement	X Riparian Buffer Planting	(Upstream)
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	
Culvert/Dam Type:	Pipe arch	Culvert/Dam Dimensions	8 ft wide, 4.5 ft tall	Blockage Type: Comr	lete Partial X None
USGS Gage Station #	01594526	LISGS Gage Discharge (fs:	3/s): 120		
USGS Gage Daily Discha	arge Percentile: 0_25°	25-50% ¥ 50-75%	× 75-100%		
Property Address:	I vons Creek near Fishers	Station Rd along W Bay Fr	ont Bd		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for di	adromous fish. mussels. RT	E cravfish. or other RTE	Can the fish blockage be remov	ed within the road right-	of-way or does it
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyon	d right-of-way limits? Ex	plain
Explain:	<u> </u>		Explain:		
One rare mussel species	noted in HUC8 watershed (Freshwater Network,	No blockage - drop site. Pipe arc	h with bottomless CMP.	Room within ROW.
Chesapeake Region).		··· ··· ·· ,	Stream bed flush with culvert bo	ottom.	
		Fish Passag	ge Site Rating		_
<u>Criteria</u>		<u>Score</u>	Criteria		<u>Score</u>
Functional Upstream Ne	etwork	5	Fish Blockage Height - Ecologica	I Benefits of Removal	1
10 - Greater than 4 miles	S		10 - Greater than 5'		
5 - 1 to 4 miles			5-1' to 5'		
1 /19 miles			No blockage, bottomless culvert		
1.45 miles			No blockage, bottomicss cuivert		
Number of Downstream	n Fish Blockages	10	Adjacent Land Use		10
10 - 0 Blockages			10 - Commercial/Agriculture/Ba	re Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Mostly agricultural fields, some	trees along downstream	channel
NAACC Diadromous Fish	h HUC 12 Watershed Score	10	Ease of Construction		5
10 - 3 to 22		r	10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
12			8 ft wide CMP with no bottom		
Percentage of Unstream	n Impervious Surface	10	Face of Assocs		ς
10 - Loss than 10%	i inpervious surrace	10	10 - Ves (with existing direct yeb	icular access to notentia	site)
5 - 10 to 25%			5-Yes (open but no existing veh	icular access)	sic
1 - Greater than 25%			1 - No (no vehicular access, clear	ring needed, steep slope:	s surrounding site)
Describe:			Describe:	0,	
1.84%			Mostly agricultural fields, some	trees along downstream	channel. Gradual
			slopes	Ũ	
Fish Habitat Diversity		10	Utilities Present		5
10 - Greater than 5 cove	er types		10 - No utilities on site		-
5 - 3-5 cover types	-71		5 - Utilities but not within site		
1 - Less than 3 cover typ	es		1 - Utilities within potential site		
Describe:			Describe:		
LWD, riffles, overhangin	g vegetation, cobble, mostly	sand, root mats; 6 types	Overhead powerlines on upstrea	am end and 30 ft upstrea	m
	,		· · ·	•	
			l		
			Тс	tal Score out of 100	71





Culvert outfall - facing upstream



Access from road adjacent to culvert

Channel overview downstream of culvert - facing downstream



Culvert inlet - facing downstream

	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Assessment Fo	orm	
		<u>Projec</u>	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 27	548	
Date of Field Assessmer	am witigation Needs (LF): nt: 2/15/2019	ТВО	Consultant Firm/Investigator(s) RK&K: KJH	I. BM	
	Si	te Location Details-ta	ken from desktop review	<i>y</i> - · · ·	
County:	Anne Arundel	Cross Roads:	W Bay Front Road, E of McKendree Rd, W c	of Dawn Dr	
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit): 02131102		
Proximity to Impacted S	Stream (mi.):	14.9	Lat/Long: 38.780954	+ -76.620245	
Parcel Size (ac):		V Channel Postoration	Drainage Area to Reach (sq. mi.	J.65	
Site Opportunities. Stream Order	1ct	Stream Hydrology:	Perennial	Stream Lise:	
Culvert/Dam Type:	Box culvert	Culvert/Dam Dimensions	: 8' wide, 6' tall, embedded bottom 6" Blockage 1	Type: Complete Partial X None	
USGS Gage Station #:	01594526	USGS Gage Discharge (fs ²			
USGS Gage Daily Discha	arge Percentile: 0-25%	6000 Cuge Distinuige (150	<u> 75-100%</u>		
Property Address:	Lyons Creek near McKend	free Rd along W Bay Front	Rd		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for di	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be removed within t	he road right-of-way or does it	
species within or in clos	se proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-	way limits? Explain	
Explain:	an attack in 1111CO water whead (Explain:		
One rare mussel species	s noted in HUC8 watershed (Freshwater Network,	No blockage - drop site. Culvert bottom em	d of culvert. Stream had fluch with	
chesapeake kegion).			culvert	d of culvert. Stream bed hush with	
		Eich Doccor	colvert.		
Criteria		Score	ICriteria	Score	
Functional Upstream Ne	etwork	5	Fish Blockage Height - Ecological Benefits	of Removal 1	
10 - Greater than 4 mile	S	-	10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
3.41 miles			NO DIOCKAGE		
Number of Downstream	n Fish Blockages	10	Adjacent Land Use	1	
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground		
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Nostly forested in ROW		
10 2 to 22	h HUC 12 Watershed Score	10	Ease of Construction		
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
12			NA - no blockage, embedded culvert		
Percentage of Linstream	n Impervious Surface	10	Easo of Assocs	1	
10 - Less than 10%	in impervious surface	10	10 - Yes (with existing direct vehicular acce	ss to potential site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular acces	ss)	
1 - Greater than 25%			1 - No (no vehicular access, clearing needed	d, steep slopes surrounding site)	
Describe:			Describe:		
6.87%			Surrounded by forest with steep slopes		
Fish Habitat Diversity		5	Utilities Present	5	
10 - Greater than 5 cover	er types		10 - No utilities on site		
1 - Less than 3 cover types	ies		1 - Utilities within potential site		
Describe:			Describe:		
I WD, riffles, overhangin	g vegetation, undercut bank	s, root mats: 5 types	Overhead power lines outside site		
		s, root mats, s types			
			Total Score	48	





Channel overview upstream of culvert - facing upstream



Culvert outfall - facing upstream

Channel overview downstream of sulvert - facing downstream



Access from road adjacent to culvert

	I-495/I-270 Mai	naged Lanes Study - F	ish Passage Field Site Assessr	nent Form	
		Projec	<u>t Details</u>		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: N	IAACC 32437	
Projects Estimated Stre	am Mitigation Needs (LF):	TBD	<u>.</u>		
Date of Field Assessmer	nt: 2/21/2019		Consultant Firm/Investigator(s) C	.RI; DS, LE	
Country	Drinco Goorgo's	te Location Details-ta	MD 197 (Laural Rowia Rd) W of O	Id Laural Powia Poad	
Basin (HUC 8):	Prince George's	Cross Rodus:	MDF Watershed (8 digit): 2	131104	
Proximity to Impacted S	Stream (mi.):	5.9	Lat/Long: 3	9.032974	-76.787302
.,		Site	Data		
Parcel Size (ac):	Within SHA ROW	<u>5/(c</u>	Drainage Area to Reach (sg. mi. 2	2.5	
Site Opportunities:	X_Fish Passage	Channel Restoration	X Habitat Enhancement	X Riparian Buffer Planting	
Stream Order:	2nd	Stream Hydrology:	Perennial	Stream Use:	I
Culvert/Dam Type:	Double RCP	Culvert/Dam Dimensions	5'x5' (both), ~40 feet long B	lockage Type: Com	olete X Partial None
USGS Gage Station #:	01593450	USGS Gage Discharge (fs3	42		
USGS Gage Daily Discha	arge Percentile: 0-25%	6000 Cuge 2.00111.80 (100 6 25-50% 50-75%	75-100% *	high, but only gage ner	arby with similar DA
Property Address:	SHA ROW - just northwes	t of Old Laurel Bowie Rd.	70 10070 Bowie MD 20720	ingh, but only gage net	
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for di	adromous fish, mussels, RTI	E crayfish, or other RTE	Can the fish blockage be removed	d within the road right.	of-way or does it
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond	right-of-way limits? Ex	plain
Explain:			Explain:	<u> </u>	•
RTE coordination with a	gencies is pending. Americar	n Eel collected just DS by	Yes, but wetland located just US b	etween blockage and (Cash Lake dam
MBSS.				Ũ	
		Fish Passag	se Site Rating		
<u>Criteria</u>		Score	Criteria		Score
Functional Upstream Ne	etwork	1	Fish Blockage Height - Ecological I	Benefits of Removal	5
10 - Greater than 4 mile	S		10 - Greater than 5'		
5 - 1 to 4 miles			5-1' to 5'		
			1 - Less (Hall 1		
Describe:			Describe:		
less than 500 feet - Cash	Lake dam is just LIS and uns	stream habitat consists	Blockage is at rin-ran/boulder - 1 f	foot drop Blockage at I	ow flows Water denth
mainly of wetland area	i Lake dani is just os and up.		in culvert is 0.6 feet	oot drop. Diockage at i	
manny of wetland area					
Number of Downstream	n Fish Blockages	10	Adiacent Land Use		5
10 - 0 Blockages			10 - Commercial/Agriculture/Bare	Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Brush/field land use		
NAACC Diadromous Fis	h HUC 12 Watershed Score	10	Ease of Construction		5
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
			0 - No Blockage		
Describe:			Describe:		
17			Large pipe with about 1 foot drop over riprap downstream		
		10			-
Percentage of Upstream	n Impervious Surface	10	Ease of Access		5
10 - Less than 10%			10 - Yes (with <u>existing</u> direct vehicles)	ular access to potential	i site)
5 - 10 10 25% 1 - Greater than 25%			1 - No (no vehicular access clearing	and accessing an ended steen slone	s surrounding site)
Describe:			Describe:		s surrounding site;
0.60%			Within ROW with clearing of scrub	o-shrub area only: over	head utilities and
			guardrails along both sides of road	1: would either need to	remove guardrail or
			could access through Cash Lake gr	avel entrance	
Fich Habitat Divorcity					C
10 - Greater than 5 cours	ar types	J	10 - No utilities on site		J
5 - 3-5 cover types	i types		5 - Utilities but not within site		
1 - Less than 3 cover tvn	es		1 - Utilities within potential site		
Describe:			Describe:		
Riffle overhanging vege	tation undercut banks woo	idv debris	High and low overhead nowerlines	ς	
				-	
			Tota	al Score out of 100	61





Culvert inlet - facing downstream



Culvert outfall/partial blockage - facing upstream



Channel overview downstream of culvert - facing downstream



Right bank looking upstream at overhead utilities

	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 33809		
Projects Estimated Strea	am Mitigation Needs (LF):	TBD			
Date of Field Assessmer	nt: 2/21/2019	ita Lacation Dataila ta	Consultant Firm/Investigator(s) CRI; DS, LE		
County:	Anne Arundel	Ite Location Details-ta Cross Boads:	MD 32: W of MD 175 (Appapolis Rd) and E of MD 198 (I :	aurel Fort Meade Rd)	
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit): 2131105		
Proximity to Impacted S	Stream (mi.):		Lat/Long: 39.08787	-76.738265	
, .		Site	Data		
Parcel Size (ac):	No Site Access	<u></u>	Drainage Area to Reach (sg. mi. 4.97		
Site Opportunities:	Fish Passage	Channel Restoration	Habitat EnhancementRiparian Buffer Planting		
Stream Order:		Stream Hydrology:	Perennial Stream Use:	1	
Culvert/Dam Type:	Double RCP	Culvert/Dam Dimensions	Blockage Type:Comp	lete PartialNone	
USGS Gage Station #:		USGS Gage Discharge (fs3			
USGS Gage Daily Discha	arge Percentile: 0-259	× 25-50% 50-75%	75-100%		
Property Address:	SHA ROW - W of MD 175	(Annapolis Rd.) and E of M	ID 198 (Laurel Fort Meade Rd); Fort Meade MD 20755		
Property Owner(s):	SHA	<u>, , ,</u>			
		General Field	d Observations		
Are there records for dia	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be removed within the road right-	of-way or does it	
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain	
Explain:			Explain:		
No site Access			No site access. Site is located on NSA property and could	not access due to	
			fence.		
		r'sh Davaa			
Critoria		Fish Passag	<u>se Site Kating</u>	Scoro	
Cilleria Eurotional Unstroam No	atwork	Score	Criteria Fich Plaskage Height - Feelegisel Penefits of Pemeval	Score	
10 - Greater than 4 miles	S		10 - Greater than 5'		
5 - 1 to 4 miles	5		10 - Greater than 5		
1 - Less than 1 mile			1 - Less than 1'		
			0 - No Blockage		
Describe:			Describe:		
No site Access			No site Access		
Number of Downstream	n Fish Blockages		Adjacent Land Use		
10 - 0 Blockages		-	10 - Commercial/Agriculture/Bare Ground		
5 - 1 Blockage			5- Field/Scrub-shrub 1 - Forest		
1 - >1 BIOCKage			Describe:		
Nono			Bush field land use		
None					
NAACC Diadromous Fish	h HUC 12 Watershed Score		Ease of Construction		
10 - 3 to 22			10 - Easy		
5 - 23 t0 41 1 - 42 to 61			5- Average 1 - Difficult/Complex		
1 - 42 (0 01			0 - No Blockage		
Describe [.]			Describe:		
Desenbe.					
Percentage of Upstream	n Impervious Surface		Ease of Access		
10 - Less than 10%			10 - Yes (with <u>existing</u> direct vehicular access to potential	site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)		
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slopes	s surrounding site)	
Describe:			Describe:		
Fish Habitat Diversity		<u> </u>	Utilities Present		
10 - Greater than 5 cove	er types		10 - NO Utilities on site		
5 - 3-5 COVER TYPES	PC		o - ounnes but not within site 1 - Utilities within notential site		
			Total Score out of 100	0	



NSA force prohibiling site agent	Streen conditions US of read proving
NSA fence prohibiting site access	Stream conditions US of road crossing

	I-495/I-270 Mai	naged Lanes Study - Fi	ish Passage Field Site Assessment Form		
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 44542		
Projects Estimated Strea	m Mitigation Needs (LF):	IBD	- Consultant Firm //musetinater/s) CDL /C. DS. SC. / F.		
Date of Field Assessment	si	te Location Details-ta	ken from deskton review		
County:	Anne Arundel	Cross Roads:	MD 3 (Crain Hwy), S of Evergreen Rd.		
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit): 2131105		
Proximity to Impacted St	tream (mi.):	10	Lat/Long: 39.028803	-76.687628	
		Site	Data		
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 0.8		
Site Opportunities:	X_Fish Passage	<u>X</u> Channel Restoration	X_Habitat EnhancementX_Riparian Buffer Plantin	B	
Stream Order:	1st	Stream Hydrology:	Perennial Stream Use:	1	
Culvert/Dam Type:	CMP w/ concrete bottom	Culvert/Dam Dimensions	8'x8' CMP; 155 feet long Blockage Type: <u>x</u> Con	plete PartialNone	
USGS Gage Station #:	01649150	USGS Gage Discharge (fs3	1.79		
USGS Gage Daily Discha	rge Percentile:0-25%	625-50%50-75%	75-100% *136% of mean		
Property Address:	SHA ROW - at MD 3 just s	outh of Evergreen Rd., Gar	mbrills MD 21054		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for dia	dromous fish, mussels, RT	crayfish, or other RTE	Can the fish blockage be removed within the road righ	t-of-way or does it	
species within or in close	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? E	xplain	
Explain:	ionaios is nonding		Explain:	stroom area not in	
RIE coordination with ag	encies is pending.		No, access to parcel downstream will be needed. Downs	stream area not in	
			ROW, but in need of restoration.		
		Fish Passag	e Site Rating		
<u>Criteria</u>		Score	Criteria	<u>Score</u>	
Functional Upstream Net	twork	5	Fish Blockage Height - Ecological Benefits of Removal	5	
10 - Greater than 4 miles	1		10 - Greater than 5'		
5 - 1 to 4 miles			5-1' to 5'		
1 - Less than 1 mile					
Doccribo:			Describe:		
1 5 miles of US network			Describe. Downstream step blockage, drops: 0.45 feet, 1.20 feet	0.8 feet 1.50 feet	
1.5 miles of 05 network			Unstream drop 0.35 feet: 4.3 feet total. Water denth in	culvert is 0.5 feet	
Number of Downstream	Fish Blockages	5	Adjacent Land Use	1	
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground		
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
1			Commercial with forest downstream of blockage. Upstream end of culvert also		
			forest. Immediate area at blockage clear with current co	onstruction.	
NAACC Diadromous Fish	HUC 12 Watershed Score	10	Ease of Construction	1	
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describer			Describe:		
1/			Describe:		
17			Large pipe with 1 5 loot blockage		
Percentage of Upstream	Impervious Surface	1	Ease of Access	5	
10 - Less than 10%			10 - Yes (with <u>existing</u> direct vehicular access to potentia	al site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)		
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	es surrounding site)	
Describe:					
36.00%			Roadway drainage rip-rap/gabion wall constructed near	site. Clear access, but	
			no existing road		
				_	
Fish Habitat Diversity		5	Utilities Present	5	
10 - Greater than 5 cover	types		10 - No utilities on site		
1 - Less than 3 cover types	25		1 - Utilities within potential site		
Describe:			Describe:		
Downstream 2-E cover to	nes: riffle deen nool wood	ty debris undercut	Overhead lines cross within site, may not directly inhibit	access to restoration	
cobble/bouldor Unstrast	m 3-5 cover types riffle re-	ot cobble	overnead lines cross within site, fildy not directly infibil		
	in 5 5 cover types. Time, 10				
			Total Score out of 100	43	





Righ Bank Riprap channel, overhead lines, and existing construction





Downstream looking upstream at Culvert/complete blockage

Channel overview downstream of culvert - facing downstream



Left bank downstream of culvert showing stormwater conveyance

	I-495/I-270 Mai	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		Projec	t Details		
Project Name:	I-495/I-270 Managed Land	es Study	Mitigation Site Number: NAACC 44544		
Projects Estimated Stre	am Mitigation Needs (LF):	TBD	-		
Date of Field Assessme	nt: 2/21/2019		Consultant Firm/Investigator(s) CRI; JG, DS, SS, LE		
Country	Anno Arundol	te Location Details-ta	MD 2 (Crain Hum) S of Johns Honkins Bd		
Basin (HUC 8):	Paturent	Cross Rodus:	MD S (Clain Hwy), S of Johns Hopkins Rd. MDF Watershed (8 digit): 2131105		
Proximity to Impacted	Stream (mi.):	10	Lat/Long: 39.028441	-76.686597	
,		Site	Data		
Parcel Size (ac):	Within SHA ROW	<u>5/(c</u>	Drainage Area to Reach (sg. mi, 0.8		
Site Opportunities:	Fish Passage	Channel Restoration	Habitat EnhancementRiparian Buffer Planting	-	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:	I	
Culvert/Dam Type:	CMP w/ concrete	Culvert/Dam Dimensions	5' diameter CMP, 90 feet long Blockage Type:Com	plete Partial _X_None	
USGS Gage Station #:	01649150	USGS Gage Discharge (fs3	1.79		
USGS Gage Daily Discha	arge Percentile: 0-25%	6 25-50% 50-75%	75-100%		
Property Address:	SHA ROW - at MD 3 just s	outh of Johns Hopkins Ga	ambrills MD 21054		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for di	adromous fish, mussels, RTI	E crayfish, or other RTE	Can the fish blockage be removed within the road right	-of-way or does it	
species within or in clos	se proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	(plain	
Explain:	. ,		Explain:	•	
RTE coordination with a	gencies is pending.		No blockage at crossing. There are two changes in gradie	ent within the culvert,	
			but no blockage. There is a pond just US of the culvert.		
		Fish Passag	se Site Rating	•	
Criteria		Score		<u>Score</u>	
Functional Upstream No	etwork	5	Fish Blockage Height - Ecological Benefits of Removal	0	
10 - Greater than 4 mile	S		10 - Greater than 5'		
5 - I to 4 miles 1 - Less than 1 mile			1 - Less than 1'		
			0 - No Blockage		
Describe [.]			Describe:		
1.4 miles of US network			No blockage at time of visit		
Number of Downstrean	n Fish Blockages	1	Adjacent Land Use	10	
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground	<u>e</u>	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
2 DS barriers			US - Commercial, mowed lawn; DS - Forested scrub-shru	b corridor with	
			bordering commercial.		
NAACC Diadromous Fis	h HUC 12 Watershed Score	10	Ease of Construction	0	
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
			0 - No Blockage		
Describe:			Describe:		
14			No blockage		
Percentage of Unstream	n Impervious Surface	1	Fore of Assess	10	
10 - Loss than 10%	in impervious surrace	1	Lase of Access	LO L sita)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)	i site)	
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	s surrounding site)	
Describe:			Describe:		
36.10%			County pull off area located at sewer facility - direct acce	ess to sites through	
			mowed lawn. Would need to coordinate with County for	access.	
			, ,		
Fish Habitat Diversity		1	Utilities Present	1	
10 - Greater than 5 cove	er types		10 - No utilities on site		
5 - 3-5 cover types	/ 1/		5 - Utilities but not within site		
1 - Less than 3 cover typ	bes		1 - Utilities within potential site		
Describe:			Describe:		
US - SAV; DS - riffle. root	t, cobble		County sewer adjacent to site, overhead utilities and wa	ter main	
, _, _,					
			Total Score out of 100	39	





Right bank and County facility upstream of culvert



Downstream looking upstream at culvert/no blockage

Just Upstream of culvert, impoundment and possible blockage



Downstream of culvert looking downstream

	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		<u>Projec</u>	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 50349		
Projects Estimated Stre	am Mitigation Needs (LF):	TBD	Consultant Firm (Investigator(a) CDU IC DC		
Date of Field Assessme	nt: 3/5/2019	ite Location Details_ta	ken from deskton review		
County:	Prince George's	Cross Roads:	MD 564 (Lanham Severn Rd.), E of Springfield Rd.		
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit): 2131104		
Proximity to Impacted	Stream (mi.):	4.1	Lat/Long: 39.001275	-76.79367	
		Site	Data		
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 0.6		
Site Opportunities:	Fish Passage	Channel Restoration	Habitat EnhancementRiparian Buffer Planting		
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:	1	
Culvert/Dam Type:	Box culvert	Culvert/Dam Dimensions	40 feet long Blockage Type:Com	lete Partial _X_None	
USGS Gage Station #:	01594440	USGS Gage Discharge (fs3	3/s): <u>10.20</u>		
USGS Gage Daily Disch	arge Percentile:0-25%	%25-50%50-75%	_ <u>X_</u> 75-100%		
Property Address:	SHA ROW - at MD 564 ea	st of Springfield Rd., Bowie	e MD 20720		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for di	iadromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be removed within the road right	of-way or does it	
species within or in clos	se proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain	
Explain:			Explain:		
RTE coordination with a	gencies is pending.		No blockage, but site access was outside of ROW. Assess	ment was conducted	
			from roadway due to no access US or DS.		
		Fich Passar	ro Sito Pating		
Criteria		Score	ICriteria	Score	
Functional Upstream N	etwork	5	Fish Blockage Height - Ecological Benefits of Removal	0	
10 - Greater than 4 mile	S		10 - Greater than 5'	, i i i i i i i i i i i i i i i i i i i	
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
			0 - No Blockage		
Describe:			Describe:		
1.1 miles of US network	•		No blockage		
		40	• 19 · · · · · · · · ·	4	
Number of Downstream	n Fish Blockages	10	Adjacent Land Use	1	
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
			Small riparian forested area		
NAACC Diadromous Fis	h HUC 12 Watershed Score	10	Free of Construction	0	
10 2 to 22	II HOC 12 Watershed Score	10	Lase of Construction	U	
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
			0 - No Blockage		
Describe:			Describe:		
17			No blockage, riffle grade control present		
Percentage of Upstream	n Impervious Surface	5	Ease of Access	1	
10 - Less than 10%			10 - Yes (with <u>existing</u> direct vehicular access to potentia	site)	
5 - 10 10 25% 1 - Greater than 25%			5- res (open but no existing venicular access)	s surrounding site)	
Describe:			Describe:	s surrounding site	
12.51%			Outside right of way, clearing needed, steep slopes dowr	stream, no vehicular	
12.01/0			access.		
Fish Habitat Diversity		5	Litilities Present	5	
10 - Greater than 5 cove	er tynes	5	10 - No utilities on site	5	
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover typ)es		1 - Utilities within potential site		
Describe:			Describe:		
Roots, deep pool. riffle.	cobble/boulder		Sewer and overhead powerlines upstream		
			, ,		
			<u>Total Score out of 100</u>	42	





From roadway looking at downstream end of culvert



Right bank looking at riparian forest downstream



Downstream of culvert looking downstream



Left bank looking at sewer and powerlines upstream

	I-495/I-270	Managed Lanes Study - F	ish Passage Field Site Asses	sment Form	
		<u>Projec</u>	t Details		
Project Name:	I-495/I-270 Managed	Lanes Study	Mitigation Site Number	: NAACC 57440	
Projects Estimated Stre Date of Field Assessme	am Mitigation Needs (LI nt: 2/18/2019	F) <u>TBD</u>	 Consultant Firm/Investigator(s) RK&K KJH, BM	
		Site Location Details-ta	ken from desktop review		
County:	Anne Arundel	Cross Roads	: Southern MD Blvd, SE of Plumm	ter Ln, N of MD 4	
Basin (HUC 8): Provimity to Impacted	Patuxent	11 :	MDE Watershed (8 digit)	· 02131102	76 690172
Proximity to impacted :	stream (mi.):		5 Lat/Long	: 38./98/8	-76.680172
			Dusing an Anna ta Daash (an ani	0.57	
Parcel Size (ac):	Within SHA ROW		_ Drainage Area to Reach (sq. mi	. 0.57	-
Site Opportunities:	Fish Passage	Channel Restoration	nHabitat Enhancement	Riparian Buffer Planting	
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	1
Culvert/Dam Type:	RCP - circular	Cuivert/Dam Dimensions:	4.5 ft wide, 2.5 ft tall, sand depoisition	_BIOCKage Type:Comp	plete Partial <u>X</u> None
USGS Gage Station #:	01594526	USGS Gage Discharge (fs3/s	5) <u>360</u>	-	
USGS Gage Daily Disch	arge Percentile:0-	25%25-50%50-75%	_ <u>X</u> _75-100%		
Property Address: Property Owner(s):	Galloway Creek near S	outhern MD Blvd			
rioperty owner(3).	511A	Concernel Field			
Ano these vecends for di	ia dua mana fiabumua a la	General Field	d Observations	und within the uned vield	of way or doop it
Are there records for al	adromous fish, mussels,	RIE craynsh, or other RIE	can the fish blockage be remov	red within the road right	-of-way or does it
species within or in clos	se proximity to the fish b	lockage site? Explain	require access to parcels beyon	id right-of-way limits? Ex	plain
Explain:	annoine is nondine		Explain:	hroughout outwart. Drong	
RIE coordination with a	gencies is penaling		No blockage, sand deposition th	irougnout cuivert. Drop s	Ite. Two 4.5 ft RCP
			culverts, left culvert clogged		
		Fish Passa	ze Site Rating		
Criteria		Score	Criteria		Score
Functional Upstream N	etwork	5	Fish Blockage Height - Ecologic	al Benefits of Removal	1
10 - Greater than 4 mile	:S		10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
3.32 miles			3 inches of water in culvert. No	blockage, deposition thro	oughout
Number of Downstrean	n Fish Blockages	5	Adiacent Land Use		1
10 - 0 Blockages			10 - Commercial/Agriculture/Ba	are Ground	<u> </u>
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
1 minor barrier			Scrub/shrub and forest downst	ream, forest upstream	
NAACC Diadromous Fis	h HUC 12 Watershed Sco	r i 10	Ease of Construction		5
10 - 3 to 22			10 - Easy		<u>_</u>
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
9			4.5 ft wide RCP, no drop		
Percentage of Upstream	n Impervious Surface	10	Fase of Access		1
10 - Less than 10%			10 - Yes (with existing direct ve	hicular access to potentia	l site)
5 - 10 to 25%			5- Yes (open but no existing veh	nicular access)	,
1 - Greater than 25%			1 - No (no vehicular access, clea	ring needed, steep slope	s surrounding site)
Describe:			Describe:		
3.11%			Scrub/shrub and forest clearing		
Fish Habitat Diversity		5	Utilities Present		1
10 - Greater than 5 cove	er types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover typ	les		1 - Utilities within potential site		
Describe:			Describe:		
LWD, riffles, overhangin	g vegetation, root mats;	4 types	Overhead power lines above do	wnstream culvert outfall	
			<u>и</u> Т,	otal Score out of 100	44





Channel overview downstream of culvert - facing downstream



Culvert inlet - facing downstream



Culvert outfall - facing upstream



Channel overview upstream of culvert - facing upstream

	I-495/I-270 Mar	naged Lanes Study - F	ish Passage Field Site Assess	sment Form	
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lane	es Study	Mitigation Site Number:	NAACC 57441	
Projects Estimated Strea	am Mitigation Needs (LF):	TBD	_		
Date of Field Assessmer	nt: 2/18/2019		Consultant Firm/Investigator(s)	RK&K KJH, BM	
Country	Anno Arundol	te Location Details-ta	Ken from desktop review	4	
County: Basin (HUC 8):	Anne Arundei	Cross Roads:	MDE Watershed (8 digit):	4	
Proximity to Impacted S	Stream (mi.):	10.5	lat/long:	38 80448	-76 692119
rioxinity to impacted a	fireani (inii).	10.5	2007 2018.	56.66446	70.052115
Parcal Siza (ac):	Within SHA DOW		Drainage Area to Beach (cg. mi	1 20	
Site Opportunities:		Channel Destauation	Drainage Area to Reach (Sq. mi.	L.23	
Site Opportunities:	FISN Passage	Channel Restoration	Perennial	Kiparian Buffer Planting	I
Stream Order:		Stream Hydrology:			
Culvert/Dam Type:	Elliptical	Cuivert/Dam Dimensions	12 ft wide, 5 ft deep, deposition	BIOCKage Type:Compl	ete Partial _X_None
USGS Gage Station #:	01594526	USGS Gage Discharge (fs3	3/s): _360		
USGS Gage Daily Discha	arge Percentile:0-25%	6 <u>25-50%</u> <u>50-75%</u>	<u>_X_75-100%</u>		
Property Address:	Galloway Creek near Sout	hern MD Blvd/Chesapeak	e Beach Rail Trail		
Property Owner(s):	ЗПА				
		General Field	d Observations		
Are there records for dia	adromous fish, mussels, RTE	E crayfish, or other RTE	Can the fish blockage be remove	ed within the road right-o	of-way or does it
species within or in clos	e proximity to the fish block	kage site? Explain	require access to parcels beyond	1 right-of-way limits? Exp	olain
Explain:			Explain:		
RTE coordination with ag	gencies is pending		No blockage, backwatered throu	gh culvert - 2 ft of standir	ng water. Drop site.
			Beaver dam - 150 ft downstream	of culvert	
		Fich Deces	- Cito Doting		
Critoria		FISH Passag	<u>se Site Rating</u>		Score
Eunctional Unstroam No	otwork	5000	Eich Blockago Hoight Ecologica	Bonofits of Bomoval	1
10 Groater than 4 miles	c	5	10 Groater than 5'	benefits of Removal	1
5 - 1 to 1 miles	5		5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
2 90 miles			No blockage, backwatered throu	gh culvert - 2 ft of standir	ng water
2.50 miles			no bioerage, baermater ea tinou	Bir curvert 2 it of standin	18 Water
Number of Downstream	n Fish Blockages	10	Adjacent Land Lise		1
10 - 0 Blockages			10 - Commercial/Agriculture/Bar	e Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Mid-successional forest, tulip po	plar, red maple, white oa	k, northern red oak
NAACC Diadromous Fish	h HUC 12 Watershed Score	10	Face of Construction	T	5
10 - 3 to 22	THOC IZ Watershed Score	10			5
5 - 23 to 41			10 - Edsy 5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
9			12 ft wide, no blockage		
5			(c (mac) (c c)co(mage		
Percentage of Upstream	n Impervious Surface	5	Ease of Access		1
10 - Less than 10%			10 - Yes (with existing direct vehi	icular access to potential	site)
5 - 10 to 25%			5- Yes (open but no existing vehi	cular access)	
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slopes surrounding site)		
Describe:			Describe:		
12%			Mid successional forest - steep s	opes	
Fish Habitat Diversity		5	Utilities Present		1
10 - Greater than 5 cove	er types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover types			1 - Utilities within potential site		
Describe:			Describe:		
Deep pool, overhanging	vegetation. LWD, undercut	banks, root mats. 5 cover	Fiber optics on upstream end of	culvert	
types	J ,	,			
/ 15 T T					
			Το	tal Score out of 100	44





Culvert outfall - facing upstream



Culvert outfall - view of adjacent cover



Culvert inlet - facing downstream



Channel overview downstream of culvert - facing downstream

	I-495/I-270 Mar	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		<u>Projec</u>	<u>t Details</u>		
Project Name:	I-495/I-270 Managed Lane	es Study	Mitigation Site Number:	NAACC 57443	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD			
Date of Field Assessmen	t: 2/18/2019	to Location Datails to	Consultant Firm/Investigator(s)	, RK&K KJH, BM	
County:	Anne Arundel	te Location Details-ta	along MD Service Rd, W of Plum	merln Sof MD 4	
Basin (HUC 8):	Patuxent	Closs Rodus.	MDF Watershed (8 digit):	02131102	
Proximity to Impacted S	tream (mi.):	10.5	Lat/Long:	38.80476276.691302	
		10.0		001001702, 701002002	
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (so mi	1 27	
Site Opportunities	Fish Passage	Channel Postoration	Habitat Enhancement	Pinarian Buffer Planting	
Stream Order:	2nd	Stream Hydrology:	Perennial	Stream Lise	
Culvert/Dam Type:	Box culvort	Culvert/Dam Dimensions	14 ft wide 4 E ft tall deposition	Blockage Type: Complet	to Partial X None
USCS Come Station #		USCE Cogo Discharge /fa		- Diockage Type:complet	
USGS Gage Station #:	01594526	USGS Gage Discharge (153	<u>8/s):360</u>		
USGS Gage Daily Discha	rge Percentile:0-25%	625-50%50-75%	_X_75-100%		
Property Address: Property Owner(s):	Galloway Creek near Sout	nern wid Bivd/Chesapeak	e Beach Rall Trail		
Toperty Owner(3).	JIA	Concerned Field			
Ano these necession for dis	dramava fich mussels DTI	General Field	Doservations	ed within the yead yight of	fav daga it
Are there records for dia	aromous fish, mussels, RTE	crayfish, or other RTE	Can the fish blockage be remov	ed within the road right-of	-way or does it
species within or in close	e proximity to the fish block	kage site? Explain	require access to parcels beyon	d right-of-way limits? Expl	ain
Explain:			Explain:		
RTE coordination with ag	gencies is pending		No blockage - 2 ft deep water th	rough culvert. All in ROW. I	Drop site.
		Fich Doccor	s Site Pating		
Criteria		Score	ICriteria		Score
Eunctional Unstream Ne	twork	5	Eish Blockage Height - Ecologica	al Benefits of Removal	1
10 - Greater than 4 miles		<u> </u>	10 - Greater than 5'		-
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
2.90 miles			No blockage, backwatered throu	ugh culvert - 2 ft deep throi	ugh culvert
					0
Number of Downstream	Fish Blockages	5	Adjacent Land Use		1
10 - 0 Blockages			10 - Commercial/Agriculture/Ba	re Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
1			Mid-successional forest, tulip po	oplar, red maple, sweet gun	n
NAACC Diadromous Fish	HUC 12 Watershed Score	10	Ease of Construction		5
10 - 3 to 22			10 - Easy	<u>_</u>	
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
9			14 ft wide box culvert - no blockage		
Percentage of Upstream	Impervious Surface	5	Ease of Access		1
10 - Less than 10%			10 - Yes (with <u>existing</u> direct veh	icular access to potential si	ite)
5 - 10 to 25%			5- Yes (open but no existing vehicular access)		
1 - Greater than 25%			1 - No (no venicular access, clea	ring needed, steep slopes s	urrounding site)
Describe.					
11.90%			Mid successional forest - steep s	slopes	
Fish Habitat Diversity		5	Utilities Present		1
10 - Greater than 5 cover	r types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover types			1 - Utilities within potential site		
Describe:			Describe:		
Deep pool, overhanging	vegetation, LWD, undercut	banks, root mats; 5 cover	Fiber optics along roadway		
types					
			<u>г</u>	stal Score out of 100	20
			11		





Culvert inlet - facing downstream



Culvert outfall - facing upstream

Channle overview downstream of culvert - facing downstream



Channel overview downstream of culvert - facing downstream

	I-495/I-270 Mai	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		<u>Projec</u>	<u>t Details</u>		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	NAACC 57445	
Projects Estimated Strea	am Mitigation Needs (LF):	TBD	Consultant Firm (Investigator(s)		
Date of Field Assessmen	IL: 5/ 5/ 2019	ite Location Details-ta	ken from deskton review	KNQK, KJH, DIVI	
County:	Prince George's	Cross Roads:	along US 301, E of Old Crain Hwy	. W of Croom Station Rd	1
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit):	02131103	
Proximity to Impacted S	Stream (mi.):	8.3	Lat/Long:	38.793005	-76.769992
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi.	0.25	
Site Opportunities:	XFish Passage	<u>X</u> Channel Restoration	XHabitat Enhancement	Riparian Buffer Planting	•
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	1
Culvert/Dam Type:	RCP	Culvert/Dam Dimensions	US 6' W, 5.5' tall DS 5' W, 4.5' tall	Blockage Type:x_con	nplete PartialNone
USGS Gage Station #:	01594526	USGS Gage Discharge (fs3	3/s):191	US	S: Complete, DS: Partial
USGS Gage Daily Discha	arge Percentile:0-25%	625-50%50-75%	_X_75-100%		
Property Address:	unnamed tributary of Cha	arles Branch along US 301 i	in between Old Crain Hwy and Cr	oom Station Rd	
Property Owner(s):	SHA				
		General Field	Observations		
Are there records for dia	adromous fish, mussels, RTI	E crayfish, or other RTE	Can the fish blockage be remove	ed within the road right	-of-way or does it
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyon	d right-of-way limits? Ex	plain
Explain:			Explain:		
RTE coordination with ag	gencies is pending		Need access onto private proper	ty downstream. May be	park property?
			Upstream blockage: log jam in c	ulvert, 2 ft drop in culver	t. Downstream
			blockage: culvert drop over grou	t bags	
		Fish Passag	e Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>		<u>Score</u>
Functional Upstream Ne	etwork	5	Fish Blockage Height - Ecologica	l Benefits of Removal	5
10 - Greater than 4 miles	S		10 - Greater than 5' = 5 - 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
1.45 miles			Rated based on taller blockage.	Upstream blockage: 2 ft	tall vertical.
			Downstream blockage: 4 inch DS	SW - invert, 5 inch DSW -	USW (?)
			^o		.,
Number of Downstream	n Fish Blockages	10	Adjacent Land Use		1
10 - 0 Blockages			10 - Commercial/Agriculture/Ba	re Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
None			Mid successional forest: tulin no	where booch bickory wh	ite ook
None			wild-successional forest. tulip po	piar, beech, hickory, wh	ILE OAK
NAACC Diadromous Fish	h HUC 12 Watershed Score	10	Ease of Construction		1
10 - 3 to 22			10 - Easy		
5 - 23 10 41 1 - 42 to 61			5- Average 1 - Difficult/Complex		
Describe:			Describe:		
12			Downstream: 5 ft wide RCP, 4 inch tall blockage; Upstream: 6 ft wide RCP, 2 ft		
			tall blockage		
Percentage of Upstream	n Impervious Surface	10	Ease of Access		1
10 - Less than 10%			10 - Yes (with <u>existing</u> direct veh	icular access to potentia	l site)
5 - 10 to 25%			5- Yes (open but no existing vehicular access)		
1 - Greater than 25%			1 - No (no vehicular access, clear	ing needed, steep slope	s surrounding site)
Describe:			Describe:		
7.28%			Mid-successional forest, steep si	opes along roadway emi	bankment
Fish Habitat Diversity		5	Utilities Present		1
10 - Greater than 5 cove	r types		10 - No utilities on site		
1 - Less than 3 cover types			5 - UTIIITIES DUT NOT WITNIN SITE		
	c.,		Describe:		
LMD root mate averta	nging vogotation, 2 turas		Describe. Overhead newerlines on unstream side of subject		
LVVD, root mats, overhal	ising vegetation; 3 types		overhead powerlines on upstream side of culvert		
			To	tal Score out of 100	49





Channel overview upstream of culvert - facing upstream



Within culvert - facing upstream, log blockage



Culvert outfall - facing upstream

Channel overview downstream of culvert - facing downstream

	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Assess	ment Form	
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	ies Study	Mitigation Site Number:	NAACC 57470	
Projects Estimated Strea	am Mitigation Needs (LF):	TBD			
Date of Field Assessmer	it: 2/18/2019	ita Location Dataila ta	Consultant Firm/Investigator(s)	RK&K KJH, BIVI	
County:	Anne Arundel	Cross Roads	Southern MD Blvd, SE of Plumme	er In Sof MD 4	
Basin (HUC 8):	Patuxent	- Closs Rodus.	MDE Watershed (8 digit):	02131102	
Proximity to Impacted S	Stream (mi.):	11.3	Lat/Long:	38.798645 -	76.681186
- · ·					
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sg. mi.	0.055	
Site Opportunities:	<u>X</u> Fish Passage	<u>X</u> Channel Restoration	<u>X</u> Habitat Enhancement	Riparian Buffer Planting	
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	
Culvert/Dam Type:	Grout-lined elliptical pipe	Culvert/Dam Dimensions	9 ft wide. 6.5 ft tall. 6 inches of grout	Blockage Type: Comple	ete X Partial None
USGS Gage Station #:	01594526	USGS Gage Discharge (fs:	3/s): 360	0 // <u>_</u> (
USGS Gage Daily Discha	arge Percentile: 0-25	<u>-</u>	X 75-100%		
Property Address:	Galloway Creek along Sor	uthern MD Blvd	_ <u></u> /0 100/0		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for dia	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be remove	ed within the road right-c	of-way or does it
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond	d right-of-way limits? Exp	lain
Explain:			Explain:	<u> </u>	-
RTE coordination with a	gencies is pending		Yes, downstream parallels road F	ROW. Opportunities for st	ream restoration in
			ROW.		
		Fish Passag	se Site Rating		
<u>Criteria</u>		Score	Criteria		Score
Functional Upstream Ne	etwork	1	Fish Blockage Height - Ecologica	Benefits of Removal	5
10 - Greater than 4 miles	S		10 - Greater than 5'		
5 - 1 to 4 miles			5-1 to 5 1 - Less than 1'		
Describe: 0.55 miles			Describe: 3 to 4 inches of water in culvert	2 to 2 5 ft from over grout	hans - cascado
0.55 miles			S to 4 menes of water in curvert.		. Dags - Cascaue.
Number of Downstream	n Fish Blockages	5	Adjacent Land Lise		1
10 - 0 Blockages		J	10 - Commercial/Agriculture/Bar	e Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
1 minor barrier			Mid-successional forest: sycamor	re, tulip poplar, red maple	ć
NAACC Diadromous Fish	HUC 12 Watershed Score	1	Fase of Construction		1
10 - 3 to 22			10 - Easy		_
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
9			9 ft wide elliptical pipe, 2 ft drop		
-					
Percentage of Upstream	1 Impervious Surface	5	Ease of Access		1
10 - Less than 10%			10 - Yes (with <u>existing</u> direct vehi	cular access to potential s	site)
5 - 10 10 25% 1 Groater than 25%			5- Yes (open but no existing venicular access)		
Describe:			Describe:		
18 20%			Bequires forest clearing: steen sl	ones along roadway	
10.2070			Requires forest clearing, steep si	Spes along roadway	
Fich Hobitat Discussion		10		r	1
Fish Habitat Diversity	* # # # # # #	10	Utilities Present		1
5 - 3-5 cover types	rtypes		5 - 11		
1 - Less than 3 cover types			1 - Utilities within potential site		
Describe:			Describe:		
LWD riffles deep pools	overhanging vegetation	nercut hanks root mats	Overhead utilities on unstroom s	ide of site	
hackwater pools, 7 torse	overnanging vegetation, ui	nercut bariks, root mats,	overneau utilities on upstream s	ILE UI SILE	
backwater pools; 7 type:	3				
			To	tal Score out of 100	31





Channel overview upstream of culvert - facing upstream



Culvert inlet - facing downstream



Channel overview downstream of culvert - facing downstream



Culvert outfall - facing upstream

Project Datalis Project Name: L490/L-220 Managed Lanes Stury Miligation Ste Number: Miligation Ste Number: <thm< th=""><th></th><th>I-495/I-270 Ma</th><th>naged Lanes Study - F</th><th>ish Passage Field Site Asses</th><th>sment Form</th><th></th></thm<>		I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
Project Runne: Link CS 5282 Project String and String Mitiggion Node (Lif): Too Constant Framinguosition Node (Lif): Constants Framinguosition Node (Lif): Constant String Mitiggion Node (Lif): Too String Constant String Mitiggion Node (Lif): Too Descript: Anne Annual Basin (Hiu C): Total String (Lif): Total String (Lif): String Order: Total String (Lif): Total String (Lif): Total String (Lif): String Order: Total String (Lif): Total String (Lif): Total String (Lif): Total String (Lif): String Order: Total String (Lif): Total String (Lif): Total String (Lif): Total String (Lif): String Order: Total String (Lif): Total String (Lif): Total String (Lif): Total String (Lif): String Order: Total String (Lif): Total String (Lif): Total String (Lif): Total String (Lif): String Order: Total String (Lif): Total String (Lif): Total String (Lif): Total String (Lif): String Order: Total String (Lif): Total String (Lif): Total String (Lif): Total String (Lif):			Projec	t Details		
Endpotent Stream (mightion (Nets) (F): 1000 Consultant Emry/Investigate(3), 87.45, 70.1, 80.4 Dear of Field Access (F): Fature (F): Fa	Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	NAACC 57482	
Stel Design of the state of th	Projects Estimated Stre	nt: 2/15/2019	IBD	Consultant Firm/Investigator(s)	RK&K·KIH BM	
County: Anne Arundel Cross Reads: Solumine (Single (A) MD 288 Proximity to impacted Stream (mL): 15.08 Lat/Long: 38.785015 -76.539821 Partel Sice (ac): Within SHA ROW Drainage Area to Reach (St. m., im.) 4.06 Site Opport, Imite:		Si	te Location Details-ta	ken from desktop review		
Basin (HUC 8): Patcesting to impacted Stream (init): 16.08 MULL Org. 38.7801.5 -76.59821 Parcel Size (a): Within SYA ROW Drainage Area to Reach (rg. mi. 	County:	Anne Arundel	Cross Roads:	Solomons Island Rd/ MD 258		
Provide to impacted Stream (ml.): 16.08 Lat/Long: 38.785015 -76.509821 Parcel Size (ac): Within SitA ROW Drainage Area to Reach (ag, ml. 4.06 Stream Order: 1st Stream Hydrology: Perminal Stream Use: 1 Stream Order: 1st Stream Hydrology: Perminal Stream Use: 1 Stream Order: 1st Stream Hydrology: Perminal Stream Use: 1 Stream Order: USSS Gage Disknarge (fi3/s): 120 Stream Use: 1 New USSS Gage Disknarge (fi3/s): 120 Stream Use: 1 Stream Use: 1 New USSS Gage Disknarge (fi3/s): 120 Stream Use: 1 New Stream Use: 1 New USSS Gage Disknarge (fi3/s): 120 Stream Use: 1 Condentation with agencies is pending Condentation with agencies is pending Condentation with agencies is pending Fish Passage Site Rating Score Criteria Score Score Score Score Score Criteria Score Score Score Score Score Criteria Score Score Score	Basin (HUC 8):	Patuxent		MDE Watershed (8 digit):	02131102	
Parcel Size (ac): Within SHA ROW Channel Metrostom Like (ac) and the maxement of the mannel Stream User (b) and Stream User (b	Proximity to Impacted	Stream (mi.):	16.08	Lat/Long:	38.785015	-76.599821
Pared Sire (ac) Within SHA ROW Orange Area to Reach (eq. mi						
Site Opportunities:Tab Resigner	Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi.	4.06	i
Stream Vytrongy: Permini Stream Vytrongy: Permini Stream Use: Junc USGS Sege Station #: Displace Context(Frame) USGS Sege Station #: Displace Context(Frame) Displace Context(Fram) Displace Context(Fram) <t< td=""><td>Site Opportunities:</td><td>XFish Passage</td><td><u>X</u> Channel Restoration</td><td>XHabitat Enhancement</td><td>Riparian Buffer Planting</td><td></td></t<>	Site Opportunities:	XFish Passage	<u>X</u> Channel Restoration	XHabitat Enhancement	Riparian Buffer Planting	
Current/Dam Type: Double box cubrer (F and) Current/Dam Straft, Weid, Br tail Blockage type: Complete Perial None USGS Gage Statub Discharge Percentile: O255, <u>S105, VS075%,S50756%,S50766%,S50766%,50766%,S50766%,S50766\%,S50766%,</u>	Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	
USGS Gage Station # 000000000000000000000000000000000000	Culvert/Dam Type:	Double box culvert (9' each)	Culvert/Dam Dimensions	18 ft wide, 8 ft tall	Blockage Type:Comp	lete _X PartialNone
USS 6 Sage Daily Discharge Percentile:	USGS Gage Station #:	01594526	USGS Gage Discharge (fs3	3/s): _120		
Upperty Address: Upperty Owner(t): 3TAX General Field Observations Are there records for diadromous fish, mussels, RTE cryfish, or other RTE Can the fish blockage beyond right-of-way in does it require access to parcels beyond right-of-way or does it require access to parcels beyond right-of-way limits? Explain Explain: Potential to build see within ROW - depends on design. Wide ROW about 175 ft from outfall Criteria Score Criteria Score Criteria Score Criteria Score Criteria Score Criteria Score 10 - Greater than 4 miles 1 - 10 1 - Less than 1 mile 1 - 10 1 - Less than 1 mile 1 - 10 26 miles Bish Blockage Height - Score 1 10 - Greater than 7 miles 1 - 10 5 - 1 to 6' 1 - Less than 1 1 10 - Greater than 4 miles 1 - 10 1 5 - 1 to 6' D - Gormercial/Agriculture/Bare Ground 1 10 - Blockage 10 Adjacent Land Use 1 10 - 10 at to 2 5 10 Explaine <	USGS Gage Daily Disch	arge Percentile:0-25%	625-50% _ <u>X</u> 50-75%	%75-100%		
Construction Ceneral Field Observations Are there records for diadromous fish, mussels, RTE cray/fish, or other RTE pecies within on icose proximity to the fish blockage site? Explain Can the fish blockage be removed within the road right-of-way or does it require access to parche beyond right-of-way limit? Explain Explain: Explain: Explain: Explain: Explain: Explain: Explain: Explain: Explain: Criteria Fish Passace Site Rating Score Criteria Score Criteria Score Functional Upstream Network 10 Fish Blockage Site Rating 1 10 - Greater than 1 mile 1 - Less than 1' Score 1 Describe: Describe: Describe: 1 26 miles 0 Adjacent Land Use 1 10 - Blockages 10 - Greater than 5' 1 1 - Less than 1 Describe: Describe: 1 10 - Blockages 10 - Field/Scrub-Strub 1 1 - State of Acces 1 - Field/Scrub-Strub 1 1 - State of Crubes Describe:	Property Address: Property Owner(s):	Lyons Creek near Solomo	ns Island Rd along W Bay F	-ront Rd		
Are there records for diadromous fish, mussels, RTE crayfish, or other RTE Can the Fish Blockage be removed within the road right-of-way or does it special within or in close proximity to the fish blockage site? Explain require access to parcels beyond right-of-way limits? Explain Explain: RTE coordination with agencies is pending Potential to build site within ROW - depends on design. Wide ROW about 175 ft from outfall Can the Fish Blockage be removed within the road right-of-way limits? Explain Explain: RTE coordination with agencies is pending Categories Coordination Categories Coordination with agencies is pending Categories Coordination Categories Coor	rioperty owner(s).	311/	Conoral Field	d Observations		
And the sector Set of used in the User Applied Set of User in	Are there records for di	iadromous fish mussals BT	<u>General Field</u> E cravfish or other BTE	Can the fish blockage be removed	ed within the road right.	of way or does it
Describe: Create Construction Score 0: oracter than 4 miles 5 1 6 1: Less than 1 mile 10 10 6 0: oracter than 4 miles 5 1 0 1: Less than 1 mile 1 1 1 0: oracter than 4 miles 5 1 1 1: Less than 1 mile 1 1 1 0: oracter than 4 miles 5 1 1 1: Less than 1 mile 1 1 1 0: oracter than 4 miles 1 1 1 1: Less than 1 mile 1 1 1 0: oracter than 5'' 1 1 1 1: Less than 1' 1 1 1 0: oracter than 5'' 1 1 1 1: Less than 1'' 1 1 1 0: oracter than 5'' 1 1 1 1: Stockage 1 1 1 1 0: Stockage 1 1 1 <	species within or in close	se provimity to the fish bloc	kage site? Evolain	require access to parcels beyon	d right_of_way limits? Ev	nlain
Additional procession Potential to build site within ROW - depends on design. Wide ROW about 175 it from outfall RTE coordination with agencies is pending Potential to build site within ROW - depends on design. Wide ROW about 175 it from outfall RTE coordination with agencies is pending Fish Passage Site Rating Citeria Score Functional Upstream Network 10 10 - Grater than A miles 5 - 1'to 5' 1 - Less than 1 mile 1 - Less than 1' Describe: Describe: 26 miles Binches tall - BW, 10 inches TW Number of Downstream Fish Blockages 10 10 - 0 Blockages 5 - 1'to 5' 1 - 1 - Blockage 1 - Commercial/Agriculture/Bare Ground 1 - 1 - Blockage 1 - Forest Describe: Describe: None Describe: None Describe: None Describe: Note of Upstream Impervious Surface 10 10 - Less than 10% 10 - Fasy 5 - 100 - Less than 10% 1 - Vifficult/Complex 1 - 20 - Stribe: 1 - No (no vehicular access) 5 10 - Less than 10% 1 - Vifficult/Complex 5	Evolain [.]		Rage Site: Explain	Evolain:	a fight-of-way mints: LA	plain
Fish Passage Site Rating Criteria Score Criteria Score Criteria Score Criteria Score Protobiol Upstream Network 10 Fish Blockage Pielo Construction 1 Operative Than 5' 5 Stind Amles 1 Describe: Describe: Describe: Describe: Stind Amles 10 Commercial/Agriculture/Bare Ground 1 Other State Describe: Stind Amles 10 Commercial/Agriculture/Bare Ground 1 Obscribe: Describe: Number of Downstream Fish Blockages 10 Adjacent Land Use 1 10 - O Blockage 10 Stind Amles 1 Stind Amles 1 Stind Agriculture/Bare Ground 5 Stind Agriculture/Bare Ground 5 Dickage 10 5 Dickage 10 5 Dickage 10 5 Dickage 10 </td <td>RTF coordination with a</td> <td>gencies is pending</td> <td></td> <td>Potential to build site within ROV</td> <td>W - depends on design. V</td> <td>Vide ROW about 175</td>	RTF coordination with a	gencies is pending		Potential to build site within ROV	W - depends on design. V	Vide ROW about 175
Fish Passage Site Rating Criteria Score Criteria Score Functional Upstream Network 10 Fish Blockage Height - Ecological Benefits of Removal 1 10 - Fish Blockage Height - Ecological Benefits of Removal 1 1 10 - Fish Blockage Height - Ecological Benefits of Removal 1 1 10 - Commercial Agriculture/Bare Ground S - 1 11 - Less than 1' - - - Describe: 26 miles 0 Adjacent Land Use 1 1 10 0 Blockages 10 - Commercial/Agriculture/Bare Ground S 1 1 10 0 Blockage 5 Field/Scrub-shrub 1 1 1 10 clockage 1 - Forest 0				ft from outfall		
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1 - Less than 1 '' - Less than 1' Describe: 26 miles 26 miles 8 inches tall - BW, 10 inches TW Number of Downstream Fish Blockages 10 10 - 0 Blockages 10 - Commercial/Agriculture/Bare Ground 5 - 1 Blockage 5 - Field/Scrub-shrub 1 - 1.51 Blockage 1 - Forest Describe: Describe: None Mostly mid-successional forest, open lawn downstream of site NAACC Diadromous Fish HUC 12 Watershed Score 10 Ease of Construction 5 NAACC Diadromous Fish HUC 12 Watershed Score 10 - Ease of Construction 1 - 3 - 23 to 41 5 - Average 1 - 42 to 61 1 - Difficult/Complex Describe: Describe: 12 10 - Ease of Access 10 - Loss than 10% 10 - Yes (upth existing direct vehicular access to potential site) 5 - 10 to 25% 5 - Yes (open but no existing vehicular access, clearing needed, steep slopes surrounding site) Describe: Describe: 4.00% Corest through grass lawn downstream of culvert within ROW. Upstream surrounded by forest. Steep slopes 4.00% Corest through grass lawn downstream of culvert within ROW. Upstream surrounded by forest. Steep	5 - 1 to 4 miles			5- 1' to 5'		
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26 miles 8 inches tall - BW, 10 inches TW Number of Downstream Fish Blockages 10 10 - 0 Blockages 10 - Commercial/Agriculture/Bare Ground 5 - 1 Blockage 1 - Freest Describe: Describe: None Mostly mid-successional forest, open lawn downstream of site NAACC Diadromous Fish HUC 12 Watershed Score 10 10 - 3 to 22 50 5 - 23 to 41 5- Average 1 - 42 to 61 1 - Difficult/Complex Describe: 12 12 18 to bx culvert, 8 inch blockage Percentage of Upstream Impervious Surface 10 10 - Ves (with existing direct vehicular access to potential site) 5- ves (pone but no existing vehicular access) 1 - Sorg% 1 - No (no vehicular access, clearing needed, steep slopes surrounding site) Describe: 20 4.00% Access through grass lawn downstream of culvert within ROW. Upstream surrounded by forest. Steep slopes 10 - Greater than 5 cover types 10 - No utilities on site 10 - Greater than 5 cover types 10 - No utilities unt not within site 1 - Less than 20% 5 - Utilities but not within site 1 - Less than 5 cover types 10 - No utilities un	Describe:			Describe:		
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NAACC Diadromous Fish HUC 12 Watershed Score 10 Ease of Construction 5 10 - 3 to 22 10 - Easy 5 - Average 1 - Difficult/Complex 1 - 42 to 61 1 - Difficult/Complex Describe: 12 28 ft box culvert, 8 inch blockage 5 Percentage of Upstream Impervious Surface 10 Ease of Access 5 10 - Less than 10% 5 - Yes (with existing direct vehicular access to potential site) 5 5 - 10 to 25% 1 - No (no vehicular access, clearing needed, steep slopes surrounding site) Describe: 1 - Socribe: 1 - No (no vehicular access, clearing needed, steep slopes surrounding site) Describe: 4.00% 26 creater than 25% Describe: Access through grass lawn downstream of culvert within ROW. Upstream surrounded by forest. Steep slopes Fish Habitat Diversity 10 Utilities Present 5 10 - Greater than 5 cover types 10 - No utilities on site 5 5 - 3-5 cover types 1 - Utilities within potential site 5 10 - Ises than 3 cover types 1 - Utilities within potential site 5 Describe: UWD, deep pools (2 to 3 ft), overhanging vegetation, undercut banks, riffles Overhead utilities just downstream 67						
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5 - 23 to 41 5 - Average 1 - 42 to 61 1 - Difficult/Complex Describe: 12 12 Bescribe: 13 Bescribe: 14 Describe: 15 10 - Less than 10% 5 - 10 to 25% 5 - Yes (open but no existing vehicular access) 1 - Koreater than 25% 1 - No (no vehicular access, clearing needed, steep slopes surrounding site) Describe: Access through grass lawn downstream of culvert within ROW. Upstream surrounded by forest. Steep slopes 4.00% Access through grass lawn downstream of culvert within ROW. Upstream surrounded by forest. Steep slopes Fish Habitat Diversity 10 Utilities Present 5 10 - Greater than 3 cover types 10 - No utillities on site 5 1 - Less than 3 cover types 1 - Utilities within potential site 5 1 - Less than 3 cover types. 1 - Utilities within potential site 5 Describe: <td>10 - 3 to 22</td> <td></td> <td></td> <td>10 - Easy</td> <td></td> <td></td>	10 - 3 to 22			10 - Easy		
1 - 42 to 61 1 - Difficult/Complex Describe: 12 12 18 ft box culvert, 8 inch blockage Percentage of Upstream Impervious Surface 10 10 - Less than 10% 5 5 - 10 to 25% 10 - Yes (with existing direct vehicular access to potential site) 5 - Greater than 25% 5 - Yes (open but no existing vehicular access) 1 - No (no vehicular access) 1 - No (no vehicular access) 1 - No (no vehicular access) 1 - No (no vehicular access) 2 - Sover types 0 5 - 3 - 6 cover types 10 - Ves (with existing of vert within ROW. Upstream surrounded by forest. Steep slopes 5 - 3 - 6 cover types 10 - No utilities on site 5 - 3 - 6 cover types 5 - Utilities within potential site 1 - Less than 3 cover types 1 - Utilities within potential site Describe: Describe: LWD, deep pools (2 to 3 ft), overhanging vegetation, undercut banks, riffles downstream Overhead utilities just downstream WD, deep pools (2 to 3 ft), overhanging vegetation, undercut banks, riffles Overhead utilities just downstream	5 - 23 to 41			5- Average		
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1 - Greater than 25% 1 - No (no vehicular access, clearing needed, steep slopes surrounding site) Describe: 4.00% 4.00% Access through grass lawn downstream of culvert within ROW. Upstream surrounded by forest. Steep slopes Fish Habitat Diversity 10 Utilities Present 5 10 - Greater than 5 cover types 10 - No utilities on site 5 - 3-5 cover types 5 - Utilities but not within site 1 - Less than 3 cover types 1 - Utilities within potential site Describe: Describe: LWD, deep pools (2 to 3 ft), overhanging vegetation, undercut banks, riffles downstream Overhead utilities just downstream overhead utilities just downstream 67	5 - 10 to 25%			5- Yes (open but no existing vehi	icular access)	sicej
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Fish Habitat Diversity 10 Utilities Present 5 10 - Greater than 5 cover types 10 - No utilities on site 5 5 - 3-5 cover types 10 - No utilities on site 5 1 - Less than 3 cover types 1 - Utilities within potential site 5 Describe: Describe: Describe: 0verhead utilities just downstream LWD, deep pools (2 to 3 ft), overhanging vegetation, undercut banks, riffles downstream Overhead utilities just downstream 67	4.00%			Access through grass lawn downstream of culvert within ROW. Upstream		
Fish Habitat Diversity 10 Utilities Present 5 10 - Greater than 5 cover types 10 - No utilities on site 5 5 - 3-5 cover types 5 - Utilities but not within site 1 1 - Less than 3 cover types 1 - Utilities within potential site 5 Describe: Describe: Describe: 0verhead utilities just downstream LWD, deep pools (2 to 3 ft), overhanging vegetation, undercut banks, riffles downstream Overhead utilities just downstream 67				surrounded by forest. Steep slop	ves	
Fish Habitat Diversity 10 Utilities Present 5 10 - Greater than 5 cover types 10 - No utilities on site 5 5 - 3-5 cover types 5 - Utilities but not within site 1 1 - Less than 3 cover types 1 - Utilities within potential site 5 Describe: Describe: 0 LWD, deep pools (2 to 3 ft), overhanging vegetation, undercut banks, riffles 0 0 downstream; 6 types. Riffles downstream 67						
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5 - 3-5 cover types 5 - Utilities but not within site 1 - Less than 3 cover types 1 - Utilities within potential site Describe: Describe: LWD, deep pools (2 to 3 ft), overhanging vegetation, undercut banks, riffles downstream; 6 types. Riffles downstream Overhead utilities just downstream Total Score out of 100 67	10 - Greater than 5 cove	er types		10 - No utilities on site		
1 - Less tran 3 cover types 1 - Utilities within potential site Describe: Describe: LWD, deep pools (2 to 3 ft), overhanging vegetation, undercut banks, riffles downstream; 6 types. Riffles downstream Overhead utilities just downstream Total Score out of 100 67	5 - 3-5 cover types			5 - Utilities but not within site		
Describe: LWD, deep pools (2 to 3 ft), overhanging vegetation, undercut banks, riffles downstream; 6 types. Riffles downstream Total Score out of 100 67	1 - Less than 3 cover types			1 - Utilities within potential site		
LWD, deep pools (2 to 3 ft), overhanging vegetation, undercut banks, riffles Overhead utilities just downstream downstream; 6 types. Riffles downstream Total Score out of 100 67	Describe:			Describe:		
downstream; 6 types. Riffles downstream Total Score out of 100 67	LWD, deep pools (2 to 3	8 ft), overhanging vegetation	, undercut banks, riffles	Overhead utilities just downstrea	am	
Total Score out of 100 67	downstream; 6 types. R	ittles downstream				
				To	tal Score out of 100	67





	I-495/I-270 Mar	naged Lanes Study - F	ish Passage Field Site Assess	sment Form	
		<u>Projec</u>	t Details		
Project Name:	I-495/I-270 Managed Lane	es Study	Mitigation Site Number:	NAACC 57494	
Projects Estimated Stream	m Mitigation Needs (LF):	TBD			
Date of Field Assessment	:: 3/5/2019	to Location Dataila to	Consultant Firm/Investigator(s)	RK&K KJH, BM	
County:	Anne Arundel	te Location Details-ta	Sollers In/MD 408 (Mt Zion Mar	lboro Pd)	
Basin (HUC 8):	Patuxent	CIUSS ROdus.	MDF Watershed (8 digit):	02131102	
Proximity to Impacted St	ream (mi.):	11.6	Lat/Long:	38.814191	-76.674711
· · · · · · · · · · · · · · · · · · ·		-	.,		
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sg. mi.	1.68	
Site Opportunities:	Fish Passage	X Channel Restoration	Habitat Enhancement	Riparian Buffer Planting	
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	1
Culvert/Dam Type:	Bridge	Culvert/Dam Dimensions	15 ft wide. 5 ft. 7 in tall	Blockage Type: Comp	lete Partial X None
USGS Gage Station #·	01594526	USGS Gage Discharge (fs?	(/s): 191		
USGS Gage Daily Dischar	rge Percentile: 0_25%	25-50% 50-75%	X 75-100%		
Property Address:	Wilson Owens Branch nez	ar Sollers I n	_^_/3-100%		
Property Owner(s):	SHA				
		General Field	Observations		
Are there records for dia	dromous fish, mussels, RTI	E cravfish, or other RTE	Can the fish blockage be remove	ed within the road right-	of-way or does it
species within or in close	proximity to the fish block	kage site? Explain	require access to parcels beyond	d right-of-way limits? Fx	nlain
Evolain [.]	proximity to the non-bloch	tage site: Explain	Evolain:	a fight of way limits. Ex	piam
RTF coordination with ag	encies is pending		No blockage - drop site. No - nar	row ROW, would need a	ccess to private
	cheres is perioding		property		
		Fich Doccor	o Sito Pating		
Criteria		Score	Criteria		Score
Eunctional Unstream Net	twork	10	Fish Blockage Height - Ecologica	Benefits of Removal	1
10 - Greater than 4 miles	WORK	10	10 - Greater than 5'	Denents of Kelloval	
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
8.32 miles			No blockage, bridge, substrate u	nder bridge - deposition	throughout
Number of Downstream	Fish Blockages	10	Adjacent Land Use		1
10 - 0 Blockages			10 - Commercial/Agriculture/Bar	e Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe.			Nid successional forest white a	ak tulin nanlar haadh a	
None			white successional forest. white of	ak, tulip popial, beech, s	ycamore
NAACC Diadromous Fish	HUC 12 Watershed Score	10	Ease of Construction		5
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 10 61			1 - Difficult/Complex		
Describe:			Large bridge 15 ft		
5					
Percentage of Upstream	Impervious Surface	10	Ease of Access		10
10 - Less than 10%		-	10 - Yes (with existing direct vehi	icular access to potential	site)
5 - 10 to 25%			5- Yes (open but no existing vehi	cular access)	/
1 - Greater than 25%			1 - No (no vehicular access, clear	ing needed, steep slopes	surrounding site)
Describe:			Describe:		
4.13%			Opening in guard rail. Existing clear path adjacent to bridge - 15 ft wide,		
			minimal tree impacts along bank	ίs.	
Fish Habitat Diversity		10	Utilities Present		5
10 - Greater than 5 cover	types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover types			1 - Utilities within potential site		
Describe:			Describe:		
Deep pools, root mats, w	oody debris, overhanging v	egetation, riffles,	Overhead powerlines on upstrea	im end of bridge	
undercut banks; 6 types					
			Т.	tal Score out of 100	72





	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		<u>Projec</u>	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 57496		
Projects Estimated Stream	am Mitigation Needs (LF):	TBD			
Date of Field Assessmen	IC: 2/18/2019	te Location Details-ta	consultant Firm/investigator(s)	KK&K KJH, BIVI	
County:	Anne Arundel	Cross Roads:	Southern MD Blvd, N of MD 4, Sl	F of Plummer I n	
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit):	02131102	
Proximity to Impacted S	tream (mi.):	11	Lat/Long:	38.800916 -7	76.68399
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi.	0.77	
Site Opportunities:	Fish Passage	Channel Restoration	Habitat Enhancement	Riparian Buffer Planting	
Stream Order:	2nd	Stream Hydrology:	Intermittent	Stream Use:	
Culvert/Dam Type:	СМР	Culvert/Dam Dimensions	24 inches	Blockage Type:Comple	te Partial _X_None
USGS Gage Station #:	01594526	USGS Gage Discharge (fs3	3/s): <u>360</u>		
USGS Gage Daily Discha	arge Percentile:0-25%	625-50%50-75%	X_75-100%		
Property Address:	Galloway Creek near Sout	hern MD Blvd			
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for dia	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be remove	ed within the road right-o	f-way or does it
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyon	d right-of-way limits? Expl	lain
Explain:			Explain:		
RTE coordination with ag	gencies is pending		Clogged pipe that drains upstrea	am roadway - intermittent	channel. No fish
			habitat upstream or downstream	n. Drop site.	
		Fich Deser	a Cita Dating		
Criteria		FISH Passag	<u>le Site Kating</u> ICriteria		Score
Eunctional Unstream Ne	atwork	1	Fish Blockage Height - Ecologica	I Benefits of Removal	1
10 - Greater than 4 miles	S	1	10 - Greater than 5'	Denentis of Removal	I
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
0.02 miles			No upstream fish habitat; downs	stream channel of culvert i	s mostly dry
Number of Downstream	n Fish Blockages	1	Adjacent Land Use		1
10 - 0 Blockages			10 - Commercial/Agriculture/Bar	re Ground	
5 - I BIOCKage			5- Field/Scrub-snrub		
Describe:			Describe:		
2 in database			Mid-successional upland forest:	white oak, tulip poplar, An	nerican beech
				white out, tunp popul, , in	
		10			10
NAACC Diadromous Fish	HUC 12 Watershed Score	10	Ease of Construction		10
10 - 3 to 22 5 - 23 to 41			10 - Easy 5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
9			24 inch CMP, clogged, no blockage, no fish habitat		
-					
Percentage of Upstream	n Impervious Surface	10	Ease of Access		1
10 - Less than 10%			10 - Yes (with <u>existing</u> direct veh	icular access to potential s	ite)
5 - 10 to 25%			5- Yes (open but no existing vehi	icular access)	
1 - Greater than 25%			1 - No (no vehicular access, clear	ring needed, steep slopes s	surrounding site)
Describe:			Describe:		
5.04%			Mid-successional forest		
Plak Hakita Di Si		4		-	A
Fish Habitat Diversity		1	Utilities Present		1
10 - Greater than 5 cover	riypes		10 - NO UTILITIES ON SITE		
1 - Less than 3 cover types			5 - Ullilles dut not within site 1 - Itilities within potential site		
Describe			Describe		
Intermittant channels	aiority of channel is day		Overhead utilities on unstream side		
mermitent channel; ma	ajointy of channel 15 dry		overnead utilities on upstream side		
			To	tal Score out of 100	37




	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	NAACC 57498	
Projects Estimated Stream	n Mitigation Needs (LF):	IRD	Consultant Firm/Investigator(s)	RK&K·KIH BM	
Dute of field Assessment	S S S S	te Location Details-ta	ken from desktop review		
County:	Prince George's	Cross Roads:	US 301/MD 382 (Croom Rd)		
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit):	02131103	
Proximity to Impacted St	ream (mi.):	9.7	Lat/Long:	38.785678	-76.792231
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi.	. 0.95	
Site Opportunities:	Fish Passage	<u>X</u> Channel Restoration	Habitat Enhancement	Riparian Buffer Planting	
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	l
Culvert/Dam Type:	СМР	Culvert/Dam Dimensions	12' wide, 12' tall, 3" grout on bottom	Blockage Type:Comp	lete PartialX_None
USGS Gage Station #:	01594526	USGS Gage Discharge (fs3	3/s):191	-	
USGS Gage Daily Dischar	ge Percentile:0-259	625-50%50-75%	_X_75-100%		
Property Address: Property Owner(s):	SHA	Irles Branch along US 301 I	near MD 382 (Croom Rd)		
		General Field	1 Observations		
Are there records for dia	dromous fish, mussels, RT	F cravfish, or other RTF	Can the fish blockage be remov	ed within the road right-	of-way or does it
species within or in close	proximity to the fish bloc	kage site? Explain	require access to parcels beyon	d right-of-way limits? Fx	nlain
Fynlain [.]	proximity to the hon bloc	Ruge Site: Explain	Explain:		Juli
RTE coordination with age	encies is pending		Drop site - no blockage		
		Fish Passag	ve Site Rating		
<u>Criteria</u>		Score	Criteria		Score
Functional Upstream Net	work	10	Fish Blockage Height - Ecologica	al Benefits of Removal	1
10 - Greater than 4 miles			10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:	· · · · · · · · · · · · · · · · · · ·	
5.62 miles			No blockage - deposition and ba	ickwatering in cuivert. wa	iter depth in cuivert is
			8 inches		
Number of Downstream	Fish Blockages	10	Adjacent Land Lise		1
10 - 0 Blockages	FISH DIOCKages	10	10 - Commercial/Agriculture/Ba	re Ground	T
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Mid-successional forest: tulip po	oplar, beech, sycamore	
NAACC Diadromous Fish	HUC 12 Watershed Score	10	Ease of Construction		5
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
12			12 ft CMP, no blockage		
Percentage of Unstream	Impervious Surface	5	Ease of Access		1
10 - Less than 10%	impervious surface	5	10 - Yes (with existing direct veh	nicular access to potential	site)
5 - 10 to 25%			5- Yes (open but no existing veh	icular access)	0.007
1 - Greater than 25%			1 - No (no vehicular access, clear	ring needed, steep slopes	surrounding site)
Describe:			Describe:		
13.60%			Mid-successional forest, steep s	lopes surrounding culvert	:
Fish Habitat Diversity		10	Utilities Present		1
10 - Greater than 5 cover	types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover type	S		1 - Utilities within potential site		
Describe:			Describe:		
LWD, riffles, deep pools, o	overhanging vegetation, ur	idercut banks, root mats;	Sewer line upstream and downs	tream of culvert. Overhea	ad power lines
6 types			upstream		
			ı Tr	otal Score out of 100	54





	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	NAACC 57501	
Projects Estimated Stre	am Mitigation Needs (LF):	TBD			
Date of Field Assessme	nt: 3/5/2019	ita Lacation Dataila ta	Consultant Firm/Investigator(s)	RK&K KJH, BM	
County:	Prince George's	Cross Roads:	MD 382/Trumps Hill Rd		
Basin (HUC 8):	Patuxent	. cross noaus.	MDE Watershed (8 digit):	02131103	
Proximity to Impacted S	Stream (mi.):	10	Lat/Long:	38.783646	-76.790279
, ,			, ,		
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sg. mi.	1.03	
Site Opportunities:	Fish Passage	X Channel Restoration	Habitat Enhancement	Riparian Buffer Planting	
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	I
Culvert/Dam Type:	Bridge	Culvert/Dam Dimensions	16 ft wide, 6 ft tall	Blockage Type:Comr	olete PartialX_None
USGS Gage Station #:	01594526	USGS Gage Discharge (fs3	3/s): 191		
USGS Gage Daily Discha	arge Percentile: 0-25	× 25-50% 50-75%	X 75-100%		
Property Address:	Unnamed tributary of Ch	arles Branch along MD 382	near Trumps Hill Rd		
Property Owner(s):	SHA	0	•		
		General Field	d Observations		
Are there records for di	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be remove	ed within the road right-	of-way or does it
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyon	d right-of-way limits? Ex	plain
Explain:			Explain:		
RTE coordination with a	gencies is pending		Drop site - no blockage. Bridge. I	Upstream is a forest cons	servation area
			designated by signs.		
		Fish Passag	e Site Rating		
<u>Criteria</u>		Score	Criteria		<u>Score</u>
Functional Upstream No	etwork	1	Fish Blockage Height - Ecologica	l Benefits of Removal	1
10 - Greater than 4 mile	S		10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
0.36 miles			No blockage - bridge. Water dep	th under bridge approxir	nately 8 inches.
Number of Downstreen	a Eich Plackagas	10	Adjacent Land Llas		1
Number of Downstream	n Fish Blockages	10	Adjacent Land Use	ro Cround	Ţ
5 - 1 Blockage			5- Field/Scrub-shrub	e Ground	
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Mid-successional forest: tulip po	plar, sycamore, sweet gu	ım
NAACC Diadromous Fis	h HUC 12 Watershed Score	10	Easo of Construction		5
10 - 3 to 22	in fibe 12 watershed Score	10	10 - Fasy		5
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
12			16 ft wide bridge - no blockage		
Percentage of Upstrean	n Impervious Surface	5	Ease of Access		1
10 - Less than 10%			10 - Yes (with <u>existing</u> direct veh	icular access to potential	l site)
5 - 10 t0 25% 1 - Greater than 25%			5- Yes (open but no existing veni 1 - No (no vehicular access, clear	cular access)	surrounding site)
			Describe:	ing needed, steep slopes	s surrounding site
13 70%		Surrounded by forest Recent cle	aring on south side		
13.70%			Surrounded by forest. Recent cle	aning on south side	
Fich Hobitat Divorcity		10	Litilities Dresent		1
10 - Greater than 5 cove	artypes	10	10 - No utilities on site		L
5 - 3-5 cover types	er types		5 - Utilities but not within site		
1 - Less than 3 cover type	es		1 - Utilities within potential site		
Describe:			Describe:		
LWD, riffles, deen nools	. overhanging vegetation up	ndercut banks, root mats	Sewer and overhead utilities wit	hin site	
6 types			sector and sector during with		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
			To	tal Score out of 100	45





	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		Projec	<u>t Details</u>		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	NAACC 57502	
Projects Estimated Stream	m Mitigation Needs (LF):	TBD			
Date of Field Assessment	:: 2/18/2019	ita Lanatian Dataila ta	Consultant Firm/Investigator(s)	RK&K KJH, BM	
County:	Anne Arundel	Cross Boads:	Southern MD Blvd, SE of Blumm	er In Nof MD 4	
Basin (HUC 8):	Patuxent	. cross noaus.	MDF Watershed (8 digit):	02131102	
Proximity to Impacted St	ream (mi.):	11	Lat/Long:	38.800275	-76.683598
· .,					
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi.	0 72	
Site Opportunities:	X Fish Passage	X Channel Restoration	X Habitat Enhancement	Riparian Buffer Planting	•
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	1
Culvert/Dam Type:	Grouted elliptical pipe	Culvert/Dam Dimensions	9 ft wide. 4.5 ft tall	Blockage Type: Com	olete X Partial None
USGS Gage Station #:	01594526	USGS Gage Discharge (fs ²	3/s): 360		
USGS Gage Daily Dischar	rge Percentile: 0-25	25-50% 50-75%	X 75-100%		
Property Address:	Galloway Creek near Sou	thern MD Blvd	_ <u></u> /0 100/0		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for dia	dromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be remove	ed within the road right	-of-way or does it
species within or in close	proximity to the fish bloc	kage site? Explain	require access to parcels beyon	d right-of-way limits? Ex	plain
Explain:	· ·		Explain:		÷
RTE coordination with age	encies is pending		No, need access downstream of	ROW. Natural blockage	just downstream of
-			culvert. Debris jam against stand	ling trees, beaver activity	y
Cuit a ui a		Fish Passag	<u>se Site Rating</u>		Coord
<u>Criteria</u>		<u>score</u>	<u>Criteria</u>		<u>score</u>
Functional Upstream Net	WORK	5	FISH BIOCKage Height - Ecologica	I Benefits of Removal	5
10 - Greater than 4 miles			10 - Greater than 5		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
3.68 miles			3-4 inches of water in culvert. 2.	5 ft to water surface. 3 f	t to top of debris
Number of Downstream	Fish Blockages	10	Adjacent Land Use		1
10 - 0 Blockages			10 - Commercial/Agriculture/Ba	re Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
No significant barriers			Narrow forested strip: early successional w/ scattered larger trees- sweet gum,		
			American beech, tulip poplar, re	d maple	
NAACC Diadromous Fish	HUC 12 Watershed Score	10	Ease of Construction		1
10 - 3 to 22		-	10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
9			9 ft wide pipe, 2.5 ft blockage. Debris jam and recent beaver activity		
Percentage of Upstream	Impervious Surface	10	Ease of Access		1
10 - Less than 10%		-	10 - Yes (with existing direct veh	icular access to potentia	l site)
5 - 10 to 25%			5- Yes (open but no existing vehi	icular access)	
1 - Greater than 25%			1 - No (no vehicular access, clear	ring needed, steep slope	s surrounding site)
Describe:		Describe:			
5.06%			Surrounded by young forest with	n scattered larger trees	
Fish Habitat Diversity		10	Utilities Present		1
10 - Greater than 5 cover	types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover type	S		1 - Utilities within potential site		
Describe:			Describe:		
LWD, riffles, deep pools, o	overhanging vegetation, ur	ncercut banks, root mats,	Overhead power lines just down	stream of blockage	
backwater pools: 7 types					
			<u>. т</u> а	tal Score out of 100	54





	I-495/I-270 Mar	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		<u>Projec</u>	<u>t Details</u>		
Project Name:	I-495/I-270 Managed Lane	es Study	Mitigation Site Number:	NAACC 57504	
Projects Estimated Stre	am Mitigation Needs (LF):	IBD	Consultant Firm (Invostigator(s)	DVS.V.VIL DM	
Date of Field Assessifie	Si	te Location Details-ta	ken from deskton review	KKQK, KJH, DIVI	
County:	Anne Arundel	Cross Roads:	MD 258 (W Bay Front Rd)/MD 4		
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit):	02131102	
Proximity to Impacted	Stream (mi.):	12.6	Lat/Long:	38.791381	-76.660114
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi.	0.45	
Site Opportunities:	<u>X</u> Fish Passage	<u>X</u> Channel Restoration	Habitat Enhancement	Riparian Buffer Planting	
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	1
Culvert/Dam Type:	Box culvert	Culvert/Dam Dimensions	7 ft wide, 7 ft tall	Blockage Type:Comp	olete <u>X</u> Partial None
USGS Gage Station #:	01594526	USGS Gage Discharge (fs3	3/s):360		
USGS Gage Daily Disch	arge Percentile:0-25%	%25-50%50-75%	_ <u>X_</u> 75-100%		
Property Address:	Cabin Branch along MD 2	58, just E of MD 4			
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for di	iadromous fish, mussels, RTF	E crayfish, or other RTE	Can the fish blockage be remove	ed within the road right-	of-way or does it
species within or in clos	se proximity to the fish block	kage site? Explain	require access to parcels beyon	d right-of-way limits? Ex	plain
Explain:			Explain:		
RTE coordination with a	gencies is pending		Likely would need access to dow	nstream property for ins	stream structure.
			Possible upstream access under	power lines.	
		Eich Dassar	site Rating		
Criteria		Score	ICriteria		Score
Functional Upstream N	etwork	5	Fish Blockage Height - Ecologica	Benefits of Removal	1
10 - Greater than 4 mile	25	-	10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
2.26 miles			2 inches water in culvert. 6.5 inc	hes to invert. 7 inches to	water. Note 0.5
			inches night before site visit, stre	eam water level up by ab	out 1 to 2 inches.
Number of Downstream	n Fish Blockages	10	Adjacent Land Use		1
10 - 0 Blockages			10 - Commercial/Agriculture/Bar	'e Ground	
5 - I Blockage			1 - Forest		
Describe:			Describe:		
None			Surrounded by mid successional	upland forest: American	beech, tulip poplar.
			white oak		·····) ····· [[· · [· · · ·)
NAACC Diadromous Fis	h LILIC 12 Wetershed Coore	10			г
10 2 to 22	h HOC 12 Watershed Score	10	Ease of Construction		5
10 - 3 to 22 5 - 23 to 41			10 - Edsy 5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
12			7 ft wide box culvert, 6.5 inch dr	ор	
			,		
Percentage of Upstream	n Impervious Surface	10	Ease of Access		1
10 - Less than 10%			10 - Yes (with <u>existing</u> direct veh	icular access to potentia	l site)
5 - 10 to 25%			5- Yes (open but no existing vehi	cular access)	
1 - Greater than 25%			1 - No (no vehicular access, clear	ing needed, steep slopes	s surrounding site)
			Describe.		
2.80%			Surrounded by forest, some stee	p slopes near road	
					-
Fish Habitat Diversity		10	Utilities Present		5
10 - Greater than 5 cove	er types		10 - No utilities on site		
1 - Less than 3 cover tur	าคร		1 - Utilities within notential site		
			Describe:		
LWD rifflag door as -1-	overbanging vegetation	orgut hanks root mate C	Overhead newer line on wreture	m side just outside of -:+	
LVVD, Times, deep pools	, overhanging vegetation, un	iercut pariks, root mats; 6	overneau power line on upstrea	m side just outside of sit	e
rypes					
			Το	tal Score out of 100	58





	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: <u>NAACC 57507</u> or MD_P	² XM05	
Date of Field Assessmen	am Mitigation Needs (LF): ht: 2/15/2019		Consultant Firm/Investigator(s) BK&K: KIH, BM		
	Si	te Location Details-ta	ken from desktop review		
County:	Anne Arundel	Cross Roads:	MD 258 (W Bay Front Rd), E of MD 4, W of Cabin Creek	Rd	
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit): 02131102		
Proximity to Impacted S	Stream (mi.):	13.2	Lat/Long: 38.789509	-76.648672	
Parcel Size (ac):	Within SHA ROW	V. Channel Bastanstin	Drainage Area to Reach (sq. mi. 2	-	
Site Opportunities:	<u>X</u> FISN Passage	X_Channel Restoration		3	
Stream Order:	1st	Stream Hydrology:	Perennial Stream Ose	i I	
Curvert/Dam Type:	Box cuivert	USCE Cogo Discharge (fr	Li ti ti wide, / ft tall Biockage Type:Com	piete <u>X</u> PartialNone	
USGS Gage Station #:	01594526	USGS Gage Discharge (183	(/s):120		
DSGS Gage Daily Discha	SHA ROW - just north of	6000 Cabin Creek Rd Loth	675-100% hian MD 20711		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for dia	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be removed within the road right	t-of-way or does it	
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? E	xplain	
Explain:			Explain:		
One rare mussel species	noted in HUC8 watershed (Freshwater Network,	Partial blockage removal may require access onto down	stream private	
Chesapeake Region). Am	nerican eel records two mile	s south (MBSS).	property due to narrow ROW.		
		Fish Desser	vo Sito Poting		
Criteria		Score	<u>e site kating</u> Icriteria	Score	
Eunctional Upstream Ne	etwork	5	Fish Blockage Height - Ecological Benefits of Removal	1	
10 - Greater than 4 miles	5	y	10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
			0 - No blockage		
Describe:			Describe:		
1.63 miles			DS culvert invert to DS water surface - 1 inch. Water dep	oth in culvert - 2 inches.	
Number of Downstream	Fish Blockages	10	Adjacent Land Lise	1	
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground	-	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Mid successional tulip poplar forest in ROW and private	properties.	
NAACC Diadromous Fish	HUC 12 Watershed Score	10	Ease of Construction	5	
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 (0 61			1 - Difficult/Complex		
Describe [.]			Describe:		
13			14 ft wide box culvert. 1 inch partial blockage		
Percentage of Upstream	n Impervious Surface	10	Ease of Access	1	
10 - Less than 10%			10 - Yes (with <u>existing</u> direct vehicular access to potentia	al site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)	a aurraunding aita)	
Describe			1 - No (no venicular access, clearing needed, steep slope Describe:	is surrounding site)	
0 40%			Site surrounded by mid successional forest and steep slu	ones along roadway	
0.10/0			embankment.	spes along rouandy	
Fish Habitat Diversity		5	l Itilities Present	1	
10 - Greater than 5 cove	r types	5	10 - No utilities on site	<u> </u>	
5 - 3-5 cover types	· / I		5 - Utilities but not within site		
1 - Less than 3 cover type	es		1 - Utilities within potential site		
Describe:			Describe:		
Large woody debris, dee	p pools, overhanging vegeta	ation, root mats - 4 types	Overhead power lines run parallel to roadway just upstr	eam of culvert.	
			Tatal Constant 1 (10)	40	
			I otal Score out of 100	49	





Culvert outfall/partial blockage - facing upstream



Potential access downstream of culvert - facing upstream

Channel overview downstream of culvert - facing downstream



Culvert inlet - facing downstream

	I-495/I-270 Mar	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		<u>Projec</u>	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	NAACC 57511A	
Projects Estimated Stream	1 Mitigation Needs (LF):	TBD	-		
Date of Field Assessment:	3/7/2019	te Lesstien Deteile te	Consultant Firm/Investigator(s)	RK&K KJH, DWB	
County:	Drince George's	<u>te Location Details-ta</u> Cross Boads:	MD 4/William Beanes Rd		
Basin (HUC 8):	Patuxent	CIUSS ROdus.	MDF Watershed (8 digit):	02131103	
Proximity to Impacted Str	eam (mi.):	4.8	Lat/Long:	38.813056	-76.794188
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (so mi	0.82	
Site Opportunities:	X Fish Passage	X Channel Restoration	X Habitat Enhancement	X Riparian Buffer Planting	(Upstream)
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	
Culvert/Dam Type:	CMP	Culvert/Dam Dimensions	US 15 ft. DS 12 ft	Blockage Type: X Cor	nplete Partial None
USGS Gage Station #	01594526	USGS Gage Discharge (fs:	3/s): 120		
USGS Gage Daily Discharg	Percentile: 0-259	25-50% X 50-75%	× 75-100%	•	
Property Address:	Federal Spring Branch alo	ong MD 4 near William Bea	ines Rd		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for diad	romous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be remov	ed within the road right	-of-way or does it
species within or in close	proximity to the fish bloc	kage site? Explain	require access to parcels beyon	d right-of-way limits? E	In colain
Explain:			Explain:		•
RTE coordination with age	ncies is pending		Possibly could be completed ins	ide ROW	
Ũ					
		Fish Passag	se Site Rating		
<u>Criteria</u>		Score	Criteria		Score
Functional Upstream Netw	vork	1	Fish Blockage Height - Ecologica	I Benefits of Removal	5
10 - Greater than 4 miles			10 - Greater than 5		
5 - 1 to 4 miles 1 - Less than 1 mile			5-1 (05 1 - Less than 1'		
Describe:					
0.3 miles			1.9 ft downstream water surface	e to culvert invert. 0.4 ft	water depth within
			culvert		
Number of Downstream F	ish Blockages	10	Adiacent Land Use		1
10 - 0 Blockages	U		10 - Commercial/Agriculture/Ba	re Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Roadside culvert, but adjacent p	roperty is forested	
NAACC Diadromous Fish H	IUC 12 Watershed Score	10	Ease of Construction		5
10 - 3 to 22			10 - Easy		8
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
12			Upstream: 15 ft circular; Downstream: 12 ft arch; 1.9 ft blockage		
Percentage of Unstream l	mpervious Surface	5	Fase of Access		1
10 - Less than 10%	inpervious surface		10 - Yes (with existing direct yeb	vicular access to notentia	l site)
5 - 10 to 25%			5- Yes (open but no existing veh	icular access)	
1 - Greater than 25%			1 - No (no vehicular access, clear	ring needed, steep slope	s surrounding site)
Describe:		Describe:			
12.80%			Forest, steep slopes		
Fish Habitat Diversity		5	Utilities Present		10
10 - Greater than 5 cover t	zypes		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover types			1 - Utilities within potential site		
Describe:			Describe:		
Deep pools, overhanging v	egetation, LWD, undercut	t banks, root wads; 5	None visible		
types. Exposed clay botton	n just downstream of bloc	:kage			
			-	tel Coore ant a face	F 2
			10	nal score out of 100	33





Culvert inlet - facing downstream



Channel overview upstream of culvert - facing upstream



Culvert outfall - facing upstream

Channel overview downstream of culvert - facing downstream

	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		<u>Projec</u>	<u>t Details</u>		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	NAACC 57518	
Projects Estimated Stream	am Mitigation Needs (LF):	TBD			
Date of Field Assessmen	nt: 3/5/2019	to Location Dotails to	Consultant Firm/Investigator(s)	RK&K KJH, BIVI	
County:	Prince George's	Cross Roads:	MD 223 (Woodyard Bd)/Johensi	u Dr	
Basin (HUC 8):	Patuxent	cross nodus.	MDE Watershed (8 digit):	02131103	
Proximity to Impacted S	Stream (mi.):	4	Lat/Long:	38.801108	-76.825585
· · ·					
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sg. mi	. 1.41	
Site Opportunities:	Fish Passage	<u>X</u> Channel Restoration	X Habitat Enhancement	X Riparian Buffer Planting	
Stream Order:	2nd	Stream Hydrology:	Perennial	Stream Use:	I
Culvert/Dam Type:	Arched culvert	Culvert/Dam Dimensions	12 ft wide. 6.5 ft tall	Blockage Type: Comp	lete Partial X None
USGS Gage Station #:	01594526	USGS Gage Discharge (fs?	3/s): 191		
USGS Gage Daily Discha	arge Percentile: 0-25%	60000 Cuge 2.00111.90 (100 6 25-50% 50-75%	X 75-100%	-	
Property Address:	along MD 223 (Woodyard	Rd), N of Pond Dr and Joh	nensu Dr		
Property Owner(s):	SHA	Concerned Firely			
Ano these vecende for di	advances fich muscale DT	General Field	Deservations	ad within the yead yight	of way as dood it
Are there records for dia	auromous iisii, musseis, kii	Lorayiisi, or other KIE	can the lish blockage be remov	d wight of wey limite? Fu	JI-way of does it
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyon	a right-of-way limits? Exp	nain
Explain:	anneine is nonding		Explain:		
	gencies is perioring		NO DIOCKage - Terriove site		
		Eich Dassar	to Sito Poting		
Criteria		Score	ICriteria		Score
Functional Upstream Ne	etwork	5	Fish Blockage Height - Ecologica	al Benefits of Removal	1
10 - Greater than 4 miles	S	<u> </u>	10 - Greater than 5'		
5 - 1 to 4 miles	-		5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
3.81 miles		No blockage, deposition in culve	ert. Water depth in culver	t approximately 5	
			inches. Arched culvert - base flo	w across	
Number of Downstream	n Fish Blockages	10	Adjacent Land Use		5
10 - 0 Blockages			10 - Commercial/Agriculture/Ba	re Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
Describe:			Describe:		
None			Downstream: Scrub/shrub on p	ark land: Unstream: forest	,
None					
		10		r	
NAACC Diadromous Fish	HUC 12 Watershed Score	10	Ease of Construction		5
10 - 3 to 22			10 - Edsy 5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
12			12 ft wide culvert - no blockage. Water 5 inches deep in culvert		
			J. J		
Percentage of Upstream	n Impervious Surface	1	Ease of Access		5
10 - Less than 10%			10 - Yes (with <u>existing</u> direct veh	icular access to potential	site)
5 - 10 to 25% 1 Greater than 25%			5- Yes (open but no existing ven	icular access)	surrounding site)
Describe			1 - No (no veniculai access, ciea Describe:	This needed, steep slopes	surrounding site
36.00%		Ucsulue.			
50.50%			power lines	cicaring, Downstream. ci	
			power mes		
Fish Habitat Diversity		10	l Itilities Present	r	1
10 - Greater than 5 cove	r types	10	10 - No utilities on site		±
5 - 3-5 cover types	7 F = -		5 - Utilities but not within site		
1 - Less than 3 cover typ	es		1 - Utilities within potential site		
Describe:			Describe:		
LWD, riffles, deep pools.	overhanging vegetation, ur	idercut banks, root mats.	Upstream: water line; Downstre	am: overhead power line	S
backwater pools; 7 type	S S	· · · · ·		•	
, , ,,,,,,					
			Тс	otal Score out of 100	53





	I-495/I-270 Mai	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		<u>Projec</u>	<u>t Details</u>		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	NAACC 57526	
Projects Estimated Stre	nt 3/7/2019	IRD	 Consultant Firm/Investigator(s)	RK&K KIH DWB	
	Si	te Location Details-ta	ken from desktop review		
County:	Prince George's	Cross Roads:	Ritchie Marlboro Rd/Old Marlbo	oro Pike	
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit):	02131103	
Proximity to Impacted	Stream (mi.):	6	Lat/Long:	38.814583	-76.777547
Parcel Size (ac):	Within SHA ROW		_Drainage Area to Reach (sq. mi.	2.87	
Site Opportunities:	Fish Passage	<u>X</u> Channel Restoration	XXHabitat Enhancement	Riparian Buffer Planting	(Upstream)
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	
Culvert/Dam Type:	Twin concrete box	Culvert/Dam Dimensions	8 ft wide, 8 ft tall	Blockage Type:Comp	lete Partial _XNone
USGS Gage Station #:	01594526	USGS Gage Discharge (fs	3/s):120		
USGS Gage Daily Disch	arge Percentile:0-25%	625-50%X_50-75%	%75-100%		
Property Address: Property Owner(s):	Federal Spring Branch alo	ng Ritchie Marlboro Rd ne	ear Old Marlboro Pike		
Property Owner(s).	ЭПА	Companyal Fiel			
Are there records for di	iadromous fish mussals PT	General Field	Can the fish blockage he remov	od within the read right	of way or doos it
Are there records for all	auromous fish, mussels, Kri	E Crayiisii, or other KTE	can the fish blockage be remov	ed within the road right-	ol-way or does it
Species within or in clos	se proximity to the fish block	Rage Site? Explain	Evolute access to parcels beyon	a right-of-way limits? Ex	piain
Explain: RTF coordination with a	gencies is nending		Explain: No blockage, Would require acc	ess onto private property	1
	igencies is penuing		No blockage. Would require acc	ess onto private property	
		Fish Passag	ge Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>		Score
Functional Upstream N	etwork	5	Fish Blockage Height - Ecologica	I Benefits of Removal	0
10 - Greater than 4 mile	25		10 - Greater than 5'		
5 - 1 to 4 miles 1 - Less than 1 mile			5-1 (05) 1 - Less than 1'		
3.33 miles			No blockage: debris jam on upst	ream	
Number of Downstream	n Fish Blockages	10	Adjacent Land Use		1
10 - 0 Blockages			10 - Commercial/Agriculture/Ba	re Ground	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Mid-successional forest		
NAACC Diadromous Fis	h HUC 12 Watershed Score	10	Ease of Construction		0
10 - 3 to 22			10 - Easy		
5 - 23 10 41 1 - 12 to 61			5- Average 1 - Difficult/Complex		
Describe:			Describe:		
12			No blockage		
Percentage of Upstream	n Impervious Surface	10	Ease of Access		5
10 - Less than 10%			10 - Yes (with <u>existing</u> direct veh	icular access to potential	site)
5 - 10 to 25%			5- Yes (open but no existing vehi	icular access)	our sunding site)
1 - Greater than 25%			1 - No (no venicular access, clear Describe:	ring needed, steep slopes	surrounding site)
0 67%					
5.0776					
Fish Habitat Divorcity		10	Litilities Present		10
10 - Greater than 5 cove	ar types	10	10 - No utilities on site		10
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover typ	bes		1 - Utilities within potential site		
Describe:			Describe:		
LWD, root wad. overhar	nging vegetation. undercut h	anks, deep pools, riffles; F	None visible		
types		,			
/ C					
			Та	otal Score out of 100	61





Culvert inlet - facing downstream



Culvert outfall - facing upstream

Channel overview upstream of culvert - facing upstream



Channel overview downstream of culvert - facing downstream

	I-495/I-270 Ma	naged Lanes Study - Fi	ish Passage Field Site Assess	sment Form	
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number:	NAACC 57533	
Projects Estimated Strea	m Mitigation Needs (LF):	TBD			
Date of Field Assessmen	t: 3/ //2019	ita Lagatian Dataila ta	Consultant Firm/Investigator(s)	RK&K KJH, DWB	
County:	Drince George's	Cross Boads:	MD 4 N/Ritchie Marlboro Rd		
Basin (HUC 8):	Patuxent	Closs Rodus.	MDF Watershed (8 digit):	02131103	
Proximity to Impacted S	tream (mi.):	5.4	Lat/Long:	38.812102	-76.784063
,	· · · · · · · · · · · · · · · · · · ·				
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sg. mi.	2.05	
Site Opportunities:	X Fish Passage	X Channel Restoration	X Habitat Enhancement	Riparian Buffer Planting	(Upstream)
Stream Order:	1st	Stream Hydrology:	Perennial	Stream Use:	1
Culvert/Dam Type:	СМР	Culvert/Dam Dimensions	8 ft wide, 8 ft tall	Blockage Type: X Con	nplete Partial None
USGS Gage Station #:	01594526	USGS Gage Discharge (fs3	(s): 120	0 // 2	
USGS Gage Daily Discha	rge Percentile: 0-25%	25-50% X 50-75%	<u> </u>		
Property Address:	Federal Spring Branch alo	ong MD 4 near Ritchie Marl	boro Rd		
Property Owner(s):	SHA				
		General Field	Observations		
Are there records for dia	dromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be remove	ed within the road right-	of-way or does it
species within or in close	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond	d right-of-way limits? Ex	plain
Explain:			Explain:		
According to Chesapeake	e Fish Passage Prioritization	, a nearby upstream dam	Upstream and downstream exte	nd beyond SHA ROW	
lists alewife, blueback, A	merican eel, and one or mo	re anadromous species as			
occurring downstream.					
		Fish Passag	e Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>		<u>Score</u>
Functional Upstream Ne	twork	5	Fish Blockage Height - Ecologica	l Benefits of Removal	5
10 - Greater than 4 miles			10 - Greater than 5'		
5 - 1 to 4 miles			5-1' to 5' 1 Loss than 1'		
Describer					
3 92 miles			2 3 ft natural debris blockage do	wnstream from culvert	1 ft denosition in nine
5.52 miles				whistream nom cuivert.	
Number of Downstream	Fish Blockages	10	Adjacent Land Use		1
10 - 0 Blockages			10 - Commercial/Agriculture/Bar	e Ground	_
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Roadside culvert with adjacent for	orest	
NAACC Diadromous Fish	HUC 12 Watershed Score	10	Ease of Construction		5
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
12			2.3 ft natural blockage debris jan	n downstream of culvert	
Percentage of Unstream	Impervious Surface	10	Ease of Access		1
10 - Less than 10%		10	10 - Yes (with existing direct vehi	icular access to potentia	site)
5 - 10 to 25%			5- Yes (open but no existing vehi	cular access)	,
1 - Greater than 25%			1 - No (no vehicular access, clear	ing needed, steep slopes	s surrounding site)
Describe:			Describe:		
7.52%			Steep slopes, forested, some clea	aring needed.	
Fish Habitat Diversity		5	Utilities Present		10
10 - Greater than 5 cover	r types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover type	es		1 - Utilities within potential site		
Describe:			Describe:		
LWD, root wad, overhan	ging vegetation, undercut b	anks, deep pools; 5 types	None visible		
			L	tal Score aut of 100	60
			10		4 UZ





Culvert inlet - facing downstream



Culvert outfall - facing upstream

Channel overview downstream of culvert - facing downstream



Slopes adjacent to culvert outfall, facing roadway

	I-495/I-270 Mar	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 57561		
Projects Estimated Stre	am Mitigation Needs (LF):	TBD			
Date of Field Assessme	nt: 2/25/2019	to Location Dataila to	Consultant Firm/Investigator(s) CRI; JG, DS, LE		
Country	Drinco Goorgo's	te Location Details-ta	MD 214 (Control Ave.) W of Oueen Appe Bridge Bd		
Basin (HUC 8):	Philice George's	Closs Rodus:	MDE Watershed (8 digit): 2131104		
Proximity to Impacted	Stream (mi.):	8.4	Lat/Long: 38.904759	-76.682769	
		Site	Data		
Parcel Size (ac):	Within SHA ROW	<u>5116</u>	Drainage Area to Reach (sg. mi, 1.3		
Site Opportunities:	X Fish Passage	X Channel Restoration	X Habitat Enhancement Riparian Buffer Planting	•	
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:	1	
Culvert/Dam Type:	Double Box	Culvert/Dam Dimensions	H: 5.35' to TW, W: 11.2': 50 feet long Blockage Type: Com	olete Partial X None	
USGS Gage Station #	010/0150	USGS Gage Discharge (fs3			
USGS Gage Daily Disch	arge Percentile: 0.259	25-50% 50-75%	X 75-100% 169% of mean		
Property Address:	SHA ROW - at MD 214 we	st of Oueen Anne Bridge F	<u></u>		
Property Owner(s):	SHA	St of Queen Anne Bridge F			
		General Field	d Observations		
Are there records for di	iadromous fish. mussels. RT	E cravfish. or other RTE	Can the fish blockage be removed within the road right	-of-way or does it	
species within or in clos	se proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	olain	
Explain [.]			Explain	P • • • • •	
RTE coordination with a	igencies is pending.		No blockage		
	88-				
		Fish Passag	ge Site Rating		
<u>Criteria</u>		<u>Score</u>	Criteria	<u>Score</u>	
Functional Upstream N	etwork	5	Fish Blockage Height - Ecological Benefits of Removal	0	
10 - Greater than 4 mile	!S		10 - Greater than 5'		
5 - 1 to 4 miles			5-1' to 5'		
1 - Less than 1 mile					
Doscribo:			Describe:		
2 3 miles of US network			No blockage		
2.5 miles of 05 metwork			No blockage		
Number of Downstream	n Fish Blockages	5	Adiacent Land Use	1	
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground		
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
1 DS barrier			Forested		
NAACC Diadromous Fis	h HUC 12 Watershed Score	10	Ease of Construction	0	
10 - 3 to 22			10 - Easy	-	
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
			0 - No Blockage		
Describe:			Describe:		
11			No blockage		
		10			
Percentage of Upstream	n Impervious Surface	10	Ease of Access		
10 - Less than 10%			5. Yes (open but no existing vehicular access to potentia	i site)	
5 - 10 10 25% 1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steen slope	s surrounding site)	
Describe:		Describe:	s surrounding site		
1.95%			Steep slopes, clearing needed, guardrail		
1.00/0			steep slopes, clearing needed, guararan		
Fich Habitat Diversity			Hallaise Dussent	E	
10 Groater than 5 cover	or typos	5	10 No utilitios on sito	5	
5 - 3-5 cover types	er types		5 - Itilities but not within site		
1 - Less than 3 cover types	bes		1 - Utilities within potential site		
Describe:			Describe:		
DS: woody deep pool r	iffle undercut hanks roots	US: deen nool undercut	low powerlines downstream of culvert		
hanks roots	inic, anacicat banks, 10015.	SS. accp poor, undercut			
			Total Score out of 100	42	





Downstream looking upstream at culvert/no blockage



Upstream of culvert looking upstream



Downstream of culvert looking downstream



Upstream looking downstream at culvert

	I-495/I-270 Mar	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lane	es Study	Mitigation Site Number: NAACC 57565		
Date of Field Assessme	nt: 3/5/2019	ТВО	Consultant Firm/Investigator(s) RK&K: KIH, BM		
	Si	te Location Details-ta	ken from desktop review		
County:	Prince George's	Cross Roads:	Croom Station Rd/US 301 (Crain Highway)		
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit): 02131103		
Proximity to Impacted S	Stream (mi.):	7.6	Lat/Long: 38.79775	-76.759915	
Parcel Size (ac):		Y Channel Postoration	Drainage Area to Reach (sq. mi. 0.48	-	
Stream Order:	XFISH Passage	Stream Hydrology:	Perennial Stream Use:	.	
Culvert/Dam Type:	DS: CIPP lined culvert US: RCP	Culvert/Dam Dimensions	5 ft wide, 5 ft tall, twin: flow in left Blockage Type: Com		
USGS Gage Station #:	01594526	USGS Gage Discharge (fs3	3/s): 191	proto _/() and an	
USGS Gage Daily Discha	arge Percentile: 0-25%	6000 Cuge 2.00111.80 (100 6 25-50% 50-75%	X 75-100%		
Property Address:	Horse Tavern Branch near	r Croom Station Rd and Cra	ain Hwy		
Property Owner(s):	SHA				
		General Field	Observations		
Are there records for di	adromous fish, mussels, RTE	E crayfish, or other RTE	Can the fish blockage be removed within the road right	of-way or does it	
species within or in clos	e proximity to the fish block	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	(plain	
Explain:	anneine is nonding		Explain:		
RIE coordination with a	gencies is pending		would require access onto private property due to harro	JW ROW	
		Eich Dassar	a Site Rating		
Criteria		Score	Icriteria	Score	
Functional Upstream No	etwork	1	Fish Blockage Height - Ecological Benefits of Removal	1	
10 - Greater than 4 mile	S		10 - Greater than 5'	<u>.</u>	
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe: Unstroam: 2 inches dran water to invert: Downstroam: 2) inchas dran water to	
0.85 miles			invert	inches drop water to	
			livert		
Number of Downstrean	n Fish Blockages	10	Adiacent Land Use	1	
10 - 0 Blockages	0		10 - Commercial/Agriculture/Bare Ground		
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Nono			Mostly mid-successional forest: sycamore, tulip poplar		
None			Mostly mid-successional forest. sycamore, tunp popial		
		10			
10 2 to 22	h HUC 12 watershed Score	10	Lase of Construction	5	
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
12			Large pipe, less than 1 ft tall		
Percentage of Unstream	n Impervious Surface	5	Ease of Access	1	
10 - Less than 10%		J	10 - Yes (with existing direct vehicular access to potentia	al site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)	/	
1 - Greater than 25%		1 - No (no vehicular access, clearing needed, steep slopes surrounding site)			
Describe:		Describe:			
18.80%			Mostly forested, site surrounded by steep slopes. Private	e driveway on	
			downstream end could be used for access.		
	r				
Fish Habitat Diversity	artunac	5	Utilities Present	5	
5 - 3-5 cover types	ir types		5 - Utilities but not within site		
1 - Less than 3 cover typ)es		1 - Utilities within potential site		
Describe:			Describe:		
LWD, riffles, overhangin	g vegetation, undercut bank	s, root mats; 5 types	Overhead utilities on upstream side		
Ĵ					
			Tatal Coord and 5 (400	11	
				44	





	I-495/I-270 Mar	naged Lanes Study - F	ish Passage Field Site Assess	sment Form	
		<u>Projec</u>	<u>t Details</u>		
Project Name:	I-495/I-270 Managed Lane	es Study	Mitigation Site Number:	NAACC 57566	
Projects Estimated Strea	Mitigation Needs (LF):	TBD			
Date of Field Assessmen	t: 3/5/2019	to Location Dotails to	Consultant Firm/Investigator(s)	RK&K KJH, BIVI	
County:	Prince George's	Cross Boads:	US 301/Trumps Hill Rd		
Basin (HUC 8):	Patuxent	CIUSS ROdus.	MDF Watershed (8 digit):	02131103	
Proximity to Impacted S	tream (mi.):	10	Lat/Long:	38.782963	-76.796289
.,		-			
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sg. mi.	6 44	
Site Opportunities:	Fish Passage	X Channel Restoration	Habitat Enhancement	Riparian Buffer Planting	
Stream Order:	2nd	Stream Hydrology:	Perennial	Stream Use:	1
Culvert/Dam Type:	Triple CMP - grouted 4 inches	Culvert/Dam Dimensions	14 ft wide 14 ft tall	Blockage Type: Com	Nete Partial X None
USGS Gage Station #:	01504526	USGS Gage Discharge (fs3	(c)· 191	bioenage Typereamp	
USGS Gage Station #.	van Dereentile: 0.25%		V 75 100%		
DSGS Gage Daily Discha	Charles Branch along US 3	³ 25-50%50-75%	_X_75-100%		
Property Address. Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for dia	dromous fish mussels PTE	General Field cravfish or other PTE	Can the fish blockage he remove	ad within the road right.	of way or doos it
	nu onious nsn, mussels, kre		can the fish blockage be remove	d wight of word limite? Fy	ol-way of upes it
Species within or in close	e proximity to the fish block	tage site? Explain	Function access to parcels beyond	I fight-of-way liftins? EX	piain
Explain:	ionaios is ponding		Explain:	Basaflow moving throw	ah contor culvort
RTE COOTUINATION WITH ag	encies is perioring		approximately 2 ft doop		gii center cuivert,
			approximately 2 it deep		
		Fish Passag	<u>se Site Rating</u>		
<u>Criteria</u>		Score	<u>Criteria</u>		Score
Functional Upstream Ne	twork	10	Fish Blockage Height - Ecological	Benefits of Removal	1
10 - Greater than 4 miles			10 - Greater than 5		
5 - 1 to 4 miles			$5 - 1 \ 10 \ 5$		
Describer					
19 60 miles			No blockage - 2 ft deen water in	culvert	
19.00 miles			No blockage - 2 it deep water in	cuivert	
Number of Downstream	Fish Blockages	10	Adjacent Land Use		1
10 - 0 Blockages			10 - Commercial/Agriculture/Bar	e Ground	_
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Mid-successional forest: tulip po	plar, beech, sweet gum	
NAACC Diadromous Fish	HUC 12 Watershed Score	10	Fase of Construction		5
10 - 3 to 22			10 - Easy		-
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describe:			Describe:		
12			14 ft CMP - no blockage		
Percentage of Upstream	Impervious Surface	5	Ease of Access		1
10 - Less than 10%			10 - Yes (with <u>existing</u> direct vehi	cular access to potential	site)
5 - 10 to 25%			5- Yes (open but no existing veni 1. No (no vehicular access, clear	cular access)	currounding cita)
1 - Greater than 25%			1 - NO (NO VENICUIAI ACCESS, CIEAR	ing needed, steep slopes	surrounding site)
		Surrounded by forest steen slop	es along roadway embar	akment	
10.20%			Surrounded by forest, steep slop	es along loauway enibal	INITETI
Fish Habitat Diversity		10	Utilities Present		1
10 - Greater than 5 cover	rtypes		10 - No utilities on site		
J - S-S COVER LYPES	20		1 - Utilities within potential site		
			Describe:		
		ala ana di kana			
LWD, riffles, deep pools,	overnanging vegetation, un	uercut banks, root mats;	sewer line and overhead utilities	within site	
o types					
				tal Score out of 100	54





	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Asses	sment Form	
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	ies Study	Mitigation Site Number:	NAACC 57652	
Projects Estimated Stre	am Mitigation Needs (LF): nt: 2/15/2019	IRD	Consultant Firm/Investigator(s)	RK&K·KIH BM	
	S	ite Location Details-ta	ken from desktop review		
County:	Prince George's	Cross Roads:	Croom Rd (MD 382)/S of Whites	Landing Rd	
Basin (HUC 8):	Patuxent	•	MDE Watershed (8 digit):	02131101	
Proximity to Impacted	Stream (mi.):	27.5 (straight line)	Lat/Long:	38.664127	-76.714366
Parcel Size (ac):	Within SHA ROW	V. Channel Destaution	Drainage Area to Reach (sq. mi.	1.//	
Site Opportunities:	XFish Passage	<u>X</u> Channel Restoration	Habitat Enhancement	Riparian Buffer Planting	1
Stream Order:	1st Box outwort	_ Stream Hydrology:		Blockago Typo: Com	l
USCS Cago Station #:		USGS Gago Dischargo (fs:		biockage Typecomp	nete _X PartialNone
USGS Gage Station #.	arge Percentile: 0_25	- 0505 Gage Discharge (155	% 75_100%		
Property Address:	Full Mill Branch under M	D 382	<u> </u>		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for di	iadromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be removed within the road right-of-way or does it		
species within or in clos	se proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Explain		
Explain:			Explain:		
RTE coordination with a	gencies is pending		Removal would require access o	nto private property - na	rrow ROW
Critoria		Fish Passag	<u>se Site Rating</u>		
Citteria Euroctional Unstream N	etwork	10	<u>Criteria</u> Fish Blockage Height - Ecologica	Benefits of Removal	1
10 - Greater than 4 mile	S S S S S S S S S S S S S S S S S S S	10	10 - Greater than 5'	il Bellents of Kelhoval	T
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describe:			Describe:		
6.28 miles			6 inches from downstream wate	er surface to bottom of w	ater at drop; 8 inches
			to top of water		
Number of Downstreen	n Eich Blockagos	10	Adjacent Land Lice		1
10 - 0 Blockages	II FISH DIOCKAges	10	Adjacent Land Use	re Ground	L
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
None			Downstream: forested on privat	e properties; Upstream:	forested meadow and
			scrub-shrub		
NAACC Diadromous Fis	h HUC 12 Watershed Score	10	Ease of Construction		5
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 (0 61 Deceribe:			1 - Difficult/Complex		
7			8 ft wide box culvert		
,					
Percentage of Upstream	n Impervious Surface	10	Ease of Access		1
10 - Less than 10%			10 - Yes (with <u>existing</u> direct veh	icular access to potential	site)
5 - 10 to 25% 1 - Greater than 25%			5- Yes (open but no existing ven	icular access)	s surrounding site)
Describe:			Describe:	ing needed, steep slopes	surrounding site
4.20%		Downstream: surrounded by for	est, narrow ROW guard r	ail: Upstream: clear	
			on eastern side		
Fish Habitat Diversity		5	Utilities Present		1
10 - Greater than 5 cove	er types	-	10 - No utilities on site		1
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover types			1 - Utilities within potential site		
Describe:			Describe:		
Deep pool downstream	of culvert (1 to 2 ft), overha	inging vegetation,	Overhead powerlines on upstread	am side; None observed o	on downstream side
undercut banks; 3 types	. Extensive sand deposition				
			r Tr	tal Score out of 100	54





	I-495/I-270 Ma	naged Lanes Study - Fi	ish Passage Field Site Assessment Form		
		Projec	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 63410		
Projects Estimated Stre	am Mitigation Needs (LF):	TBD	-		
Date of Field Assessme	nt: 2/21/2019		Consultant Firm/Investigator(s) CRI; DS, LE		
County:	Drince George's	<u>Te Location Details-ta</u> Cross Boads:	MD 3 (N. Craine Hwy) S of Appapolis Rd		
Basin (HUC 8):	Patuxent	cross noaus.	MDE Watershed (8 digit): 2131104		
Proximity to Impacted	Stream (mi.):	7.4	Lat/Long: 38.982583	-76.711365	
· · ·		Site	Data		
Parcel Size (ac):	Within SHA ROW	<u></u>	Drainage Area to Reach (sg. mi. 1.3		
Site Opportunities:	Fish Passage	Channel Restoration	Habitat EnhancementRiparian Buffer Planting	•	
Stream Order:	1st	Stream Hydrology:	Perennial Stream Use:	I	
Culvert/Dam Type:	Box Culvert	Culvert/Dam Dimensions	18' W x 3.34' to thalweg; 55 feet long Blockage Type:Com	plete Partial _X_None	
USGS Gage Station #:	01049150	USGS Gage Discharge (fs3	2.39		
USGS Gage Daily Discha	arge Percentile: 0-25%	× 25-50% 50-75%	75-100%		
Property Address:	SHA ROW - at MD 3 south	n of Annapolis Rd., Bowie N			
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for di	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be removed within the road right	-of-way or does it	
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain	
Explain:	· · ·		Explain:	<u>.</u>	
RTE coordination with a	gencies is pending.		No blockage		
Cuitouio		Fish Passag	<u>se Site Rating</u>	Coores.	
<u>Criteria</u>	- to one all	<u>Score</u>	Criteria	<u>score</u>	
Functional Upstream No	etwork	Ţ	FISH BIOCKAGE Height - Ecological Benefits of Removal	U	
10 - Greater than 4 miles	5		5 - 1' + 5'		
1 - Less than 1 mile			1 - Less than 1'		
			0 - No Blockage		
Describe:			Describe:		
0.3 miles of US network			No blockage		
			-		
Number of Downstrean	n Fish Blockages	10	Adjacent Land Use	1	
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground		
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
			All forest		
NAACC Diadromous Fis	h HUC 12 Watershed Score	10	Ease of Construction	0	
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describer			U - NO BIOCKage		
Describe:			Describe:		
11			NO DIOCKAge		
Percentage of Upstrean	n Impervious Surface	5	Ease of Access	1	
10 - Less than 10%	•		10 - Yes (with existing direct vehicular access to potentia	l site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)		
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	s surrounding site)	
Describe:		Describe:			
17.70%		Clearing needed, not open			
Fish Habitat Diversity		1	Utilities Present	5	
10 - Greater than 5 cove	er types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover typ	es		1 - Utilities within potential site		
Describe:			Describe:		
US: deep pool; DS: roots	5		Overhead lines within ROW		
			Total Score out of 100	3/	
				57	



Site Photos



Right bank from upstream end of culvert



Downstream looking upstream at culvert/no blockage



Downstream of culvert looking downstream



Left bank from downstream end of culvert, powerlines

	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		Projec	t Details		
Project Name: I-495/I-270 Managed Lanes Study			Mitigation Site Number: NAACC 63413		
Projects Estimated Stre	am Mitigation Needs (LF):	TBD	Consultant Firm (Investigator(a) CDI: DS IF		
Date of Field Assessmen	nt: 2/21/2019 Ci	te Location Details_ta	consultant Firm/investigator(s) CRI; DS, LE		
County:	Prince George's	Cross Roads:	MD 3 (N. Craine Hwy), S of Annapolis Rd.		
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit): 2131104		
Proximity to Impacted S	Stream (mi.):	7.3	Lat/Long: 38.982234	-76.712577	
		Site	Data		
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 1.3		
Site Opportunities:	Fish Passage	Channel Restoration	Habitat EnhancementRiparian Buffer Planting		
Stream Order:	1st	Stream Hydrology:	Perennial Stream Use:		
Culvert/Dam Type:	Box culvert	Culvert/Dam Dimensions	18' W x 3.5' H to thalweg Blockage Type:Comp	lete Partial _X_None	
USGS Gage Station #:	01049150	USGS Gage Discharge (fs3	2.39		
USGS Gage Daily Discha	arge Percentile:0-25%	625-50%50-75%	75-100%		
Property Address:	SHA ROW - at MD 3 south	1 of Annapolis Rd., Bowie N	MD 20715		
Property Owner(s):	ЗПА				
Ano these necession for di	advomana fiab mussala DT	General Field	Con the fish blockers he removed within the read right	of way or door it	
Are there records for all	adromous fish, mussels, RT	E crayfish, or other RIE	Can the fish blockage be removed within the road right	of-way or does it	
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	piain	
Explain: RTE coordination with a	gencies is nending		Explain:		
	geneies is penuing.		NO DIOCKAGE		
		Fish Passag	se Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Functional Upstream Ne	etwork	1	Fish Blockage Height - Ecological Benefits of Removal	0	
10 - Greater than 4 mile	S		10 - Greater than 5'		
5 - 1 to 4 miles 1 - Less than 1 mile			5- 1' to 5' 1 - Less than 1'		
			0 - No Blockage		
Describe:			Describe:		
0.3 miles of US network			No blockage		
Number of Downstream	n Fish Blockages	5	Adjacent Land Use	1	
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground	-	
5 - 1 Blockage			5- Field/Scrub-shrub		
Describe:			Describe:		
1 DS barrier			All forest		
NAACC Diadromous Fiel	HUIC 12 Watershed Score	10	Free of Country tion	0	
10 - 3 to 22	HOC 12 Watershed Score	10	Lase of Construction	U	
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
			0 - No Blockage		
Describe:			Describe:		
11			No blockage		
Percentage of Unstream	Imporvious Surfaco		5 of A	1	
10 - Less than 10%	i impervious surface	5	Lase of Access 10 - Yes (with existing direct vehicular access to potentia	L (site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)	site)	
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slopes	s surrounding site)	
Describe:		Describe:			
17.60%		Clearing needed, not open			
Fish Habitat Diversity		1	Utilities Present	5	
10 - Greater than 5 cove	er types		10 - No utilities on site		
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover typ	es		1 - Utilities within potential site		
Describe:			Describe:		
DS: roots, riffle; US: dee	p pool, riffle		Overhead lines within ROW		
			Total Score out of 100	29	
				4	





Downstream looking upstream at culvert/no blockage



Upstream of culvert looking upstream



Left bank at downstream end



Left bank at upstream end looking at powerlines

	I-495/I-270 Mai	naged Lanes Study - F	ish Passage Field Site Assessment Form		
Project Details					
Project Name: I-495/I-270 Managed Lanes Study			Mitigation Site Number: NAACC 63777		
Projects Estimated Stre	am Mitigation Needs (LF):	TBD			
Date of Field Assessmer	nt: 2/25/2019	to Location Dotails to	Consultant Firm/Investigator(s) CRI; JG, DS, LE		
County:	Anne Arundel	Cross Roads:	MD 3 (Craine Hwy). N of Defense Hwy		
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit): 2131105		
Proximity to Impacted S	Stream (mi.):	9.1	Lat/Long: 39.000079	-76.700608	
		Site	Data		
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 2.3		
Site Opportunities:	X_Fish Passage	<u>X</u> Channel Restoration	X_Habitat EnhancementX_Riparian Buffer Planting		
Stream Order:	2nd	Stream Hydrology:	Perennial Stream Use:	1	
Culvert/Dam Type:	Pipe arch w/ concrete bottom	Culvert/Dam Dimensions	Depth: 3/10' W:15' Blockage Type:Com	lete Partial _X_None	
USGS Gage Station #:	01049150	USGS Gage Discharge (fs3	2.2		
USGS Gage Daily Discha	arge Percentile:0-25%	6 25-50% 50-75%	75-100%		
Property Address:	SHA ROW - at MD 3 north	of Defence Hwy., Crofton	MD 21114		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for di	adromous fish, mussels, RTI	E crayfish, or other RTE	Can the fish blockage be removed within the road right	of-way or does it	
species within or in clos	se proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Explain		
Explain:			Explain:		
RIE coordination with a	gencies is pending.		по біоскаде		
		Fish Passag	e Site Rating		
<u>Criteria</u>		Score	Criteria	<u>Score</u>	
Functional Upstream Ne	etwork	1	Fish Blockage Height - Ecological Benefits of Removal	0	
10 - Greater than 4 mile	S		10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describer			0 - NO BIOCKage		
0.4 miles of US network			Describe:		
0.4 miles of 05 network			NO DIOCKAGE		
Number of Downstream	n Fish Blockages	10	Adiacent Land Use	5	
10 - 0 Blockages	0		10 - Commercial/Agriculture/Bare Ground		
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
No blockages			DS: field; US: forest		
NAACC Diadromous Fisl	h HUC 12 Watershed Score	10	Ease of Construction	0	
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Doccribo:			Describe:		
14			No blockage		
14			No blockage		
Percentage of Upstream	n Impervious Surface	5	Ease of Access	5	
10 - Less than 10%			10 - Yes (with <u>existing</u> direct vehicular access to potentia	i site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)		
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	s surrounding site)	
		Describe:			
21.50%		DS - no clearing needed, but no direct road. US - sewage	line parallel to stream,		
			no immediate access		
Fish Habitat Diversity		5	Utilities Present	5	
10 - Greater than 5 cove	er types		10 - No utilities on site		
5 - 3-5 cover types 1 - Less than 3 cover two)es		5 - Olimes but not within site 1 - Utilities within notential site		
Describe [.]			Describe:		
DS: riffle deen nool overhanging vogstation: LIS: riffle			DS - nowerlines overhead, but high at adds of DOM/LUS	lower noworlines and	
os. mile, acep pool, overhanging vegetation, os. mile			cower line	iower powernines and	
			Total Score out of 100	46	





Downstream looking upstream at culvert/no blockage



Left bank looking at ROW access and overhead lines

Downstream of culvert looking downstream



Upstream of culvert looking upstream

	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		Projec	t Details		
Project Name: I-495/I-270 Managed Lanes Study			Mitigation Site Number: NAACC 63785		
Projects Estimated Stre	am Mitigation Needs (LF):	TBD			
Date of Field Assessme	nt: 2/28/2019	ita Location Dotails ta	Consultant Firm/Investigator(s) CRI; DS, KS		
County:	Anne Arundel	Cross Roads:	MD 32. NW of MD 295		
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit): 2131105		
Proximity to Impacted	Stream (mi.):	9.9	Lat/Long: 39.119754	-76.782597	
		Site	Data		
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 11.9		
Site Opportunities:	<u>X</u> Fish Passage	<u>X</u> Channel Restoration	X_Habitat EnhancementX_Riparian Buffer Planting		
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Use:	1	
Culvert/Dam Type:	Boulder/rip-rap	Culvert/Dam Dimensions	23' wide Blockage Type:Comp	lete <u>X</u> Partial None	
USGS Gage Station #:	01594440	USGS Gage Discharge (fs3	590 cfs		
USGS Gage Daily Disch	arge Percentile:0-25%	%25-50% _ <u>X_</u> 50-75%	75-100%		
Property Address:	SHA ROW - at MD 32 nort	thwest of MD 295, Annapo	lis Junction MD 20701		
Property Owner(s):	SHA				
Anna the anna mara and a fam di	is due an ever fish an and a DT	General Field	d Observations	af	
Are there records for a	ladromous fish, mussels, Rill	E crayfish, or other RTE	Can the fish blockage be removed within the road right	or does it	
Species within or in clos	se proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	piain	
Explain: RTF coordination with a	agencies is nending		Explain: No blockage DS of MD 32, Scored ripran blockage US of M	MD 32 DS of National	
	igeneies is penaing.		Business Hwy - located in ROW between roadways		
			business nwy located in NOW between roadways		
		Fish Passag	ge Site Rating		
<u>Criteria</u>		<u>Score</u>	<u>Criteria</u>	<u>Score</u>	
Functional Upstream N	etwork	10	Fish Blockage Height - Ecological Benefits of Removal	5	
10 - Greater than 4 mile	25		10 - Greater than 5'		
5 - 1 to 4 miles 1 - Less than 1 mile			5-1' to 5' 1 - Less than 1'		
			0 - No Blockage		
Describe:			Describe:		
>10 miles of US networl	k		1.2 foot drop in water surface boulder/riprap blockage - likely a		
			partial/complete blockage during low flows.		
Number of Downstream	n Fish Blockages	5	Adjacent Land Use	5	
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground		
5 - 1 Blockage			5- Field/Scrub-snrub 1 - Forest		
Describe:			Describe:		
1 blockage			LB - scrub-shrub/small tree forest in ROW. RB scrub-shru	b/forest	
				-,	
NAACC Diadromous Fis	h HUC 12 Watershed Score	1	Ease of Construction	5	
10 - 3 to 22	in floc 12 Watershed Score	1	10 - Fasy	5	
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
			0 - No Blockage		
Describe:			Describe:		
48			"Natural blockage" although not natural. No evidence that it is sewer crossing,		
			but not ruled out.		
Percentage of Unstream	m Impervious Surface	1	Easo of Assoss	5	
10 - Less than 10%		±	10 - Yes (with existing direct vehicular access to potentia	site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)		
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	s surrounding site)	
Describe:		Describe:			
32.10%			Clearing may be needed on LB, but RB is open and in ROV	N	
Fish Habitat Diversity		5	Utilities Present	10	
10 - Greater than 5 cove	er types		10 - No utilities on site		
5 - 3-5 cover types	205		5 - Utilities but not within site		
I - Less man 3 cover typ	162				
Describe.	a /bauldar raat-		Describe.		
Rime, deep pool, cobble	e/boulder, roots		ind evidence of utilities on site.		
			Total Score out of 100	52	





Upstream of blockage looking upstream



Left bank upstream of blockage



Upstream of blockage looking downstream



Downstream looking upstream at partial blockage

	I-495/I-270 Mar	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		Projec	t Details		
Project Name: Projects Estimated Stre	I-495/I-270 Managed Land	es Study	Mitigation Site Number: NAACC 64432		
Date of Field Assessme	nt: 3/6/2019		Consultant Firm/Investigator(s) CRI; JG, DS		
	Si	te Location Details-ta	aken from desktop review		
County:	Prince George's	Cross Roads:	MD 197 (Laurel Bowie Rd.), N of Lemons Bridge Rd./S of	Old Laurel Bowie Rd.	
Basin (HUC 8): Provimity to Imported	Patuxent	5.6	MDE Watershed (8 digit): 2060006	76 77116	
Proximity to impacted	Stream (mi.).	Site		-/0.//110	
Parcel Size (ac):	Within SHA ROW	Site	Drainage Area to Reach (so mi 0.6		
Site Opportunities:	X_Fish Passage	Channel Restoration	Habitat EnhancementRiparian Buffer Planting	ı.	
Stream Order:	1st	Stream Hydrology:	Perennial Stream Use:	I	
Culvert/Dam Type:	Double culvert RCP	Culvert/Dam Dimensions	Blockage Type: _x_Com	plete PartialNone	
USGS Gage Station #:	01594440	USGS Gage Discharge (fs:	3 1020 cfs		
USGS Gage Daily Disch	arge Percentile:0-25%	625-50%50-75%	_ <u>X_</u> 75-100%		
Property Address:	SHA ROW - at MD 197 no	rth of Lemons Bridge Rd.,	south of Laurel Bowie Rd., Bowie MD 20720		
Property Owner(s):	SHA				
Are there records for d	indromous fich mussals PT	General Field	d Observations	of way or doos it	
are there records for a	se provimity to the fish bloc	L Craynsh, or other KTE	require access to parcels beyond right-of-way limits? Ex	or uses it	
Explain:	se proximity to the fish block	Rage Site: Explain	Explain:	piairi	
RTE coordination with a	agencies is pending.		Yes, well within ROW with additional ROW upstream		
	0 1 0				
Criteria		Fish Passag	<u>ge Site Rating</u>	Score	
Eunctional Unstream N	letwork	5	Fish Blockage Height - Ecological Benefits of Removal	5	
10 - Greater than 4 mile	es	5	10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
			0 - No Blockage		
Describe:			Describe:		
1.3 miles of US network	ί		Riprap/boulder just US of culvert causing 1.3 foot drop		
Number of Downstrear	m Fish Blockages	10	Adjacent Land Use	1	
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground	<u></u>	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe. O blockagos DS: howow	or partial blockage at cite NA	ACC 611220	Ecrosted unstream but POW extends well unstream		
U DIOCKAges DS, HOWEVE	er partial blockage at site NAA	чсс 04452В	Polested upstream but NOW extends well upstream		
		10		F	
10 - 3 to 22	in HUC 12 Watershed Score	10	Lase of Construction	5	
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
			0 - No Blockage		
Describe:			Describe:		
17			"Natural Blockage" riprap. 1-5ft (1.3')		
Percentage of Upstream	m Impervious Surface	10	Fase of Access	1	
10 - Less than 10%			10 - Yes (with existing direct vehicular access to potentia	site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)		
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	s surrounding site)	
		Describe:			
4.57%			Moderate slope from road, clearing needed. Mature/you	ing/regen deciduous	
Fich Hobitat Discusio		10	Littliking Descent	10	
10 - Greater than 5 cover	or types	10	Utilities Present	10	
5 - 3-5 cover types			5 - Utilities but not within site		
1 - Less than 3 cover typ	pes		1 - Utilities within potential site		
Describe:			Describe:		
Roots, woody, riffle, col	bble/boulder, deep pool, bac	kwater pools	None observed		
			Total Coore out of 400	67	
			Total Score out of 100	07	




Upstream of blockage looking upstream



Rip-rap placed at blockage

Looking upstream at blockage



Left bank looking at riparian area



	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		<u>Projec</u>	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 64434		
Projects Estimated Stre	eam Mitigation Needs (LF):	TBD	Consultant Firm (Investigator(c) CPU DS KS		
Date of Field Assessme	nt: 2/28/2019 Ci	te Location Details_ta	Consultant Firm/investigator(s) CRI; DS, KS		
County:	Prince George's	Cross Roads:	MD 197 (Laurel Bowie Rd.). S of Race Track Rd.		
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit): 2131104		
Proximity to Impacted	Stream (mi.):	5.8	Lat/Long: 39.003508	-76.761299	
		Site	e Data		
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 5.94		
Site Opportunities:	Fish Passage	Channel Restoration	Habitat EnhancementRiparian Buffer Planting	'	
Stream Order:	3rd	Stream Hydrology:	Perennial Stream Use:	1	
Culvert/Dam Type:	Double Box Culvert	Culvert/Dam Dimensions	12 ft wide, 200 feet long Blockage Type:Com	olete Partial _X_None	
USGS Gage Station #:	01594440	USGS Gage Discharge (fs3	3 590 cfs		
USGS Gage Daily Disch	arge Percentile:0-25%	625-50% _ <u>X</u> _50-75%	75-100%		
Property Address:	SHA ROW - at MD 197, so	uth of Race Track Rd., Bov	vie MD 20715		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for d	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be removed within the road right	-of-way or does it	
species within or in clos	se proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain	
Explain:			Explain:		
RIE coordination with a	agencies pending.		No blockage, steep grade control rimes at both ends of c	uivert. Within ROW	
		Fish Passag	ge Site Rating		
<u>Criteria</u>		Score	Criteria	<u>Score</u>	
Functional Upstream N	letwork	10	Fish Blockage Height - Ecological Benefits of Removal	0	
10 - Greater than 4 mile	es		10 - Greater than 5'		
5 - 1 to 4 miles			5-1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
Describer			0 - NO BIOCKage		
>10 miles of US network	k		Describe:		
	ĸ		No blockage, just time grade control by of clossing		
Number of Downstrear	m Fish Blockages	10	Adjacent Land Use	1	
10 - 0 Blockages	0		10 - Commercial/Agriculture/Bare Ground		
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
			Forest on both banks		
NAACC Diadromous Fis	sh HUC 12 Watershed Score	10	Ease of Construction	0	
10 - 3 to 22			10 - Easy		
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
Describer			0 - NO BIOCKAGE		
Describe:			Describe: Not a true blockage		
17			Not a true blockage		
Percentage of Upstrear	m Impervious Surface	5	Ease of Access	1	
10 - Less than 10%			10 - Yes (with existing direct vehicular access to potentia	l site)	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)		
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	s surrounding site)	
11.70%			Tree clearing needed, no vehicular access exising		
	-				
Fish Habitat Diversity		10	Utilities Present	10	
10 - Greater than 5 cove	er types		10 - No utilities on site		
5 - 3-5 Cover types	nec		5 - Olinies bul not within sile 1 - Utilities within potential site		
Describe			Describe		
Diffle cobble/boulder	raate doop pool weady be-	water peal	No utilities located DS		
nine, cobble/boulder, r	i oots, deep pool, woody, bac	kwater poor	NO ULIILLES IOLALEU DS		
			<u> </u>		
			Total Score out of 100	57	





Downstream of culvert looking downstream



Right bank downstream of culvert

Downstream looking upstream at culvert/no blockage



Upstream of culvert looking upstream

	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Assessment Form		
		<u>Projec</u>	t Details		
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 64498		
Projects Estimated Stream	am Mitigation Needs (LF):	TBD	Consultant Firm (Investigator(a) CDU IC DS IF		
Date of Field Assessmer	nt: 2/25/2019	to Location Dotails to	Consultant Firm/Investigator(s) CRI; JG, DS, LE		
County:	Anne Arundel	Cross Roads:	MD 3 (Crain Hwy). S of MD 424/N of Defense Hwy		
Basin (HUC 8):	Patuxent	ci oso nouusi	MDE Watershed (8 digit): 2131105		
Proximity to Impacted S	Stream (mi.):	9.1	Lat/Long: 38.999801	-76.700676	
		Site	Data		
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 0.5		
Site Opportunities:	<u>X</u> Fish Passage	<u>X</u> Channel Restoration	X_Habitat Enhancement X_Riparian Buffer Planting	,	
Stream Order:	1st	Stream Hydrology:	Perennial Stream Use:	I	
Culvert/Dam Type:	СМР	Culvert/Dam Dimensions	W: 11.5' H: 8' Blockage Type:Com	plete X_ PartialNone	
USGS Gage Station #:	01649150	USGS Gage Discharge (fs3	2.2		
USGS Gage Daily Discha	arge Percentile:0-25%	625-50%50-75%	75-100%		
Property Address:	SHA ROW - at MD 3, sout	h of MD 424 and north of I	Defense Hwy., Crofton MD 21114		
Property Owner(s):	SHA				
		General Field	d Observations		
Are there records for di	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be removed within the road right	-of-way or does it	
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain	
Explain:			Explain:		
RTE coordination with a	gencies is pending.		Within ROW		
		Fich Doccor	ro Cito Poting		
Criteria		Score	ICriteria	Score	
Functional Upstream Ne	etwork	1	Fish Blockage Height - Ecological Benefits of Removal	1	
10 - Greater than 4 mile	S		10 - Greater than 5'		
5 - 1 to 4 miles			5- 1' to 5'		
1 - Less than 1 mile			1 - Less than 1'		
			0 - No Blockage		
Describe:			Describe:		
0.6 miles of US network			0.7 feet from bottom of CMP to bottom of stream. Water depth is 0.2 feet		
			inside culvert.		
Number of Decimation		10	A. P	r	
Number of Downstream	h FISH BIOCKages	10	Adjacent Land Use	5	
5 - 1 Blockage			5- Field/Scrub-shrub		
1 - >1 Blockage			1 - Forest		
Describe:			Describe:		
0			US: forested; DS: field		
NAACC Diadromous Fish	h HUC 12 Watershed Score	10	Easo of Construction	5	
10 - 3 to 22	THOC 12 Watershed Score	10	10 - Fasy	5	
5 - 23 to 41			5- Average		
1 - 42 to 61			1 - Difficult/Complex		
			0 - No Blockage		
Describe:			Describe:		
14			Less than 1 foot drop with diameter > 48 inches		
Deveenters of Unstract				r.	
10 Loss than 10%	i impervious surface	5	Ease of Access	5	
5 - 10 to 25%			5- Yes (open but no existing vehicular access)	i site)	
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	s surrounding site)	
Describe:			Describe:	0 ,	
21.70%		LB no clearing needed, grading necessary			
Fish Habitat Diversity		1	Utilities Present	5	
10 - Greater than 5 cove	er types		10 - No utilities on site		
5 - 3-5 cover types	, I		5 - Utilities but not within site		
1 - Less than 3 cover typ	es		1 - Utilities within potential site		
Describe:			Describe:		
US: riffle; DS: pool, over	hanging vegetation		Low powerlines US. High powerlines at edge of ROW		
• •					
			Total Score out of 100	48	



Site Photos



Upstream looking downstream at culvert/partial blockage



Upstream looking upstream at old cement structure outside of ROW



Right bank looking at powerlines and plantings

Downstream looking upstream at culverts/partial blockages

	I-495/I-270 Ma	naged Lanes Study - F	ish Passage Field Site Assessment Form	
		<u>Projec</u>	t Details	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 64596	
Projects Estimated Stream	am Mitigation Needs (LF):	TBD	Consultant Firm (Investigator(a) CDI. IC. DC	
Date of Field Assessmer	nt: 2/25/2019	to Location Dotails to	Consultant Firm/Investigator(s) CRI; JG, DS	
County:	Montgomery	Cross Roads:	MD 108 (Ashton Rd.), E of New Hampshire Ave.	
Basin (HUC 8):	Patuxent	cross notads	MDE Watershed (8 digit): 2131107	
Proximity to Impacted S	Stream (mi.):	9.8	Lat/Long: 39.151371	-77.00691
		Site	Data	
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 0.5	
Site Opportunities:	Fish Passage	<u>X</u> Channel Restoration	XHabitat EnhancementRiparian Buffer Planting	
Stream Order:	1st	Stream Hydrology:	Perennial Stream Use:	IV
Culvert/Dam Type:	Double RCP	Culvert/Dam Dimensions	48" RCP, 25 feet long Blockage Type:Com	plete Partial <u>X</u> None
USGS Gage Station #:	01591700	USGS Gage Discharge (fs3	59.7	
USGS Gage Daily Discha	arge Percentile:0-25%	6 25-50%50-75%	75-100%	
Property Address:	SHA ROW - at MD 108, ea	ist of New Hampshire Ave,	Ashton MD 20861	
Property Owner(s):	SHA			
		General Field	Observations	
Are there records for dia	adromous fish, mussels, RT	E crayfish, or other RTE	Can the fish blockage be removed within the road right	-of-way or does it
species within or in clos	e proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain
Explain:			Explain:	
RIE coordination with ag	gencies pending.		NO DIOCKAGE	
		Fish Passag	ge Site Rating	
<u>Criteria</u>		Score	Criteria	<u>Score</u>
Functional Upstream Ne	etwork	1	Fish Blockage Height - Ecological Benefits of Removal	1
10 - Greater than 4 miles	S		10 - Greater than 5'	
5 - 1 to 4 miles			5-1' to 5'	
1 - Less than 1 mile			1 - Less than 1 0 - No Blockage	
Describe:				
0.2 miles of US network			None, 0.2' water depth in RCP at US end.	
Number of Downstream	n Fish Blockages	5	Adjacent Land Use	5
10 - 0 Blockages			10 - Commercial/Agriculture/Bare Ground	
5 - 1 Blockage			5- Field/Scrub-shrub	
1 - >1 Blockage			1 - Forest	
Describe:				
1 DS barrier			US: Forested. DS: residential lawn (field)	
NAACC Diadromous Fish	n HUC 12 Watershed Score	1	Ease of Construction	0
10 - 3 to 22			10 - Easy	
5 - 23 t0 41 1 - 42 to 61			5- Average 1 - Difficult/Complex	
1 - 42 (0 01			0 - No Blockage	
Describe:			Describe:	
43			No blockage	
_				
Percentage of Upstream	n Impervious Surface	10	Ease of Access	5
10 - Less than 10%			10 - Yes (with <u>existing</u> direct vehicular access to potentia	l site)
5 - 10 to 25% 1 Greater than 25%			5- Yes (open but no existing venicular access)	c currounding cito)
Describe:			Describe:	s surrounding site
3.59%		Open downstream (some clearing), clearing needed upst	ream	
010070				
Fish Habitat Diversity		10	I Itilities Present	1
10 - Greater than 5 cove	r types	10	10 - No utilities on site	-
5 - 3-5 cover types	7 IF		5 - Utilities but not within site	
1 - Less than 3 cover typ	es		1 - Utilities within potential site	
Describe:			Describe:	
Riffle, cobble/boulder, u	ndercut bank, backwater, d	eep pool, roots	Water line DS; powerlines US and DS	
				20
			lotal Score out of 100	39





Downstream looking upstream at culvert/no blockage



Upstream of culvert looking upstream



Downstream of culvert looking downstream



Left bank at upstream end of culvert looking at utilities

	I-495/I-270 Mar	naged Lanes Study - F	ish Passage Field Site Assessment Form	
		Projec	t Details	
Project Name:	I-495/I-270 Managed Lan	es Study	Mitigation Site Number: NAACC 64628	
Projects Estimated Stre	am Mitigation Needs (LF):	TBD	Consultant Firm (Investigator(a) CBU IC DS	
Date of Field Assessme	nt: 3/6/2019	te Location Details_ta	Consultant Firm/investigator(s) CRI; JG, DS	
County:	Prince George's	Cross Roads:	MD 197 (Laurel Bowie Rd.). N of Race Track Rd.	
Basin (HUC 8):	Patuxent		MDE Watershed (8 digit): 2131104	
Proximity to Impacted	Stream (mi.):	6.1	Lat/Long: 39.012859	-76.762718
		Site	Data	
Parcel Size (ac):	Within SHA ROW		Drainage Area to Reach (sq. mi. 0.45	
Site Opportunities:	X_Fish Passage	<u>X</u> Channel Restoration	XHabitat EnhancementRiparian Buffer Planting	
Stream Order:	1st	Stream Hydrology:	Perennial Stream Use:	1
Culvert/Dam Type:	Pipe arch	Culvert/Dam Dimensions	9.5' x 6.8', 130 feet long Blockage Type:Com	plete <u>X</u> PartialNone
USGS Gage Station #:	01594440	USGS Gage Discharge (fs3	1020 cfs	
USGS Gage Daily Disch	arge Percentile:0-25%	625-50%50-75%	_ <u>X_</u> 75-100%	
Property Address:	SHA ROW - at MD 197, nc	orth of Race Track Rd, Bow	ie MD 20720	
Property Owner(s):	SHA			
		General Field	d Observations	
Are there records for di	iadromous fish, mussels, RTI	E crayfish, or other RTE	Can the fish blockage be removed within the road right	-of-way or does it
species within or in clos	se proximity to the fish bloc	kage site? Explain	require access to parcels beyond right-of-way limits? Ex	plain
Explain:			Explain:	
RTE coordination with a	igencies is pending.		Yes, blockage is partial, low flow in upstream end of cros	sing at gradient
			change within CMP.	
		Fish Passag	ze Site Rating	
Criteria		Score	Criteria	Score
Functional Upstream N	etwork	1	Fish Blockage Height - Ecological Benefits of Removal	1
10 - Greater than 4 mile	2S		10 - Greater than 5'	
5 - 1 to 4 miles			5- 1' to 5'	
1 - Less than 1 mile			1 - Less than 1'	
Describes			U - NO BIOCKage	
Describe: 0.7 miles of US network	,		Describe: Water denth at top of gradient: 0.15 feet: Water denth a	t bottom of gradient
0.7 miles of 05 metwork			in CMP: 0.20 feet. Potential partial blockage during low	lows DS of culvert at
			rin civir. 0.20 feet. Potential partial blockage during low i	IOWS DS OF CUIVELL AL
Number of Downstream	n Fish Blockages	10	Adjacent Land Use	1
10 - 0 Blockages	in the brockages		10 - Commercial/Agriculture/Bare Ground	
5 - 1 Blockage			5- Field/Scrub-shrub	
1 - >1 Blockage			1 - Forest	
Describe:			Describe:	
0 blockages			Forest upstream and downstream	
NAACC Diadromous Fis	h HUC 12 Watershed Score	10	Ease of Construction	5
10 - 3 to 22			10 - Easy	
5 - 23 to 41			5- Average	
1 - 42 to 61			1 - Difficult/Complex	
Decesting.			U - NO BIOCKAGE	
Describe:			Describe:	
17			Large pipe, less than 1 loot	
Percentage of Upstream	n Impervious Surface	5	Ease of Access	1
10 - Less than 10%	· · ·		10 - Yes (with existing direct vehicular access to potentia	l site)
5 - 10 to 25%			5- Yes (open but no existing vehicular access)	
1 - Greater than 25%			1 - No (no vehicular access, clearing needed, steep slope	s surrounding site)
Describe:			Describe:	
10.20%			Clearing of young regen trees required. Some mature de	ciduous.
Fish Habitat Diversity		5	Utilities Present	5
10 - Greater than 5 cove	er types		10 - No utilities on site	
5 - 3-5 cover types	205		5 - Utilities but not within site	
1 - Less (IIdii 5 Cover Lypes				
Doop pool siftle here it	or/oobblo boolourterest	aata	Couver downstroom. Transformer ob inter of	traffic light)
Deep pool, mile, boulde	erreubble, backwater pool, ro	2012	Sewer downstream. Transformer above miet of culvert (iranic light)
			Total Score out of 100	44





Closeup of inlet, upper end of gradient change



Right bank at downstream end



Downstream looking upstream at culvert



Looking at potential partial blockage downstream of culvert