Sampling I	Point:	Z-WET
------------	--------	-------

40.5	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 10' R) 1)	% Cover	-		Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2				Total Number of Dominant
3				Species Across All Strata: 1 (B)
4				Percent of Dominant Species
5			· ——	That Are OBL, FACW, or FAC: 100.0 (A/B)
6	0 :	= Total Cov	/or	Prevalence Index worksheet:
				Total % Cover of: Multiply by:
50% of total cover: <u>0.0</u>	20% of	total cover	: 0.0	OBL species x 1 = 0
Sapling Stratum (Plot size: 10' R)				FACW species x 2 = 0
1				FAC species x 3 = 0
2				FACU species x 4 = 0
3				UPL species x 5 = 0
4				Column Totals: (A) 0 (B)
5				
6			· ——	Prevalence Index = B/A =
	0 :	= Total Cov	/er	Hydrophytic Vegetation Indicators:
50% of total cover: 0.0	20% of	total cover	:0.0	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 10' R				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0¹
2				4 - Morphological Adaptations (Provide supporting
3				data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain)
4				Problematic Hydrophytic Vegetation¹ (Explain)
5				1
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	:	= Total Cov	/er	Definitions of Five Vegetation Strata:
50% of total cover: 0.0	20% of	total cover	. 0.0	
Herb Stratum (Plot size: 10' R)				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Symplocarpus foetidus	65	yes	OBL	(7.6 cm) or larger in diameter at breast height (DBH).
2 Osmundastrum cinnamomeum	8	no	FACW	Carling Washington washington
3.				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
T				Shrub – Woody plants, excluding woody vines,
6			·	approximately 3 to 20 ft (1 to 6 m) in height.
				Heath All house account (non-used to) plants in cluding
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
				plants, except woody vines, less than approximately 3
9			· ——	ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11	70			
		= Total Cov		
50% of total cover: <u>36.5</u>	20% of	total cover	: 14.6	
Woody Vine Stratum (Plot size: 10' R)				
1				
2				
3				
4				
5		-		Historykatio
	0 :	= Total Cov	/er	Hydrophytic Vegetation
50% of total cover: 0.0	20% of	total cover	0.0	Present? Yes No No
Remarks: (Include photo numbers here or on a separate s				1
rtomarko: (moiado prioto riamboro noro or orra coparato e	sheet.)			

Sampling Point: Z-WET

Profile Desc	ription: (Describe	to the dep	th needed to docum	nent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redo	x Feature	<u>s</u>			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-5	7.5YR 4/1	90	7.5YR 3/4	10	<u> </u>	_PL	Loam	
5-11	10YR 5/2	90	7.5YR 4/6	10	С	PL_	Silt loam	
11-13	10YR 5/1	100					Silt loam	Some small gravel
	-							
¹ Type: C=Co	ncentration D=Den	letion RM	=Reduced Matrix, MS	S=Masker		ains	² Location: P	L=Pore Lining, M=Matrix.
Hydric Soil I		ietion, rtivi	-rteduced Matrix, Mc	J-Masket	Janu Ore	aii i 3.		ators for Problematic Hydric Soils ³ :
Histosol			☐ Dark Surface	(S7)			_	cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Be		ce (S8) (N	ILRA 147,		Coast Prairie Redox (A16)
Black His	stic (A3)		☐ Thin Dark Su	rface (S9) (MLRA 1	47, 148)	_	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		F2)		∐ P	Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Mar	. ,	-0\			(MLRA 136, 147)
	ck (A10) (LRR N) I Below Dark Surfac	o (A11)	Redox Dark S	•	•			ery Shallow Dark Surface (TF12) Other (Explain in Remarks)
	rk Surface (A12)	e (ATT)	Redox Depre		` '			other (Explain in Kemarks)
=	lucky Mineral (S1) (L	RR N,	Iron-Mangan		,	LRR N,		
	147, 148)		MLRA 13					
	leyed Matrix (S4)		Umbric Surfa		-	-		licators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo	-		•	•	etland hydrology must be present,
	Matrix (S6)		☐ Red Parent N	/laterial (F	21) (MLR	A 127, 147	7) un	less disturbed or problematic.
Type: Gr	ayer (if observed):							
Depth (inc							Hydric Soil	Present? Yes No No
							Hydric 30ii	Fresent: Tes No
Remarks: Su	ılfidic odor							

Project/Site: 1-95 5th Lane Widening	City/County: Harford County		_ Sampling Date: <u>5/4/2017</u>
Applicant/Owner: MDTA		State: MD	Sampling Point: Z-AA-UPL
Investigator(s): ET/MRS	Section, Township, Range:		
Landform (hillslope, terrace, etc.): hillslope	Local relief (concave, convex, non	e): <u>none</u>	Slope (%): 2
Subregion (LRR or MLRA): LRR S; MLRA 148 Lat: 39.45699	Long: <u>-^{76.31}</u>	130	Datum: WGS84
Soil Map Unit Name: DcA		NWI classifi	ication: N/A
	ntly disturbed? Are "Normal problematic? (If needed, ex		present? Yes No ers in Remarks.)
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Yes O No O No O Remarks:	Is the Sampled Area within a Wetland?	Yes	No No
HANDOLOGA			
HYDROLOGY Wetland Hydrology Indicators:			eators (minimum of two required)
Primary Indicators (minimum of one is required; check all that app Surface Water (A1)	ly) c Plants (B14) ulfide Odor (C1) izospheres on Living Roots (C3) Reduced Iron (C4) Reduction in Tilled Soils (C6)	Surface Soi Sparsely Ve Drainage Pe Moss Trim I Dry-Season Crayfish Bu Saturation \ Stunted or S Geomorphic	I Cracks (B6) egetated Concave Surface (B8) atterns (B10) Lines (B16) n Water Table (C2) rrows (C8) //sible on Aerial Imagery (C9) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4)
Water Table Present? Saturation Present? (includes capillary fringe) Yes No Depth (includes No Depth (inc	,	ydrology Prese	ent? Yes No No
Describe Recorded Data (stream gauge, monitoring well, aerial ph	notos, previous inspections), if avail	lable:	
Remarks:			

201-	Absolute		Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>20'r</u>)		Species?		Number of Dominant Species	
1. Fagus grandifolia	_70	_yes	<u>FACU</u>	That Are OBL, FACW, or FAC: 2 (A))
2. Acer rubrum	_50	_yes	<u>FAC</u>	Total Number of Dominant	
3. Nyssa sylvatica	_15	no	FAC	Species Across All Strata: 5 (B))
4				Percent of Dominant Species	
5		-		That Are OBL, FACW, or FAC: 40.0 (A/	/B)
6					
		= Total Co	ver	Prevalence Index worksheet:	
500/ of total across 67.5				Total % Cover of: Multiply by:	
50% of total cover: <u>67.5</u>	20% 61	total cover	: <u>27.U</u>	OBL species x 1 = 0	
Sapling Stratum (Plot size: 20'r)	10		FACIL	FACW species x 2 = 0	
1. Fagus grandifolia		yes	FACU	FAC species 68 x 3 = 204	
2				FACU species 82 x 4 = 328	
3				UPL species x 5 = 0	
4		-		Column Totals: 150 (A) 532 (E	R)
5				Goldmir Fotals (A) ==== (A)	٥,
6				Prevalence Index = B/A = 3.55	
	10	= Total Co	ver	Hydrophytic Vegetation Indicators:	
FOOV of total powers FOO	200/ -f	tatal assum	0.0	1 - Rapid Test for Hydrophytic Vegetation	
50% of total cover: <u>5.0</u>	20% 01	total cover	2.0	2 - Dominance Test is >50%	
Shrub Stratum (Plot size: 20'r)				3 - Prevalence Index is ≤3.0¹	
1				1 '=	
2				4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)	ing
3				Problematic Hydrophytic Vegetation¹ (Explain)	
4				Troblematic rigarophytic vegetation (Explain)	
5				1 to disease of books and contained books to contain	
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	ι
		= Total Co	ver		
50% of total cover: 0.0	20% of			Definitions of Five Vegetation Strata:	
50% of total cover: 0.0	20% of			Tree – Woody plants, excluding woody vines,	
Herb Stratum (Plot size: 20'r)		total cover	-: 0.0	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.	
Herb Stratum (Plot size: 20'r) 1. Smilax rotundifolia	3	total cover	FAC	Tree – Woody plants, excluding woody vines,	
Herb Stratum (Plot size: 20'r)	3	total cover	-: 0.0	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines,	
Herb Stratum (Plot size: 20'r) 1. Smilax rotundifolia	3 2	ves yes	FAC	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less	
Herb Stratum (Plot size: _20'r) 1Smilax rotundifolia 2Rosa multiflora	3 2	ves yes	FAC	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines,	
Herb Stratum (Plot size: _20'r) 1Smilax rotundifolia 2Rosa multiflora	3 2	ves yes	FAC	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines,	
Herb Stratum (Plot size: _20'r) 1. Smilax rotundifolia 2. Rosa multiflora 3 4	3 2	yes yes	FAC	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
Herb Stratum (Plot size: 20'r) 1. Smilax rotundifolia 2. Rosa multiflora 3. 4. 5. 6.	3 2	yes yes	FAC FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
Herb Stratum (Plot size: _20'r) 1Smilax rotundifolia 2Rosa multiflora 3	3 2	yes yes	FAC FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody	1
Herb Stratum (Plot size:20'r)	3 2	yes yes	FAC FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately	1
Herb Stratum (Plot size:20'r)	3 2	yes yes	FAC FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody	1
Herb Stratum (Plot size:20'r) 1Smilax rotundifolia 2Rosa multiflora 3	3 2	yes yes	FAC FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately	3
Herb Stratum (Plot size:20'r)	3 2	yes yes	FAC FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height.	3
Herb Stratum (Plot size:20'r) 1Smilax rotundifolia 2Rosa multiflora 3	3 2	yes yes	FAC FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height.	3
Herb Stratum (Plot size:20'r) 1Smilax rotundifolia 2Rosa multiflora 3	3 2	yes yes Total Co	FAC FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height.	3
Herb Stratum (Plot size: 20'r) 1. Smilax rotundifolia 2. Rosa multiflora 3. 4. 5. 6. 7. 8. 9. 10. 11.	3 2	yes yes Total Co	FAC FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height.	3
Herb Stratum (Plot size:	3 2 	yes yes Total Co	FAC FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height.	3
Herb Stratum (Plot size:	3 2 	yes yes Total Co	FAC FACU FACU FACU FACU FACU FACU FACU F	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height.	3
Herb Stratum (Plot size:	3 2 	yes yes Total Co	FAC FACU FACU FACU FACU FACU FACU FACU F	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height.	3
Herb Stratum (Plot size:	3 2 	yes yes Total Co	FAC FACU FACU FACU FACU FACU FACU FACU F	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height.	3
Herb Stratum (Plot size:	3 2 	yes yes Total Co	FAC FACU FACU FACU FACU FACU FACU FACU F	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height.	3
Herb Stratum (Plot size:	3 2 	yes yes Total Co	FAC FACU FACU FACU FACU FACU FACU FACU F	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height. Woody vine – All woody vines, regardless of height.	3
Herb Stratum (Plot size:	3 2 5 20% of	yes yes Total Cover	FAC FACU FACU FACU FACU FACU FACU FACU F	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height. Woody vine – All woody vines, regardless of height.	3
Herb Stratum (Plot size:	3 2 5 20% of	yes yes Total Cover	FAC FACU FACU FACU FACU FACU FACU FACU F	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height. Woody vine – All woody vines, regardless of height.	3
Herb Stratum (Plot size:	3 2 	yes yes Total Cover	FAC FACU FACU FACU FACU FACU FACU FACU F	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately ft (1 m) in height. Woody vine – All woody vines, regardless of height.	3

Sampling Point: Z-AA-UPL

Profile Desc	ription: (Describe	to the depti	n needed to document the indicator or con	firm the absence	of indicators.)
Depth	Matrix		Redox Features		
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Loc		Remarks
0-2	7.5YR 3/2	100		Organic rich loam	
2-6	10YR 5/3	100		Silt loam	
6-10	2.5Y 5/4	100		Silt loam	
10-12	10YR 5/6	100		Loam	With gravel
				_	
		. <u></u>			
¹Type: C=Co	oncentration, D=Dep	letion, RM=I	Reduced Matrix, MS=Masked Sand Grains.	Location: P	L=Pore Lining, M=Matrix.
Hydric Soil I					ators for Problematic Hydric Soils ³ :
Histosol	(A1)		☐ Dark Surface (S7)	<u> </u>	cm Muck (A10) (MLRA 147)
Histic Ep	pipedon (A2)		Polyvalue Below Surface (S8) (MLRA		Coast Prairie Redox (A16)
Black Hi			Thin Dark Surface (S9) (MLRA 147, 14		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	L F	Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Matrix (F3)	\Box	(MLRA 136, 147) /ery Shallow Dark Surface (TF12)
	ick (A10) (LRR N) d Below Dark Surfac	Δ(Δ11)	Redox Dark Surface (F6) Depleted Dark Surface (F7)		Other (Explain in Remarks)
_	ark Surface (A12)	0 (/ (/)	Redox Depressions (F8)	_ `	CAPIGIT IT TOMATIC)
=	lucky Mineral (S1) (L	RR N,	Iron-Manganese Masses (F12) (LRR N	,	
	A 147, 148)		MLRA 136)		
	Gleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122		licators of hydrophytic vegetation and
	ledox (S5)		Piedmont Floodplain Soils (F19) (MLRA	•	etland hydrology must be present,
	Matrix (S6) _ayer (if observed):		Red Parent Material (F21) (MLRA 127,	147) un	lless disturbed or problematic.
Type:	Layer (ii observed).				
Depth (inc	ches).			Hydric Soil	Present? Yes No No
Remarks:				Tiyane oon	Tresent: TesNo
Remarks.					

Project/Site: 1-95 5th Lane Widening	City/County: Harford County		Sampling Date: <u>5/4/2017</u>
Applicant/Owner: MDTA		State: MD	Sampling Point: AA-WET
Investigator(s): ET/MRS	_ Section, Township, Range: _		
Landform (hillslope, terrace, etc.): Floodplain L	ocal relief (concave, convex, no	one): Concave	Slope (%): 2
Subregion (LRR or MLRA): LRR S; MLRA 148 Lat: 39.45750	Long: <u>-</u> -76	6.31119	Datum: WGS84
Soil Map Unit Name: DcA		NWI classific	ation: PFO
Are climatic / hyd <u>rolog</u> ic condi <u>tion</u> s on the site typical for this time of	year? Yes No	(If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrology significant	ly disturbed? Are "Norma	al Circumstances" p	present? Yes V No No
Are Vegetation, Soil, or Hydrology naturally p	problematic? (If needed,	explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map showir	g sampling point locati	ons, transects	, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes O No O Yes No O	Is the Sampled Area within a Wetland?	Yes_	No _
Remarks:			
Seep wetland area. Drains to Waters Y. Photos 337-3 considered PFO because it is located within a forest, a conditions.			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply	<u>')</u>	Surface Soil	Cracks (B6)
Surface Water (A1) True Aquatic	Plants (B14)	$\overline{}$	getated Concave Surface (B8)
	lfide Odor (C1)	✓ Drainage Pa	-
Saturation (A3) Oxidized Rhiz	zospheres on Living Roots (C3)	Moss Trim Li	nes (B16)
	Reduced Iron (C4)		Water Table (C2)
Sediment Deposits (B2) Recent Iron F	Reduction in Tilled Soils (C6)	Crayfish Bur	rows (C8)
☐ Drift Deposits (B3) ☐ Thin Muck Su	ırface (C7)	☐ Saturation Vi	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	n in Remarks)	Stunted or S	tressed Plants (D1)
☐ Iron Deposits (B5)		☐ Geomorphic	Position (D2)
Inundation Visible on Aerial Imagery (B7)		☐ Shallow Aqu	tard (D3)
Water-Stained Leaves (B9)		Microtopogra	aphic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutral	Test (D5)
Field Observations:			
Surface Water Present? Yes No Depth (inche	,		
Water Table Present? Yes No Depth (inche	es): <u>3</u>		
Saturation Present? Yes V No Depth (inche	es): 0 Wetland	Hydrology Preser	nt? Yes No No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial pho			
Remarks:			

/EGETATION (Five Strata) – Use scientific n	ames of _l	olants.		Sampling Point: AA-WET
40.00	Absolute			Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 10x20')	% Cover			Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant Species Across All Strata: 3 (B)
3 4				Species Across All Strata: 3 (B)
				Percent of Dominant Species That Are ORL FACW or FAC: 66.7 (A/R)
5 6				That Are OBL, FACW, or FAC: 66.7 (A/B)
0	0		- ——	Prevalence Index worksheet:
50% of total cover: <u>0.0</u>				Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 10x20')	20% 61	total cove	r; <u>u.u</u>	OBL species x 1 = 0
				FACW species x 2 = 0
1			_	FAC species x 3 = 0
2				FACU species $x = 4 = 0$
4				UPL species x 5 = 0
5				Column Totals: (A) 0 (B)
6.				Prevalence Index = B/A =
-	0	= Total Co	ver	Hydrophytic Vegetation Indicators:
50% of total cover: <u>0.0</u>				1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 10x20')	20 % 01	total cove	1	☑ 2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Co	ver	Definitions of Five Vegetation Strata:
50% of total cover: 0.0	20% of	total cove	r: 0.0	
Herb Stratum (Plot size: 10x20')				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
1. Microstegium vimineum	25	yes	FAC	(7.6 cm) or larger in diameter at breast height (DBH).
2. Osmunda cinnamomea	5	no	FACW	Sapling – Woody plants, excluding woody vines,
3. Carex tenera	10	yes	FAC	approximately 20 ft (6 m) or more in height and less
4 _. Lonicera japonica	5	no	FACU	than 3 in. (7.6 cm) DBH.
5. Onoclea sensibilis	5	no	FACW	Shrub – Woody plants, excluding woody vines,
6. Rosa multiflora	10	yes	FACU	approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				Woody vine - All woody vines, regardless of height.
	60	= Total Co	ver	
50% of total cover: <u>30.0</u>	20% of	total cove	r: <u>12.0</u>	
Woody Vine Stratum (Plot size:)				
1				
2				
3				
4				
5				Hydrophytic
	0	= Total Co	ver	Vegetation
50% of total cover: 0.0	20% of	total cove	r: <u>0.0</u>	Present? Yes No No

Remarks: (Include photo numbers here or on a separate sheet.)

No trees in wetland, but within a forest.

Sampling Point: AA-WET

Profile Desc	ription: (Describe	to the dep	th needed to docur	nent the	indicator	or confirn	n the absence of indicators.)	
Depth	Matrix			x Feature	s			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture Remarks	
0-3	7.5YR 3/2	70	5YR 4/7	30		PL_	Loam	
3-7	7.5YR 4/1	70	7.5YR 4/6	10	<u>C</u>	PL_	Silt loam	
			10YR 5/1	20	D	М		
7-12	10YR 5/4	60	10YR 4/1	30			Sandy loam	
			7.5YR 4/4	10	C	PL		
			7.0111 1/1		<u> </u>			
	-							
¹Type: C=Co	oncentration, D=Dep	letion, RM	=Reduced Matrix, M	S=Masked	d Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil		•	,				Indicators for Problematic Hydric Soils	³ :
Histosol	(A1)		Dark Surface	e (S7)			2 cm Muck (A10) (MLRA 147)	
	pipedon (A2)		Polyvalue Be					
☐ Black Hi			∐ Thin Dark Su			47, 148)	(MLRA 147, 148)	
	n Sulfide (A4)		Loamy Gleye		(F2)		☐ Piedmont Floodplain Soils (F19)	
	d Layers (A5) ick (A10) (LRR N)		Depleted Ma	. ,	=6)		(MLRA 136, 147) ☐ Very Shallow Dark Surface (TF12)	
	d Below Dark Surfac	e (A11)	Depleted Dark	•	•		Other (Explain in Remarks)	
_	ark Surface (A12)	,	Redox Depre					
	lucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) (LRR N,		
	A 147, 148)		MLRA 13				3	
	Gleyed Matrix (S4)		Umbric Surfa		-	-	³ Indicators of hydrophytic vegetation an	d
	ledox (S5) Matrix (S6)		☐ Piedmont Flo			•		
	_ayer (if observed):			viateriai (i	Z1) (MLIC	A 121, 14	unless disturbed of problematic.	
Type:	,							
Depth (inc	ches):						Hydric Soil Present? Yes No)
Remarks:								

Project/Site: 1-95 5th Lane Widening	City/County: Harford County	Sampling Date: <u>5/10/2017</u>
Applicant/Owner: MDTA	State: MD	Sampling Point: BB-WET
Investigator(s): ET/MRS	Section, Township, Range:	
Landform (hillslope, terrace, etc.): Forested depression	Local relief (concave, convex, none): Concave	Slope (%): <u>0</u>
Subregion (LRR or MLRA): LRR S; MLRA 148 Lat: 39.45594	Long: <u>-76.31309</u>	Datum: WGS84
Soil Map Unit Name: KpA	NWI classi	fication: PFO
	ntly disturbed? Are "Normal Circumstances problematic? (If needed, explain any answ	" present? Yes No vers in Remarks.)
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Yes O No O Yes O No O	Is the Sampled Area within a Wetland? Yes	No No
Depressional wetland adjacent to Waters Y. Drains to in depressed area. Photos 360-361	ephemeral Waters CC. Within forested	canopy. Sparse vegetation
HYDROLOGY		
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) Hydrogen St Recent Iron Thin Muck S Other (Explain St) Other (Explain St) Recent Iron Thin Muck S Other (Explain St) Aquatic Fauna (B13)	Surface So C Plants (B14) Ulfide Odor (C1) Drainage F Moss Trim Reduced Iron (C4) Reduction in Tilled Soils (C6) Surface (C7) Ain in Remarks) Surface So Surface So Drainage F Moss Trim Crayfish B Surface (C7) Saturation Geomorph Shallow Ad Microtopog	cators (minimum of two required) bil Cracks (B6) degetated Concave Surface (B8) Patterns (B10) Lines (B16) In Water Table (C2) furrows (C8) Visible on Aerial Imagery (C9) Stressed Plants (D1) ic Position (D2) quitard (D3) graphic Relief (D4) fal Test (D5)
Water Table Present? Saturation Present? (includes capillary fringe) Yes No Depth (inch	nes): Wetland Hydrology Pres	ent? Yes No No
Describe Recorded Data (stream gauge, monitoring well, aerial ph	notos, previous inspections), if available:	
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

/EGETATION (Five Strata) – Use scientific na	ames of p	olants.		Sampling Point: BB-WET	
	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>20'x30'</u>) 1. Acer rubrum	15	Species? yes	Status FAC	Number of Dominant Species That Are OBL, FACW, or FAC: 2	(A)
2					()
3				Total Number of Dominant Species Across All Strata: 2	(B)
4					()
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0	(A/B)
6.					(700)
	15	= Total Cov	er	Prevalence Index worksheet:	
50% of total cover: 7.5	20% of	total cover	3.0	Total % Cover of: Multiply by:	
Sapling Stratum (Plot size:)		total oo ron,		OBL species x 1 = 0	_
1				FACW species x 2 = 0	_
2				FAC species x 3 = 0	_
3				FACU species $x = 4 = 0$	_
4				UPL species x 5 = 0	_
5				Column Totals: (A) 0	_ (B)
6.				Prevalence Index = B/A =	
		Total Cov	er	Hydrophytic Vegetation Indicators:	
FOO/ of total account O O				1 - Rapid Test for Hydrophytic Vegetation	
50% of total cover: 0.0	20% 01	total cover:	0.0	✓ 2 - Dominance Test is >50%	
Shrub Stratum (Plot size:)				3 - Prevalence Index is ≤3.0 ¹	
1				4 - Morphological Adaptations¹ (Provide supp	ortina
2				data in Remarks or on a separate sheet)	,orung
3				Problematic Hydrophytic Vegetation¹ (Explain	า)
4					
5				¹ Indicators of hydric soil and wetland hydrology m	ıust
6		= Total Cov		be present, unless disturbed or problematic.	
				Definitions of Five Vegetation Strata:	
50% of total cover: <u>0.0</u>	20% of	total cover:	0.0	Tree – Woody plants, excluding woody vines,	
Herb Stratum (Plot size: 20'x30') 1 Smilax rotundifolia	16		EAC	approximately 20 ft (6 m) or more in height and 3 (7.6 cm) or larger in diameter at breast height (DE	
		<u>yes</u>	FAC FAC	(7.0 cm) of larger in diameter at breast neight (DE	<i>,</i> , ,,,
2. Microstegium vimineum	5	no	FACW	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and le	
3. Carex scoparia	3	no	$\overline{}$	than 3 in. (7.6 cm) DBH.	SS
4. Toxicodendron radicans		<u>no</u>	FAC		
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
6					
7				Herb – All herbaceous (non-woody) plants, include herbaceous vines, regardless of size, and woody	
8				plants, except woody vines, less than approximate	
9				ft (1 m) in height.	
10				Woody vine – All woody vines, regardless of height	ght.
11					
		= Total Cov			
50% of total cover: <u>13.0</u>	20% of	total cover:	5.2		
Woody Vine Stratum (Plot size:)					
1					
2					
3					
4					
5				Hydrophytic	
	0 :	= Total Cov	er	Vegetation	
50% of total cover: 0.0	20% of	total cover:	0.0	Present? Yes No No	
Remarks: (Include photo numbers here or on a separate s				1	
,	,				

SOIL Sampling Point: BB-WET

	-	e to the dep	oth needed to docur			or confirm	the absence	of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Feature	<u>Type¹</u>	Loc ²	Texture	Remarks
0-4	10YR 4/1	100					Loam	
4-10	10YR 4/1	80	7.5YR 5/6	20	C	M	Sandy loam	Some gravel
10-14	10YR 4/2	60	7.5YR 5/4	40	<u> </u>		Sandy loam	
10-14	1018 4/2	_ 60	7.518 5/4	40	· —		Sandy loam	Some gravel
¹ Type: C=C	oncentration, D=De	pletion, RM	=Reduced Matrix, M	S=Maske	d Sand Gr	ains.	² Location: Pl	L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indica	ators for Problematic Hydric Soils ³ :
Histosol			Dark Surface					cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be				148)	coast Prairie Redox (A16)
	stic (A3)		Thin Dark Su			47, 148)		(MLRA 147, 148)
	n Sulfide (A4) d Layers (A5)		Loamy Gleye		(F2)		Ц Р	riedmont Floodplain Soils (F19)
	ick (A10) (LRR N)		Depleted Ma Depleted Ma Redox Dark		F6)		Пу	(MLRA 136, 147) Yery Shallow Dark Surface (TF12)
	d Below Dark Surfa	ce (A11)	Depleted Da		,			Other (Explain in Remarks)
_	ark Surface (A12)	(, , , , ,	Redox Depre		. ,			(Zipiani in ternante)
=	lucky Mineral (S1)	(LRR N,	☐ Iron-Mangan			LRR N,		
	A 147, 148)		MLRA 13					
	Bleyed Matrix (S4)		Umbric Surfa		-			icators of hydrophytic vegetation and
_	Redox (S5)		Piedmont Flo	-		•	•	etland hydrology must be present,
	Matrix (S6) Layer (if observed	١.	. Red Parent I	viateriai (i	-21) (MLR	A 127, 147	r) un	less disturbed or problematic.
	Layer (II observed).						
Type:	-h \.						Hydric Soil	Present? Yes No No
Depth (in							Hydric Soil	Present? Yes No
Remarks:								

Project/Site: I-95 5th Lane Widening	City/County: Harford County		_ Sampling Date: <u>5/10/2017</u>
Applicant/Owner: MDTA		State: MD	Sampling Point: BB-UPL
Investigator(s): ET/MRS	Section, Township, Range: _		
Landform (hillslope, terrace, etc.): Floodplain	Local relief (concave, convex, no	one): None	Slope (%): <u>1</u>
Subregion (LRR or MLRA): LRR S; MLRA 148 Lat: 39	.45605 Long: <u>-76</u> .	.31285	Datum: WGS84
Soil Map Unit Name: SIC2		NWI classifi	cation: N/A
Are climatic / hydrologic conditions on the site typical for the Are Vegetation, Soil, or Hydrology Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS – Attach site map	significantly disturbed? Are "Normal attrally problematic? (If needed,	(If no, explain in F al Circumstances" explain any answe ions, transects	present? Yes No
Hydric Soil Present? Yes O	No_O Is the Sampled Area within a Wetland?	Yes	No No
Plot taken approximately one foot higher in ele	evation than adjacent wetland.		
HYDROLOGY			
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) Field Observations: Surface Water Present? Water Table Present? Yes No D Saturation Present? Yes No D Cincludes capillary fringe)	ue Aquatic Plants (B14) drogen Sulfide Odor (C1) idized Rhizospheres on Living Roots (C3) esence of Reduced Iron (C4) cent Iron Reduction in Tilled Soils (C6) in Muck Surface (C7) ner (Explain in Remarks) epth (inches): epth (inches): epth (inches):	Surface Soil Sparsely Ve Drainage Pa Moss Trim L Dry-Season Crayfish Bui Saturation V Stunted or S Geomorphic Shallow Aqu Microtopogr FAC-Neutra	Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4) al Test (D5)
Describe Recorded Data (stream gauge, monitoring well	, aerial photos, previous inspections), if av	ʻailable:	
Remarks:			

VEGETATION (Five Strata) – Use scientific names of plants.

/EGETATION (Five Strata) – Use scientific na	ames of	plants.		Sampling Point: BB-UPL	
	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>20'r</u>)		Species?	<u>Status</u>	Number of Dominant Species	
1. Acer rubrum	65	_yes	FAC	That Are OBL, FACW, or FAC: 4	(A)
2. Liriodendron tulipifera	15	<u>no</u>	FAC	Total Number of Dominant	
3				Species Across All Strata: 6	(B)
4				Percent of Dominant Species	
5					(A/B)
6				Prevalence Index worksheet:	
	80	= Total Cov	er	Total % Cover of: Multiply by:	
50% of total cover: <u>40.0</u>	20% of	total cover:	16.0	OBL species x 1 = 0	
Sapling Stratum (Plot size: 20'r				FACW species x 2 = 0	_
1. Acer rubrum	10	yes	FAC	FAC species x 3 = 0	_
2				FACU species x 4 = 0	_
3					_
4					- (D)
5				Column Totals: (A) 0	_ (B)
6				Prevalence Index = B/A =	_
	10	= Total Cov	er	Hydrophytic Vegetation Indicators:	_
50% of total cover: <u>5.0</u>	20% of	total cover	. 20	1 - Rapid Test for Hydrophytic Vegetation	
201-	20 % 01	total cover.		2 - Dominance Test is >50%	
Shrub Stratum (Plot size: 201) 1 Fagus grandifolia	40	yes	FACU	☐ 3 - Prevalence Index is ≤3.0 ¹	
2 Liquidambar Styraciflua	5	no	FAC	4 - Morphological Adaptations ¹ (Provide supp	ortina
			170	data in Remarks or on a separate sheet)	,orung
3				Problematic Hydrophytic Vegetation¹ (Explain	۱)
4					
5				¹ Indicators of hydric soil and wetland hydrology m	ust
6	45			be present, unless disturbed or problematic.	
		= Total Cov		Definitions of Five Vegetation Strata:	
50% of total cover: <u>22.5</u>	20% of	total cover:	9.0	Tree – Woody plants, excluding woody vines,	
Herb Stratum (Plot size: 20'r)				approximately 20 ft (6 m) or more in height and 3	
1. Smilax rotunditolia	10	<u>yes</u>	FAC	(7.6 cm) or larger in diameter at breast height (DB	3H).
2. Liquidambar Styraciflua	5	<u>yes</u>	FAC	Sapling – Woody plants, excluding woody vines,	
3. Fagus grandifolia	_5	<u>yes</u>	FACU	approximately 20 ft (6 m) or more in height and le	SS
4				than 3 in. (7.6 cm) DBH.	
5				Shrub – Woody plants, excluding woody vines,	
6				approximately 3 to 20 ft (1 to 6 m) in height.	
7				Herb - All herbaceous (non-woody) plants, includ	ling
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximate	oly 2
9				ft (1 m) in height.	ely 3
10					
11				Woody vine – All woody vines, regardless of height	ght.
	20	= Total Cov	er		
50% of total cover: 10.0	20% of	total cover	4.0		
Woody Vine Stratum (Plot size: 20'r)	20 % 01	total cover.			
1					
2					
J					
4					
5				Hydrophytic	
	· ·	= Total Cov		Vegetation Present? Yes No	
50% of total cover: <u>0.0</u>	20% of	total cover:	0.0	100	
Remarks: (Include photo numbers here or on a separate s	heet.)				

SOIL Sampling Point: BB-UPL

Profile Desc	ription: (Describe	to the de	oth needed to docur	ment the	indicator	or confirn	n the absence	of indicators.)
Depth	Matrix		Redo	x Feature	S			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-3	7.5YR 4/2	100					<u>Loam</u>	
3-12	7.5YR 4/3	70	7.5YR 5/2	30	D	M	Loam	Some gravel
				-				
						. ——		
1Type: C=C	noontration D-Don	lotion DM	I-Poducod Matrix M	S-Maska	d Sand Gr	oine	² Location: D	L=Pore Lining, M=Matrix.
Hydric Soil I		netion, Riv	=Reduced Matrix, M	5=Masked	a Sand Gr	ains.		ators for Problematic Hydric Soils ³ :
_			☐ Dark Surface	(87)			_	_
Histosol	oipedon (A2)		Polyvalue Be	. ,	oo (S8) (N	AI DA 147		2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16)
Black Hi			Thin Dark Su				140) ((MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			147, 140)		Piedmont Floodplain Soils (F19)
	l Layers (A5)		Depleted Ma		(1 2)		ш.	(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark	. ,	- 6)			/ery Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (A11)	Depleted Da	•	•			Other (Explain in Remarks)
_	ark Surface (A12)	· (· · · ·)	Redox Depre		` ,			(2.10.11)
=	lucky Mineral (S1) (I	LRR N,	☐ Iron-Mangan		,	LRR N,		
	\ 147, 148)		MLRA 13		, ,			
	Bleyed Matrix (S4)		☐ Umbric Surfa		(MLRA 13	86, 122)	³ Inc	dicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo		-			etland hydrology must be present,
	Matrix (S6)		Red Parent I	Material (F	21) (MLR	A 127, 147	7) un	lless disturbed or problematic.
Restrictive I	_ayer (if observed):	:						
Туре:								
Depth (inc	ches):						Hydric Soil	I Present? Yes No No
Remarks:							_1_	

Pro	ject: I-95 5th Lane W	denina				<u> </u>	uters of	· ·	. C.S. Dat	Featu	re I	D:	CC			Stre	am Orde	r: 1	
	te: 5/10/2017	<u> </u>				State: MD	1			Photo						Sirci		2	
	ew: ET/MRS					County:							umber:	CC-4A&E	3				
	Feature Hydr	ologi	c Class (cl	ieck one)	:	ı v					8	,							
	Tidal				ennial			In	termittent							Epheme	ral		
	TNW (Subject to	ebb a	and 7	ΓNW – Pe	rennial		RP'	W -	- Seasonal	(must	To	<u> </u>	Non-RPV	V dra	ining	uplands			
\smile	flow)		\sim	Flowing :	year roun	ıd)	oflow	v at	least 3 mo	onths a	C					l feature			
				RPW – Pe			yea	r)			C					ıtting wetl			
			$\mathcal{O}_{\mathcal{O}}$	Flowing :	year roun	ıd)					\odot					acent wetl			
	scribe rational hydrologic class:	No 1	flow obse	erved									Non-RPV outside o			adjacent o ea)	or abuttin	g upstrear	n
Нус	drologic Connecti	vity –	Upstr	eam: Wetla	nd BB		Dov	wns	tream: Wat	ers Y	-		Α	Adjac	ent/A	butting: N	one		
	Feature Desc	rinti	on: (check	all that a	nnlv)		<u> </u>												
			vith respec							Substra	ate					Vegetat	ion Cove	r Type (N	(IBSS)
	Natural Channel	<u> </u>		Width: 1-					Silts		nds		N	Auck	F	RB: Fore			
	Artificial (man-m			Depth: 6'					Cobbles		avel			Other:	_	1 010			
	Manipulated (ma	n-alte	ered)	Bank Erc	sion/stab	oility:			Bedrock	Co	ncre	ete							
	Other:			Minor erd	sion		Side	slo	pe:	1 🗸 2:1		3:	:1 \[\leq \leq 4	4 :1	I	LB: Fores	st		
Not	es: Erosional featur	e draiı	ns Wetland	BB. Flows	to Perenn	ial Waters Y	<u> </u>												
	Weather/Pred																		
	vv cather/1 1 co	_	ches of	luons.					Mo	nthly Dr	பாரி	ht (Conditio	n					
			n Within							NCDC R				11		Mo	nth:	Year	r:
Du	ring Field Visit		st Week	http://v	ww.ncd	c.noaa.gov	v/temp-a	nd						ndex.	.php	Apr	il	201	7
0	No rain	0	0-0.5	0	0	0	0		0	0	C)	0		\supset	0	0	0	0
0	Light rain	0	0.5-1	-6	-5	-4	-3		-2	-1	0		1		2	3	4	5	6
0	Heavy Rain	0	>1	Ser	zere Droi	ught	Moder	ate	Drought		Nori	mal		Mo	odera	tely Wet	S	everely W	⁷ et
	Non-tidal trib	utar	y has: (<i>che</i>	ck all tha	t apply;	include ph	otos for	eac	h & list ph	oto #)									
]	Bed and Banks							(Ordinary 1	High Wa	ter]	Ma	rk						
V	Yes		Clear, na	tural line	impresse	d on the ba	ınk		Sedimen	t deposit	ion				Sedi	ment sorti	ng		
	No		Changes	in the cha	racter of	`soil			Water st					✓	Scou				
			Shelving						Presence							erved/pred			
						ent, or abse	ent	✓	Destruct				veg.	Щ		ıpt change	in plant	communit	y
			4	r disturbe					Presence		k lin	ie			Othe	r:			
	Tidal tributa	_		ll that ap	oly; incli							_							
			de Line				0		Mark indi	cated by	0	<u> </u>				mical Cha	aracteris	tics	
Щ	Oil or scum line				_		to availa		datum			╙	Wate						
Щ	Fine shell or debi				_		al markin					╙	Wate		iscolo	ored			
	Physical marking	s/cha	racteristics		<u> </u> L	Vegeta	tion lines	s/ch	anges in ty	pes		\Vdash	Oily						
لِبا	Tidal gauges												Other	r:					
Not	es:																		

Pro	ject: I-95 5th Lane W	denina				<u>''</u>	uters of	tiit	. C.S. Dat	Featu	ire l	ID: [OD.			Strea	am Orde	r:	
	te: 5/10/2017	<u></u>				State: MD				Photo						1 2120	0144		
	ew: ET/MRS					County:				_			mber:	DD-3A&E	3				
	Feature Hydr	ologi	c Class (cl	neck one)	:														
	Tidal			Per	ennial			In	termittent						I	Epheme	ral	,	
\bigcirc	TNW (Subject to	ebb a	and 7	ΓNW – Pe	rennial		RP'	W –	- Seasonal	(must		\overline{N}	lon-RPV	V dra	ining u	ıplands			
\cup	flow)			Flowing :		d)	oflow	v at	least 3 mo	onths a			lon-RPV						
			L /	RPW – Pe			yea	r)								ting wetl			
			\mathcal{C}	Flowing :	year roun	d)						_				cent wetl			
	scribe rational hydrologic class:	Inte	rcepts gro	undwate	r toward	the toe o	of the roa	adv	vay emba	nkment		-	Ion-RPV outside o				or abuttin	g upstrear	n
Нус	drologic Connecti	vity –	Upstr	eam: None			Dov	wns	tream: Wat	ers Y			Α	Adjac	ent/Abi	utting: N	one		
	Feature Desc	riptio	on: (check	all that a	nnlv)								•						
		_	vith respec							Substra	ate				7	Vegetati	ion Cove	r Type (N	ABSS)
	Natural Channel	<u> </u>		Width: 1-			-	✓	Silts		nds		N	Auck		B: Fores		VI \	
	Artificial (man-m	ade)		Depth: 6'					Cobbles	✓ Gr	ave	1		Other:					
V	Manipulated (ma	n-alte	ered)	Bank Erc	sion/stab	ility:			Bedrock	Co	ncr	ete							
	Other:			Stable			Side	slo	pe:	1 2:1	l [•	/ 3:	1 \[\leq \leq 4	4:1	LE	B: Fores	st		
Not	es: Begins as hea	dcut	receiving s	surface flo	w before	interceptir	ng groun	dwa	ater. Flagg	ed at gro	ound	dwat	er interd	ceptio	on				
	Weather/Pred	vinita	tion Cond	itions:															
	vv cather/1 1 co	_	ches of	10115.					Mo	nthly Dr	Alla	ht C	onditio	n					
			n Within							NCDC R				, 11		Mo	nth:	Year	r:
Du	ring Field Visit		st Week	http://v	ww.ncd	c.noaa.gov	v/temp-a	nd-						ndex.	.php	Apr	il	2017	7
0	No rain	0	0-0.5	0	0	0	0		0	0		$\overline{}$	0		\circ	0	0	0	0
0	Light rain	0	0.5-1	-6	-5	-4	-3		-2	-1)	1		2	3	4	5	6
0	Heavy Rain	0	>1	Ser	zere Drou	ıght	Modera	ate	Drought	-	Nor	mal		Mo	oderate	ely Wet	S	everely W	/et
	Non-tidal trib	utar	y has: (<i>che</i>	eck all tha	t apply; i	include ph	otos for	eac	h & list ph	oto #)									
]	Bed and Banks							(Ordinary 1	High Wa	iter	Mai	rk						
V	Yes		Clear, na	tural line	impresse	d on the ba	ınk		Sedimen	t deposit	ion				Sedim	ent sorti	ng		
	No		Changes	in the cha	racter of	soil			Water st					✓	Scour				
			Shelving						Presence								icted flov		
		╙				ent, or abse	ent	~	Destruct				veg.	Щ			in plant	communit	ty
			4	r disturbe					Presence		k lir	ne			Other:				
	Tidal tributa	_		ll that ap	ply; inclu							_							
			de Line				0		Mark indi	cated by	7.		7			nical Cha	aracteris	tics	
Щ	Oil or scum line				_		to availa		datum			╬	Wate						
	Fine shell or debi				_		ıl markin		•			╙			iscolor	red			
H	Physical marking	s/cha	racteristics	eristics Vegetation lines/changes in types Oily film Other:															
لپا	Tidal gauges												_ Other	r:					
Not	es:																		

Project	t: I-95 5th Lane Wi	denina				<u> </u>	uters of		C C.S. Dat	Featu	ıre	ID:	EE				Stre	am Orde	r:	
Date: 5/						State: MD				Photo							1 2 1 2 2			
Crew:	ET/MRS					County:	Harford			Last 1	Fla	g Nı	um	ber: E	E-2A&B					
	Feature Hydr	ologi	c Class (cl	heck one)	:	·														
	Tidal			Per	ennial			In	termittent								Epheme	ral		
\bigcap TN	W (Subject to	ebb a	and	TNW – Pe	erennial				- Seasonal								uplands			
flov	w)			(Flowing :		d)	oflow	v at	least 3 mo	onths a							l feature			
			A — /	RPW – Pe			yea	r)									tting wetl			
			\sim	(Flowing	year roun	d)						_					acent wetl			
	be rational rologic class:	Hea	vy flow o	bserved								_		n-RPW side o				or abuttin	g upstrear	n
Hydrolo	ogic Connectiv	vity –	Upstr	eam: Outsi	de of study	area	Dov	wns	tream: Wat	ers Y				A	djace	ent/A	butting: N	one		
	Feature Desc	rintic	on: (check	all that a	nnlv)		_							•						
			vith respe							Substr	ate					Т	Vegetat	ion Cove	r Type (N	ABSS)
✓ Nat	tural Channel	<u> </u>		Width: 6'				✓	Silts		nds			M	luck	R	B: Fore			
	tificial (man-m			Depth: 1'					Cobbles		rave				ther:		1 010	J.		
Ma:	inipulated (mai	n-alte	red)	Bank Erc	sion/stab	ility:			Bedrock	Co	onci	rete								
Oth	ner:			Moderate	erosior	1	Side	slo	pe:	1 🗸 2:1	1 [3:	:1	<u></u> ≤4	:1		B: Fore	st		
Notes:																				
L	Woodhow/Dwo		tion Cond	litiana.																
,	Weather/Pred	_	ches of	nuons: T				—	Mo	nthly Dr		aht (Cor	dition	<u> </u>					
			n Within							NCDC R					II.		Mo	nth:	Year	r:
During	g Field Visit		st Week	http://v	ww.ncd	c.noaa.gov	v/temp-a	nd-							dex.	php	Apr		2017	
	o rain	0	0-0.5	0	0		O	Т	0	0		\supset		0		\mathbf{c}	0	0	0	0
O Li	ight rain	0	0.5-1	-6	-5	-4	-3		-2	-1		0		1	2	2	3	4	5	6
ОНе	eavy Rain	0	>1	Ser	zere Droi	ıght	Modera	ate !	Drought	-	No	rmal	1		Mo	derat	ely Wet	S	everely W	/et
I	Non-tidal trib	utary	y has: (cho	eck all tha	t apply; i	include ph	otos for	eac	h & list ph	oto #)										
	and Banks	T '	,				*		Ordinary 1		iter	·Ma	ark							
✓ Yes	S	V	Clear, na	atural line	impresse	d on the ba	ınk		Sedimen	t deposit	ion	l				Sedir	nent sorti	ng		
No	1		Changes	in the cha	racter of	soil		✓	Water st	aining						Scou	r			
			Shelving						Presence	of flood	l litt	ter/d	lebi	is	✓	Obse	rved/pred	icted flov	<i>w</i> events	
						ent, or abse	ent		Destruct				l ve	g.		Abru	pt change	in plant	communit	ty
		✓		er disturbe				✓	Presence		k li	ne				Other	r:			
	Tidal tributaı	_		ıll that apj	oly; inclu															
			de Line				0		Mark indi	cated by	/:						mical Cha	aracteris	tics	
	or scum line a				_		to availa		datum			_ _	_	Water						
	ne shell or debr				<u> </u> _		ıl markin					╙	_	Water		iscolo	ored			
	ysical marking	s/cha	racteristics																	
_	lal gauges													Other	:					
Notes:																				

Pro	ject: I-95 5th Lane Wi	denina				<u> </u>		-	C.S. Data	7	ire Ì	ID: FF	F		Stre	am Orde	r: 1	
	e: 5/18/2017	dorning			Feature ID: FF State: MD Photos: 452									5010	um oruc	2		
	ew: ET/MRS					County:							nber: ⊧	F-5A&B				
	Feature Hydr	ologi	c Class (c	heck one)	:					1 20050	1 100 8	5 1 141						
	Tidal				rennial			Int	termittent						Epheme	ral		
\bigcirc	TNW (Subject to	ebb a	and	TNW – Pe	erennial		(RP	W –	Seasonal	must	10) No	on-RPV	V drainir	ng uplands			
\bigcirc	flow)		N. /	(Flowing	year roun	ıd)			least 3 mo) No	on-RPV	V erosio	nal feature			
				RPW – Pe	rennial		yea	r)) No	on-RPV	V with al	outting wetl	and		
			\mathcal{C}	(Flowing	year roun	id)) No	on-RPV	V with a	djacent wet	land		
	cribe rational hydrologic class:	Fed	ground	water by	wetland	d outside	of stud	y a	rea		C			V wetlan of study a	d adjacent o area)	or abuttin	g upstrear	n
Нус	drologic Connecti	vity –	Upsti	ream: Outsi	de of study	area	Dov	vns	tream: Wate	rs U	•		A	djacent/	Abutting: N	one		
	Feature Desc	riptio	on: (check	all that a	nnlv)		t						•					
				ct to OHV						Substr	ate				Vegetat	ion Cove	r Type (N	MBSS)
V	Natural Channel	Shape	;	Width: 2					Silts	Sa	nds		✓ N	Iuck	RB: Fore		<i>U</i> <u>1</u> \	/
	Artificial (man-m	ade)		Depth: 2-	-10"				Cobbles	Gı	rave	:1		Other:				
✓	Manipulated (ma	n-alte	red)	Bank Erc	sion/stab	oility:			Bedrock	✓ Co	oncr	ete						
	Other:			Stable														
Not	$\it es$: Flows through $\it c\iota$	ılvert u	ınder Fashi	on Way to V	/inters Rui	n. Flow goes	under cor	ncret	te apron at c	utfall befo	ore re	eachin	ig Winte	rs Run.				
_	Weather/Pred	inita	tion Cond	litions:														
	vv cucher/11 c	_	ches of	1					Moi	thly Dr	กมอ	ht Co	onditio	n				
			n Within							CDC R					Mo	nth:	Year	r:
	ring Field Visit	Las	st Week	http://v	www.ncd	c.noaa.go	v/temp-a	nd-			_			ıdex.ph	<u>a</u> Apr	il	201	7
0	No rain	0	0-0.5	0	0	0	0		0	0	(\supset	0	0	0	0	0	0
0	Light rain	0	0.5-1	-6	-5	-4	-3		-2	-1		0	1	2	3	4	5	6
0	Heavy Rain	0	>1	Se	vere Dro	ıght	Modera	ate 1	Drought		Nor	rmal		Mode	rately Wet	S	everely W	Vet
	Non-tidal trib	utary	y has: (ch	eck all tha	t apply;	include ph	otos for	eaci	h & list ph	oto #)								
	Bed and Banks							(Ordinary I	0			k					
	Yes					d on the ba	ank		Sedimen		ion				liment sorti	ng		
Ш	No	ᆜ		in the cha	aracter of	soil		✓	Water sta			, , , ,		Sco				
			Shelving						Presence				-		served/pred			
						ent, or abso	ent		Destruct				eg.		rupt change	in plant	communi	ty
		Ļ		er disturbe				\bigsqcup_{Δ}	Presence		K l11	ne			ner:			
	Tidal tributai	•		all that ap	ply; incli							_			. 1.01	4 •	4 0	
			de Line				0		Mark indi	cated by	7:	_	1 .		emical Ch	aracteris	tics	
	Oil or scum line a				<u> </u>		to availa		aatum			╠		r is clear				
	Fine shell or debi				<u> </u>		al markin		ongo in to	200		╬		r is disco	norea			
	Physical marking Tidal gauges	s/cnai	acteristic	8	Vegetation lines/changes in types Oily film Other:													
Not	es.																	

Project/Site: I-95 5th Lane Widening	City/Co	unty: Harford County		Sampling Date: <u>5/18/2017</u>
Applicant/Owner: MDTA			State: MD	Sampling Point: GG-WET
Investigator(s): ET/MRS	Section	ı, Township, Range:		
Landform (hillslope, terrace, etc.): Depression	Local relie	f (concave, convex, nor	ie): Concave	Slope (%): <u>0</u>
Subregion (LRR or MLRA): LRR S; MLRA 148	Lat: <u>39.44617</u>	Long: <u>-^{76.33}</u>	352	Datum: WGS84
Soil Map Unit Name: KpB			NWI classifi	cation: PFO
Are climatic / hydrologic conditions on the site Are Vegetation, Soil, or Hydro Are Vegetation, Soil, or Hydro SUMMARY OF FINDINGS – Attach	ogy significantly disturbe	ed? Are "Normal ic? (If needed, e	If no, explain in F Circumstances" xplain any answe ns, transects	present? Yes V No No No Remarks.)
Hydrophytic Vegetation Present? Ye Hydric Soil Present? Ye Wetland Hydrology Present? Ye Remarks:	s O No O	Is the Sampled Area within a Wetland?	Yes_	No No
Depressional wetland in forest. Spa	se vegetation. 456-457. C	Continues as linear	feature to Wa	iters HH.
HYDROLOGY				
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requir ✓ Surface Water (A1) ✓ High Water Table (A2) ✓ Saturation (A3) ✓ Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) ✓ Water-Stained Leaves (B9) Aquatic Fauna (B13)	True Aquatic Plants (B Hydrogen Sulfide Odor Oxidized Rhizospheres Presence of Reduced I Recent Iron Reduction Thin Muck Surface (C7 Other (Explain in Remains)	(C1) s on Living Roots (C3) lron (C4) in Tilled Soils (C6)	Surface Soil Sparsely Ve Drainage Pa Moss Trim L Dry-Season Crayfish But Saturation V Stunted or S Geomorphic Shallow Aqu	Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) Position (D2) uitard (D3) aphic Relief (D4)
Water Table Present? Saturation Present? (includes capillary fringe)	Depth (inches): 2 Depth (inches): 0 Depth (inches): 0			nt? Yes No No
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previ	ous inspections), if ava	lable:	
Remarks:				

VEGETATION (Five Strata) – Use scientific names of plants.

/EGETATION (Five Strata) – Use scientific na	ames of p	olants.		Sampling Point: GG-WET	Γ
	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>5x15'</u>)		Species?	<u>Status</u>	Number of Dominant Species	
1. Nyssa sylvatica		_yes	FAC	That Are OBL, FACW, or FAC: 4	(A)
2. Liquidambar styraciflua	_15	<u>no</u>	FAC	Total Number of Dominant	
3				1	(B)
4				Percent of Dominant Species	
5					(A/B)
6					. ,
	80	= Total Cov	er	Prevalence Index worksheet:	
50% of total cover: 40.0	20% of	total cover:	16.0	Total % Cover of: Multiply by:	
Sapling Stratum (Plot size: 5x15')				OBL species x 1 = 0	_
1				FACW species x 2 = 0	_
2				FAC species x 3 = 0	_
3				FACU species $\times 4 = \frac{0}{2}$	_
4				UPL species x 5 = 0	_
				Column Totals: (A) 0	_ (B)
5 6.				Prevalence Index = B/A =	
0	0 :	= Total Cov			_
				Hydrophytic Vegetation Indicators:	
50% of total cover: <u>0.0</u>	20% of	total cover:	0.0	1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%	
Shrub Stratum (Plot size: 5x15')				1 = .	
1				3 - Prevalence Index is ≤3.0¹	
2				4 - Morphological Adaptations ¹ (Provide supp data in Remarks or on a separate sheet)	oorting
3				Problematic Hydrophytic Vegetation¹ (Explain	n)
4				resistance rijuroprijus regetation (Explan	•••
5				¹ Indicators of hydric soil and wetland hydrology m	nuet
6				be present, unless disturbed or problematic.	iust
	:	= Total Cov	er	Definitions of Five Vegetation Strata:	
50% of total cover: 0.0	20% of	total cover:	0.0		
Herb Stratum (Plot size: 5x15')				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3	in
1. Toxicodendron radicans	5	_yes	FAC	(7.6 cm) or larger in diameter at breast height (DE	 ЗН).
2. Carex scoparia	5	yes	FACW	Sapling – Woody plants, excluding woody vines,	
3. Smilax rotundifolia	5	yes	FAC	approximately 20 ft (6 m) or more in height and le	
4.				than 3 in. (7.6 cm) DBH.	
5				Shrub – Woody plants, excluding woody vines,	
6				approximately 3 to 20 ft (1 to 6 m) in height.	
7				Herb – All herbaceous (non-woody) plants, include	dina
8				herbaceous vines, regardless of size, and woody	
9.				plants, except woody vines, less than approximate	ely 3
10				ft (1 m) in height.	
11				Woody vine – All woody vines, regardless of height	ght.
		= Total Cov	or.		
7.5					
50% of total cover: 7.5	20% of	total cover:	3.0		
Woody Vine Stratum (Plot size: 5x15')					
1					
2					
3					
4					
5				Hydrophytic	
	0 :	= Total Cov	er	Vegetation	
50% of total cover: <u>0.0</u>	20% of	total cover:	0.0	Present? Yes No No	
Remarks: (Include photo numbers here or on a separate s	heet.)			-1	
•	•				

Sampling Point: GG-WET

Profile Desc	ription: (Describe	to the de	oth needed to docur	ment the	indicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redo	x Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-5	7.5YR 4/1	90	7.5YR 3/4	10	C	_PL	Silt loam	
5-12	7.5YR 5/1	75	7.5YR 3/4	25	<u>C</u>	PL_	Silt loam	Concentration in matrix as well
					. ———			
1- 0.0							21 11 5	
Type: C=Co		letion, RM	=Reduced Matrix, M	S=Maske	d Sand Gra	ains.		L=Pore Lining, M=Matrix. ators for Problematic Hydric Soils ³ :
Histosol			☐ Dark Surface	(\$7)				cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		ace (S8) (N	ILRA 147.		Coast Prairie Redox (A16)
Black Hi			Thin Dark Su					(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye	•	, .	, ,	Д₽	Piedmont Floodplain Soils (F19)
Stratified	Layers (A5)		Depleted Ma	trix (F3)				(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark	•	,			ery Shallow Dark Surface (TF12)
	Below Dark Surfac	e (A11)	Depleted Da					Other (Explain in Remarks)
	ark Surface (A12)	DD N	Redox Depre			DD N		
	lucky Mineral (S1) (I \ 147, 148)	LKK N,	∐ Iron-Mangan MLRA 13		ses (F12) (LKK N,		
	leyed Matrix (S4)		Umbric Surfa		(MLRA 13	6. 122)	³ Ind	licators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo		-			etland hydrology must be present,
	Matrix (S6)		Red Parent I	•	, ,	•	•	less disturbed or problematic.
Restrictive I	ayer (if observed)	:						
Туре:								
	ches):						Hydric Soil	Present? Yes No No
Remarks:								

SOIL

Project/Site: I-95 5th Lane Widening	City/County: Harford County		_ Sampling Date: <u>5/18/2017</u>
Applicant/Owner: MDTA		State: MD	Sampling Point: GG-UPL
Investigator(s): ET/MRS	Section, Township, Range:		
Landform (hillslope, terrace, etc.): Forest	Local relief (concave, convex, non-	e): None	Slope (%): <u>0</u>
Subregion (LRR or MLRA): LRR S; MLRA 148 Lat: 39.44621	Long: <u>-^{76.333}</u>	348	Datum: WGS84
Soil Map Unit Name: KpB		NWI classif	ication: N/A
	antly disturbed? Are "Normal or y problematic? (If needed, ex		present? Yes No ers in Remarks.)
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Yes O No C Yes O No C	within a Wetland?	Yes	No No
LIVEROLOGY			
HYDROLOGY Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that ap Surface Water (A1) High Water Table (A2) Hydrogen Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13)		Surface Soil Sparsely Ve Drainage Po Moss Trim I Dry-Seasor Crayfish Bu Saturation V Geomorphic Shallow Aqu	water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4)
Water Table Present? Saturation Present? (includes capillary fringe) Yes No Depth (includes No Depth (includes No	,	ydrology Prese	nt? Yes No No
Describe Recorded Data (stream gauge, monitoring well, aerial p	hotos, previous inspections), if avail	lable:	
Remarks:			

VEGETATION (Five Strata) – Use scientific names of plants.

201-		Absolute	Dominant		Dominance Test worksheet:	
Tree Stratum (Plot size: 20'r)		Species?		Number of Dominant Species	
1. Acer rubrum			_yes	FAC	That Are OBL, FACW, or FAC: 3	(A)
2. Liquidambar styraciflua			<u>no</u>	FAC	Total Number of Dominant	
3						(B)
4						
5					Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0	(A/B)
6					That Ale OBE, I AOW, OI I AO.	,700)
<u> </u>			Total Cov		Prevalence Index worksheet:	
					Total % Cover of: Multiply by:	
	50% of total cover: <u>37.5</u>	20% of	total cover:	15.0	OBL species x 1 = 0	
Sapling Stratum (Plot size: 20'r)				FACW species x 2 = 0	•
1. Ulmus americana		15	yes	FACW	FAC species x 3 = 0	•
2					FACU species x 4 = 0	•
3						•
4					UPL species x 5 = 0	
5					Column Totals: (A) 0	(B)
					Dravalance Index = D/A =	
6		15			Prevalence Index = B/A =	
		<u>15</u> :	= Total Cov	er	Hydrophytic Vegetation Indicators:	
	50% of total cover: <u>7.5</u>	20% of	total cover:	3.0	1 - Rapid Test for Hydrophytic Vegetation	
Shrub Stratum (Plot size: 20'r)				2 - Dominance Test is >50%	
- u.a		5	yes	FACU	☐ 3 - Prevalence Index is ≤3.0 ¹	
2					4 - Morphological Adaptations (Provide suppo	orting
					data in Remarks or on a separate sheet)	
3					Problematic Hydrophytic Vegetation¹ (Explain))
4						
5					¹Indicators of hydric soil and wetland hydrology mu	ıst
6					be present, unless disturbed or problematic.	
			= Total Cov	er	Definitions of Five Vegetation Strata:	
	50% of total cover: 0.0	20% of	total cover:	0.0		
Herb Stratum (Plot size: 20'r)				Tree – Woody plants, excluding woody vines,	
Toxicodendron radicans	/	5	no	FAC	approximately 20 ft (6 m) or more in height and 3 ii (7.6 cm) or larger in diameter at breast height (DBI	
Parthenocissus quinquefolia				FACU	(**************************************	-7-
			<u>yes</u>		Sapling – Woody plants, excluding woody vines,	
3. Lonicera japonica		3	<u>no</u>	FACU	approximately 20 ft (6 m) or more in height and les than 3 in. (7.6 cm) DBH.	S
4. Geranium sp.		_2	<u>no</u>		and o m. (7.0 om) BBH.	
5. Microstegium vimineum		10	_yes	FAC	Shrub – Woody plants, excluding woody vines,	
6					approximately 3 to 20 ft (1 to 6 m) in height.	
7					Herb – All herbaceous (non-woody) plants, includi	na
8					herbaceous vines, regardless of size, and woody	
9					plants, except woody vines, less than approximate	ly 3
					ft (1 m) in height.	
10					Woody vine – All woody vines, regardless of heigh	ht.
11						
		30 :	= Total Cov	er		
	50% of total cover: 15.0	20% of	total cover:	6.0		
Woody Vine Stratum (Plot size:	20'r)					
		5	ves	FACU		
_						
3						
4						
5					Hydrophytic	
		5 :	= Total Cov	er		
	50% of total cover: 2.5	20% of	total cover	1.0	Present? Yes No No	
Remarks: (Include photo numbe						
No evidence of hydrology,	•		calculated	d.		

Sampling Point: GG-UPL

Sampling Point: GG-UPL

SOIL

Profile Desc	ription: (Describe	to the dep	th needed to docur	nent the i	indicator	or confirm	the absence of i	ndicators.)
Depth	Matrix			x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-4	10YR 4/2	100					Silt loam_	
4-8	10YR 4/1	95	10YR 4/6	5	С	_M	Silt loam	
8-12	10YR 5/2	60	10YR 5/6	40	С	М	Silt loam	
			-					
								_
	-						·	
1							2	
		letion, RM	=Reduced Matrix, MS	S=Masked	d Sand Gra	ains.		ore Lining, M=Matrix. s for Problematic Hydric Soils³:
Hydric Soil I			Davis Confess	(07)			_	-
Histosol	(A1) pipedon (A2)		Dark Surface Polyvalue Be		00 (88) /	II DA 147		Muck (A10) (MLRA 147) t Prairie Redox (A16)
Black His			Thin Dark Su					LRA 147, 148)
_	n Sulfide (A4)		Loamy Gleye			47, 140 <i>)</i>	_ `	nont Floodplain Soils (F19)
= ' '	Layers (A5)		Depleted Ma		/			LRA 136, 147)
	ck (A10) (LRR N)		Redox Dark	, ,	- 6)			Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (A11)	Depleted Da		,			(Explain in Remarks)
	ark Surface (A12)		Redox Depre	essions (F	8)			
	lucky Mineral (S1) (I	₋RR N,	☐ Iron-Mangan		es (F12) (LRR N,		
	A 147, 148)		MLRA 13	-			2	
	leyed Matrix (S4)		Umbric Surfa					ors of hydrophytic vegetation and
	edox (S5)		Piedmont Flo	-		•	,	d hydrology must be present,
	Matrix (S6) -ayer (if observed):		Red Parent N	viateriai (F	(IVILR	A 127, 147	r) uniess	disturbed or problematic.
	-ayer (ii observeu).	•						
Type:	shoe):						Hydric Soil Pre	sent? Yes No No
Depth (inc							Hydric Soli Fre	sent: TesNo
Remarks:								

Pro	ject: I-95 5th Lane W	denina				,,	uters of	CIIC	. C.S. Dat	Featu	ire	ID:	: HH				Stre	am Orde	r: 1		
	te: 5/18/2017	<u></u>				State: MD				Photo							50100		2		
	ew: ET/MRS					County:								ber: ∺		3		Month: Year: April 2017 O O O O O 3 4 5 6 y Wet Severely Wet and wetland GG cont wetland jacent or abutting upstream Wegetation Cover Type (MBSS) Forest Month: Year: April 2017 O O O O 3 4 5 6 y Wet Severely Wet			
	Feature Hydr	ologi	c Class (cl	heck one)	:	v					•	0						phemeral plands Feature ing wetland GG ent wetland jacent or abutting upstream tting: None Vegetation Cover Type (MBSS) Forest Forest Month: Year: April 2017 O O O O 3 4 5 6			
	Tidal				ennial			In	termittent								Epheme	ral			
	TNW (Subject to	ebb a	and 7	TNW – Pe	rennial		RPV	W –	Seasonal	(must	10	<u> </u>	No	n-RPW	/ drai	ining	uplands	hemeral ands eature g wetlandGG nt wetland ecent or abutting upstream egetation Cover Type (MBSS) Forest Month: Year: April 2017 O O O C 3 4 5 6 Wet Severely Wet t sorting d/predicted flow events			
\sim	flow)			(Flowing :		d)	• flov	v at	least 3 mo	nths a							feature	Plands Peature Ing wetland GG Pent wetland Placent or abutting upstream Pegetation Cover Type (MBSS) Personal Forest Month: Year:			
			L)	RPW – Pe			year	r)			0										
			\sim	Flowing :	ear roun	d)						_									
	scribe rational hydrologic class:	Dra	ins wetla	nd GG.	Some s	tanding v	vater ob	ose	rved.			_		n-RPW tside o				or abuttin	g upstrear	n	
Ну	drologic Connecti	vity –	Upstr	eam: Wetla	nd GG		Dov	wns	tream: Wat	ers M	•			A	djace	ent/Al	butting: N	one			
	Feature Desc	rinti	on: (check	all that a	nnlv)		<u> </u>							•	_						
			vith respe				T			Substra	ate						Vegetati	ion Cove	r Type (N	MBSS)	
V	Natural Channel	<u> </u>		Width: 1-				✓	Silts		nds			M	luck	R				//	
	Artificial (man-m	ade)		Depth: 3'					Cobbles	✓ Gr	ave	el		<u> </u>	ther:			.			
	Manipulated (ma	n-alte		Bank Erc				∠	Bedrock	Co	oncr	rete	;								
	Other:			Upper sta	able, low	er incised	Side	slo	pe: 🗹 ≥1:	1 🗸 2:1	[·	✓ 3	3:1	≤4	:1		B: Fore	st			
Not	^{tes:} Upper reach	stal	ble. Incis	ed mid s	ection.	Drains o	ver bed	roc	k to Wat	ers M											
	Weather/Pred	cipita	tion Cond	itions:																	
	.,,	_	ches of						Mo	nthly Dr	oug	ght	Co	nditio	n						
			n Within							NCDC R							Mo	nth:	Year	r:	
Du	ring Field Visit		st Week	http://v	ww.ncd	c.noaa.gov	//temp-a	nd-	-precip/cli	matologi	ical	l-ra	ınk	ings/in	dex.	php	Apr	il	201	7	
0	No rain	0	0-0.5	0	0	0	0		0	0		\supset		0	\circ		0	0		0	
0	Light rain	0	0.5-1	-6	-5	-4	-3		-2	-1		0		1	2						
0	Heavy Rain	0	>1	Ser	ere Drou	ıght	Modera	ate :	Drought]	Noı	rma	ıl		Mo	derat	ely Wet	S	everely W	Vet	
	Non-tidal trib	utar	y has: (<i>che</i>	eck all tha	t apply; t	include ph	otos for d	eac	h & list ph	oto #)											
]	Bed and Banks							(Ordinary 1	High Wa	iter	· Ma	ark								
$oxed{oxed}$	Yes					d on the ba	ınk			t deposit	ion	l						ng			
Ш	No	╙		in the cha	racter of	soil		✓	Water st						_	Scour					
			Shelving						4	of flood					_						
		✓				ent, or abse	ent	<u> </u>		ion of ter			l ve	eg.	_			in plant	communit	ty	
		,		er disturbe	-		<i>C</i> 1	_	4	of wracl	k l11	ne		ļ		Other	••				
	Tidal tributa	•		ill that ap	oly; inclu							_				CI	. 1.01	, .	4.0		
			de Line		<u> </u> _		0		Mark indi	cated by	7:	_	_	TT /			nical Cha	aracteris	tics		
₽	Oil or scum line				— <u> </u> -		to availa		aatum			╬	╣	Water			wad				
H	Fine shell or debra Physical marking		,		╌╠		ıl markin		anges in ty	mag		╬	╣	Water Oily f		scolo	nea				
₩	<u> </u>	,s/cna	racteristics	5		_ vegeta	non imes	s/CI1	anges in ty	pes		╠	╣								
N_{C}												_		Ontel	•						
Ļ	Tidal gauges													Other	:						
Not	res:																				

Pro	ject: I-95 5th Lane Wi	denina					uters of		. C.S. Dat	_		e ID:	II			Stre	am Orde	r:	
	e: 5/18/2017	<u></u>				State: MD	1					: 463-4				2.22	014.		
	w: ET/MRS					County:				La	st F	lag Nu	umb	er: 11-3	A&B				
	Feature Hydr	ologi	c Class (cl	neck one)	:					_									
	Tidal			Per	ennial			In	termittent							Epheme	ral		
	TNW (Subject to	ebb a	and 7	ΓNW – Pe	rennial		RP	W –	Seasonal	(must	,	0 1	Non-	-RPW	draini	ng uplands			
\sim	flow)			Flowing :		d)	oflow	v at	least 3 mo	onths a	a					nal feature			
			k /	RPW – Pe			yea	r)								butting wetl			
			$\mathcal{O}_{\mathcal{O}}$	Flowing :	year roun	d)							Non-	-RPW	with a	djacent wet	land		
	cribe rational hydrologic class:	No 1	flow obse	erved. De	eep inci	sion indi	cates st	torr	n flow			_			wetlar study	nd adjacent o area)	or abuttin	g upstrear	m
Нус	lrologic Connectiv	vity –	Upstr	eam: Outsi	de of study	area	Dov	wns	tream: Wat	ers J				Ac	ljacent	/Abutting: N	lone		
	Feature Desc	riptio	on: (check	all that a	pply)									•					
		_	vith respec							Sub	stra	te				Vegetat	ion Cove	r Type (N	MBSS)
V	Natural Channel	Shape		Width: 12	2'			∠	Silts	V	San	ds		M	uck	RB: Fore	st		,
	Artificial (man-m	ade)		Depth: 6'				∠	Cobbles	~	Gra	vel	T	Ot	her:				
	Manipulated (mar	n-alte		Bank Erc		oility:			Bedrock		Cor	crete							
	Other:			Highly ur	ıstable		Side	slo	pe: 🗹 ≥1:	1	2:1	<u></u> 3	:1 [<u></u> ≤4:	1	LB: Fore	st		
Not	$^{\it es:}$ Deeply incis	ed. l	Jnstable	banks															
	Weather/Pred	ipita	tion Cond	itions:															
		In	ches of						Mo	nthly	Dro	ught (Con	dition	1				
			n Within									giona					nth:	Year	
	ring Field Visit		st Week		_	c.noaa.go		nd-	precip/cli	_	logic	al-ra	_	_	dex.ph	_		201	_
0	No rain	0	0-0.5	0	0	0	<u> </u>		0	0		0	(0	0	0	0	0	0
0	Light rain	Ó	0.5-1	-6	-5	-4	-3		-2	-1		0		1	2	3	4	5	6
0	Heavy Rain	O	>1	Sev	ere Dro	ight	Modera	ate.	Drought		N	lormal	l		Mode	rately Wet	S	everely W	Vet
_	Non-tidal trib	utar	y has: (<i>che</i>	eck all tha	t apply;	include ph	otos for												
	Bed and Banks	<u> </u>	1					(Ordinary 1				ırk						
	Yes	╙				d on the ba	ınk	_	Sedimen			on		<u> </u>		diment sorti	ng		
Ш	No	╠		in the cha	racter of	soil		Ļ	Water st							our			
			Shelving					<u> </u>	Presence							served/pred			
		¥				ent, or abse	ent	Ý					veg	5. L	_	rupt change	in plant	communi	ty
	(D) 1 1 4 1 4	<u> </u>		r disturbe		1 1 .	<i>c</i> 1	✓	Presence		rack	line		L		her:			
	Tidal tributar	_		ill that ap	oly; incli						1							4.0	
			de Line	-4-:	I Ir		0		Mark indi	cated	by:	_	—	X 7 - 4		nemical Ch	aracteris	tics	
	Oil or scum line a						to availa		aatum			 -			is clear				
	Fine shell or debr Physical marking				<u> </u>		al markin		anges in ty	mac		╌╠╴	_	water Dily fi	is disc	otorea			
	Tidal gauges	5/ CHa	1 actor Istics	•		vegeta	non imes	s/ C11	anges in ty	pes		╠	_	Other:					
Not														Juici.					
/VOI	es:																		

Pro	ject: I-95 5th Lane W	denina				<u> </u>	, acces of	·	c C.S. Dat	Featu	ıre	ID:	.1.1			Stre	am Orde	r: 1		
	te: 5/18/2017	doming				State: ME)			Photo						- J Stre	um oru	×1 • ·		
	ew: ET/MRS					County:				Last				ber: JJ-	3A&B					
	Feature Hydr	ologi	c Class (cl	neck one)	:	J						0					feature Ing wetland KK ent wetland Ijacent or abutting upstream) Itting: Wetland LL Vegetation Cover Type (MBSS) E: Forest Month: Year:			
	Tidal				ennial			In	termittent							Epheme	eral			
\bigcirc	TNW (Subject to	ebb a	and 7	ΓNW – Pe	erennial		RP'	W -	- Seasonal	(must	10	\overline{C}	Non	-RPW	drain	ing uplands				
\smile	flow)		N. /	Flowing :	year roun	id)	\smile flow	<i>x</i> at	least 3 mo	onths a						onal feature				
				RPW – Pe	rennial		yea	r)				í C	Non	-RPW	with	abutting wet	landKK			
			\mathcal{C}	Flowing :	year roun	id)					(1 C	Non	-RPW	with	adjacent wet	land			
	scribe rational hydrologic class:	No flo	ow observed.	Deep incision	on indicates	s storm flow.	Receives h	nydro	ology from W	etland KK.		_				and adjacent of area)	or abuttir	ıg upstrear	n	
Hye	drologic Connecti	vity –	Upstr	eam: Wetla	and KK		Dov	wns	tream: Wat	ers J	•			A	djacen	nt/Abutting: w	Vetland LL			
	Feature Desc	rinti	on• (check	all that a	nnlv)											-				
		_	vith respec							Substr	ate					Vegetat	tion Cove	er Type (N	ABSS)	
	Natural Channel	<u> </u>		Width: 12				✓	Silts		nds			M	uck					
	Artificial (man-m			Depth: 6'	I				Cobbles		rave			_	ther:	7 ' ' ' '	.01			
	Manipulated (ma	n-alte	ered)	Bank Erc	sion/stab	oility:			Bedrock	Co	onci	rete								
	Other:			Highly ur	stable		Side	slo	pe: 🗸 ≥1:	1 2:1	1 [3	:1	<u></u> ≤4:	1	LB: Fore	est			
Not	es: Deeply incis	ed. l	Unstable	banks			<u> </u>									1				
	Weather/Pred																			
	vv cuciici/i i c		ches of						Mo	nthly Dr	ous	ght (Cor	ditior	<u> </u>					
			n Within							NCDC R					_	Mo	nth:	Year	r :	
Du	ring Field Visit		st Week	http://v	www.ncd	c.noaa.go	v/temp-a	ınd-	-precip/cli						dex.p	<mark>hp</mark> Apı	ril	201	7	
0	No rain	0	0-0.5	0	0	0	0		0	0	(0		0	0	0	0	0	0	
0	Light rain	0	0.5-1	-6	-5	-4	-3		-2	-1		0		1	2	3	4	5	6	
0	Heavy Rain	0	>1	Ser	vere Droi	ıght	Moder	ate	Drought		No	rmal	1		Mod	lerately Wet	5	Severely W	/et	
	Non-tidal trib	utar	y has: (<i>che</i>	ck all tha	t apply;	include ph	otos for	eac	h & list ph	oto #)										
	Bed and Banks							(Ordinary 1	High Wa	iter	·Ma	ark							
V	Yes					d on the b	ank		Sedimer	t deposit	tion	l			S	ediment sort	ing			
	No			in the cha	racter of	soil			Water st					L		cour				
			Shelving					✓	1 1000110							bserved/pred				
		✓				ent, or abs	ent	<u> </u>	Destruct				lve	g. L	_	brupt change	e in plant	communi	ty	
			4	r disturbe				✓	Presence		k li	ne		L	C	Other:				
	Tidal tributa	•		ll that ap	ply; incli															
			de Line				0		Mark indi	cated by	7 .					Chemical Ch	aracteris	stics		
\square	Oil or scum line				_		to availa		datum			-	=	Water						
	Fine shell or debi				<u> </u>		al markin		•			-	_			colored				
H	Physical marking	s/cha	racteristics	<u> </u>	<u> </u> L	Vegeta	tion lines	s/ch	anges in ty	pes		⊫	=	Oily fi						
لپا	Tidal gauges													Other:						
Not	es:																			

Project/Site: I-95 5th Lane Widening	City/County: Harford County	Sampling Date: <u>5/23/2017</u>
Applicant/Owner: MDTA		State: MD Sampling Point: KK-WET
Investigator(s): ET/MRS	Section, Township, Range:	
Landform (hillslope, terrace, etc.): Slight depression	Local relief (concave, convex, none	e): <u>Concave</u> Slope (%): <u>0</u>
Subregion (LRR or MLRA): LRR S; MLRA 148 Lat: 39.445	506 Long: <u>-76.336</u>	Datum: WGS84
Soil Map Unit Name: KpB		NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this	time of year? Yes No (l	f no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology sig	gnificantly disturbed? Are "Normal 0	Circumstances" present? Yes 🚩 No 🛄
Are Vegetation, Soil, or Hydrology na	turally problematic? (If needed, ex	plain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map s	howing sampling point location	ns, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes O No	within a Wetland?	Yes No No
Wetland Hydrology Present? Yes ONO Remarks:		
Small depressional wetland between ROW Fend	se and roadway embankment. Co	insists of two calls linked by sheet flow
over uplands. South cell conveys sheet flow to E	-	-
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all the	ī	Surface Soil Cracks (B6)
	Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
	· · · · · · · · · · · · · · · · · · ·	✓ Drainage Patterns (B10)
	zed Rhizospheres on Living Roots (C3)	Moss Trim Lines (B16)
	ence of Reduced Iron (C4)	Dry-Season Water Table (C2)
	nt Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
	Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
	· (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	· · ·	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Ī	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Ī	Microtopographic Relief (D4)
Aquatic Fauna (B13)	J	FAC-Neutral Test (D5)
Field Observations:		· ·
Surface Water Present? Yes No Dept	:h (inches):	
Water Table Present? Yes No Dept	:h (inches):	
		ydrology Present? Yes ONO
(includes capillary fringe)	· /	
Describe Recorded Data (stream gauge, monitoring well, ac	erial photos, previous inspections), if avail	able:
Remarks:		
Tremaine.		

VEGETATION (Five Strata) – Use scientific names of plants.

/EGETATION (Five Strata) – Use scientific na	ames of	plants.		Sampling Point: KK-WE	Γ
	Absolute			Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: 10'x20')		Species?	<u>Status</u>	Number of Dominant Species	
1. Fraxinus pennsylvanica	20	_yes	FACW	That Are OBL, FACW, or FAC: 7	(A)
2				Total Number of Dominant	
3				Species Across All Strata: 8	(B)
4				Percent of Dominant Species	
5				That Are OBL, FACW, or FAC: 87.5	(A/B)
6					
	20	= Total Cov	er	Prevalence Index worksheet:	
50% of total cover: <u>10.0</u>	20% of	total cover:	4.0	Total % Cover of: Multiply by:	
Sapling Stratum (Plot size: 10'x20')		,		OBL species x 1 = 0	_
1. Acer rubrum	10	yes	FAC	FACW species x 2 = 0	_
2 Liquidambar styraciflua	10	yes	FAC	FAC species $x 3 = 0$	_
o Ouerous poluetris	10	yes	FACW	FACU species x 4 = 0	_
		100		UPL species x 5 = 0	_
4				Column Totals: (A) 0	_ (B)
5				Book and the BM	
6				Prevalence Index = B/A =	_
	30	= Total Cov	er	Hydrophytic Vegetation Indicators:	
50% of total cover: <u>15.0</u>	20% of	total cover:	6.0	1 - Rapid Test for Hydrophytic Vegetation	
Shrub Stratum (Plot size: 10'x20')				2 - Dominance Test is >50%	
1. Fraxinus pennsylvanica	10	yes	FACW	3 - Prevalence Index is ≤3.0 ¹	
2				. 4 - Morphological Adaptations (Provide sup	porting
3				data in Remarks or on a separate sheet)	>
4				Problematic Hydrophytic Vegetation¹ (Explain	n)
5				1	
6.				¹ Indicators of hydric soil and wetland hydrology r be present, unless disturbed or problematic.	nust
		= Total Cov	er	Definitions of Five Vegetation Strata:	
50% of total cover: 0.0				Definitions of Five Vegetation Strata.	
	20% 01	total cover.		Tree – Woody plants, excluding woody vines,	
Herb Stratum (Plot size: 10'x20') 1 Carex vulpinoidea	10	yes	OBL	approximately 20 ft (6 m) or more in height and 3 (7.6 cm) or larger in diameter at breast height (D	
2. Juncus tenuis	5		FAC		•
	5	yes	FACU	Sapling – Woody plants, excluding woody vines	
3. Lonicera japonica		yes		approximately 20 ft (6 m) or more in height and le than 3 in. (7.6 cm) DBH.	288
4. Toxicodendron radicans		<u>no</u>	FAC	· · · ·	
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
6				approximately 0 to 20 ft (1 to 0 fil) in neight.	
7				Herb – All herbaceous (non-woody) plants, inclu herbaceous vines, regardless of size, and woody	
8				plants, except woody vines, less than approxima	
9				ft (1 m) in height.	,
10				Woody vine – All woody vines, regardless of he	aht
11				Woody vine – All woody vines, regardless of he	grit.
	23	= Total Cov	er		
50% of total cover: 11.5	20% of	total cover:	4.6		
Woody Vine Stratum (Plot size: 10'x20')					
1					
2					
3					
4					
5				Hydrophytic	
	·	= Total Cov		Vegetation Present? Yes No	
50% of total cover: 0.0	20% of	total cover:	0.0	Tresent: TesNO	
Remarks: (Include photo numbers here or on a separate s	heet.)				

SOIL Sampling Point: KK-WET

Profile Desc	ription: (Describe	to the dep	th needed to docur	nent the i	indicator	or confirm	the absence	of indicators.)
Depth	Matrix			x Feature				
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-3	10YR 4/2	100					<u>Loam</u>	
3-13	2.5Y 5/2	60	10YR 5/6	40	С	M	Silt loam	
					-			
1							21 11 12	
		letion, RM	=Reduced Matrix, MS	S=Masked	Sand Gra	ains.		L=Pore Lining, M=Matrix.
Hydric Soil I				(07)				ators for Problematic Hydric Soils ³ :
Histosol	• •		Dark Surface		(00) (5			cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be				148) <u> </u>	coast Prairie Redox (A16)
Black Hi			Thin Dark Su			47, 148)		(MLRA 147, 148)
= ' '	n Sulfide (A4)		Loamy Gleye		(F2)		шР	iedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Ma		-6)			(MLRA 136, 147) ery Shallow Dark Surface (TF12)
	ick (A10) (LRR N) d Below Dark Surfac	o (A11)	Depleted Da					ery Shallow Dark Surface (1712) Other (Explain in Remarks)
	ark Surface (A12)	e (ATT)	Redox Depre				<u> </u>	mier (Explain in Remarks)
=	lucky Mineral (S1) (L	RR N	Iron-Mangan		,	I RR N		
	147, 148)	-1414 14,	MLRA 13		00 (1 12) (
	leyed Matrix (S4)		☐ Umbric Surfa	•	(MLRA 13	6. 122)	³ Ind	icators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo					etland hydrology must be present,
	Matrix (S6)		Red Parent N	•		•	•	less disturbed or problematic.
	_ayer (if observed):			(-	/ (, , , , , , , , , , , , , , , , , , , ,	<u> </u>	
Type:	,							
Depth (inc	thes):						Hydric Soil	Present? Yes No No
Remarks:								
Kemarks.								

Project/Site: I-95 5th Lane Widening	City/County: Harford County		Sampling Date: <u>5/23/2017</u>
Applicant/Owner: MDTA		State: MD	Sampling Point: KK-UPL
Investigator(s): ET/MRS	Section, Township, Range:		
Landform (hillslope, terrace, etc.): Top of embankment	Local relief (concave, convex, none)): <u>None</u>	Slope (%): 0
Subregion (LRR or MLRA): LRR S; MLRA 148 Lat: 39.44495	Long: <u>-76.3363</u>	85	Datum: WGS84
Soil Map Unit Name: KpB		_ NWI classifica	tion: N/A
	tly disturbed? Are "Normal C problematic? (If needed, exp	no, explain in Re ircumstances" pr plain any answers s, transects,	esent? Yes Vo No
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Yes O No O No O No O	Is the Sampled Area within a Wetland?	Yes _	No No
HYDROLOGY			
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Hydrogen St Oxidized Rh Presence of Recent Iron Thin Muck S	ry) E Plants (B14) Ulfide Odor (C1) izospheres on Living Roots (C3) Reduced Iron (C4) Reduction in Tilled Soils (C6)	Surface Soil C Sparsely Vege Drainage Patt Moss Trim Lin Dry-Season W Crayfish Burro Saturation Vis Stunted or Str Geomorphic F Shallow Aquit	etated Concave Surface (B8) erns (B10) les (B16) l/ater Table (C2) lows (C8) lible on Aerial Imagery (C9) essed Plants (D1) Position (D2) ard (D3) lobic Relief (D4)
Surface Water Present? Water Table Present? Yes No Depth (inch	es): es): es): Wetland Hyd	drology Present	? Yes No No
Describe Recorded Data (stream gauge, monitoring well, aerial ph	otos, previous inspections), if availa	ble:	
Remarks:			

VEGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: KK-UPL
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'r)	% Cover	Species?	<u>Status</u>	Number of Dominant Species
1. Acer rubrum	_15	_yes	FAC	That Are OBL, FACW, or FAC: 5 (A)
2. Liquidambar styraciflua	25	_yes	FAC	Total Number of Dominant
3				Species Across All Strata: 10 (B)
4				Barret (Barrier 10 and 1
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 (A/B)
6.				(100)
	40	= Total Cov	er	Prevalence Index worksheet:
50% of total cover: 20.0				Total % Cover of: Multiply by:
	20% 01	total cover.	0.0	OBL species x 1 = 0
Sapling Stratum (Plot size: 20'r 1. Fraxinus pennsylvanica	25	VOC	FACW	FACW species x 2 = 0
	25	yes	FAC	FAC species x 3 = 0
2. Acer rubrum	10	yes		FACU species x 4 = 0
3. Liquidambar styraciflua	_15	yes	FAC	UPL species x 5 = 0
4				Column Totals: (A) 0 (B)
5				(2)
6				Prevalence Index = B/A =
	50	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover: 25.0	20% of	total cover	10.0	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'r)	20 /0 01	total cover.	10.0	2 - Dominance Test is >50%
1 Rosa multiflora	40	VOC	FACU	☐ 3 - Prevalence Index is ≤3.0 ¹
	5	yes		4 - Morphological Adaptations ¹ (Provide supporting
2. Fraxinus pennsylvanica		<u>no</u>	FACW	data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation¹ (Explain)
4				· · · · · · · · · · · · · · · · ·
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
	45	= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover: 22.5	20% of	total cover	9.0	Bennations of the vegetation official.
001-	2070 01	total cover.		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size:) 1. Lonicera japonica	15	_yes	FACU	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Rosa multiflora	15		FACU	(1.10 stri) of target in alameter at 2.000 more (22.11).
		yes		Sapling – Woody plants, excluding woody vines,
3. Carex vulpinoidea	5	no	OBL	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4. Parthenocissus quinquefolia	10	<u>yes</u>	FACU	ulair o iii. (1.10 ciii) BBTI.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				
11				Woody vine – All woody vines, regardless of height.
	45	= Total Cov	er	
00.5				
50% of total cover: 22.5	20% of	total cover:	9.0	
Woody Vine Stratum (Plot size: 20'r)				
1. Lonicera japonica	10	_yes	FACU	
2				
3				
4				
5				Hardwards die
	10	= Total Cov	er	Hydrophytic Vegetation
50% of total cover: 5.0				Present? Yes No No
<u> </u>		total cover:		
Remarks: (Include photo numbers here or on a separate s		-11		
No evidence of hydrology or hydric soils, so PI v	vas not c	aiculated		

Sampling Point: KK-UPL

Depth	cription: (Describe Matrix	to the de	oth needed to docur	nenτ τηe x Feature		or confirm	the absence	of indicators.)
(inches)	Color (moist)	%	Color (moist)	<u> </u>	Type ¹	Loc ²	Texture	Remarks
0-3	10YR 4/2	100					Loam	
3-12	10YR 5/3	80	10YR 4/6	20		M	Silt	
	10111070		1011111110					
				-				
	_							
								-
1							2	
		pletion, RM	I=Reduced Matrix, MS	S=Maske	d Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil								ators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	. ,	(00) (1			cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be				148) <u> </u>	Coast Prairie Redox (A16)
_	istic (A3)		Thin Dark Su	•	, .	47, 148)		(MLRA 147, 148)
_ ` `	en Sulfide (A4)		Loamy Gleye		(F2)		шР	Piedmont Floodplain Soils (F19)
	d Layers (A5)		☐ Depleted Ma☐ Redox Dark	, ,	E6)			(MLRA 136, 147) 'ery Shallow Dark Surface (TF12)
	uck (A10) (LRR N) d Below Dark Surfa	00 (111)	Depleted Dark	,	,			Other (Explain in Remarks)
_	ark Surface (A12)	ce (ATT)	Redox Depre		. ,		<u> </u>	other (Explain in Remarks)
=	Aucky Mineral (S1) (I RR N	Iron-Mangan		,	I RR N		
	4 147, 148)	,	MLRA 13		(1 12) (LIXIX IV,		
_	Gleyed Matrix (S4)		Umbric Surfa	•	(MLRA 13	6. 122)	³ Ind	licators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo		-			etland hydrology must be present,
	Matrix (S6)		Red Parent N			•	•	less disturbed or problematic.
	Layer (if observed):	<u>, </u>				ĺ	
Type:		,						
Depth (in	ches):						Hydric Soil	Present? Yes No No
Remarks:								
Nemaiks.								

SOIL

Project/Site: I-95 5th Lane Widening	City/County: Harford County		Sampling Date: <u>5/23/2017</u>
Applicant/Owner: MDTA		State: MD	Sampling Point: LL-WET
Investigator(s): ET/MRS	Section, Township, Range:		
Landform (hillslope, terrace, etc.): Toe of slope	Local relief (concave, convex, nor	ne): Concave	Slope (%): 2
Subregion (LRR or MLRA): LRR S; MLRA 148 Lat: 39.4	Long: <u>-76.33</u>	373	Datum: WGS84
Soil Map Unit Name: KpB		NWI classific	cation: PEM
	significantly disturbed? Are "Normal naturally problematic? (If needed, e	(If no, explain in F I Circumstances" p explain any answe ons, transects	present? Yes No ers in Remarks.)
Hydric Soil Present? Yes O	Is the Sampled Area within a Wetland?	Yes	No No
Linear wetland at toe of roadway embankment	. Drains to Waters J. Photos 474-4	476.	
HYDROLOGY			
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Hyd Oxid President Hyd Red Thir	that apply) e Aquatic Plants (B14) frogen Sulfide Odor (C1) dized Rhizospheres on Living Roots (C3) sence of Reduced Iron (C4) cent Iron Reduction in Tilled Soils (C6) in Muck Surface (C7) er (Explain in Remarks)	Surface Soil Sparsely Ve Drainage Pa Moss Trim L Dry-Season Crayfish Bur Saturation V Stunted or S Geomorphic Shallow Aqu	getated Concave Surface (B8) interns (B10) ines (B16) Water Table (C2) rrows (C8) risible on Aerial Imagery (C9) itressed Plants (D1) Position (D2) itard (D3) aphic Relief (D4)
Water Table Present? Saturation Present? (includes capillary fringe) Yes V No De No De			nt? Yes No No
Describe Recorded Data (stream gauge, monitoring well,	aerial photos, previous inspections), if ava	ilable:	
Remarks:			

401-001	Absolute	Dominant		Dominance Test worksheet:	
Tree Stratum (Plot size: 10'x20') 1	% Cover			Number of Dominant Species That Are OBL, FACW, or FAC: 2	(A)
2					()
3				Total Number of Dominant Species Across All Strata: 2	(B)
4				Percent of Dominant Species	
5				That Are OBL, FACW, or FAC: 100.0	(A/B)
6				Durantan as Indonesia de la constanta	
	0 =	= Total Co	ver	Prevalence Index worksheet:	
50% of total cover: <u>0.0</u>	20% of	total cover	: <u>0.0</u>	Total % Cover of: Multiply by:	
Sapling Stratum (Plot size: 10'x20')				OBL species x 1 = 0	_
1				FACW species x 2 = 0	_
2				FAC species x 3 = 0	_
3				FACU species x 4 = 0	_
4				UPL species x 5 = 0	_
5				Column Totals: (A) 0	_ (B)
6				Prevalence Index = B/A =	
<u> </u>	0 =	- Total Co		Hydrophytic Vegetation Indicators:	_
				✓ 1 - Rapid Test for Hydrophytic Vegetation	
50% of total cover: <u>0.0</u>	20% of	total cover	: <u>0.0</u>		
Shrub Stratum (Plot size: 10'x20')				2 - Dominance Test is >50%	
1				☐ 3 - Prevalence Index is ≤3.0 ¹	
2				4 - Morphological Adaptations (Provide sup data in Remarks or on a separate sheet)	
3				Problematic Hydrophytic Vegetation¹ (Expla	
4				Froblematic Hydrophytic Vegetation (Expla	··· <i>)</i>
5				1 adia stana af hadria a sil and continue hadrala acc	4
6				¹ Indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic.	nust
	=	= Total Co	ver	Definitions of Five Vegetation Strata:	
50% of total cover: 0.0	20% of	total cover	0.0	Dominiono or rivo vogotation ou atai	
Herb Stratum (Plot size: 10'x20')	2070 01	total cover		Tree – Woody plants, excluding woody vines,) i
1. Typha latifolia	65	yes	OBL	approximately 20 ft (6 m) or more in height and (7.6 cm) or larger in diameter at breast height (D	
2. Carex vulpinoidea	20				, .
		VAS	OBL		
<u> </u>		yes	OBL FACW	Sapling – Woody plants, excluding woody vines	
3. Juncus effusus	10	no	FACW	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH.	
Juncus effusus Persicaria saggitata				approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH.	
3. Juncus effusus 4. Persicaria saggitata 5	10 5	no no	FACW	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines,	
3. Juncus effusus 4. Persicaria saggitata 5 6	10 5	no no	FACW	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	ess
3. Juncus effusus 4. Persicaria saggitata 5. 6. 7	10 5	no no	FACW	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, inclu	ess
3. Juncus effusus 4. Persicaria saggitata 5. 6. 7. 8.	10 5	no no	FACW	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	ess ding
3. Juncus effusus 4. Persicaria saggitata 5. 6. 7. 8. 9.	10 5	no no	FACW	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood	ess ding
3. Juncus effusus 4. Persicaria saggitata 5. 6. 7. 8.	10 5	no no	FACW	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximately (1 m) in height.	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5. 6. 7. 8. 9.	5	no no	FACW OBL	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximate.	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5	10 5	no no	FACW OBL	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximately (1 m) in height.	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5	10 5	no no = Total Co	FACW OBL	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximately (1 m) in height.	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5. 6.	10 5	no no = Total Co	FACW OBL	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximately (1 m) in height.	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5	10 5	no no = Total Cortotal cover	FACW OBL	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximately (1 m) in height.	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5. 6. 7. 8. 9. 10. 11. 50% of total cover: 50.0 Woody Vine Stratum (Plot size: 10'x20') 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	10 5	no no Total Cortotal cover	FACW OBL	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximately (1 m) in height.	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5	10 5	no no = Total Cortotal cover	FACW OBL	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximately (1 m) in height.	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5	10 5	no no = Total Cor total cover	FACW OBL	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximately (1 m) in height.	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5	10 5	no no = Total Cor total cover	FACW OBL	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximately (1 m) in height.	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5	10 5	no no Total Cortotal cover	FACW OBL	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximate (1 m) in height. Woody vine – All woody vines, regardless of height herbaceous vines, regardless of her	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5	10 5	no no Total Cover	FACW OBL Ver 20.0	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximate (1 m) in height. Woody vine – All woody vines, regardless of he	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5	10 5	no no Total Cover	FACW OBL Ver 20.0	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximate (1 m) in height. Woody vine – All woody vines, regardless of height herbaceous vines, regardless of her	ding / tely 3
3. Juncus effusus 4. Persicaria saggitata 5	10 5	no no Total Cover	FACW OBL Ver 20.0	approximately 20 ft (6 m) or more in height and than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, incluherbaceous vines, regardless of size, and wood plants, except woody vines, less than approximate (1 m) in height. Woody vine – All woody vines, regardless of height herbaceous vines, regardless of her	ding / tely 3

Sampling Point: LL-WET

Profile Desc	ription: (Describe	to the dep	th needed to docur			or confirm	the absence	of indicators.)	
Depth	Matrix		Redox Features			. 2			
(inches) 0-1	Color (moist) 7.5YR 3/1	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks	
		100	10)/5 1/0				Organic		
1-6	10YR 5/1	90	10YR 4/6	10	С	PL	Clay loam	Some inclusions of fill material	
6-10	2.5Y 4/1	85	5YR 3/4	15	<u> </u>	PL_	Clay loam		
10-14	10YR 6/3	90	10YR 4/6	10	<u>C</u>	PL_	Silt loam		
		letion, RM	=Reduced Matrix, MS	S=Masked	Sand Gra	ains.		L=Pore Lining, M=Matrix.	
Hydric Soil Indicators: Indicators for Problematic Hydric Soils ³ :									
Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)									
Histic Epipedon (A2) Polyvalue Below Surface (S8) (MLRA 147, 148) Coast Prairie Redox (A16)									
☐ Black Histic (A3) ☐ Thin Dark Surface (S9) (MLRA 147, 148) (MLRA 147, 148) ☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2) ☐ Piedmont Floodplain Soils (F19)									
☐ Stratified Layers (A5) ☐ Depleted Matrix (F2) ☐ Pledmont Floodplain Solis (F19) ☐ Stratified Layers (A5) ☐ Depleted Matrix (F3) ☐ (MLRA 136, 147)									
2 cm Muck (A10) (LRR N) Redox Dark Surface (F6) Very Shallow Dark Surface (TF12)									
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Other (Explain in Remarks)									
Thick Dark Surface (A12) Redox Depressions (F8)									
Sandy Mucky Mineral (S1) (LRR N, Iron-Manganese Masses (F12) (LRR N,									
	147, 148)		MLRA 13	•	/MI DA 42	c 400\	3 _{1 m o} l	instance of budges budges the constation and	
☐ Sandy Gleyed Matrix (S4) ☐ Umbric Surface (F13) (MLRA 136, 122) ☐ Sandy Redox (S5) ☐ Piedmont Floodplain Soils (F19) (MLRA 148)								icators of hydrophytic vegetation and tland hydrology must be present,	
							less disturbed or problematic.		
Restrictive Layer (if observed):									
Type:									
Depth (inches):							Hydric Soil Present? Yes No		
Remarks:									

Project/Site: I-95 5th Lane Widening		City/County: Harford County		Sampling Date: <u>5/23/2017</u>
Applicant/Owner: MDTA			State: MD	Sampling Point: LL-MM-UPL
Investigator(s): ET/MRS		Section, Township, Range:		
Landform (hillslope, terrace, etc.): Roadv	vay embankment Loc	cal relief (concave, convex, non	e): Convex	Slope (%): 4
Subregion (LRR or MLRA): LRR S; MLRA	148 Lat: <u>39.44448</u>	Long: <u>-76.33</u>	721	Datum: WGS84
Soil Map Unit Name: KpB			NWI classifica	tion: N/A
	ydrology significantly ydrology naturally pro	disturbed? Are "Normal oblematic? (If needed, e	If no, explain in Rei Circumstances" pro xplain any answers ns, transects,	esent? Yes Vo No
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes O No O Yes O No O Yes O No O	Is the Sampled Area within a Wetland?	Yes _	No No
Remarks: Hydrophytic vegetation could no	t be determined, but ap	peared to be upland turfg	rass.	
HYDROLOGY				
Wetland Hydrology Indicators:			Coondan, Indicate	ors (minimum of two required)
Primary Indicators (minimum of one is read of the content of the c	☐ True Aquatic Pl☐ Hydrogen Sulfic ☐ Oxidized Rhizo ☐ Presence of Re☐ Recent Iron Re☐ Thin Muck Surf☐ Other (Explain	de Odor (C1) spheres on Living Roots (C3) educed Iron (C4) duction in Tilled Soils (C6) face (C7)	Drainage Patte Moss Trim Lin Dry-Season W Crayfish Burro Saturation Visi	etated Concave Surface (B8) erns (B10) es (B16) /ater Table (C2) ws (C8) ible on Aerial Imagery (C9) essed Plants (D1) rosition (D2) ard (D3) hic Relief (D4)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	No Depth (inches) No Depth (inches) No Depth (inches)):): Wetland H	ydrology Present′	? Yes No No
Describe Recorded Data (stream gauge	e, monitoring well, aerial photo	os, previous inspections), if avai	lable:	
Remarks:				

Sapling Stratum (Plot size: 20'r)

Shrub Stratum (Plot size: 20'r

Herb Stratum (Plot size: 5'r)

Fescue sp.

2. Agrostis stolonifera 20 no 3. Taraxacum officinale 40 yes FACU

ı) – Use scientific n	Absolute	Dominant	Indicator	Sampling Point: LL-MM-UPL Dominance Test worksheet:
)	% Cover	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
				Total Number of Dominant Species Across All Strata: (B)
				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
	0	= Total Cov	ver	Prevalence Index worksheet:
50% of total cover: 0.0				Total % Cover of: Multiply by:
)	20 /8 01	total cover		OBL species x 1 = 0
/				FACW species x 2 = 0
				FAC species x 3 = 0
				FACU species x 4 = 0
				UPL species $x = 5 = 0$
				Column Totals: (A) 0 (B)
				Prevalence Index = B/A =
	0	= Total Cov	ver	Hydrophytic Vegetation Indicators:
50% of total cover: 0.0	20% of	total cover	: 0.0	☐ 1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
				. 3 - Prevalence Index is ≤3.0 ¹
				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
				Problematic Hydrophytic Vegetation¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cov	ver	Definitions of Five Vegetation Strata:
50% of total cover: 0.0	20% of	total cover	. 0.0	
)	 75	ves		Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
	20	no	FACW	
	40	yes	FACU	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
				plants, except woody vines, less than approximately 3 ft (1 m) in height.
				Woody vine – All woody vines, regardless of height.
	135	= Total Cov	ver	
50% of total cover: 67.5	20% of	total cover	27.0	

50% of total cover: 0.0 20% of total cover: 0.0 Remarks: (Include photo numbers here or on a separate sheet.)

Woody Vine Stratum (Plot size: 20'r)

The fescue species could not be identified since it was mowed, but it was consistent with the upland roadside fescue

0 = Total Cover

Yes No No

Hydrophytic

Vegetation Present?

Sampling Point: LL-MM-UPL

Profile Desc	ription: (Describe	to the dept	h needed to docur	nent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix			x Features			- .	
(inches) 0-6	Color (moist) 7.5YR 5/3	%	Color (moist)		Type ¹	Loc ²	Texture Silty clay loam	Remarks Roadside fill
0-6		70					Silly Clay loan	Hoadside IIII
	2.5YR 4/6	10						
	7.5YR 4/2	20						
6-13	7.5YR 5/3	40					Silty clay loam	Roadside fill
	10YR 6/1	30						
	10YR 5/8	30						
		· ———						
1 _{Type:} C=C		lotion DM-	Poduced Metrix M		Cond Cr		² Location: DI	=Doro Lining M=Motrix
Hydric Soil	oncentration, D=Dep	ietion, Rivi=	Reduced Matrix, Mi	S=Masked	Sand Gra	ains.		_=Pore Lining, M=Matrix. ators for Problematic Hydric Soils ³ :
Histosol			☐ Dark Surface	e (S7)			_	cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		ce (S8) (N	ILRA 147,		oast Prairie Redox (A16)
Black Hi			Thin Dark Su		•	47, 148)		(MLRA 147, 148)
= '	n Sulfide (A4)		Loamy Gleye	•	F2)		∐ P	iedmont Floodplain Soils (F19)
	d Layers (A5) ick (A10) (LRR N)		Depleted Ma	. ,	·6)		Пу	(MLRA 136, 147) ery Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (A11)	Depleted Dai	•	,			ther (Explain in Remarks)
_	ark Surface (A12)	<i>(</i> , (, , , ,)	Redox Depre		. ,		_ `	ther (Explain in remaine)
Sandy M	lucky Mineral (S1) (L	RR N,	☐ Iron-Mangan	ese Masse	es (F12) (I	LRR N,		
	A 147, 148)		MLRA 13				3	
	Gleyed Matrix (S4) Redox (S5)		Umbric Surfa					icators of hydrophytic vegetation and tland hydrology must be present,
	Matrix (S6)		Red Parent N	-		•	•	land hydrology must be present, less disturbed or problematic.
	Layer (if observed):				, (, <u></u>	
Туре:								
Depth (inc	ches):						Hydric Soil	Present? Yes No No
Remarks:							_	

Project/Site: I-95 5th Lane Widening	City/County: Harford County		Sampling Date: <u>5/23/2017</u>
Applicant/Owner: MDTA		State: MD	Sampling Point: MM-WET
Investigator(s): ET/MRS	Section, Township, Range:		
Landform (hillslope, terrace, etc.): Toe of slope	Local relief (concave, convex, none	e): Concave	Slope (%): 0
Subregion (LRR or MLRA): LRR S; MLRA 148 Lat: 39.44434	Long: <u>-76.337</u>	78	Datum: WGS84
Soil Map Unit Name: KpB		NWI classifica	tion: PFO
	ntly disturbed? Are "Normal of problematic? (If needed, ex	f no, explain in Re Circumstances" pr xplain any answer: ns, transects,	esent? Yes V No No
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Yes O No O Yes No O	Is the Sampled Area within a Wetland?	Yes	No
Small forested wetland at toe of roadway embankmer 482-483.	nt. May have hydrologic linka	age to perenni	al Waters G. Photos
HYDROLOGY			
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) Field Observations: Surface Water Present? Water Table Present? Hydrogen Si Recent Iron Presence of Recent Iron Other (Explaint) Presence of Recent Iron Other (Explaint) Depth (inch	explants (B14) c Plants (B14) culfide Odor (C1) izospheres on Living Roots (C3) Reduced Iron (C4) Reduction in Tilled Soils (C6) curface (C7) sin in Remarks)	Surface Soil C Sparsely Vego Drainage Patt Moss Trim Lir Dry-Season V Crayfish Burro Saturation Vis Stunted or Str Geomorphic F Shallow Aquit Microtopograp FAC-Neutral	etated Concave Surface (B8) erns (B10) les (B16) Vater Table (C2) lows (C8) lible on Aerial Imagery (C9) lessed Plants (D1) Position (D2) lard (D3) lohic Relief (D4) Fest (D5)
Saturation Present? Yes No Depth (inch (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial ph	,	drology Present able:	? Yes • No •
, , ,	. , ,		
Remarks:			

/EGETATION (Five Strata) – Use scientific na		Sampling Point: MM-WET				
	Absolute	Dominant		Dominance Test worksheet:		
<u>Tree Stratum</u> (Plot size: 20'r)	% Cover	Species?	<u>Status</u>	Number of Dominant Species		
1. Acer rubrum	_50	_yes	FAC	That Are OBL, FACW, or FAC: 6	A)	
2. Quercus palustris		<u>yes</u>	FACW	Total Number of Dominant		
3. Liquidambar styraciflua	_30	_yes	FAC	Species Across All Strata: 6 (I	B)	
4				Percent of Dominant Species		
5					A/B)	
6				Prevalence Index worksheet:		
	100	= Total Cov	er			
50% of total cover: <u>50.0</u>	20% of	total cover:	20.0			
Sapling Stratum (Plot size: 20'r)				FACW species x 2 = 0		
1				FAC species x 3 = 0		
2				FACU species x 4 = 0		
3						
4				UPL species $x = 5 = 0$	(D)	
5				Column Totals: (A) 0	(B)	
6				Prevalence Index = B/A =		
	0 :	= Total Cov	er	Hydrophytic Vegetation Indicators:		
50% of total cover: <u>0.0</u>	20% of	total cover:	0.0	1 - Rapid Test for Hydrophytic Vegetation		
Shrub Stratum (Plot size: 20'r)	20 /0 01	total cover.		2 - Dominance Test is >50%		
1 Quercus palustris	5	yes	FACW	3 - Prevalence Index is ≤3.0 ¹		
2 llex verticillata	5	yes	FACW	4 - Morphological Adaptations (Provide suppo	rtina	
3			171011	data in Remarks or on a separate sheet)	J	
				Problematic Hydrophytic Vegetation¹ (Explain)		
4						
5 6.				¹ Indicators of hydric soil and wetland hydrology mu	st	
6	10	Total Cov		be present, unless disturbed or problematic.		
5.0				Definitions of Five Vegetation Strata:		
50% of total cover: <u>5.0</u>	20% of	total cover:	2.0	Tree – Woody plants, excluding woody vines,		
Herb Stratum (Plot size: 20'r)	40		E40	approximately 20 ft (6 m) or more in height and 3 in (7.6 cm) or larger in diameter at breast height (DBH		
1. Smilax rotundifolia	10	<u>yes</u>	FAC	(7.0 cm) or larger in diameter at breast neight (DB)	1).	
2. Arisaema triphyllum	3	<u>no</u>	FACW	Sapling – Woody plants, excluding woody vines,		
3. Toxicodendron radicans	2	<u>no</u>	FAC	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	S	
4. Carex scoparia		<u>no</u>	FACW			
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.		
6				approximately 3 to 20 it (1 to 3 iii) iii neight.		
7				Herb – All herbaceous (non-woody) plants, includin herbaceous vines, regardless of size, and woody	ng	
8				plants, except woody vines, less than approximately	y 3	
9				ft (1 m) in height.		
10				Woody vine – All woody vines, regardless of heigh	nt.	
11						
	<u>17</u> :	= Total Cov	er			
50% of total cover: 8.5	20% of	total cover:	3.4			
Woody Vine Stratum (Plot size: 20'r)						
1,						
2						
3						
4						
5				Hudranbutia		
	0 :	= Total Cov	er	Hydrophytic Vegetation		
50% of total cover: 0.0	20% of	total cover	0.0	Present? Yes No No		
Remarks: (Include photo numbers here or on a separate s						

Sampling Point: MM-WET

Profile Desc	ription: (Describe	to the dep	oth needed to docur	nent the	indicator	or confirn	n the absence o	f indicators.)
Depth	Matrix		Redo	x Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-5	10YR 5/1	80	10YR 3/6	20			Silt loam	
5-11	10YR 5/2	80	10YR 4/6	20	С	M	Silt loam	
11-14	10YR 5/6	75	10YR 6/1	25	RM	М	Silt loam	
				-				
				-				
						· ——		
		oletion, RM	=Reduced Matrix, MS	S=Maske	d Sand Gr	ains.		Pore Lining, M=Matrix.
Hydric Soil I							_	ors for Problematic Hydric Soils ³ :
Histosol	• •		Dark Surface		(00) (1			m Muck (A10) (MLRA 147)
Black His	ipedon (A2)		Polyvalue Be					ast Prairie Redox (A16)
	stic (A3) n Sulfide (A4)		Loamy Gleye			147, 148)		MLRA 147, 148) dmont Floodplain Soils (F19)
	Layers (A5)		Depleted Ma		(' <i>L)</i>			MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark	, ,	F6)			ry Shallow Dark Surface (TF12)
	l Below Dark Surfac	e (A11)	Depleted Dai		,			ner (Explain in Remarks)
	rk Surface (A12)		Redox Depre	essions (F	8)			
	ucky Mineral (S1) (LRR N,	∐ Iron-Mangan		ses (F12) (LRR N,		
	147, 148)		MLRA 13	-			3	
	leyed Matrix (S4)		Umbric Surfa					ators of hydrophytic vegetation and
	edox (S5) Matrix (S6)		☐ Piedmont Flo	-		•	•	and hydrology must be present, ss disturbed or problematic.
	.ayer (if observed)		Red Falelit is	viateriai (i	ZI) (WILK	A 127, 14		ss disturbed of problematic.
Type:	ayer (ii observed)	•						
Depth (inc	hes).						Hydric Soil P	resent? Yes No No
Remarks:								100 <u> </u>
rtemarks.								

Waters of the U.S. Data Sheet

Project: I-95 5th Lane Widening	•	vaters of the C		re ID: NN		Stre	am Ordei	r:	
Date: 5/23/2017	State: ME)		s: 484-485		1 2120			
Crew: ET/MRS	County:	Harford	Last I	Flag Num	ber: NN-5A	√ &B			
Feature Hydrologic Class (check one):	·		•						
	ennial	Inter	mittent			Epheme	ral		
TNW (Subject to ebb and TNW – Per	rennial	\bigcirc RPW – Se	asonal (must	O Noi	n-RPW d	raining uplands	ning uplands		
flow) (Flowing y		flow at lea	st 3 months a			rosional feature			
RPW – Per		year)				vith abutting wetl			
(Flowing y	ear round)			_		vith adjacent wetl			
Describe rational for hydrologic class: No flow observed one day after rain event. No flow observed one day after rain event.						vetland adjacent o tudy area)	or abutting	g upstream	
Hydrologic Connectivity – Upstream: None		Downstrea	am: Waters G	_	Adja	acent/Abutting: N	one		
Feature Description: (check all that ap	plv)	•			•				
Shape (with respect to OHW			Substra	ate		Vegetat	ion Cove	r Type (MBSS)	
✓ Natural Channel Shape Width: 1-3	8'	✓ Sil	ts Sa	nds	Muc			V II .	
Artificial (man-made) Depth: 3"		Co	bbles 🗸 Gr	avel	Othe				
	ion/stability:	Ве	drock Co	ncrete					
Other: Stable		Side slope:		3:1	<u></u> ≤4:1	LB: Fore	st		
Notes: Table erosional channel that drains to perennial Waters G									
Weather/Precipitation Conditions:									
Inches of			Monthly Dro	ought Co	ndition				
Rain Within			NCDC R				nth:	Year:	
	ww.ncdc.noaa.go	v/temp-and-pr	ecip/climatologi	cal-ranki	ings/inde	ex.php Apr		2017	
● No rain ● 0-0.5 ●	0 0	O	0 0	0	0	0 0	0	0 0	
O Light rain O 0.5-1 -6	-5 -4	-3	-2 -1	0	1	2 3	4	5 6	
O Heavy Rain O >1 Sev	ere Drought	Moderate Dro	ought	Normal	N	Moderately Wet	Se	everely Wet	
Non-tidal tributary has: (check all that	apply; include ph								
Bed and Banks			linary High Wa						
Yes Clear, natural line in	mnraccad on the h	ank Q					Sediment sorting		
	1			ion			ng		
No Changes in the changes	1	□ V	Vater staining			Scour			
No Changes in the cha	racter of soil	V P	Vater staining resence of flood	litter/deb		Scour Observed/pred	licted flow		
No Changes in the cha	acter of soil	V P ent	Vater staining resence of flood Destruction of ter	litter/deb		Scour Observed/pred Abrupt change	licted flow		
No Changes in the cha	acter of soil	V V P Ent D P	Vater staining resence of flood Destruction of ter resence of wracl	litter/deb		Scour Observed/pred	licted flow		
No Changes in the cha	lown, bent, or absolutely; include photos	ent P	Vater staining resence of flood Destruction of ter resence of wracl photo #)	litter/deb restrial ve		Scour Observed/pred Abrupt change Other:	licted flow in plant o	community	
No Changes in the cha	down, bent, or absolute, include photos Mean H	Por each & list	Vater staining resence of flood Destruction of ter resence of wracl photo #) rk indicated by	litter/deb restrial ve	eg.	Scour Observed/pred Abrupt change Other:	licted flow in plant o	community	
No Changes in the ch	lown, bent, or absolute photos Wean Hean Hear Survey	Pent Proreach & list ligh Water Mater Mater de dayailable da	Vater staining resence of flood Destruction of ter resence of wracl photo #) rk indicated by	litter/deb restrial ve	Water is	Scour Observed/pred Abrupt change Other: Chemical Change	licted flow in plant o	community	
No Changes in the cha	lown, bent, or absolute in the lown with the	ent P for each & list ligh Water Ma to available da al markings	Vater staining resence of flood Destruction of ter resence of wracl photo #) rk indicated by tum	litter/deb restrial ve	Water is	Scour Observed/pred Abrupt change Other: Chemical Change discolored	licted flow in plant o	community	
No Changes in the ch	lown, bent, or absolute in the lown with the	Pent Proreach & list ligh Water Mater Mater de dayailable da	Vater staining resence of flood Destruction of ter resence of wracl photo #) rk indicated by tum	litter/deb restrial ve	Water is	Scour Observed/pred Abrupt change Other: Chemical Change discolored	licted flow in plant o	community	

Waters of the U.S. Data Sheet

Dwg	ject: I-95 5th Lane Wi	ما میدا به مد				<u> </u>	uters or	tiit	. C.S. Dat	Featu	ına l	ID.	00			Stro	am Orde	1	
	te: 5/23/2017	aening				State: MD	<u> </u>			Photo						Sire	am Orue	21:1	
	ew: ET/MRS					County:							ımber:	00.54	9 D				
CI	Feature Hydr	ologi	c Class (c)	hack ana)		County.	папоги			Last	1 laş	gni	illibei .	00-3A	IQD				
	Tidal	ulugi	C Class (C)		· ·ennial			Int	termittent		Т					Epheme	rol		
$\overline{}$	TNW (Subject to	ohh (and O	TNW – Pe			DDV		- Seasonal										
\cup	flow)	600 6	N. /	(Flowing		4)			least 3 mg		1					al feature			
	now)			RPW – Pe)	year		icast 5 iii	iiiis a	1					utting wetl	and		
			k /	(Flowing		d)	yea	•)			\vdash					iacent wetl			
Des	cribe rational	Out	fall chanr			<i>'</i>	north E	200	oflow ob	anyad	16	_				l adjacent o		g unstrear	
	hydrologic class:	Outi		iei iioiii s	swiii pui	id to the	HOILII. E)as	enow ob:	serveu.			outside					S observer	
Нус	drologic Connecti	vity –	Upstr	ream: SWM	pond		Dov	vns	tream: Wat	ers Y				Adja	icent/A	Abutting: N	one		
	Feature Desc	_																	
ļ		<u> </u>	vith respe							Substr	ate							r Type (N	ABSS)
	Natural Channel		2	Width: 2-				4	Silts	+	nds			Muc		RB: Fore	st		
	Artificial (man-m			Depth: 2-				_	Cobbles	+=-	rave			Othe	er:				
	Manipulated (ma	n-alte		Bank Erc	sion/stab	ility:			Bedrock		oncr		Rip r	<u> </u>		I D. =			
	Other:			Stable			Side				_	/ 3:		<u>4:1</u>		LB: Fore	Sī		
Not	Notes: Man made outfall channel. Heavy base flow observed. Concrete channel eroded at confluence with Waters Y.																		
	Weather/Precipitation Conditions:																		
			ches of							nthly Dr				on					
			n Within							NCDC R	_					_	nth:	Year	
	ring Field Visit		st Week		www.ncd	c.noaa.go	v/temp-a	nd-	-precip/cli	_	ical	-rar	ıkings/	<u>inde</u>	x.php			2017	
0	No rain	0	0-0.5	0	0	0	<u> </u>		0	0		<u>) </u>	0	\perp	0	0	0	0	0
0	Light rain	0	0.5-1	-6	-5	-4	-3		-2	-1		0	1	+	2	3	4	5	6
0	Heavy Rain	0	>1	Sev	vere Drou	ight	Modera	ate .	Drought		Nor	mal		N	/lodera	ately Wet	S	everely W	/et
	Non-tidal trib	utar	y has: (che	eck all tha	t apply; i	include ph	otos for												
_	Bed and Banks							(Ordinary 1			Ma	rk	,					
M	Yes	✓				d on the ba	ınk		Sedimer		ion			<u> </u>		iment sorti	ng		
Ш	No	╙		in the cha	racter of	soil		✓	Water st					<u> </u>	Sco				
			Shelving						Presence					<u> </u>		erved/pred			
		┡				ent, or abso	ent	lacksquare	Destruct				veg.	<u> </u>	-	upt change	in plant	communit	У
			"	er disturbe				L	Presence		k lii	ne			Oth	er:			
	Tidal tributa	_		ıll that apj	ply; inclu							_							
			de Line				0		Mark indi	cated by	7:	<u>Ļ</u>	—			emical Cha	aracteris	tics	
H	Oil or scum line a				_		to availa		datum			╙			clear				
╟┤	Fine shell or debr				_		al markin			Water is discolored									
╟╣	Physical marking	s/cha	racteristics	<u> </u>	<u> </u> L	_ Vegeta	tion lines	s/ch	anges in ty	pes		⊫	=	/ film	1				
لِبا	Tidal gauges												Oth	er:					
Not	es:																		

Project/Site: I-95 5th Lane Widening	City/County: Harfor	d County	Sampling Date: <u>5/24/2017</u>
Applicant/Owner: MDTA		State: MD	Sampling Point: PP-WET
Investigator(s): ET/MH	Section, Township,	Range:	
Landform (hillslope, terrace, etc.): Toe of slope	Local relief (concave, o	convex, none): Concave	Slope (%): <u>1</u>
Subregion (LRR or MLRA): LRR S; MLRA 148 La	t: 39.44309	Long: <u>-^{76.34099}</u>	Datum: WGS84
Soil Map Unit Name: KpB		NWI classif	fication: PEM
Are climatic / hydrologic conditions on the site typical Are Vegetation, Soil, or Hydrology Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS – Attach site is	significantly disturbed? A naturally problematic?	o (If no, explain in are "Normal Circumstances" f needed, explain any answ at locations, transect	present? Yes No
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Small emergent wetland at too of LOS SR	No O Is the Samp within a We	tland? Yes 🔽	No
Small emergent wetland at toe of I-95 SB	Embankment. Drains to inlet t	nat flows to perennial	waters E. Photos 492-493.
HYDROLOGY			
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; che ✓ Surface Water (A1) ✓ High Water Table (A2) ✓ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ✓ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)	ck all that apply) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Other (Explain in Remarks)	Surface So Sparsely V Drainage P Noots (C3) Moss Trim Dry-Season Saturation Stunted or Geomorphi Shallow Aq Microtopog	Visible on Aerial Imagery (C9) Stressed Plants (D1) c Position (D2)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)		Wetland Hydrology Prese	ent? Yes No No
Describe Recorded Data (stream gauge, monitoring	weii, aeriai pnotos, previous inspecti	ons), if available:	
Remarks: Fed partially by seep on embankment.			

/EGETATION (Five Strata) – Use scientific na	ames of _l	olants.		Sampling Point: PP-WET				
5.00		Dominant		Dominance Test worksheet:				
<u>Tree Stratum</u> (Plot size: 5x20') 1)		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)	A)			
2				Total Number of Dominant				
3					В)			
4				Develop of Deminent Species				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (/	A/B)			
6					,			
	0	= Total Cov	er	Prevalence Index worksheet:				
50% of total cover: <u>0.0</u>	20% of	total cover:	0.0	Total % Cover of: Multiply by:				
Sapling Stratum (Plot size: 5x20')				OBL species x 1 = 0				
1				FACW species x 2 = 0				
2				FAC species x 3 = 0				
3				FACU species x 4 = 0				
4				UPL species x 5 = 0				
				Column Totals: (A) 0	(B)			
5				Prevalence Index = B/A =				
0		Total Cov	or.	Hydrophytic Vegetation Indicators:				
				1 - Rapid Test for Hydrophytic Vegetation				
50% of total cover: <u>0.0</u>	20% of	total cover:	0.0	2 - Dominance Test is >50%				
Shrub Stratum (Plot size: 5x20')				1 				
1				3 - Prevalence Index is ≤3.0¹				
2				4 - Morphological Adaptations ¹ (Provide suppo data in Remarks or on a separate sheet)	rting			
3				☐ Problematic Hydrophytic Vegetation¹ (Explain)				
4				- Tropioniano Tryaropriyao Pogotanon (Explain)				
5				Indicators of hydric soil and wetland hydrology must	et			
6				be present, unless disturbed or problematic.	Si.			
		= Total Cov	er	Definitions of Five Vegetation Strata:				
50% of total cover: 0.0	20% of	total cover:	0.0					
Herb Stratum (Plot size: 5x20')				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in	,			
1. Typha latifolia	30	yes	OBL	(7.6 cm) or larger in diameter at breast height (DBF				
2. Typha angustifolia	50	ves	OBL	Sapling – Woody plants, excluding woody vines,				
3. Festuca sp.	10	no		approximately 20 ft (6 m) or more in height and less	8			
	3	no		than 3 in. (7.6 cm) DBH.				
_				Shrub – Woody plants, excluding woody vines,				
56.				approximately 3 to 20 ft (1 to 6 m) in height.				
7				Harb All barbassas (non usadu) planta includin				
8				Herb – All herbaceous (non-woody) plants, includin herbaceous vines, regardless of size, and woody	ıg			
				plants, except woody vines, less than approximately	у 3			
9				ft (1 m) in height.				
10				Woody vine – All woody vines, regardless of heigh	ıt.			
11								
		= Total Cov						
50% of total cover: <u>46.5</u>	20% of	total cover:	18.6					
Woody Vine Stratum (Plot size: 5x20')								
1								
2								
3								
4								
5	· 			Hydrophytic				
	0	= Total Cov	er	Vegetation				
50% of total cover: 0.0	20% of	total cover:	0.0	Present? Yes No No				
Remarks: (Include photo numbers here or on a separate s				I				
(,							

SOIL Sampling Point: PP-WET

Profile Desc	ription: (Describe	to the dep	th needed to docur	nent the	indicator	or confirn	n the absence	of indicators.)
Depth	Matrix			x Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
<u>0-1</u>	10YR 2/2	100					Fine sandy clay	With organics
1-8	10YR 5/3	60	10YR 5/8	40	<u>C</u>	_M	Clay loam	
8-17	5Y 7/1	75	10YR 5/8	25		_M	Clay loam	
					·			
	-				· ——		-	
¹ Type: C=Co	oncentration, D=Dep	letion, RM	=Reduced Matrix, M	S=Maske	d Sand Gra	ains.	² Location: PI	L=Pore Lining, M=Matrix.
Hydric Soil		,	,					ators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	e (S7)			<u> </u>	cm Muck (A10) (MLRA 147)
Histic Ep	oipedon (A2)		Polyvalue Be		. , .		, 148) 🔲 C	oast Prairie Redox (A16)
	stic (A3)		Thin Dark Su			47, 148)		(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye		(F2)		<u> </u>	iedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Ma		-0)			(MLRA 136, 147)
	uck (A10) (LRR N)	o (A11)	Redox Dark	•	,			ery Shallow Dark Surface (TF12) hther (Explain in Remarks)
_	d Below Dark Surfac ark Surface (A12)	e (ATT)	Depleted Da Redox Depre				_	ther (Explain in Remarks)
=	lucky Mineral (S1) (I	LRR N.	Iron-Mangan			LRR N.		
	A 147, 148)	,	MLRA 13		(, (-	,		
	Gleyed Matrix (S4)		Umbric Surfa		(MLRA 13	6, 122)	³ Ind	icators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo				48) we	tland hydrology must be present,
☐ Stripped	Matrix (S6)		Red Parent N	Material (F	21) (MLR	A 127, 14	7) unl	less disturbed or problematic.
Restrictive I	Layer (if observed):	:						
Туре:								
Depth (in	ches):						Hydric Soil	Present? Yes No No
Remarks:								

Project/Site: I-95 5th Lane Widening	(City/County: Harford County		Sampling Date: <u>5/24/2017</u>
Applicant/Owner: MDTA			State: MD	Sampling Point: PP-UPL
Investigator(s): ET/MH		Section, Township, Range:		
Landform (hillslope, terrace, etc.): Roadw	vay embankment Loc	cal relief (concave, convex, nor	ne): Convex	Slope (%): <u>4</u>
Subregion (LRR or MLRA): LRR S; MLRA	148 Lat: 39.44303	Long: <u>-^{76.34}</u>	1116	Datum: WGS84
Soil Map Unit Name: KpB			NWI classific	ation: N/A
	ydrology significantly ydrology naturally pro	disturbed? Are "Normal blematic? (If needed, e	(If no, explain in R Circumstances" p explain any answe	oresent? Yes No
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks:	Yes O No O Yes O No O Yes O No O	Is the Sampled Area within a Wetland?	Yes	No No
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is read Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery Water-Stained Leaves (B9) Aquatic Fauna (B13)	☐ True Aquatic Pla ☐ Hydrogen Sulfid ☐ Oxidized Rhizos ☐ Presence of Re ☐ Recent Iron Rec ☐ Thin Muck Surfa ☐ Other (Explain i	de Odor (C1) spheres on Living Roots (C3) duced Iron (C4) duction in Tilled Soils (C6) ace (C7)	☐ Drainage Pa☐ Moss Trim Li☐ Dry-Season☐ Crayfish Buri☐ Saturation Vi☐ Stunted or S☐ Geomorphic☐ Shallow Aqu	getated Concave Surface (B8) tterns (B10) ines (B16) Water Table (C2) rows (C8) isible on Aerial Imagery (C9) tressed Plants (D1) Position (D2) itard (D3) aphic Relief (D4)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	No Depth (inches) No Depth (inches) Depth (inches)	:	lydrology Preser	nt? Yes No No
Describe Recorded Data (stream gauge	, monitoring well, aerial photo	s, previous inspections), if ava	ilable:	
Remarks:				

/EGETATION (Five Strata) – Use scientific na	ames of p	olants.		Sampling Point: PP-UPL	
	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>20'r</u>) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 0	(A)
2				Total Number of Dominant	
3				Species Across All Strata: 1	(B)
4				Description of Description	
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0	(A/B)
6					(/
	0 :	= Total Cov	er	Prevalence Index worksheet:	
50% of total cover: 0.0	20% of	total cover:	0.0	Total % Cover of: Multiply by:	
Sapling Stratum (Plot size: 20'r)				OBL species x 1 = 0	_
1				FACW species x 2 = 0	_
2				FAC species $x 3 = 0$	_
3				FACU species x 4 = 0	_
4				UPL species x 5 = 0	_
				Column Totals: (A) 0	_ (B)
5				Prevalence Index = B/A =	
0		= Total Cov		Hydrophytic Vegetation Indicators:	_
				1 - Rapid Test for Hydrophytic Vegetation	
50% of total cover: <u>0.0</u>	20% of	total cover:	0.0	2 - Dominance Test is >50%	
Shrub Stratum (Plot size: 20'r)				3 - Prevalence Index is ≤3.0 ¹	
1				☐ 4 - Morphological Adaptations ¹ (Provide supplementations)	4!
2				data in Remarks or on a separate sheet)	porting
3				Problematic Hydrophytic Vegetation¹ (Explai	n)
4					,
5				¹ Indicators of hydric soil and wetland hydrology n	nust
6				be present, unless disturbed or problematic.	
	:	= Total Cov	er	Definitions of Five Vegetation Strata:	
50% of total cover: 0.0	20% of	total cover:	0.0	Tree – Woody plants, excluding woody vines,	
Herb Stratum (Plot size: 5'r)				approximately 20 ft (6 m) or more in height and 3	in.
1. Festuca rubra	65	<u>yes</u>	FACU	(7.6 cm) or larger in diameter at breast height (DI	BH).
2. Taraxacum officinale	10	<u>no</u>	FACU	Sapling – Woody plants, excluding woody vines,	
3				approximately 20 ft (6 m) or more in height and le	ess
4				than 3 in. (7.6 cm) DBH.	
5				Shrub – Woody plants, excluding woody vines,	
6				approximately 3 to 20 ft (1 to 6 m) in height.	
7				Herb – All herbaceous (non-woody) plants, include	ding
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximate	
9				ft (1 m) in height.	lely 3
10				W I All	. 1. 1
11				Woody vine – All woody vines, regardless of hei	gnt.
	75 :	= Total Cov	er		
50% of total cover: 37.5	20% of	total cover:	15.0		
Woody Vine Stratum (Plot size: 20'r)					
1					
2					
3					
4					
5.					
<u>. </u>	0	= Total Cov	er	Hydrophytic	
500/ -(1-1-1 0.0				Vegetation Present? Yes No No	
50% of total cover: 0.0		total cover:	0.0		
Remarks: (Include photo numbers here or on a separate s	neet.)				

Sampling Point: PP-UPL

Profile Desc	ription: (Describe	to the dept	h needed to docum	ent the indica	tor or confirm	the absence	of indicators.)
Depth	Matrix		Redox	Features			
(inches)	Color (moist)	%	Color (moist)	%Typ	e ¹ Loc ²	Texture	Remarks
0-1	7.5YR 4/2	100				Sandy loam	Fill material
1-8	7.5YR 5/4	60					Fill material
	10YR 4/4	40					
	1011114/4						
1						21	
		letion, RM=	Reduced Matrix, MS	=Masked Sand	Grains.		L=Pore Lining, M=Matrix. ators for Problematic Hydric Soils ³ :
Hydric Soil I				(07)			-
Histosol			Dark Surface				cm Muck (A10) (MLRA 147)
	pipedon (A2)			ow Surface (S8		148) <u> </u>	Coast Prairie Redox (A16)
Black His				face (S9) (MLF	KA 147, 148)	П -	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleyed			⊔ Р	liedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Mat	` '			(MLRA 136, 147)
	ick (A10) (LRR N) d Below Dark Surfac	o (A11)	Redox Dark S Depleted Darl	, ,			ery Shallow Dark Surface (TF12) Other (Explain in Remarks)
	ark Surface (A12)	e (ATT)	Redox Depres			ш ч	otter (Explain in Remarks)
	lucky Mineral (S1) (RRN	=	ese Masses (F1	2) (I RR N		
	147, 148)		MLRA 136		<i>2)</i> (2111111,		
	leyed Matrix (S4)			., ce (F13) (MLR /	A 136, 122)	³ Ind	icators of hydrophytic vegetation and
	edox (S5)			odplain Soils (F			etland hydrology must be present,
	Matrix (S6)			laterial (F21) (N	, .	•	less disturbed or problematic.
	_ayer (if observed)	:		(= · , (-	, · · ·	<u> </u>	
Type: Gra							
Depth (inc						Hydric Soil	Present? Yes No No
Remarks:							

Waters of the U.S. Data Sheet

Pro	ject: I-95 5th Lane W	denina				<u> </u>	uters of	till	. C.S. Dat	Featu	ıre	ID: c)O			Stre	am Orde	r: 1	
	te: 5/23/2017	<u> </u>				State: MD	1			Photo						5070			
	ew: ET/MRS					County:							mber:	Q-6A&	kB				
	Feature Hydr	ologi	c Class (cl	heck one)	:	v						0							
	Tidal				ennial			In	termittent							Epheme	ral		
	TNW (Subject to	ebb a	and 7	TNW – Pe	rennial		RP	W –	- Seasonal	(must	10	N C	on-RPV	V dra	aining	uplands			
${}^{\smile}$	flow)			(Flowing		d)	o flow	<i>x</i> at	least 3 mo	nths a						ıl feature			
				RPW – Pe	rennial		yea	r)								ıtting wetl			
			$\mathcal{O}_{\mathcal{O}}$	(Flowing	year roun	d)						N C	on-RPV	V wi	ith adj	acent wetl	and		
	scribe rational hydrologic class:	Origii	nates at pip	e outfall. Pi	pe origina	tes outside	of study a	area.	. Baseflow o	bserved.		_	on-RPV outside o			adjacent o ea)	or abuttin	g upstrear	n
Нус	drologic Connecti	vity –	Upstr	eam: Outsi	de of study	area	Dov	wns	tream: Wat	ers G	-		Α	djac	cent/A	butting: N	one		
	Feature Desc	rinti	on: (check	all that a	nnlv)		-												
			vith respe							Substr	ate					Vegetat	ion Cove	r Type (N	ABSS)
	Natural Channel	<u> </u>		Width: 2-				✓	Silts		nds		N	Iuck	(I	RB: Fores			
	Artificial (man-m	ade)		Depth: 6'					Cobbles	Gr	rave	el	V C	ther					
V	Manipulated (ma	n-alte	ered)	Bank Erc	sion/stab	ility:		╝	Bedrock	Co	onci	rete	Rip rap)					
	Other:			Stable			Side	slo	pe:	1 2:1	1 [✓ 3::	1	l :1		LB: Fores	st		
Not	es: Heavily arm	ored	with rip	rap			•												
	Weather/Pred																		
	vv cather/11 c	_	ches of	1110113.					Mo	ıthly Dr	'OII (oht C	onditio	n					
			n Within							NCDC R				11		Mo	nth:	Year	r:
Du	ring Field Visit		st Week	http://v	ww.ncd	c.noaa.go	v/temp-a	ınd-	-precip/cli					ıdex	.php	Apr	il	2017	7
0	No rain	0	0-0.5	0	0	0	0		0	0	(\circ	0		0	0	0	0	0
0	Light rain	0	0.5-1	-6	-5	-4	-3		-2	-1		0	1		2	3	4	5	6
0	Heavy Rain	0	>1	Ser	zere Drou	ıght	Modera	ate :	Drought	-	No	rmal		M	lodera	tely Wet	S	everely W	⁷ et
	Non-tidal trib	utar	y has: (<i>che</i>	eck all tha	t apply; i	include ph	otos for	eac	h & list ph	oto #)									
]	Bed and Banks							(Ordinary 1	Tigh Wa	iter	Mar	·k						
V	Yes					d on the ba	ınk		Sedimen		tion					ment sorti	ng		
	No		Changes	in the cha	racter of	soil		✓	Water st						Scou				
			Shelving						Presence					✓		erved/pred			
		✓				ent, or abse	ent		Destruct				veg.	Щ		ıpt change	in plant	communit	У
			4	er disturbe					Presence		k li:	ne			Othe	er:			
	Tidal tributa	_		ıll that apj	ply; inclu														
			de Line				0		Mark indi	cated by	/ .	<u> </u>	71			mical Cha	aracteris	tics	
\square	Oil or scum line				_		to availa		datum			╨	Wate						
	Fine shell or debi		,		_		al markin		•			╬			discol	ored			
H	Physical marking	s/cha	racteristics	3	L	Vegeta	tion lines	s/ch	anges in ty	pes		\vdash	Oily						
لپا	Tidal gauges												Other	:					
Not	es:																		

Waters of the U.S. Data Sheet

Pro	oject: I-95 5th Lane W	denina				•	vater 5 O	CII	c 0.5. Dat	Feat	ure	· ID:	: RF				Strea	am Orde	r:	
	te: 5/24/2017					State: MI)			Phot										
Cro	ew: ET/MH					County:	Harford			Last	Fla	ag N	un	ıber: R	R-5A&B					
	Feature Hydr	ologi	c Class (cl	neck one)	:	•				•										
	Tidal			Per	ennial			In	termittent	,						F	Epheme	ral		
\bigcirc	TNW (Subject to	ebb a	and 7	ΓNW – Pe	erennial		\bigcap RP	W -	- Seasonal	(must		<u> </u>	No	n-RPW	/ draii	ning u	plands			
\sim	flow)			Flowing :		ıd)	o flow	w at	least 3 mo	onths a							feature			
				RPW – Pe			yea	r)			L						ing wetl			
			\mathcal{C}	Flowing :	year roun	ıd)						_					ent wetl			
	scribe rational hydrologic class:	Son	ne standi	ng wate	r observ	ed after	storm,	but	t no base	flow.	ď	_		n-RPW itside o				or abuttin	g upstrear	n
Hy	drologic Connecti	vity –	Upstr	eam: None			Do	wns	stream: Wat	ers G				A	djace	nt/Abı	utting: N	one		
	Feature Desc	riptio	on: (check	all that a	pplv)		•													
		_	with respec							Substr	rate	e					Vegetati	ion Cove	r Type (N	ABSS)
	Natural Channel	Shape	e	Width: 2'				✓	Silts	Sa	and	ls		M	Iuck	RE	3: Fores	st		
	Artificial (man-m	ade)		Depth: 2'	ı				Cobbles	G	rav	el			ther:					
\	Manipulated (ma	n-alte	ered)	Bank Erc	sion/stab	oility:			Bedrock	✓ C	onc	crete	;							
	Other:			Stable			Side	slo	pe:	1 2:	1	✓ 3	3:1	<u></u> ≤4	:1	LB	3: Fores	st		
Not	es: Concrete lin	ing a	at conflue	nce with	Water:	s G														
	Weather/Pred	cipita	tion Cond	itions:																
	.,,	_	ches of	1					Mo	nthly Di	rou	ıght	Co	nditio	n					
		Rai	n Within							NCDC F							Mo	nth:	Year	r :
Du	ring Field Visit		st Week	http://v	www.ncd	c.noaa.go	v/temp-a	nd	-precip/cli	matolog	gica	al-ra	ınk	ings/in	dex.p	<u>ohp</u>	Apr	il	201	7
0	No rain	0	0-0.5	0	0	0	0		0	0		0		0	C		0	0	0	0
0	Light rain	0	0.5-1	-6	-5	-4	-3		-2	-1		0		1	2		3	4	5	6
0	Heavy Rain	0	>1	Sev	vere Dro	ıght	Moder	ate	Drought		No	orma	ıl		Mod	deratel	ly Wet	S	everely W	/et
	Non-tidal trib	utar	y has: (<i>che</i>	eck all tha	t apply;	include ph	otos for	eac	h & list ph	oto #)										
]	Bed and Banks							(Ordinary 1	High W	ate	r M	ark	(
$oxed{oxed}$	Yes					d on the b	ank		Sedimen		itio	n					ent sorti	ng		
Ш	No	<u> </u>		in the cha	racter of	soil		L	Water st							Scour				
			Shelving					~	1 1000110									icted flov		
		<u> </u>				ent, or abs	ent	Ļ	Destruct				l v	eg.	_			in plant	communit	ty
		✓	4	r disturbe				<u> </u>	Presence		ck l	ine				Other:				
	Tidal tributa	•		ll that ap	ply; incli														_	
			de Line				0		Mark indi	cated by	y:		_				ical Cha	aracteris	tics	
	Oil or scum line				_		to availa		datum			_ -	4	Water			1			
╟╣	Fine shell or debi		,		_		al markir		• .				4			scolore	ed			
╟╣	Physical marking	s/cna	racteristics		<u> </u> L	vegeta	ition lines	s/ch	anges in ty	pes		╠	┥	Oily f						
	Tidal gauges						Other:													
Not	'es:																			

Project/Site: 1-95 5th Lane Widening	City/County: Harford County	Sampling Date: _7/7/20	17
Applicant/Owner: MDTA		State: MD Sampling Point: SS	-WET
Investigator(s): ET/KJH	_ Section, Township, Range:		
Landform (hillslope, terrace, etc.): Depression	ocal relief (concave, convex, none	s): None Slope (%)	: 2
Subregion (LRR or MLRA): LRR S; MLRA 148 Lat: 39.44248	Long: <u>-^{76.344}</u>	8 Datum: WG	iS84
Soil Map Unit Name: KpB		NWI classification: PFO	
Are climatic / hyd <u>rologic conditions</u> on the site typical for this time of	year? Yes _ No (l	no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significant	ly disturbed? Are "Normal (Circumstances" present? Yes 🔟 🏻 🗈	No
Are Vegetation, Soil, or Hydrology naturally p	oroblematic? (If needed, ex	plain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map showin	g sampling point location	is, transects, important featur	es, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes O No O Yes No O	Is the Sampled Areawithin a Wetland?	Yes No No	
Remarks:			
Oxbow wetland adjacent to Waters G. Sparsely vegeta trees within the plot, but the wetland is considered PF0 fringe share similar soil and hydrologic conditions.			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two re	quired)
Primary Indicators (minimum of one is required; check all that apply	·)	Surface Soil Cracks (B6)	
☐ Surface Water (A1) ☐ True Aquatic	Plants (B14)	Sparsely Vegetated Concave Surfac	e (B8)
☐ High Water Table (A2) ☐ Hydrogen Su	lfide Odor (C1)	☐ Drainage Patterns (B10)	
Saturation (A3) Oxidized Rhiz	zospheres on Living Roots (C3)	Moss Trim Lines (B16)	
☐ Water Marks (B1) ☐ Presence of F	Reduced Iron (C4)	Dry-Season Water Table (C2)	
Sediment Deposits (B2)	Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)	
☐ Drift Deposits (B3) ☐ Thin Muck Su	ırface (C7)	Saturation Visible on Aerial Imagery	(C9)
Algal Mat or Crust (B4)	n in Remarks)	Stunted or Stressed Plants (D1)	
☐ Iron Deposits (B5)		Geomorphic Position (D2)	
Inundation Visible on Aerial Imagery (B7)		Shallow Aquitard (D3)	
✓ Water-Stained Leaves (B9)]	Microtopographic Relief (D4)	
Aquatic Fauna (B13)		FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present? Yes No V Depth (inche			
Water Table Present? Yes No Depth (inche	·s): 4		
Saturation Present? Yes Ve No Depth (inche	s): 4 Wetland Hy	drology Present? Yes No _	\bigcirc
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial pho			
Remarks:			

/EGETATION (Five Strata) – Use scientific n	ames of _l	olants.		Sampling Point: SS-	WET
		Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>5'</u>) 1)		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 1	(A)
2				Total Number of Dominant	
3				Species Across All Strata: 1	(B)
4				Bound of Bourie and On a day	
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0	(A/B)
6					
	0	= Total Cov	er	Prevalence Index worksheet:	
50% of total cover: 0.0				Total % Cover of: Multiply by	<u>V:</u>
Sapling Stratum (Plot size: 5')	20 70 01	total cover.		OBL species x 1 = 0	
1				FACW species x 2 = 0	
2				FAC species x 3 = 0	
				FACU species x 4 = 0	
3		-		UPL species x 5 = 0	
4				Column Totals: (A) 0	(B)
5				Dravalance Index - D/A -	
6				Prevalence Index = B/A =	
		= Total Cov	er	Hydrophytic Vegetation Indicators:	
50% of total cover: 0.0	20% of	total cover:	0.0	1 - Rapid Test for Hydrophytic Vegetation	on
Shrub Stratum (Plot size: 5'				2 - Dominance Test is >50%	
1				☐ 3 - Prevalence Index is ≤3.0 ¹	
2				4 - Morphological Adaptations ¹ (Provide data in Remarks or on a separate sh	supporting
3				Problematic Hydrophytic Vegetation¹ (E:	•
4				Troblematic Hydrophytic Vegetation (E.	хріанту
5				¹ Indicators of hydric soil and wetland hydrolc	av muet
6				be present, unless disturbed or problematic.	gy must
		= Total Cov	er	Definitions of Five Vegetation Strata:	
50% of total cover: 0.0	20% of	total cover:	0.0		
Herb Stratum (Plot size: 5')				Tree – Woody plants, excluding woody vines approximately 20 ft (6 m) or more in height a	
1. Red maple	5	ves	FAC	(7.6 cm) or larger in diameter at breast heigh	
2				Sapling – Woody plants, excluding woody v	inco
3.				approximately 20 ft (6 m) or more in height a	
4				than 3 in. (7.6 cm) DBH.	
5				Shrub – Woody plants, excluding woody vin	es
6				approximately 3 to 20 ft (1 to 6 m) in height.	00,
7	· 			Herb – All herbaceous (non-woody) plants, i	noludina
8				herbaceous vines, regardless of size, and we	
9				plants, except woody vines, less than approx	kimately 3
10				ft (1 m) in height.	
11				Woody vine – All woody vines, regardless of	f height.
	5	= Total Cov	or.		
7					
50% of total cover: 2.5	20% of	total cover:	1.0		
Woody Vine Stratum (Plot size: 5'					
1					
2	· 				
3					
4					
5				Hydrophytic	
	0	= Total Cov	er	Vegetation)
50% of total cover: 0.0	20% of	total cover:	0.0	Present? Yes No No	<u></u>
Remarks: (Include photo numbers here or on a separate s				1	
Sparse vegetation. One red maple seedling ide	ntified. W	ithin a for	est.		

Sampling Point: SS-WET

SOIL

Profile Desc	ription: (Describe	to the dep	th needed to docur	nent the	indicator	or confirm	n the absence	of indicate	ors.)	
Depth	Matrix			x Feature		. 2				
(inches)	Color (moist)		Color (moist)	%	Type'	Loc ²	<u>Texture</u>	Mixadi	Remarks	otoio!
0-3	10YR 2/2	100					CL	wiixea i	n organic m	lateiai
3-8	2.5Y 6/2	95	10YR 6/8	5	<u>C</u>		SCL			
8-14	5Y 5/2	100					SL			
										_
					-					
										
¹Type: C=Co	oncentration, D=Dep	letion, RM	=Reduced Matrix, MS	S=Maske	d Sand Gr	ains.	² Location: P	L=Pore Lini	ing, M=Matrix.	_
Hydric Soil		,	,						roblematic Hy	dric Soils³:
Histosol	(A1)		Dark Surface	(S7)			<u> </u>	cm Muck (A10) (MLRA 1 4	17)
	pipedon (A2)		Polyvalue Be				148)		e Redox (A16)	
Black Hi			☐ Thin Dark Su			47, 148)		(MLRA 14		- 10)
	n Sulfide (A4) d Layers (A5)		Loamy Gleye Depleted Ma		(F2)		L P	iedmont Flo MLRA 13)	oodplain Soils (F19)
	ick (A10) (LRR N)		Redox Dark	. ,	F6)		Пν		v Dark Surface	(TF12)
	d Below Dark Surfac	e (A11)	Depleted Dai						in in Remarks)	
☐ Thick Da	ark Surface (A12)		Redox Depre	ssions (F	8)					
	lucky Mineral (S1) (I	LRR N,	∐ Iron-Mangan		ses (F12) (LRR N,				
	\ 147, 148)		MLRA 13		/MI DA 40	c 400\	311			-4-4:
	Gleyed Matrix (S4) Redox (S5)		Umbric Surfa		-				ydrophytic vege ology must be p	1
	Matrix (S6)		Red Parent N	-		•	•		ed or problema	
	Layer (if observed):	<u> </u>		(-		, , , , ,	1			
Type:										
Depth (in	ches):						Hydric Soil	Present?	Yes <u> </u>	No <u> </u>
Remarks: 🔥	nha alnha tostor	d nocitive	in upper 4 inche	20						
Al	pria alpria lestet	a positive	in upper 4 mene	75						

Project/Site: I-95 5th Lane Widening	City/0	County: Harford County		_ Sampling Date: <u>7/7/2017</u>
Applicant/Owner: MDTA			State: MD	Sampling Point: SS-UU-VV-UPL
Investigator(s): ET/KJH	Secti	on, Township, Range:		
Landform (hillslope, terrace, etc.): Terrace	Local re	lief (concave, convex, nor	ne): None	Slope (%): <u>0</u>
Subregion (LRR or MLRA): LRR S; MLRA 148	Lat: _ ^{39.44264}	Long: <u>-^{76.34}</u>	1402	Datum: WGS84
Soil Map Unit Name: Av			NWI classif	ication: N/A
Are climatic / hydrologic conditions on the site Are Vegetation , Soil , or Hydrol Are Vegetation , Soil , or Hydrol SUMMARY OF FINDINGS – Attach	ogy significantly disturbed significantly disturbed significantly problem	rbed? Are "Normal atic? (If needed, e		present? Yes No rers in Remarks.)
Hydrophytic Vegetation Present? Ye. Hydric Soil Present? Ye. Wetland Hydrology Present? Ye. Remarks:	s O No O S	Is the Sampled Area within a Wetland?	Yes _	No No
HYDROLOGY				
Wetland Hydrology Indicators:			Casandami India	cators (minimum of two required)
Primary Indicators (minimum of one is required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13)	True Aquatic Plants Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductic Thin Muck Surface (Other (Explain in Re	dor (C1) res on Living Roots (C3) d Iron (C4) on in Tilled Soils (C6) C7)	Sparsely Vo	n Water Table (C2) Irrows (C8) Visible on Aerial Imagery (C9) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4)
Water Table Present? Saturation Present? (includes capillary fringe)	Depth (inches): Depth (inches): Depth (inches): Depth (inches):	Wetland H	lydrology Prese	ent? Yes No No
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, pre	evious inspections), if ava	ilable:	
Remarks: No hydrology indicators				

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: 20'		Species?		Number of Dominant Species	
1. Liriodendron tulipifera	35	_yes	FACU	That Are OBL, FACW, or FAC: 2	(A)
2. Fagus grandifolia		<u>yes</u>	FACU	Total Number of Dominant	
3. Nyssa sylvatica	_10	<u>no</u>	FAC		(B)
4				Develop of Deminant Species	
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0 40.0	(A/B)
6					(, , ,)
		= Total Cov	er	Prevalence Index worksheet:	
500/ 61 1 1 40 5				Total % Cover of: Multiply by:	
50% of total cover: <u>42.5</u>	20% of	total cover:	17.0	OBL species x 1 = 0	_
Sapling Stratum (Plot size: 20'				FACW species x 2 = 0	
1				FAC species x 3 = 0	
2				FACU species x 4 = 0	
3				UPL species x 5 = 0	-
4					- (D)
5				Column Totals: (A) 0	(B)
6.				Prevalence Index = B/A =	
<u>. </u>	0 :	Total Cov		Hydrophytic Vegetation Indicators:	_
50% of total cover: 0.0	20% of	total cover:	0.0	1 - Rapid Test for Hydrophytic Vegetation	
Shrub Stratum (Plot size: 20')				☐ 2 - Dominance Test is >50%	
1. Ilex opaca	10	yes	FACU	☐ 3 - Prevalence Index is ≤3.0 ¹	
2. Viburnum dentatum	5	no	FAC	4 - Morphological Adaptations (Provide supp	orting
3				data in Remarks or on a separate sheet)	
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5					
				¹ Indicators of hydric soil and wetland hydrology me	ust
6	15			be present, unless disturbed or problematic.	
		= Total Cov		Definitions of Five Vegetation Strata:	
50% of total cover: 7.5	20% of	total cover:	3.0	Tree – Woody plants, excluding woody vines,	
Herb Stratum (Plot size: 20')				approximately 20 ft (6 m) or more in height and 3 i	in.
1. Osmunda cinnamomea	30	yes	FACW	(7.6 cm) or larger in diameter at breast height (DB	H).
2. Fagus grandifolia	_5	no	FACU	Sapling – Woody plants, excluding woody vines,	
3. Parathelypteris noveboracensis	25	yes	FAC	approximately 20 ft (6 m) or more in height and les	SS
4				than 3 in. (7.6 cm) DBH.	
5.				Shrub – Woody plants, excluding woody vines,	
				approximately 3 to 20 ft (1 to 6 m) in height.	
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody	ing
8				plants, except woody vines, less than approximate	ely 3
9				ft (1 m) in height.	•
10				Woody vine – All woody vines, regardless of heig	ıht
11				Woody vine – All woody vines, regardless of field	III.
	60 :	= Total Cov	er		
50% of total cover: 30.0	20% of	total cover:	12.0		
Woody Vine Stratum (Plot size: 20'	20 /0 01	total cover.			
1					
2					
3					
4					
5				Hydrophytic	
	0 :	= Total Cov	er	Hydrophytic Vegetation	
50% of total cover: 0.0				Vegetation Present? Yes No No	
		total COVER		1	
Remarks: (Include photo numbers here or on a separate s No evidence of hydrology, so PI was not calcula					

SOIL Sampling Point: Ss-uu-vv-upl

Profile Desc	cription: (Describe	to the de	oth needed to docum	nent the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix			x Feature		. ?	- .	
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	_Type ^¹	Loc ²	<u>Texture</u>	Remarks Mixed in organia
0-2	10YR 2/2	100					<u>-</u>	Mixed in organic
2-6	10YR 3/2	100					<u>L</u>	Mixed in organic
6-12	10YR 4/1	90	5YR 4/6	10	<u>C</u>	_M	SL	
					-			
		· ——			-			
								<u> </u>
		·						
					-		·	
		letion, RM	=Reduced Matrix, MS	S=Maske	d Sand Gra	ains.	² Location: P	PL=Pore Lining, M=Matrix.
Hydric Soil							_	ators for Problematic Hydric Soils ³ :
Histosol			Dark Surface		, a.e.			2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be				, 148) (Coast Prairie Redox (A16)
	istic (A3) en Sulfide (A4)		Loamy Gleye			47, 140)	П	(MLRA 147, 148) Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Mar		(1 2)		— .	(MLRA 136, 147)
	uck (A10) (LRR N)		Redox Dark		F6)		□ ∨	/ery Shallow Dark Surface (TF12)
Depleted	d Below Dark Surfac	e (A11)	Depleted Dar	rk Surface	e (F7)			Other (Explain in Remarks)
=	ark Surface (A12)		Redox Depre					
	Mucky Mineral (S1) (L	₋RR N,	∐ Iron-Mangan		ses (F12) (LRR N,		
	A 147, 148) Gleyed Matrix (S4)		MLRA 13 ☐ Umbric Surfa		(MI RA 13	6 122)	³ Inc	licators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					etland hydrology must be present,
	Matrix (S6)		Red Parent N	-	, ,	•	•	nless disturbed or problematic.
Restrictive I	Layer (if observed):							
Type:								
Depth (in	ches):						Hydric Soil	Present? Yes No No
Remarks:								

Waters of the U.S. Data Sheet

Project: I-95 5th Lane V	/idening								Featu	ıre I	D:	TT			Stre	am Orde	r: 1	
Date: 7/7/2017					State: ME				Photo									
Crew: ET/KJH					County:	Harford			Last	Flag	N	umber: ⊤	T-5A&	в				
Feature Hyd	rologi	ic Class (cl																
Tidal			Pei	ennial			In	termittent							Epheme	ral		
TNW (Subject t	ebb a	A /	TNW – Pe					Seasonal	`	\odot		Non-RPW						
flow)			(Flowing :		id)	oflow	v at	least 3 mo	nths a	\circ		Non-RPW						
		N /	RPW – Pe			yea	r)			0					itting wetl			
		\mathcal{C}	(Flowing	year rour	ıd)					0					acent wetl			
Describe rational for hydrologic class	Dry	channel	with bed	l and ba	ank							Non-RPW (outside o			adjacent o ea)	or abuttin	g upstreai	n
Hydrologic Connect	ivity –	Upstr	eam: None			Dov	wns	tream: Wat	ers G			A	djac	ent/A	butting: N	one		
Feature Des	cripti	on: (check	all that a	pply)														
Sh	ape (v	with respec	ct to <u>OHV</u>	<u>V</u>)					Substr	ate					Vegetat	ion Cove	r Type (I	MBSS)
Natural Channel		e	Width: 1-	·6'		<u> </u>	<u>~</u> [Silts	Sa	nds		✓ M	1uck	I	RB: Fore	st		
Artificial (man-ı			Depth: 3'				_	Cobbles	G ₁	avel		 O	ther:	:				
✓ Manipulated (ma	an-alte	/	Bank Erc		•			Bedrock	L Co	oncre	ete	Leaves	3					
Other:			Moderate	ely stable	Э	Side	slo	pe:	$1 \square 2:1$	✓] 3	:1	: 1	I	LB: Fore	st		
Notes:																		
Weather/Pre	cinita	tion Cond	itions:															
,, 0000007111	_	ches of						Mo	ıthly Dr	ougl	ht (Condition	n					
		n Within							NCDC R						Mo	nth:	Yea	r:
During Field Visit	La	st Week	http://v	www.ncd	c.noaa.go	v/temp-a	nd-	-precip/cli					ıdex.	.php	May	/	201	7
O No rain	0	0-0.5	0	0	0	0		0	0	С)	0		\supset	0	0	0	0
O Light rain	0	0.5-1	-6	-5	-4	-3		-2	-1	0		1		2	3	4	5	6
O Heavy Rain	0	>1	Se	vere Dro	ıght	Modera	ate !	Drought		Norr	na	1	Mo	odera	tely Wet	S	everely V	Vet
Non-tidal tri	butar	v has: (che	eck all tha	t apply:	include ph	otos for	eac	h & list ph	oto #)									
Bed and Banks				11.37	<u>, </u>	<i></i>		Ordinary 1		iter I	Ma	ark						
✓ Yes		Clear, na	tural line	impresse	d on the ba	ank		Sedimen	t deposit	ion				Sedi	ment sorti	ng		
☐ No		Changes	in the cha	racter of	`soil		✓	Water st					✓	Scou	ır			
		Shelving						Presence	of flood	l litte	er/c	debris		Obse	erved/pred	icted flov	v events	
	✓				ent, or abso	ent		Destruct				l veg.		Abru	ıpt change	in plant	communi	ty
	✓	Leaf litte	er disturbe	d				Presence	of wrac	k lin	e			Othe	er:			
Tidal tributa	ry ha	s: (check a	ll that ap	ply; incli	ide photos	for each	<i>&</i>	list photo	#)									
H	igh Ti	de Line			Mean H	ligh Wat	ter l	Mark indi	cated by	7:				Che	mical Cha	aracteris	tics	
Oil or scum line					Survey	to availa	ıble	datum				Water						
Fine shell or del						al markin					L	Wateı		iscol	ored			
Physical markin	gs/cha	racteristics	}		Vegeta	tion lines	s/ch	anges in ty	pes			Oily f						
Tidal gauges												Other	:					
Notes:																		

Project/Site: 1-95 5th Lane Widening	City/County: Harford County		Sampling Date: <u>7/7/2017</u>
Applicant/Owner: MDTA		State: MD	Sampling Point: UU-WET
Investigator(s): ET/KJH	Section, Township, Range:		
Landform (hillslope, terrace, etc.): Depression	Local relief (concave, convex, nor	ne): Concave	Slope (%): <u>0</u>
Subregion (LRR or MLRA): LRR S; MLRA 148 Lat: 39.44268	Long: <u>-^{-76.3}-</u>	4389	Datum: WGS84
Soil Map Unit Name: Av		NWI classifi	cation: PFO
	ntly disturbed? Are "Normal problematic? (If needed, e	(If no, explain in F Circumstances" explain any answe ons, transects	present? Yes No ers in Remarks.)
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Yes O No O No O	Is the Sampled Area within a Wetland?	Yes Yes	No No
Photos 719-721. Depression floodplain wetland adjac	cent to Waters G.		
HYDROLOGY			
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13)	bly) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living Roots (C3) f Reduced Iron (C4) Reduction in Tilled Soils (C6) Surface (C7) ain in Remarks)	Surface Soi Sparsely Ve Drainage Pa Moss Trim L Dry-Season Crayfish Bu Saturation V Geomorphic Shallow Aqu	Water Table (C2) rrows (C8) /isible on Aerial Imagery (C9) Stressed Plants (D1) c Position (D2) uitard (D3) aphic Relief (D4)
Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Yes V No Depth (includes capillary fringe)	hes): 0 Wetland F		nt? Yes No No
Describe Recorded Data (stream gauge, monitoring well, aerial pl	notos, previous inspections), if ava	illable:	
Remarks:			

/EGETATION (Five Strata) – Use scientific na	ames of _l	plants.		Sampling Point: UU-WET	
	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>20'</u>)	% Cover	Species?	<u>Status</u>	Number of Dominant Species	
1. Acer rubrum	_60	yes	FAC	That Are OBL, FACW, or FAC: $\frac{4}{}$ (A)	
2. Liquidambar styraciflua	10	<u>no</u>	FAC	Total Number of Dominant	
3. Fagus grandifolia	15	no	FACU	Species Across All Strata: 5 (B)	
4. Nyssa sylvatica		<u>no</u>	FAC	Percent of Dominant Species	
5				That Are OBL, FACW, or FAC: 80.0 (A/B	3)
6				Prevalence Index worksheet:	
	100	= Total Cov	er		
50% of total cover: <u>50.0</u>	20% of	total cover:	20.0		
Sapling Stratum (Plot size: 20'				OBL species x 1 = 0 FACW species x 2 = 0	
1				FAC species x 2 = 0	
2					
3				FACU species $x = 4 = 0$	
4				UPL species $x = 5 = 0$	
5				Column Totals: (A) 0 (B))
6.				Prevalence Index = B/A =	
	0	= Total Cov	er	Hydrophytic Vegetation Indicators:	_
E00/ of total covery 0.0				1 - Rapid Test for Hydrophytic Vegetation	
50% of total cover: <u>0.0</u>	20% 01	total cover:	0.0	2 - Dominance Test is >50%	
Shrub Stratum (Plot size: 20') 1. Viburnum dentatum	15	yes	FAC	☐ 3 - Prevalence Index is ≤3.0 ¹	
2. Vaccinium corymbosum	15	yes	FACW	4 - Morphological Adaptations ¹ (Provide supporting	na
3 Fagus grandifolia	30			data in Remarks or on a separate sheet)	9
		yes	FACU	☐ Problematic Hydrophytic Vegetation¹ (Explain)	
4					
5				¹ Indicators of hydric soil and wetland hydrology must	
6	60			be present, unless disturbed or problematic.	
		= Total Cov		Definitions of Five Vegetation Strata:	
50% of total cover: <u>30.0</u>	20% of	total cover:	12.0	Tree – Woody plants, excluding woody vines,	
Herb Stratum (Plot size: 20')				approximately 20 ft (6 m) or more in height and 3 in.	
1. Symplocarpus foetidus	80	<u>yes</u>	OBL	(7.6 cm) or larger in diameter at breast height (DBH).	
2. Osmunda Cinnamomea	10	no	FACW	Sapling – Woody plants, excluding woody vines,	
3. Smilax rotundifolia	5	no	FAC	approximately 20 ft (6 m) or more in height and less	
4				than 3 in. (7.6 cm) DBH.	
5				Shrub – Woody plants, excluding woody vines,	
6				approximately 3 to 20 ft (1 to 6 m) in height.	
7				Herb – All herbaceous (non-woody) plants, including	
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3	,
9				ft (1 m) in height.	,
10				L	
11				Woody vine – All woody vines, regardless of height.	
	95	= Total Cov	er		
50% of total cover: 47.5	20% of	total cover:	19.0		
Woody Vine Stratum (Plot size:)		10101 00101			
1					
2					
3					
4 5.					
J	0	= Total Cov		Hydrophytic	
				Vegetation Present? Yes No	
50% of total cover: 0.0		total cover:	U.U		
Remarks: (Include photo numbers here or on a separate s	heet.)				

Sampling Point: UU-WET

Color (moist)	Texture Remarks CL organic material mixed in CL SCL SCL
10 10 10 10 10 10 10 10	CL SCL
10 YR 5/8	SCL
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ydric Soil Indicators: Histosol (A1)	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Varic Soil Indicators:	SCL
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Sandy Redox (S	
ydric Soil Indicators: Histosol (A1) Histosol (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Popleted Matrix (S4) MLRA 136) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 127, 188) Bestrictive Layer (if observed): Type: Depth (inches):	
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Sandy Redox (S5) Sandy Redox (S5) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 127, 188) Redox Dark Surface (F7) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 127, 188) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Redox Depressions (F8) Iron-Manganese Masses (F12) (MLRA 136, 122) Redox Depressions (F8) Iron-Manganese Masses (F12) (MLRA 136, 122) Redox Depressions (F8) Iron-Manganese Masses (F12) (MLRA 136, 122) Redox Depressions (F8) Redox Depressions (F8) Iron-Manganese Masses (F12) (MLRA 136, 122) Redox Depressions (F8) Redo	- -
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Depleted Dark Surface (F12) (LRR N, MLRA 136) Depleted Dark Surface (F13) (MLRA 136, 122) Depleted Dark Surface (F13) (MLRA 136, 122) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 127, 128) Estrictive Layer (if observed): Type: Depth (inches):	
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Sandy Redox (S6) Red Parent Material (F21) (MLRA 127, 128) Setrictive Layer (if observed): Type: Depth (inches):	
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Depleted Dark Surface (F12) (LRR N, MLRA 136) Depleted Dark Surface (F13) (MLRA 136, 122) Depleted Dark Surface (F13) (MLRA 136, 122) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 127, 128) Estrictive Layer (if observed): Type: Depth (inches):	
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Sandy Redox (S6) Red Parent Material (F21) (MLRA 127, 128) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Where Tion-Manganese Masses (F12) (MLRA 127, 128) Piedmont Floodplain Soils (F19) (MLRA 127, 128) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Red Parent Material (F21) (MLRA 127, 128) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Red Parent Material (F21) (MLRA 127, 128) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Redox Depressions (F8) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Redox Depressions (F8) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Redox Depressions (F8) Redox Depressions (F	-
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Sandy Redox (S6) Red Parent Material (F21) (MLRA 127, 128) Setrictive Layer (if observed): Type: Depth (inches):	² Location: PL=Pore Lining, M=Matrix.
Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Sandy Redox (S5) Stripped Matrix (S6) Polyvalue Below Surface (S8) (MLRA 147, 148 Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 127, 128) Strictive Layer (if observed): Type: Depth (inches):	Indicators for Problematic Hydric Soils ³
Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Strictive Layer (if observed): Type: Depth (inches):	2 cm Muck (A10) (MLRA 147)
Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Depleted Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 127, 1) Strictive Layer (if observed): Type: Depth (inches):	• • • • • • • • • • • • • • • • • • • •
Stratified Layers (A5) 2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Depleted Matrix (F3) Redox Dark Surface (F7) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 127, 138) Strictive Layer (if observed): Type: Depth (inches):	(MLRA 147, 148) ☐ Piedmont Floodplain Soils (F19)
2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 127, 136) Strictive Layer (if observed): Type: Depth (inches):	(MLRA 136, 147)
Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Strictive Layer (if observed): Type: Depth (inches):	Very Shallow Dark Surface (TF12)
Sandy Mucky Mineral (S1) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 127, 198 trictive Layer (if observed): Type: Depth (inches):	Other (Explain in Remarks)
MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Type: Depth (inches):	
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Type: Depth (inches):	
Sandy Redox (S5) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 128 trictive Layer (if observed): Type: Depth (inches):	³ Indicators of hydrophytic vegetation and
Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 1 estrictive Layer (if observed): Type: Depth (inches):	
Type: Depth (inches):	
Depth (inches):	
emarks:	Hydric Soil Present? Yes No

Project/Site: 1-95 5th Lane Widening	City/County: Harford County		Sampling Date: <u>7/7/2017</u>
Applicant/Owner: MDTA		State: MD	Sampling Point: VV-WET
Investigator(s): ET/KJH	Section, Township, Range:		
Landform (hillslope, terrace, etc.): Terrace	Local relief (concave, convex, non	e): Concave	Slope (%): 2
Subregion (LRR or MLRA): LRR S; MLRA 148 Lat: 39.44308	Long: <u>-^{76.34}</u>	167	Datum: WGS84
Soil Map Unit Name: KpB		NWI classifi	cation: PFO
Are climatic / hyd <u>rologic conditions</u> on the site typica <u>l for</u> this time of	year? Yes _✓ No _ (If no, explain in F	Remarks.)
Are Vegetation, Soil, or Hydrology significan	itly disturbed? Are "Normal	Circumstances"	present? Yes No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, e	xplain any answ	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	ng sampling point locatio	ns, transects	s, important features, etc.
Hydrophytic Vegetation Present? Yes O No O	Is the Sampled Area	. , √	´
Hydric Soil Present? Wetland Hydrology Present? Yes No O	within a Wetland?	Yes	No
Wouldn't Hydrology Frodolic.	_		
Remarks:			
Photos 722-723. Disturbed wetland at toe of slope ad	jacent to Waters G. Fill mat	eriai throughd	out soil profile.
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indic	ators (minimum of two required)
Primary Indicators (minimum of one is required; check all that appl	y)	☐ Surface Soi	Cracks (B6)
✓ Surface Water (A1) ☐ True Aquatic	Plants (B14)	Sparsely Ve	getated Concave Surface (B8)
	ulfide Odor (C1)		atterns (B10)
	izospheres on Living Roots (C3)	Moss Trim L	
	Reduced Iron (C4)		Water Table (C2)
	Reduction in Tilled Soils (C6)	Crayfish Bu	
Drift Deposits (B3)	, ,	_ `	isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	in in Remarks)	Stunted or S	Stressed Plants (D1)
☐ Iron Deposits (B5)		☐ Geomorphic	Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aqu	uitard (D3)
Water-Stained Leaves (B9)		Microtopogr	aphic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutra	l Test (D5)
Field Observations:			
Surface Water Present? Yes No Depth (inch	es): <u>0.5</u>		
Water Table Present? Yes No Depth (inch	es): <u>6</u>		
Saturation Present? Yes Vo Depth (inch	es): 0 Wetland H	ydrology Prese	nt? Yes No No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial ph	atas provious inspections) if quai	ilabla	
Describe Recorded Data (stream gauge, monitoring well, aerial pri	bios, previous inspections), il avai	liable.	
Remarks:			
Perched water on top of compacted fill soils.			

/EGETATION (Five Strata) – Use scientific na	ames of p	olants.		Sampling Point: VV-WET	-
	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: 20') 1 Acer rubrum		Species? yes	Status FAC	Number of Dominant Species That Are OBL FACW or FAC: 2	(4)
1. Acer (ubrum) 2				That Are OBL, FACW, or FAC: 2	(A)
3				Total Number of Dominant	(D)
				Species Across All Strata:	(B)
4 5				Percent of Dominant Species That Are OBL FACW or FAC: 100.0	(4 (5)
6.				That Are OBL, FACW, or FAC: 100.0	(A/B)
0	20	= Total Cov		Prevalence Index worksheet:	
				Total % Cover of: Multiply by:	
50% of total cover: <u>10.0</u>	20% of	total cover:	4.0	OBL species x 1 = 0	_
Sapling Stratum (Plot size: 20'				FACW species x 2 = 0	_
1				FAC species x 3 = 0	_
2				FACU species x 4 = 0	
3				UPL species x 5 = 0	_
4				Column Totals: (A) 0	_ (B)
5					
6				Prevalence Index = B/A =	_
	0 :	= Total Cov	er	Hydrophytic Vegetation Indicators:	
50% of total cover: 0.0	20% of	total cover:	0.0	1 - Rapid Test for Hydrophytic Vegetation	
Shrub Stratum (Plot size: 20'				2 - Dominance Test is >50%	
1				3 - Prevalence Index is ≤3.0 ¹	
2				. 4 - Morphological Adaptations (Provide supp	oorting
3				data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain	-\
4				Problematic Hydrophytic Vegetation (Explain	n)
5				The disease of booking and continued booking as	4
6				¹ Indicators of hydric soil and wetland hydrology m be present, unless disturbed or problematic.	nust
	:	= Total Cov	er	Definitions of Five Vegetation Strata:	
50% of total cover: 0.0	20% of	total cover:	0.0		
Herb Stratum (Plot size: 20')		total oover,		Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3	in
1. Liquidambar styraciflua	15	yes	FAC	(7.6 cm) or larger in diameter at breast height (DE	ш. ЗН).
2. Dichanthelium clandestinum	3	no	FAC	Sapling – Woody plants, excluding woody vines,	
3. Microstegium vimineum	5	no	FAC	approximately 20 ft (6 m) or more in height and le	
4. Smilax rotundifolia	3	no	FAC	than 3 in. (7.6 cm) DBH.	
5. Juncus effusus	3	no	FACW	Shrub – Woody plants, excluding woody vines,	
6				approximately 3 to 20 ft (1 to 6 m) in height.	
7				Herb – All herbaceous (non-woody) plants, includ	dina
8				herbaceous vines, regardless of size, and woody	
9				plants, except woody vines, less than approximat ft (1 m) in height.	tely 3
10				it (i iii) iii neigiit.	
11				Woody vine – All woody vines, regardless of height	ght.
	29	= Total Cov			
500/ 51.1. 14.5					
50% of total cover: 14.5	20% of	total cover:	5.8		
Woody Vine Stratum (Plot size: 20'					
1					
2					
3					
4					
5				Hydrophytic	
	· ·	= Total Cov		Vegetation	
50% of total cover: 0.0	20% of	total cover:	0.0	Present? Yes No No	
Remarks: (Include photo numbers here or on a separate s	heet.)			-	

Sampling Point: VV-WET

SOIL

Profile Desc	ription: (Describe	to the dep	th needed to docu	nent the	indicator	or confirn	n the absence	of indicators.)
Depth	Matrix			x Feature		. 2		
(inches)	Color (moist)		Color (moist)	%	Type¹_	Loc ²	<u>Texture</u>	Remarks
0-2	10YR 4/2	100					SL	Gravel mixed in
2-7	10YR 5/6	75	7.5 YR 4/6	10	C	PL_	SCL	
			2.5 Y 7/1	15		_M		
7-14	10YR 6/4	50	7.5 YR 4/6	40	С	M	SCL	
			2.5 Y 7/1	10		M		
					-			
¹ Type: C=Co	oncentration, D=Dep	letion, RM	=Reduced Matrix, M	S=Maske	d Sand Gra	ains.		PL=Pore Lining, M=Matrix.
Hydric Soil			_				_	ators for Problematic Hydric Soils ³ :
Histosol			Dark Surface					2 cm Muck (A10) (MLRA 147)
_	pipedon (A2)		Polyvalue Be				148) C	Coast Prairie Redox (A16)
Black Hi	stic (A3) n Sulfide (A4)		☐ Thin Dark Su☐ Loamy Gleye			47, 148)	П	(MLRA 147, 148) Piedmont Floodplain Soils (F19)
	l Layers (A5)		Depleted Ma		(Г2)		Щ.	(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark	` '	=6)		\square \vee	/ery Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (A11)	Depleted Da		,		<u> </u>	Other (Explain in Remarks)
=	ark Surface (A12)		Redox Depre		,			
	lucky Mineral (S1) (LRR N,	∐ Iron-Mangan		ses (F12) (LRR N,		
	147, 148)		MLRA 13	,	/MI DA 42	c 400\	31	disators of hydrophytic verstation and
	Bleyed Matrix (S4) Bedox (S5)		Umbric Surfa		-			dicators of hydrophytic vegetation and etland hydrology must be present,
	Matrix (S6)		Red Parent I	•			•	lless disturbed or problematic.
	_ayer (if observed)	:			, ,		<u> </u>	,
Type: gra	ivel							
Depth (inc	ches): <u>14</u>		<u> </u>				Hydric Soil	Present? Yes No No
Remarks:	nha-alnha-Dinyr	idyl etrin	s tosted positive	for rodu	icina cor	nditions i	n upper 4 ir	nches of soil profile. Soils
								atures. Fill soils do not meet the
			dric soil indicator		abarraar	πτοασχί	morpino ioo	ataros. I in sone as not most the
		, , ,						

Waters of the U.S. Data Sheet

Dro	ject: I-95 5th Lane Wi	doning				•	aters or	tiit	e U.S. Dat	Featu	ıra	ID.	١٨/\٨/			Strag	am Orde	r.	
	te: 7/7/2017	ueriirig				State: MD	<u> </u>			Photo						5116	aiii Oi ue	1.	
	ew: ET/KJH					County:							umber: w	/W-3A8					
CI	Feature Hydr	ologi	c Class (c	heck one)	•	County.	Папога			Last	1 14	SITT	amber	777 0710					
	Tidal	<u> </u>	1		ennial			In	termittent		Т					Epheme	ral		
\bigcap	TNW (Subject to	ebb a	ind O	TNW – Pe			○ RP		Seasonal		10	<u> </u>	Non-RPW	n-RPW draining uplands					
\sim	flow)			(Flowing		ıd)			least 3 mo		1					l feature			
	,			RPW – Pe			yea	r)				N C	Von-RPW	V wi	th abu	itting wetl	and		
			\sim	(Flowing	year rour	ıd)						N C	Non-RPW	V wi	th adj	acent wetl	and		
	cribe rational hydrologic class:	Mini	mal to no	o flow in o	channel	. Significa	ant rain	pric	or to delir	eation.			Non-RPW outside o			adjacent o	or abuttin	g upstrean	n
Нус	drologic Connecti	vity –	Upsti	ream: Outsi	de study a	rea	Do	wns	tream: Wat	ers N			А	djac	cent/A	butting: N	one		
	Feature Desc	riptio	n: (check	all that a	pply)		<u> </u>						•						
				ct to OHV						Substr	ate					Vegetati	ion Cove	r Type (N	(IBSS)
	Natural Channel	Shape	;	Width: 4	·6'			∠	Silts	✓ Sa	ınds	S	N	Iuck	(I	RB: Volur			,
	Artificial (man-m	ade)		Depth: 3'				╧	Cobbles	✓ Gı	rave	el		ther	::			3	
✓	Manipulated (ma	n-alte	red)	Bank Erc	sion/stab	oility:			Bedrock	Co	onci	rete							
	Other:			Moderate	erosior	1	Side	slo	pe: 🗹 ≥1:	1 2:1	1 [3:	:1	1:1		LB: Volur	nteer he	dgerow	
Not	Notes:																		
	Weather/Precipitation Conditions:																		
	Inches of Monthly Drought Condition																		
			n Within							NCDC R						Mo	nth:	Year	: :
Du	ring Field Visit	Las	st Week	http://v	ww.ncd	c.noaa.go	v/temp-a	ınd-	-precip/cli	matolog	ical	l-rar	nkings/in	ıdex	.php	May	y	2017	7
0	No rain	0	0-0.5	0	0	0	0		0	0		\supset	0	(0	0	0	0	0
0	Light rain	0	0.5-1	-6	-5	-4	-3		-2	-1		0	1		2	3	4	5	6
0	Heavy Rain	0	>1	Ser	ere Dro	ught	Moder	ate	Drought		No	rmal		M	odera	tely Wet	S	everely W	⁷ et
	Non-tidal trib	utary	/ has: (<i>ch</i>	eck all tha	t apply;	include ph	otos for												
	Bed and Banks							(Ordinary 1	0			rk						
M	Yes					d on the ba	ınk	<u> </u>	Sedimen		tion	l		$oxed{\checkmark}$		ment sorti	ng		
Ш	No	ᆜ			racter of	cter of soil Water staining Scour													
			Shelving				Presence of flood litter/debris												
						ent, or abse	or absent				У								
	Leaf litter disturbed Presence of wrack line Other: Tidal tributary has: (check all that apply; include photos for each & list photo #)																		
		•		ill that ap	oly; incli										Cl			4.0	
			de Line	4	<u> </u>		0		Mark indi	cated by	y:	╬	337-4-			mical Cha	aracteris	tics	
╟╣	Oil or scum line a						to availa		uatum			╬	Water		discol	orad			
₩	Fine shell or debr Physical marking		`		┈╠		al markir		anges in ty	mag		╬	Oily 1			JI CU			
╠╬	Tidal gauges	5/ CHd	acteristics	<u> </u>	<u> </u>	vegeta	tion inte	5/ 011	anges in ty	pes		╠	Other						
Not												_ L_		•					
\mathbf{I}	es.																		

Appendix D – Forest Stand Datasheets

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: FS1		Project: -	Project: I-95 5th Lane Widening				
Owner/Applicant: MDTA			State: MD County: Harford				
Date: 4/5/2017	Prepared by: ET/MH	Photos: 5	9-60				
Type of Community: Chest	tnut Oak Association		Forest Stand Area: 5.92				
Stand Successional Stage:	Early Mid	Mature	Percent Canopy Closure: 80				
	Existir	g Vegetation					
Dominant Species in Cano	opy: Size Clas	ss: Notes:					
Tulip poplar Red maple White oak Chestnut oak	 	1" -20" -30"	sions of white pine, Virginia pine,				
Dominant Species in Unde	erstory:	Notes:					
American beech American holly Mountain laurel							
Dominant Species in Herb	Daceous Layer:	Notes:					
Greenbrier Multiflora rose Wild onion		Minim	al herbaceous cover				
Downed Woody Debris:	Invasive Species Cover:	Invasive Spec	ies Present:				
High Medium Low	High Medium Low	Bradford pea	ar, more invasives near corner of MD 152				
General Stand Conditions	General Stand Conditions:						
			al invasive species, and perennial ghout the stand and some dead standing				

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: FS2		Project: I-95 5th	Lane Widening		
Owner/Applicant: MDTA		State: MD County: Harford			
Date: 4/19/2017	Prepared by: ET/MH	Photos: 266-268			

					,
Type of Community: Red Ma	ple Association				Forest Stand Area: 6.99
Stand Successional Stage:	✓ Early	✓ Mid	Ma	ature	Percent Canopy Closure: 90
		Existin	ıg Vege	etation	
Dominant Species in Canop	y:	Size Clas	ss:	Notes:	
Red maple		2-6			ions of loblolly pine and American
Sweet gum		6-1	.1" ·20"	sycan	nore
Tulip poplar			-30"		
Dominant Species in Unders	story:			Notes:	
Sweet gum					
Red cedar Red maple					
riou map.s					
Dominant Species in Herbac	ceous Layer:			Notes:	
Multiflora rose					
Greenbrier					
Japanese honeysuckle Wild onion					
Downed Woody Debris:	Invasive Speci	es Cover:		_	ies Present:
High	✓ High		High	invasiv	es see dominant species
✓ Medium Low	Mediun Low	n			
20"					
					+
General Stand Conditions:					
					asive species cover, presence of
wetlands and waterways	, and relative	y large cor	nuguo	us natu	re of the stand.

	WALK-THROUGH FOREST STAND ANALYSIS									
Forest Stand ID: FS3			Project: -	Project: I-95 5th Lane Widening						
			State: MD		County: Harford					
Date: 4/26/2017	Date: 4/26/2017 Prepared by: ET/MH			Photos: 298-299						
T (C)					G() 1 1					
Type of Community: White	e Oak-Black Oak-No	rthern Red Oak Ass	ociation	Forest	Stand Area: 8.52					
Stand Successional Stages	Early	✓ Mid	Mature	Percer	nt Canopy Closure: 80					
		Existing V	egetation							
Dominant Species in Can	opy:	Size Class:	Notes:							
Northern red oak		2-6"								
White oak		6-11"								
American beech		12-20"	,							
American becom		20-30"	,							
		>30"								
		+								
Dominant Species in Und	erstory:		Notes:							
American beech										
American holly										

Downed Woody Debris:	Invasive Species Cover:	Invasive Species Present:
High Medium Low	High Medium Low	Bush honeysuckle Japanese honeysuckle
0 10 10 10		

Notes:

General Stand Conditions:

Japanese honeysuckle

Mountain laurel Sweet gum Red cedar

Poison ivy Greenbrier

Virginia creeper

Dominant Species in Herbaceous Layer:

Fair condition overall and high retention value due to moderate invasive species cover, strong canopy closure, larger dominant size class, and presence of specimen trees and wetlands. Some disturbance observed (old spoil area).

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: FS4		Project: I-95 5th Lane Widening			
Owner/Applicant: MDTA		State: MD	County: Harford		
Date: 5/4/2017	Prepared by: ET/MRS	Photos: 326-327			

Type of Community: Red Maple Association					Forest Stand Area: 5.71		
Stand Successional Stage:	Early V	Mid [Ma	iture	Percent Canopy Closure: 80		
Existing Vegetation							
Dominant Species in Canopy: Size Class: Notes:							
Red maple	ĺ	2-6	,	Trees	mostly 6-18" dbh. Pin oaks tend to be		
Green ash		✓ 6-11		larger	-		
Pin oak		✓ 12-2		· ·			
	-	20-3 >30					
	_ └	>30					
Dominant Species in Unders	story.			Notes:	—		
Green ash	,		Notes:				
Red maple							
Multiflora rose							
Greenbrier			_				
Dominant Species in Herba	 ceous Laver:		+	Notes:			
Poison ivy	= j		Dense understory and herbaceous layers.				
Japanese honeysuckle			Heavy invasive species cover.				
Greenbrier				,			
Multiflora rose			#				
Downed Woody Debris:	Invasive Species Co	over.		iva Snaci	as Drasant.		
			Invasive Species Present:				
High	High		Japanese honeysuckle Multiflora rose				
✓ Medium Low	✓ Medium Low		wiaitii	11014 100			
12000							
General Stand Conditions:							
Fair to poor condition with moderate retention value due to invasive species cover, competition to							
regeneration, pockets of dead trees and presence of wetlands and waterways. Small break in forest at							
rip rap swale.							

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: FS5		Project: I-95 5th Lane Widening		
Owner/Applicant: MDTA		State: MD	County: Harford	
Date: 5/4/2017	Prepared by: ET/MRS	Photos: 339-340		

Type of Community: White C		Association	Forest Stand Area: 5.72				
Stand Successional Stage: Early Mid M							
			T,				
Existing Vegetation							
Dominant Species in Canopy: Size Class: Notes:							
American beech	2-6						
Tulip poplar 6-11"							
Red maple Northern red oak		-30"					
Black oak	>3	0"					
Diack Cak	+						
Dominant Species in Unders	story:	Not	Notes:				
American beech		Inc	Inclusions of black gum				
D : 10 : H I		N T 4					
Dominant Species in Herba	ceous Layer:		Notes:				
Sensitive fern		Mir	Minimal herbaceous layer				
Cinnamon fern							
		+	±				
Downed Woody Debris:	Invasive Species Cover:	Invasive S	sive Species Present:				
High			panese stiltgrass				
✓ Medium	NA I		oanese honeysuckle Itiflora rose				
Low	Low	Multillora Phragmit					
		Tinagiriii					
General Stand Conditions:							
Forest is in good shape overall with multiple specimen trees identified and minimal invasives. Some Phragmites on outer edge. Retention value is high due to presence of wetlands and waterways.							
5							

WALK-THROUGH FOREST STAND ANALTSIS						
Forest Stand ID: FS6	Project: I-95 5th Lane Widening					
Owner/Applicant: MDTA	State: MD County: H		County: Harford			
Date: 5/10/2017	Prepared by: ET/MRS	Photos: 355-356				
Type of Community: Tulip Poplar Association			Forest Stand Area: 2.71			
Stand Successional Stage: Early Mid Mature				t Canopy Closure: 90		

Type of Community: Tulip Po	oplar Association	Forest Stand Area: 2.71				
Stand Successional Stage:	Early	✓ Mid	Mature	Percent Canopy Closure: 90		
		Existin	ng Vegetatio	n		
Dominant Species in Canop	y:	Size Clas	ss: Not	es:		
American beech		2-6	5"			
Tulip poplar		6-1				
White oak			-20" -30"			
Red maple		>30				
		+				
Dominant Species in Unders	story:		Not	es:		
American beech						
Sweet gum Red maple						
neu mapie						
Dominant Species in Herba	ceous Laver		Not	ac.		
Greenbrier	ccous Layer.			Minimal herbaceous cover		
American beech and rec	l manle seed	linge	14111	iiinai nerbaccous cover		
American beech and rec	i mapie seed	iiigs				
			+	+		
Downed Woody Debris:	Invasive Spec	cies Cover:	Invasive S	pecies Present:		
High	High		Some Ja	panese honeysuckle on I-95 embankment		
✓ Medium	Mediu	m	on edge			
Low	✓ Low					
				Đ.		
General Stand Conditions:						
Good quality forest with forested wetlands and w			ne invasive	es on edges. High retention value due to		
Torested Wellands and W	alerways wil	11111.				

WALK-THROUGH FOREST STAND ANALTSIS						
	Project: I-95 5th Lane Widening					
Owner/Applicant: MDTA		County: Harford				
Prepared by: ET/MRS	Photos: 363-364					
Poplar Association	F	Forest Stand Area: 1.74				
Early / Mid	Mature P	Percent Canopy Closure: 80				
	Prepared by: ET/MRS Poplar Association	Project: 1-95 State: MD Prepared by: ET/MRS Poplar Association Project: 1-95 State: MD Photos: 363				

Type of Community: Tulip Po	oplar As	sociation	n					Forest Stand Area: 1.74
Stand Successional Stage:	_	Early	· •	Mid	$\overline{}$	٦ _M	ature	Percent Canopy Closure: 80
Stand Successional Stage.	<u> </u>	Larry	•	17114		11120	ituic	1 creene canopy crosure.
				Exis	ting	Vege	etation	
Dominant Species in Canop	y:			Size C	lass:		Notes:	
Red maple				<u></u>	2-6"			
American beech					5-11"			
Tulip poplar					12-20 20-30			
White oak					20-30 >30"			
			+					
Dominant Species in Unders	story:						Notes:	
American beech								
Black gum								
						+		
Dominant Species in Herba	ceous]	Layer:					Notes:	
American beech seedling	gs						Very s	sparse herbaceous layer
						+		Ð
Downed Woody Debris:	Inva	sive Spe	ecies	Cover:	I	nvasi	ive Spec	ies Present:
High		High			l v	None)	
✓ Medium		Medi	um					
Low	_	Low						
								Ð
General Stand Conditions:								
					alon	g ro	adside.	Moderate retention value due to good
canopy closure and mini	mai ii	nvasive	e co	/er.				

Forest Stand ID: FS8		Project: I-95 5th Lane Widening		
Owner/Applicant: MDTA		State: MD	County: Harford	
Date: 5/10/2017	Prepared by: ET/MRS	Photos: 370-371		

				,	
Type of Community: Tulip Po	pplar Association			Forest Stand Area: 3.99	
Stand Successional Stage:	✓ Early ✓ Mid	Mar Mar	ture	Percent Canopy Closure: 75	
	Existin	ng Veget	tation		
Dominant Species in Canop	y: Size Cla	ss:	Notes:		
Red maple	2-0	6"			
Sweet gum	6-1	11"			
Tulip poplar	<u> </u>	-20"			
American beech	>3	-30"			
Dominant Species in Unders			Notes:		
Sweet gum					
American beech					
Red maple					
Dominant Species in Herba	ceous Layer:		Notes:		
Multiflora rose			High invasive cover		
Greenbrier			•		
Poison ivy					
Japanese honeysuckle		+			
Downed Woody Debris:	Invasive Species Cover:	Invasi	ve Speci	es Present:	
High	✓ High	Multif	lora ros	se	
Medium	Medium			oneysuckle	
Low	Low				
General Stand Conditions:					
Stand in fair condition du	ue to heavy invasives ar	nd dens	se vines	s in the canopy. Better condition beyond	
roadside and study area	. High retention value de	ue to w	aterwa	ys within the forest.	

Forest Stand ID							
Forest Stand ID: FS9			Project: I-95 5th Lane Widening				
Owner/Applicant: MDTA		State: MD		County: Harford			
Date: 5/18/2017	Prepared by: ET/MRS	Photos: 40	Photos: 461-462				
Type of Community: Tulip	oplar Association		Forest	Stand Area: 7.53			
Stand Successional Stage:	✓ Early Mid	Mature	Percen	t Canopy Closure: 70			
Existing Vegetation							
Dominant Species in Cano	py: Size Class:	Notes:					
Red maple	2-6"	Some	12-20"	trees, but mostly young			
Green ash	6-11						
Black gum	12-20						
Sweet gum	20-30 >30")"					
Tulip poplar							
Dominant Species in Unde	rstory:	Notes:					
American beech	•						
Blackhaw							
Arrowwood							
Northern red oak							
Dominant Species in Herbaceous Layer:							
•							
Poison ivy		High d	ensity				
Multiflora rose		High d	ensity				
Multiflora rose Japanese honeysuckle		High d	ensity				
Multiflora rose		High d	ensity				
Multiflora rose Japanese honeysuckle Greenbrier Blackberry	Invasive Species Cover: I		ŕ	ent:			
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris:		nvasive Speci	es Prese	ent:			
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris: High	High		es Prese	ent:			
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris:		nvasive Speci	es Prese	ent:			
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris: High Medium	✓ High Medium	nvasive Speci	es Prese	ent:			
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris: High Medium	✓ High Medium	nvasive Speci	es Prese	ent:			
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris: High Medium	High Medium Low	nvasive Speci	es Prese	ent:			
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris: High Medium Low General Stand Conditions	High Medium Low	nvasive Speci See herbace	es Prese				
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris: High Medium Low General Stand Conditions Primarily edge habitat,	High Medium Low	nvasive Speci See herbace	es Prese	invasive undergrowth, vines in			
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris: High Medium Low General Stand Conditions Primarily edge habitat,	High Medium Low stand is in poor to fair cond ppy cover. Stand has a mod	nvasive Speci See herbace	es Prese				
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris: High Medium Low General Stand Conditions Primarily edge habitat, canopy and spotty cand	High Medium Low stand is in poor to fair cond ppy cover. Stand has a mod	nvasive Speci See herbace	es Prese	invasive undergrowth, vines in			
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris: High Medium Low General Stand Conditions Primarily edge habitat, canopy and spotty cand	High Medium Low stand is in poor to fair cond ppy cover. Stand has a mod	nvasive Speci See herbace	es Prese	invasive undergrowth, vines in			
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris: High Medium Low General Stand Conditions Primarily edge habitat, canopy and spotty cand	High Medium Low stand is in poor to fair cond ppy cover. Stand has a mod	nvasive Speci See herbace	es Prese	invasive undergrowth, vines in			
Multiflora rose Japanese honeysuckle Greenbrier Blackberry Downed Woody Debris: High Medium Low General Stand Conditions Primarily edge habitat, canopy and spotty cand	High Medium Low stand is in poor to fair cond ppy cover. Stand has a mod	nvasive Speci See herbace	es Prese	invasive undergrowth, vines in			

Forest Stand ID: FS10		Project: I-95 5th Lane Widening		
Owner/Applicant: MDTA		State: MD	County: Harford	
Date: 5/18/2017	Prepared by: ET/MRS	Photos: 467-468		

Type of Community: Red Ma	ple Association				Forest Stand Area: 6.85	
Stand Successional Stage:	Early	✓ Mid	Ma	ature	Percent Canopy Closure: 75	
		Existir	ıg Vege	etation		
Dominant Species in Canop	y:	Size Cla	ss:	Notes:		
Red maple		2-6	5"	Cano	by in good shape. Some vines	
Sweet gum		 	11"			
			-20" -30"			
		>3				
					0	
Dominant Species in Unders	story:			Notes:		
Red maple						
Sweet gum American beech						
7 intorioan booon						
Dominant Species in Herba	ceous Layer:			Notes:		
Multiflora rose	·			Sparse herbaceous cover.		
Greenbrier						
Red maple						
Sweetgum			+			
Downed Woody Debris:	Invasive Spe	cies Cover:	Invas	ive Speci	es Present:	
High	High		Multi	flora ros	se. Relatively low invasives presence.	
✓ Medium	Mediu	ım				
Low	∠ Low					
General Stand Conditions:						
Stand is in good condition	n overall wit	h healthy tr	ees ar	nd minin	nal invasive cover. High retention value	
due to good condition ar						

Forest Stand ID: H1	Project: _	Project: I-95 5th Lane Widening				
Owner/Applicant: MDTA			State: MD County: Harford			
Date: 4/5/2017	Prepared by: ET/MH	Photos: 6	2-63			
Type of Community: Easte	rn Red Cedar Association		Forest	t Stand Area: 0.18		
Stand Successional Stage:	✓ Early Mid	Mature	Percer	nt Canopy Closure: 70		
	Existin	g Vegetation				
Dominant Species in Cano	Dominant Species in Canopy: Size Class: Notes:					
Red cedar	✓ 2-6					
Callery pear	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	1" ·20"				
		30"				
1	>30)"				
Dominant Species in Unde	erstory:	Notes:				
Eastern baccharis						
Sweet gum						
1						
Dominant Species in Herb	aceous Layer:	Notes:				
Japanese honeysuckle	•					
•						
Downed Woody Debris:	Invasive Species Cover:	Invasive Speci		ent:		
High	High	Bradford pea Multiflora ros				
✓ Medium Low	Medium Low	Japanese ho		ckle		
	1000		,			
<u></u>						
General Stand Conditions	:					
	ention value is low due to a	a high prevale	ence of	f invasive species and its early		
successional stage.						

Forest Stand ID: H2	Project: I-95 5th Lane Widening						
Owner/Applicant: MDTA		State: MD		County: Harford			
Date: 4/19/2017	Prepared by: ET/MH		^{thotos:} 256-257				
Type of Community: Easter	n Red Cedar Association		Forest	t Stand Area: 0.82			
Stand Successional Stage:	Early Mid	Mature	Percei	nt Canopy Closure: 30			
Existing Vegetation							
Dominant Species in Canopy: Size Class: Notes: Callery pear ✓ 2-6" Red cedar ✓ 6-11" Tree of heaven 12-20" Black locust 20-30" >30"							
Dominant Species in Unde	rstory:	Notes:					
Eastern baccharis Tree of heaven Bush honeysuckle							
Dominant Species in Herb	aceous Layer:	Notes:	Notes:				
Japanese honeysuckle Japanese knotweed Poison ivy							
Downed Woody Debris:	Invasive Species Cover:	Invasive Speci	es Pres	ent:			
High Medium Low	High Medium Bradford pear, tree of heaven, the honeysuckle, Japanese knotwe						
General Stand Conditions							
Stand is in poor condition minimal canopy cover.	on and has a low retentio	n value due to	high i	invasive species presence and			

	WALK-TIROUGH I	JREST STAIN	ID ATT			
Forest Stand ID: H3	Project: -	95 5th	Lane Widening			
Owner/Applicant: MDTA		State: MD	State: MD County: Harford			
Date: 5/4/2017	Prepared by: ET/MRS			Photos: 329-330		
		<u> </u>				
Type of Community: Red N	Maple Association		Forest	t Stand Area: 0.19		
Stand Successional Stage:	✓ Early Mid	Mature	Percei	nt Canopy Closure: 60		
	Existin	g Vegetation				
Dominant Species in Cano	py: Size Clas	ss: Notes:				
Red maple Sweet gum	 	1" 20" 30"	ions of	f black locust		
Dominant Species in Unde	erstory:	Notes:	Notes:			
Red cedar						
Red maple						
Greenbrier						
			N			
Dominant Species in Herb	aceous Layer:	Notes:				
Poison ivy Bush honeysuckle Multiflora rose						
Downed Woody Debris:	Invasive Species Cover:	Invasive Speci	ies Pres	ent:		
High Medium Low	High Medium Low	Bush honeys	Bush honeysuckle, multiflora rose			
General Stand Conditions	: :					
Stand is in fair condition and retention value is moderate due to high invasive species presence and its early successional stage.						

Forest Stand ID: H4		Pro	oject: __ ç	95 5th	Lane Widening	
Owner/Applicant: MDTA			State: MD County: Harford			
Date: 5/24/2017	Prepared by: ET/MH		Photos: 504-505			
5/24/2017	Treparation □ /		30	J4-3(Jo	
Type of Community: White	Oak Association			Forest	t Stand Area: 0.91	
Stand Successional Stage:	Early Mid	Mat	ure		nt Canopy Closure: 65	
Didita Saccessional Sense.	<u> </u>			10100	it canopy crosure.	
		ng Vegeta				
Dominant Species in Cano			Notes:			
White oak Sweet gum	2-0	6"				
Virginia pine	F	2-20"				
9)-30"				
1	>3	30"				
Dominant Species in Unde	erstory:		Notes:			
Sweet gum	•					
Bush honeysuckle Virginia pine						
Willow oak						
American holly						
Dominant Species in Herb	aceous Layer:	1	Notes:			
Japanese honeysuckle Poison ivy						
Multiflora rose						
White oak Greenbrier						
Downed Woody Debris:	Invasive Species Cover:	Invasis	ve Speci	os Pres	ont·	
			•		Japanese honeysuckle, multiflora	
High Medium	✓ High Medium		_		e species cover.	
Low	Low		-		· ·	
C 154 1 Conditions						
General Stand Conditions Stand in in fair condition		iable me	ماسمام	'س امم±	ith dance investige energies cover	
	n overall and has been hi te retention value due to a				ith dense invasive species cover. Irough the hedgerow.	
The stand had his second	,0 101011110111111111111111111111111111	u 01. 2 1		G.1.5	00 9	

Forest Stand ID: H5		Project: -	Project: I-95 5th Lane Widening			
Owner/Applicant: MDTA		State: MD		County: Harford		
Date: 7/7/2017	Prepared by: ET/KJH	Photos: 73	30			
Type of Community: Pin O	ak-Sweet Gum Association		Forest	t Stand Area: 0.08		
Stand Successional Stage:	✓ Early Mid	Mature	Percer	nt Canopy Closure: 45		
	Existir	ng Vegetation				
Dominant Species in Cano	opy: Size Clas	ss: Notes:				
Callery pear Sweet gum Pin oak		11" -20" -30"				
Dominant Species in Unde	erstory:	Notes:				
Sweet gum Eastern baccharis Japanese knotweed						
Dominant Species in Herb	aceous Layer:	Notes:				
Japanese honeysuckle	;					
Poison ivy Japanese knotweed						
Downed Woody Debris:	Invasive Species Cover:	Invasive Speci	ies Pres	ent:		
High Medium Low	High Medium Low	_	oneysu	ıckle, Japanese knotweed. High		
General Stand Conditions						
Stand is in poor conditi species cover.	on and has a low retentio	n value due to	o weak	canopy closure and high invasive		

Forest Stand ID: H6		J	Project: I-95 5th Lane Widening			
Owner/Applicant: MDTA			State: MD County: Harford			
Date: 7/7/2017	Prepared by: ET/KJH	J	Photos: 75	31		
Type of Community: Red N	Maple Association			Forest	t Stand Area: 0.16	
Stand Successional Stage:	Early Mid	M	Iature	Percei	nt Canopy Closure: 60	
	Existi	ng Veş	getation			
Dominant Species in Cano	opy: Size Cla	ass:	Notes:			
Red maple White oak Sweet gum White mulberry	6- 12 20	.6" .11" 2-20" 0-30"				
Dominant Species in Unde	erstory:		Notes:			
Oriental bittersweet Poison ivy Rose of Sharon Slippery elm						
Dominant Species in Herb	aceous Layer:		Notes:			
Japanese knotweed Virginia creeper						
Downed Woody Debris:	Invasive Species Cover:	Inva	sive Speci	es Pres	sent:	
High Medium Low	High Medium Low		ental bitte tweed	rswee	et, Rose of Sharon, Japanese	
General Stand Conditions	:	•				
Stand is in fair and has	a moderate retention va	lue du	ue to the	invasiv	ve species cover.	

	WHEN THROUGHTON		111111	
Forest Stand ID: REF1	Project: I-95 5th Lane Wideni			Lane Widening
Owner/Applicant: MDTA		State: MD		County: Harford
Date: 5/23/2017	Prepared by: ET/MRS	Photos: 479-481		
Type of Community: Plant	·	Forest	Stand Area: 0.79	
a. 1a 1a.		3.5 .	_	. 6 67 1111

Type of Community: Planted	Community				Forest Stand Area: 0.79
Stand Successional Stage:	✓ Early	Mid	Matur	·e	Percent Canopy Closure: N/A
		Existi	ng Vegetat	ion	
Dominant Species in Canop	y:	Size Cla	ss: No	otes:	
Black gum Willow oak Virginia pine Sweet gum Black oak Black locust		12	11" e -20" se -30" re	xcep outh	es are small planted stock with the tion of pre-existing trees on the west and southeast corners of the station area.
Dominant Species in Under	story:		No	otes:	
None					
Dominant Species in Herba	ceous Layer:		No	otes:	
White snakeroot Lespedeza Soft rush Pennycress Broom sedge					
Downed Woody Debris:	Invasive Specie	es Cover:	Invasive	Speci	es Present:
High Medium Low	High Medium Low		None		
General Stand Conditions:					
Relatively new reforesta species present. Stand i				e in g	enerally good shape and no invasive

Forest Stand ID: REF2		Project: -	95 5th	Lane Widening
Owner/Applicant: MDTA		State: MD		County: Harford
Date: 5/23/2017	Prepared by: ET/MRS	Photos: 490-491		
			-	
Type of Community: Plante	ed Community		Forest	Stand Area: 0.51

					7-
Type of Community: Planted					Forest Stand Area: 0.51
Stand Successional Stage:	✓ Early	Mid	Ma	ature	Percent Canopy Closure: N/A
		Existir	ıg Vege	etation	
Dominant Species in Canop	y:	Size Clas	ss:	Notes:	
Sweet gum Red maple Pin oak		 	5" 11" -20"	All sm	nall planted trees
Swamp white oak American holly		20- >30-	-30" 0"		
Dominant Species in Unders	story:	•		Notes:	
None					
Dominant Species in Herba	ceous Layer:			Notes:	
Lespedeza White snakeroot Mugwort					
Downed Woody Debris:	Invasive Species	s Cover:	Invas	ive Speci	ies Present:
High Medium Low	High Medium Low		Some low.	e Japar	nese honeysuckle along roadside. Fairly
General Stand Conditions:					
Relatively new reforesta condition.	tion area. Trees	s in good	condi	tion and	d minimal invasive species. Overall good

Appendix E – Tree Inventory Table

Tree Number	Common Name	Scientific Name	DBH	Condition	Comments
T1	White Oak	Quercus alba	38	Poor	Split above DBH, dead leader, deadwood, included bark
T2	White Oak	Quercus alba	31	Good/fair	Included bark, split above dbh, minor deadwood
T3	Red Maple	Acer rubrum	32	Fair/poor	Cavity in trunk, broken limbs, dead limbs
T4	Northern Red Oak	Quercus rubra	33	Good/fair	Broken branches
T5	American Beech	Fagus grandifolia	33	Poor	Cavities in trunk, broken leader, lean, missing bark, fungus growing in trunk, included bark, split trunk below DBH
T6	Scarlet Oak	Quercus coccinea	33	Poor	Sparse canopy, growth at trunk, lean
T7	American Beech	Fagus grandifolia	33	Fair	Trunk growths, buttress roots
T8	Scarlet Oak	Quercus coccinea	37	Fair	Dead limbs, sparse canopy, included bark
T9	White Oak	Quercus alba	39	Poor	Dead branches, lean, minor vines
T10	Sweet Gum	Liquidambar styraciflua	14	Fair/poor	Deals branches, cavity in trunk
T11	Sweet Gum	Liquidambar styraciflua	6	Fair/poor	Vines, decay, missing bark
T12	Red Maple	Acer rubrum	19	Poor	Cavity in trunk, vines, broken branches
T13	Silver Maple	Acer saccharinum	36	Poor	Dead leader, included bark, lean, heavy vines
T14	Northern Red Oak	Quercus rubra	36	Fair	Deadwood, included bark
T15	Northern Red Oak	Quercus rubra	35	Good	
T16	Tulip Poplar	Liriodendron tulipifera	31	Good	
T17	Black Oak	Quercus veluntina	36	Good	
T18	Northern Red Oak	Quercus rubra	30	Fair	Heavy lean, dead branches
T19	American Beech	Fagus grandifolia	30	Good	
T20	American Beech	Fagus grandifolia	34	Poor	Large old trunk wound
T21	Tulip Poplar	Liriodendron tulipifera	32	Good	
T22	White Oak	Quercus alba	31	Fair	Split above dbh, included bark, suckering
T23	Hawthorn	Crataegus sp.	2	Good	Landscape
T24	Sweet Gum	Liquidambar styraciflua	2	Good	Landscape
T25	Willow Oak	Quercus phellos	1	Good	Landscape
T26	Red Maple	Acer rubrum	2	Good	Landscape
T27	Northern Red Oak	Quercus rubra	1	Good	Landscape
T28	American Holly	llex opaca	1	Good	Landscape
T29	American Beech	Fagus grandifolia	30	Fair	Included bark, dead branches
T30	White Oak	Quercus alba	35	Good/fair	Dead branches
T31	White Oak	Quercus alba	30	Fair/poor	Heavy lean, dead branches
T32	American Beech	Fagus grandifolia	35		Minor basal cavity
T33	American Beech	Fagus grandifolia	33	Fair	Hollow trunk mostly closed up, dead branches
T34	American Holly	llex opaca	2	Fair	Landscape
T35	American Holly	llex opaca	2	Fair	Landscape
T36	American Holly	llex opaca	2	Good/fair	Landscape
T37	American Sycamore	Platanus occidentalis	2	Good	Landscape
T38	American Sycamore	Platanus occidentalis	2	Good	Landscape

Tree Number	Common Name	Scientific Name	DBH	Condition	Comments
T39	American Holly	llex opaca	2	Good/fair	Landscape
T40	American Holly	llex opaca	2	Fair	Landscape
T41	American Holly	llex opaca	3	Good/fair	Landscape
T42	American Holly	llex opaca	3	Good/fair	Landscape
T43	American Holly	llex opaca	2	Good/fair	Landscape
T44	American Holly	llex opaca	3	Fair	Landscape
T45	American Holly	llex opaca	2	Fair	Landscape
T46	American Holly	llex opaca	2	Fair	Landscape
T47	American Holly	llex opaca	2	Fair	Landscape
T48	American Holly	llex opaca	2	Fair	Last landscape tree to the north. All others visible in aerial photography are missing.
T49	American Sycamore	Platanus occidentalis	3	Good	
T50	Pin Oak	Quercus palustris	30	Fair	Minor dead branches
T51	Northern Red Oak	Quercus rubra	30	Good	
T52	Northern Red Oak	Quercus rubra	36	Good	
T53	Northern Red Oak	Quercus rubra	30	Fair/poor	Trunk cavity, heavy lean
T54	Hickory	Carya sp.	30	Fair	Multiple leaders at 10 above ground
T55	Northern Red Oak	Quercus rubra	33	Good/fair	Included bark
T56	Northern Red Oak	Quercus rubra	32	Good/fair	Dead branches
T57	Red Maple	Acer rubrum	31	Good/fair	Split above dbh, slight lean and cracks in bark
T58	American Beech	Fagus grandifolia	30	Fair/poor	Cavity in trunk, missing branches
T59	Tulip Poplar	Liriodendron tulipifera	31	Good	
T60	Pin Oak	Quercus palustris	33	Good/fair	Lean, few vines and dead branches
T61	White Oak	Quercus alba	46	Good/fair	Included bark, dead wood
T62	Tulip Poplar	Liriodendron tulipifera	35	Good/fair	Girdling roots, broken branches
T63	American Sycamore	Fagus grandifolia	40	Fair	Extensive vines, included bark, dead wood
T64	Southern Red Oak	Quercus falcata	36	Fair	Vines, dead wood
T65	American Sycamore	Fagus grandifolia	31	Good/fair	Extensive vines, dead wood

Appendix F – Agency Correspondence



Larry Hogan, Governor Boyd Rutherford, Lt. Governor Mark Belton, Secretary Joanne Throwe, Deputy Secretary

18-MIS-021

September 13th, 2017

William Pines Maryland Transportation Authority 300 Authority Dr. Baltimore, MD 21222

Subject: Fisheries Information for the MDTA I-95 Congestion Safety Improvements from MD 152 to MD 24, MDTA Tracking# KH-3010, Harford County

Dear Mr. Pines:

The above referenced project has been reviewed to determine fisheries species near the proposed project. The proposed activities include providing an auxiliary lane along northbound I-95 from MD 152 to MD 24, restriping the MD 24/ MD 924 ramp, reconstructing the parapets on the Winters Run Bridge and providing a median opening on I-95 south of the Clayton Road bridge overpass in Harford County.

The project will impact Winters Run which is classified as a Use I-P (provides public water supply) stream. Anadromous fish are present directly downstream of Winters Run. Generally no instream work is allowed in Use I streams with anadromous fish between February 15th and June 15th of any given year to protect spawning fish. If adequate sediment and erosion controls can be implemented during construction which will prevent runoff from reaching these streams, and no instream work is required, than a Time of Year restriction period would not need to be implemented. The applicant is encouraged to strictly adhere to the approved sediment and erosion control plan to prevent further sedimentation downstream during construction.

DNR has documented many resident fish species from Winters Run and its tributaries by our Maryland Biological Stream Survey. MBSS data can be accessed via the MDDNR web page at http://streamhealth.maryland.gov, allowing access to resource surveys in neighboring tributaries.

If you have any further questions, please feel free to contact me at 410 260-8736.

Sincerely;

Christopher Aadland

Environmental Review Program

anistopher addland



Larry Hogan, Governor Boyd Rutherford, Lt. Governor Mark Belton, Secretary Joanne Throwe, Deputy Secretary

August 22, 2017

Mr. William N. Pines Maryland Transportation Authority 300 Authority Drive Baltimore, MD 21222-2200

RE: Environmental Review for MDTA I-95 Congestion Safety Improvements from MD 152 to MD 24, MDTA Tracking #KH-3010, Harford County, Maryland.

Dear Mr. Pines:

The Wildlife and Heritage Service has determined that there are no official State or Federal records for listed plant or animal species within the delineated area shown on the map provided. As a result, we have no specific concerns regarding potential impacts or recommendations for protection measures at this time. Please let us know however if the limits of proposed disturbance or overall site boundaries change and we will provide you with an updated evaluation.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely, Loui a. By

Lori A. Byrne,

Environmental Review Coordinator Wildlife and Heritage Service

MD Dept. of Natural Resources

ER# 2017.1225.ha



Maryland Transportation Authority

Larry Hogan Governor

Boyd K. Rutherford Lt. Governor

> Pete K. Rahn Chairman

Katherine Bays Armstrong Peter J. Basso Dontae Carroll William H. Cox, Jr. William C. Ensor, III W. Lee Gaines, Jr. John Von Paris

> Kevin C. Reigrut Executive Director

300 Authority Drive Baltimore MD 21222-2200 410-537-7500 410-537-7803 (fax) 711 (MD Relay) 1-888-754-0098

> e-mail: mdta@ mdta.maryland.gov

www.mdta.maryland.gov

IA TUT/EUR 8/22/17

July 25, 2017

Ms. Elizabeth Hughes State Historic Preservation Officer Maryland Historic Trust 100 Community Place, 3rd floor Crownsville, MD 21032-2023

Attention: Ms. Beth Cole

RE: Maryland Transportation Authority (MDTA)

I-95 Congestion Safety Improvements from MD 152 to MD 24

MDTA Tracking # KH-3010

Harford County, MD

Request for Project Review and Comment

Dear Ms. Hughes:

The Maryland Transportation Authority (MDTA) is proposing to address congestion safety concerns along I-95 northbound at the MD 24 interchange. The proposed improvements will provide an auxiliary lane along northbound I-95 from MD 152 to MD 24, a distance of approximately 2 miles, restriping the MD 24 /MD 924 ramp, reconstruct the parapets on the Winters Run bridge, and to provide a median opening on I-95 south of the Clayton Road bridge overpass in Harford County, MD.

These improvements along I-95 northbound address congestion safety issues and the median opening will provide for emergency access in case of an incident on I-95. These improvements are consistent with the I-95 Section 200 approved FONSI.

A National Register of Historic Places (NRHP) and Maryland Inventory of Historic Properties search of MERLIN Online was also completed and revealed four previously identified historic properties within the project area: Winter's Run A (18HA9), Winters Run I (18HA38), Winter's Run D (18HA40), and Clayton Road (18HA37). Three of the sites (18HA9, 18HA38, and 18HA40) are prehistoric lithic scatters which have not been evaluated for the NRHP. The fourth site (18HA37) is a multi-component prehistoric lithic scatter and historic refuse deposit. The site was evaluated for the NRHP in 2009 and found to be not eligible. In addition, one historic resource on the Maryland Inventory of Historic Properties (MIHP) and several archeological sites are located in the vicinity including:

MHT#	NAME	NR STATUS
HA-2173	Rainbow Farm	Not Eligible (2007)
18HA10	Winters Run B	Unevaluated
18HA35	Mountain View Road	Unevaluated
18HA39	Winters Run II	Unevaluated
18HA41	Emmorton Road	Unevaluated
18HA164	Carob	Unevaluated

SITES NOT FOUND DURING 2008 STYDY

EDITIEN

The Maryland Historical Trust has determined that there are no historic properties affected by this undertaking.

Ju Jalanna Date 8/22/17

I-95 Congestion Safety Improvements from MD 152 to MD 24

Request for Project Review and Comment

Page 2 of 2

We request your project review and comment. Please include the MDTA tracking information listed in the subject line above in all future correspondence. If you have questions on the proposed project or require additional information to complete your review, please contact me at wpines@mdta.state.md.us or (410) 931-0808.

Sincerely,

William N. Pines, P.E.

Director of Project Development

Enclosure: Location Map

cc:

MDTA: James Harkness, Serena Liu, Peter Mattejat, Pam McNicholas, Ning Zhou

JMT: Stacey Gill, Leyla Lange, Michael Rothenheber

RKK: Sally Kishter, Greg O'Hare, Mitchell Scott, Ed Tinney

CDM Smith: David Greenwood



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Chesapeake Bay Ecological Services Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401-7307 Phone: (410) 573-4599 Fax: (410) 266-9127

http://www.fws.gov/chesapeakebay/

http://www.fws.gov/chesapeakebay/endsppweb/ProjectReview/Index.html



In Reply Refer To: February 05, 2018

Consultation Code: 05E2CB00-2018-SLI-0623

Event Code: 05E2CB00-2018-E-01401 Project Name: I-95 Northbound Extension

Subject: List of threatened and endangered species that may occur in your proposed project

location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chesapeake Bay Ecological Services Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401-7307 (410) 573-4599

Project Summary

Consultation Code: 05E2CB00-2018-SLI-0623

Event Code: 05E2CB00-2018-E-01401

Project Name: I-95 Northbound Extension

Project Type: TRANSPORTATION

Project Description: I-95 Northbound Extension

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.43296821650006N76.38242874593581W



Counties: Baltimore, MD | Harford, MD

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the <u>National Wildlife Refuge</u> system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to <u>NWI wetlands</u> and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local <u>U.S. Army Corps of Engineers District</u>.

FRESHWATER FORESTED/SHRUB WETLAND

• <u>PFO1F</u>

FRESHWATER POND

- PUBHx
- PABHx

RIVERINE

- R2UBH
- <u>R3UBH</u>



United States Department of the Interior

U.S. Fish & Wildlife Service Chesapeake Bay Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401 410/573 4575



Online Certification Letter

Today's	date:	2/5/2018		
Project:	I-95	Northbound	Extension	^
				V

Dear Applicant for online certification:

Thank you for using the U.S. Fish and Wildlife Service (Service) Chesapeake Bay Field Office online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), we certify that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

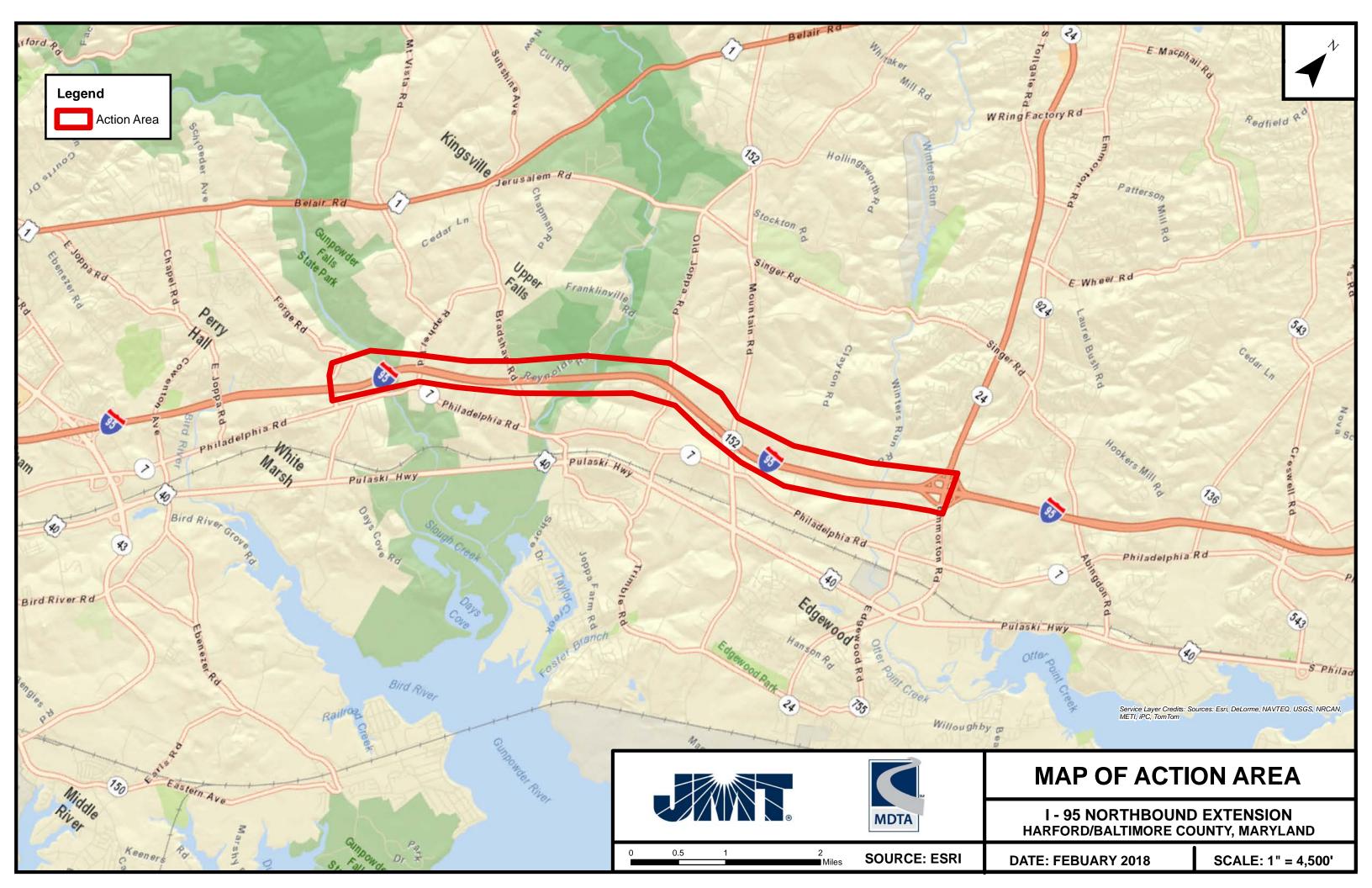
This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8573. For information in Delaware you should contact the Delaware Division of Fish and Wildlife, Wildlife Species Conservation and Research Program at (302) 735-8658. For information in the District of Columbia, you should contact the National Park Service at (202) 339-8309.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website (www.fws.gov/chesapeakebay)

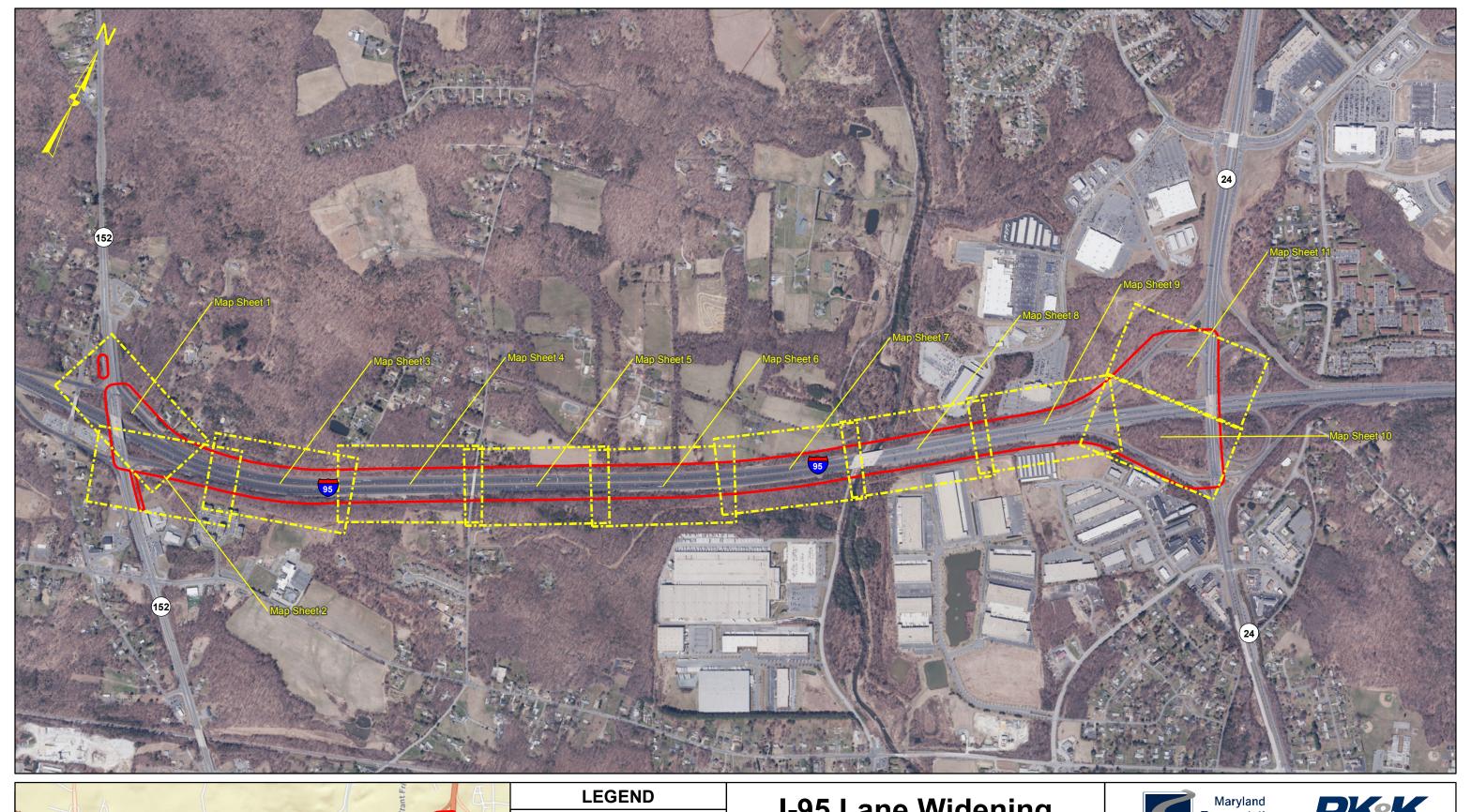
We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species program at (410) 573-4527.

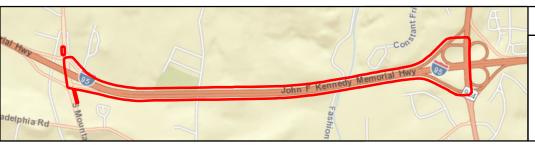
Sincerely,

Genevieve LaRouche Field Supervisor



Appendix G – NRI Plan







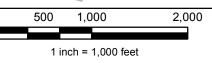
I-95 Lane Widening

from MD 152 to MD 24

Natural Resources Inventory Index Map







Index Map

