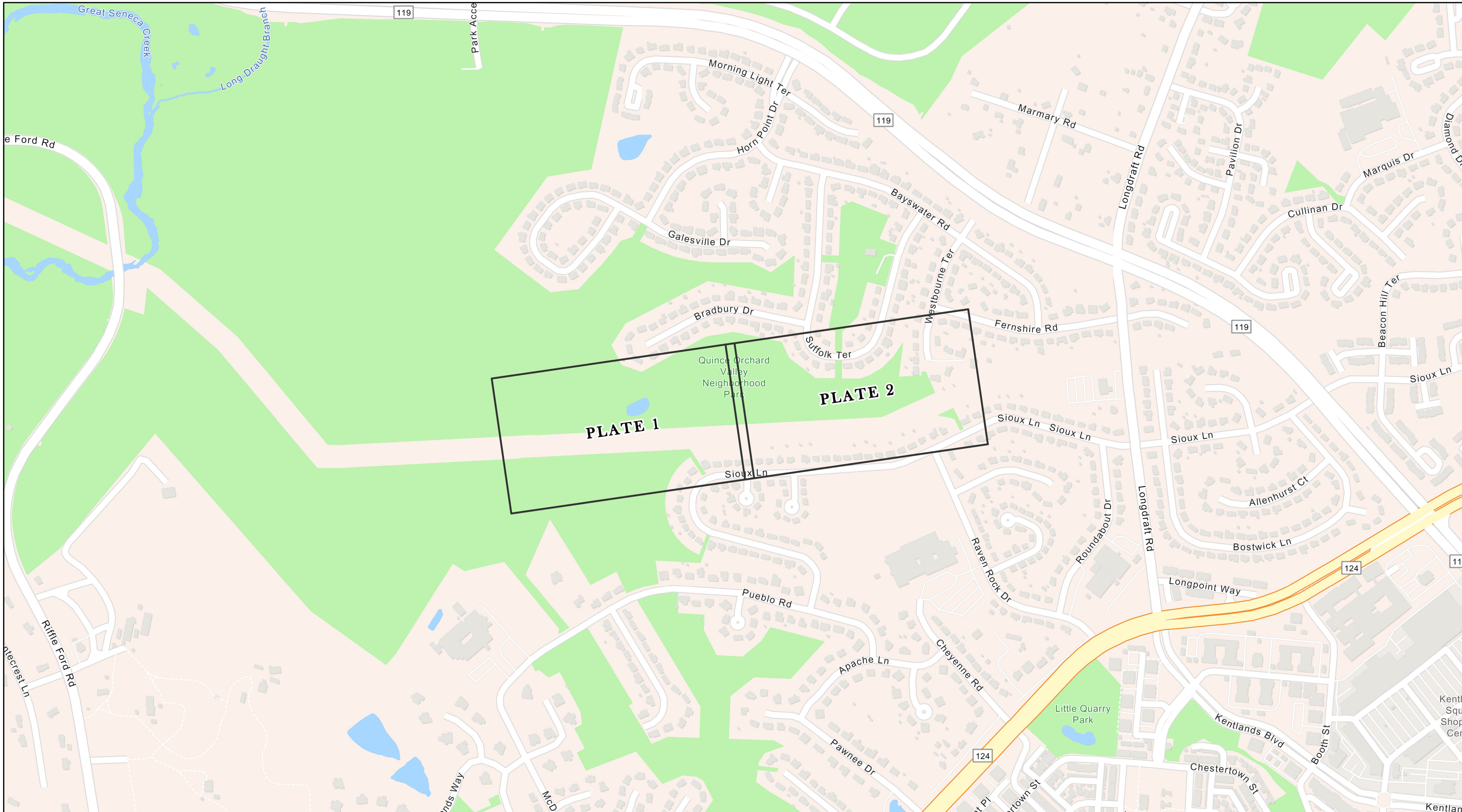
404 Mitigation
Wetland and Waterway Impact Plates and Tables

OP•LANES™
MARYLAND

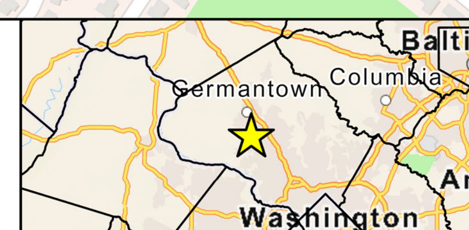
I-495 & I-270 Managed Lanes Study

June 2022



Legend

Impact Plate



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feet

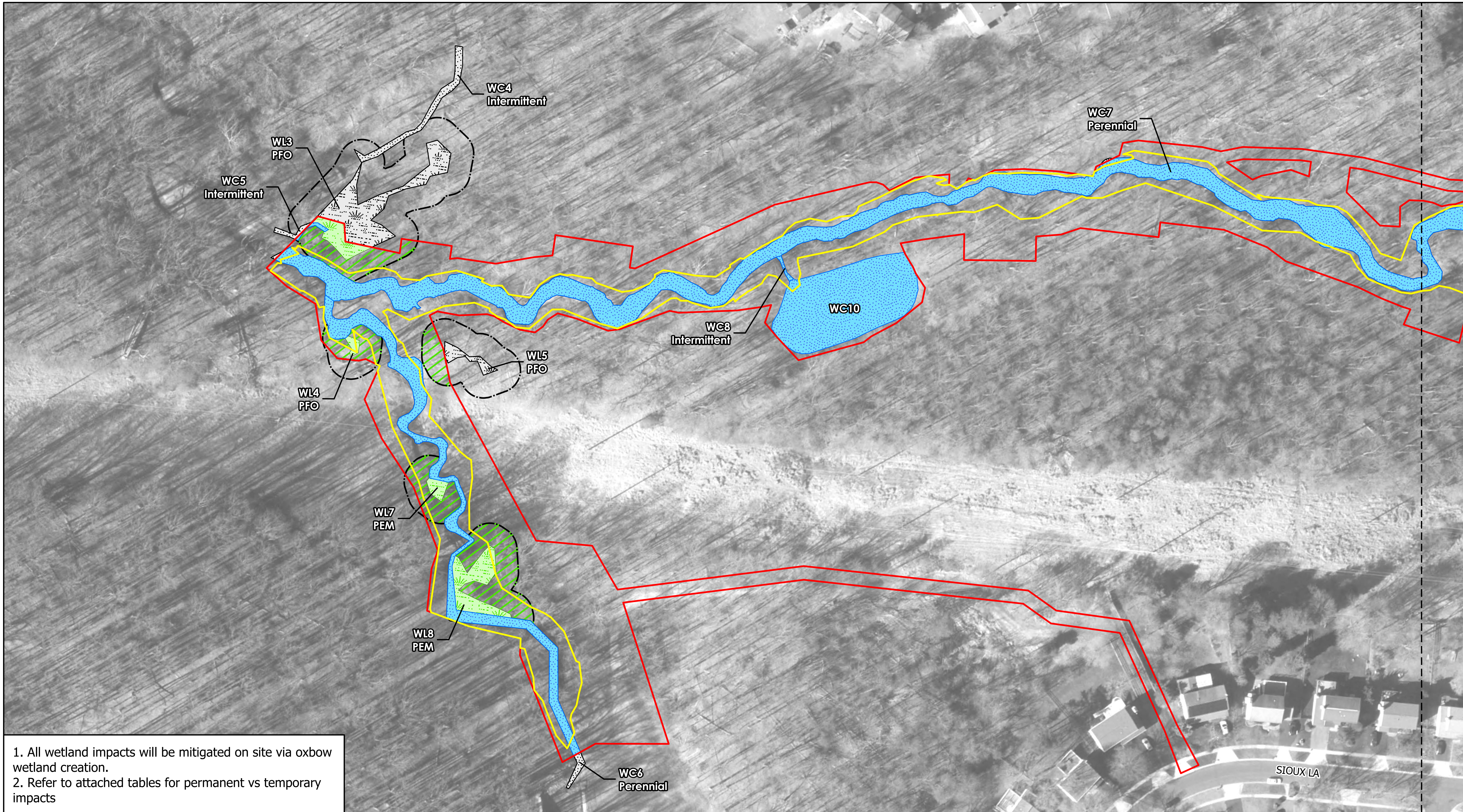
Scale: 1' = 600"

November 2021

CA-5
Wetland and Waterway Impact Plates

Key Sheet

495 270 MANAGED LANES STUDY



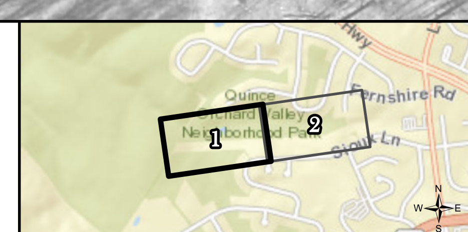
1. All wetland impacts will be mitigated on site via oxbow wetland creation.
2. Refer to attached tables for permanent vs temporary impacts

Legend

- Limit of Disturbance
- Limit of Grading Area
- Sheet Boundary
- Wetland Buffer
- Wetland, Outside LOD
- Water, Outside LOD

Impacts

- Waterway
- Wetland
- Buffer



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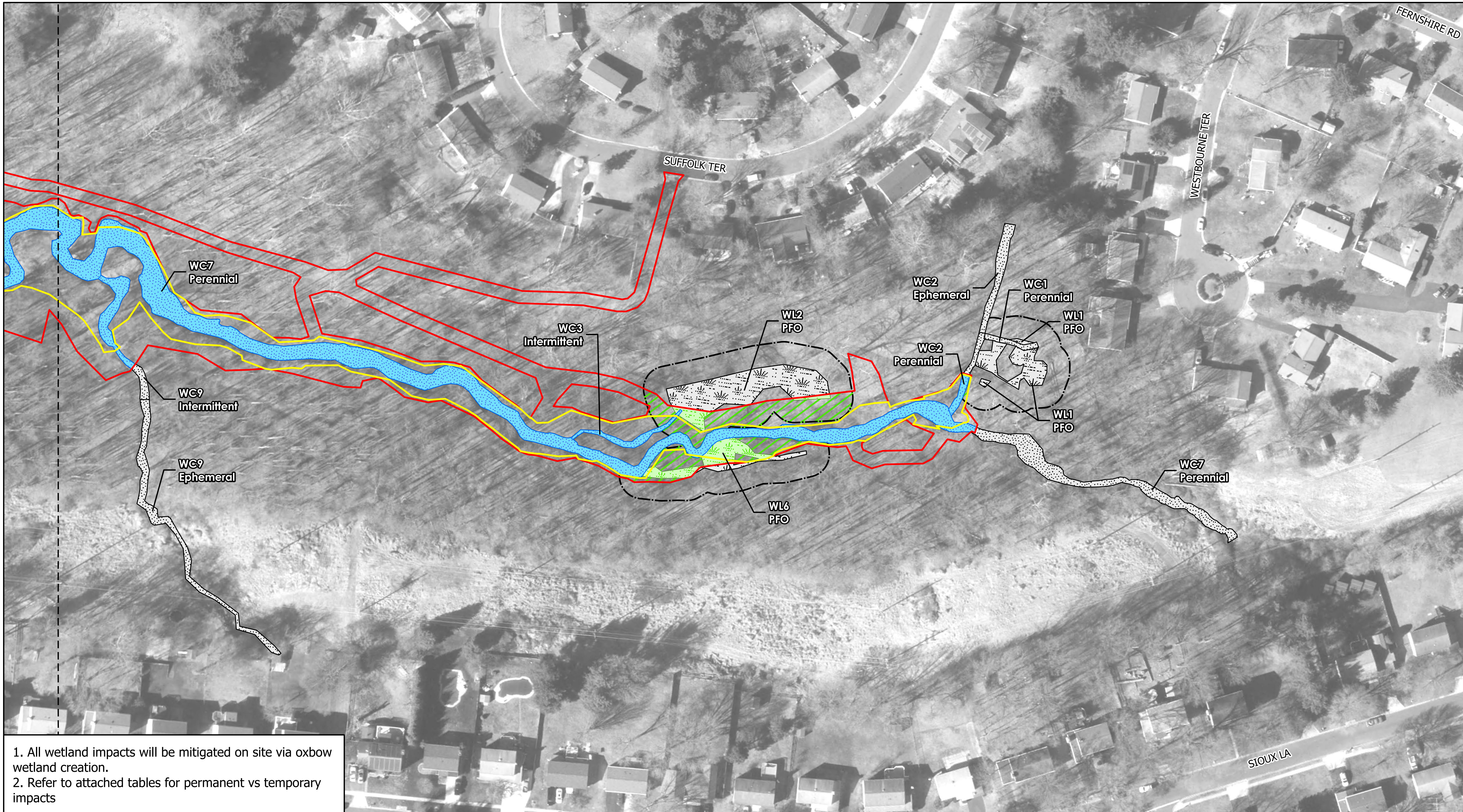
Scale: 1' = 100"

November 2021
Revised: July 2022

CA-5
Wetland and Waterway Impact Plates

495 270 MANAGED LANES STUDY



1. All wetland impacts will be mitigated on site via oxbow wetland creation.
2. Refer to attached tables for permanent vs temporary impacts

Legend

- Limit of Disturbance
- Limit of Grading Area
- Sheet Boundary
- Wetland Buffer
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- Waterway
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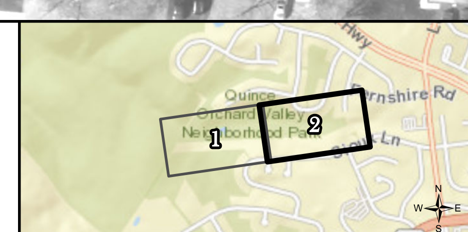

0 50 100 200

feet

Scale: 1' = 100"

November 2021
Revised: July 2022

CA-5
Wetland and Waterway Impact Plates

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495 270 MANAGED LANES STUDY

UNNAMED TRIBUTARY TO GREAT SENICA CREEK (CA-5) MITIGATION SITE IMPACTS

Table E-1: MDE Waterway Impacts Summary

RESOURCE TYPE	TEMPORARY IMPACT (LF)	TEMPORARY IMPACT (SF)	PERMANENT IMPACT (LF)	PERMANENT IMPACT (SF)
Perennial	3,605	65,994	0	0
Intermittent	322	2126	0	0
Total:	**3,927**	**68,120**	**0**	**0**

Table E-2: USACE Waterway Impacts Summary

RESOURCE TYPE	TEMPORARY IMPACT (LF)	TEMPORARY IMPACT (SF)	PERMANENT IMPACT (LF)	PERMANENT IMPACT (SF)
Perennial	0	0	3,605	54,392
Intermittent	0	0	322	2,126
Open Water	0	0	0	11602
Ephemeral	0	0	0	0
Total:	**0**	**0**	**3,927**	**68,120**

Table E-3: MDE Wetland Impacts Summary

RESOURCE TYPE	TEMPORARY WETLAND IMPACT (SF)	TEMPORARY WETLAND BUFFER IMPACT (SF)	PERMANENT WETLAND IMPACT (SF)	PERMANENT WETLAND BUFFER IMPACT (SF)
PFO	3,515	14,029	0	0
PSS	0	0	0	0
PEM	2378	6689	0	0
Total:	**5,893**	**20,718**	**0**	**0**

All wetland impacts will be mitigated on site via oxbow wetland creation.

Table E-4: USACE Wetland Impacts Summary

RESOURCE TYPE	TEMPORARY WETLAND IMPACT (SF)	PERMANENT WETLAND IMPACT (SF)
PFO	2,343	1,172
PSS	0	0
PEM	0	2378
Total:	**2,343**	**3,550**

All wetland impacts will be mitigated on site via oxbow wetland creation.

UNNAMED TRIBUTARY TO GREAT SENICA CREEK (CA-5) MITIGATION SITE IMPACTS

Table E-5: MDE Waterway Feature Impacts

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	TEMPORARY IMPACT (LF)	TEMPORARY IMPACT (SF)	PERMANENT IMPACT (LF)	PERMANENT IMPACT (SF)	IMPACT TYPE
WC2	Perennial	Open Channel	47	327	0	0	Restoration
WC3	Intermittent	Open Channel	139	667	0	0	Restoration
WC5	Intermittent	Open Channel	21	112	0	0	Restoration
WC6	Perennial	Open Channel	759	7,369	0	0	Restoration
WC7	Perennial	Open Channel	2799	46,696	0	0	Restoration
WC8	Intermittent	Open Channel	30	95	0	0	Restoration
WC9	Intermittent	Open Channel	132	1,252	0	0	Restoration
WC10	Perennial	Waterway	0	11,602	0	0	Enhancement
Total:			**3,927**	**68,120**	**0**	**0**	

Table E-6: USACE Waterway Feature Impacts

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	TEMPORARY IMPACT (LF)	TEMPORARY IMPACT (SF)	PERMANENT IMPACT (LF)	PERMANENT IMPACT (SF)	IMPACT TYPE
WC2	Perennial	Open Channel	0	0	47	327	Restoration
WC3	Intermittent	Open Channel	0	0	139	667	Restoration
WC5	Intermittent	Open Channel	0	0	21	112	Restoration
WC6	Perennial	Open Channel	0	0	759	7,369	Restoration
WC7	Perennial	Open Channel	0	0	2799	46,696	Restoration
WC8	Intermittent	Open Channel	0	0	30	95	Restoration
WC9	Intermittent	Open Channel	0	0	132	1,252	Restoration
WC10	Open Water	Pond	0	0	0	11,602	Enhancement
Total:			**0**	**0**	**3,927**	**68,120**	

UNNAMED TRIBUTARY TO GREAT SENICA CREEK (CA-5) MITIGATION SITE IMPACTS

Table E-7: MDE Wetland Feature Impacts

IMPACT ID	CLASSIFICATION	TEMPORARY WETLAND IMPACT (SF)	TEMPORARY WETLAND BUFFER IMPACT (SF)	PERMANENT WETLAND IMPACT (SF)	PERMANENT WETLAND BUFFER IMPACT (SF)	IMPACT TYPE
WL1	PFO	0	85	0	0	Restoration
WL2	PFO	618	5,332	0	0	Restoration
WL3	PFO	1,042	2,953	0	0	Restoration
WL4	PFO	177	1,645	0	0	Restoration
WL5	PFO	0	1,338	0	0	Restoration
WL6	PFO	1,678	2,676	0	0	Restoration
WL7	PEM	349	2,183	0	0	Restoration
WL8	PEM	2,029	4,506	0	0	Restoration
Total:		**5,893**	**20,718**	**0**	**0**	

All wetland impacts will be mitigated on site via oxbow wetland creation.

Table E-8: USACE Wetland Feature Impacts

IMPACT ID	CLASSIFICATION	TEMPORARY WETLAND IMPACT (SF)	PERMANENT WETLAND IMPACT (SF)	IMPACT TYPE
WL1	PFO	0	0	Restoration
WL2	PFO	618	0	Restoration
WL3	PFO	1,042	0	Restoration
WL4	PFO	0	177	Restoration
WL5	PFO	0	0	Restoration
WL6	PFO	683	995	Restoration
WL7	PEM	0	349	Restoration
WL8	PEM	0	2,029	Restoration
Total:		**2,343**	**3,550**	

All wetland impacts will be mitigated on site via oxbow wetland creation.

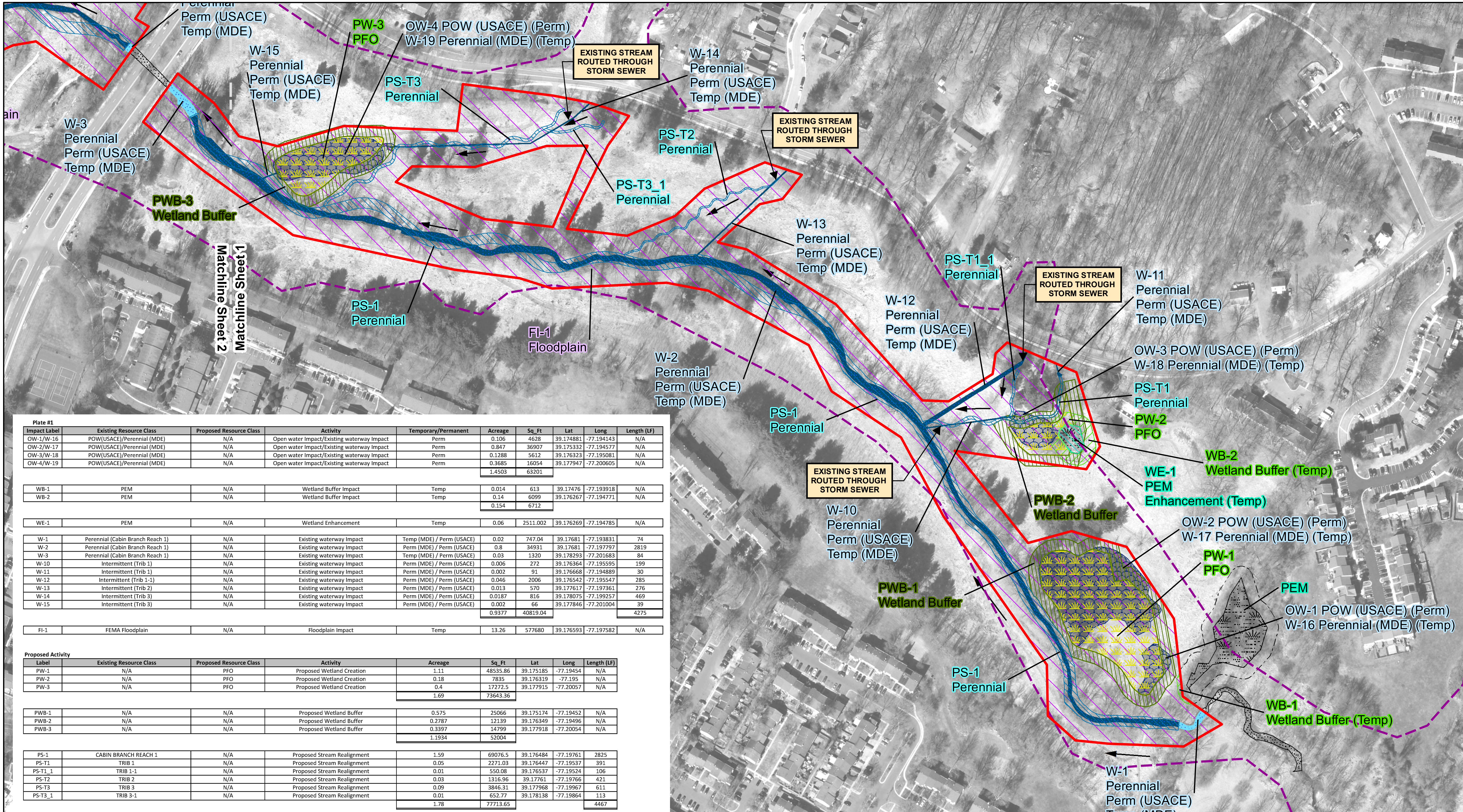


Plate #1

Impact Label	Existing Resource Class	Proposed Resource Class	Activity	Temporary/Permanent	Acreage	Sq_Ft	Lat	Long	Length (LF)
OW-1/W-16	POW(USACE)/Perennial (MDE)	N/A	Open water Impact/Existing waterway Impact	Perm	0.106	4628	39.174881	-77.194143	N/A
OW-2/W-17	POW(USACE)/Perennial (MDE)	N/A	Open water Impact/Existing waterway Impact	Perm	0.847	36907	39.175332	-77.194577	N/A
OW-3/W-18	POW(USACE)/Perennial (MDE)	N/A	Open water Impact/Existing waterway Impact	Perm	0.1288	5612	39.176323	-77.195081	N/A
OW-4/W-19	POW(USACE)/Perennial (MDE)	N/A	Open water Impact/Existing waterway Impact	Perm	0.3685	16054	39.177947	-77.200605	N/A
					1.4503	63201			
WB-1	PEM	N/A	Wetland Buffer Impact	Temp	0.014	613	39.17476	-77.193918	N/A
WB-2	PEM	N/A	Wetland Buffer Impact	Temp	0.14	6099	39.176267	-77.194771	N/A
					0.154	6712			
WE-1	PEM	N/A	Wetland Enhancement	Temp	0.06	2511.002	39.176269	-77.194785	N/A
W-1	Perennial (Cabin Branch Reach 1)	N/A	Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.02	747.04	39.17681	-77.193831	74
W-2	Perennial (Cabin Branch Reach 1)	N/A	Existing waterway Impact	Perm (MDE) / Perm (USACE)	0.8	34931	39.17681	-77.197797	2819
W-3	Perennial (Cabin Branch Reach 1)	N/A	Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.03	1320	39.178293	-77.201683	84
W-10	Intermittent (Trib 1)	N/A	Existing waterway Impact	Perm (MDE) / Perm (USACE)	0.006	272	39.176364	-77.195595	199
W-11	Intermittent (Trib 1)	N/A	Existing waterway Impact	Perm (MDE) / Perm (USACE)	0.002	91	39.176668	-77.194889	30
W-12	Intermittent (Trib 1-1)	N/A	Existing waterway Impact	Perm (MDE) / Perm (USACE)	0.046	2006	39.176542	-77.195547	285
W-13	Intermittent (Trib 2)	N/A	Existing waterway Impact	Perm (MDE) / Perm (USACE)	0.013	570	39.177617	-77.197361	276
W-14	Intermittent (Trib 3)	N/A	Existing waterway Impact	Perm (MDE) / Perm (USACE)	0.0187	816	39.178075	-77.199257	469
W-15	Intermittent (Trib 3)	N/A	Existing waterway Impact	Perm (MDE) / Perm (USACE)	0.002	66	39.177846	-77.201004	39
					0.9377	40819.04			4275
FI-1	FEMA Floodplain	N/A	Floodplain Impact	Temp	13.26	577680	39.176593	-77.197582	N/A

Proposed Activity

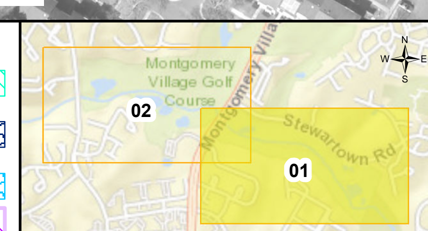
Label	Existing Resource Class	Proposed Resource Class	Activity	Acreage	Sq_Ft	Lat	Long	Length (LF)
PW-1	N/A	PFO	Proposed Wetland Creation	1.11	48535.86	39.175185	-77.19454	N/A
PW-2	N/A	PFO	Proposed Wetland Creation	0.18	7835	39.176319	-77.195	N/A
PW-3	N/A	PFO	Proposed Wetland Creation	0.4	17272.5	39.177915	-77.20057	N/A
				1.69	73643.36			
PWB-1	N/A	N/A	Proposed Wetland Buffer	0.575	25066	39.175174	-77.19452	N/A
PWB-2	N/A	N/A	Proposed Wetland Buffer	0.2787	12139	39.176349	-77.19496	N/A
PWB-3	N/A	N/A	Proposed Wetland Buffer	0.3397	14799	39.177918	-77.20054	N/A
				1.1934	52004			
PS-1	CABIN BRANCH REACH 1	N/A	Proposed Stream Realignment	1.59	69076.5	39.176484	-77.19761	2825
PS-T1	TRIB 1	N/A	Proposed Stream Realignment	0.05	2271.03	39.176447	-77.19537	391
PS-T1_1	TRIB 1-1	N/A	Proposed Stream Realignment	0.01	550.08	39.176537	-77.19524	106
PS-T2	TRIB 2	N/A	Proposed Stream Realignment	0.03	1316.96	39.17761	-77.19766	421
PS-T3	TRIB 3	N/A	Proposed Stream Realignment	0.09	3846.31	39.177968	-77.19967	611
PS-T3_1	TRIB 3-1	N/A	Proposed Stream Realignment	0.01	652.77	39.178138	-77.19864	113
				1.78	77713.65			4467

LEGEND

- Limits of Disturbance
- Proposed Stream Realignment
- 100 Year Floodplain
- Proposed PFO Wetland
- Proposed PFO Wetland Buffer
- Existing Wetlands
- Existing Waterways
- Wetland Buffer
- Flow Direction

IMPACTS

- Waterway (Perm)
- Waterway (Temp)
- Waterway (Outside)
- Wetland Buffer (Temp)
- Wetland Enhancement
- Open Water (USACE) (Perm) Perennial (MDE) (Perm)
- Open Water (Temp)
- Floodplain



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February 2021

RFP-2
Wetland and Waterway Impact Plates

Plate 01 of 02

I-270 I-495 MANAGED LANES STUDY

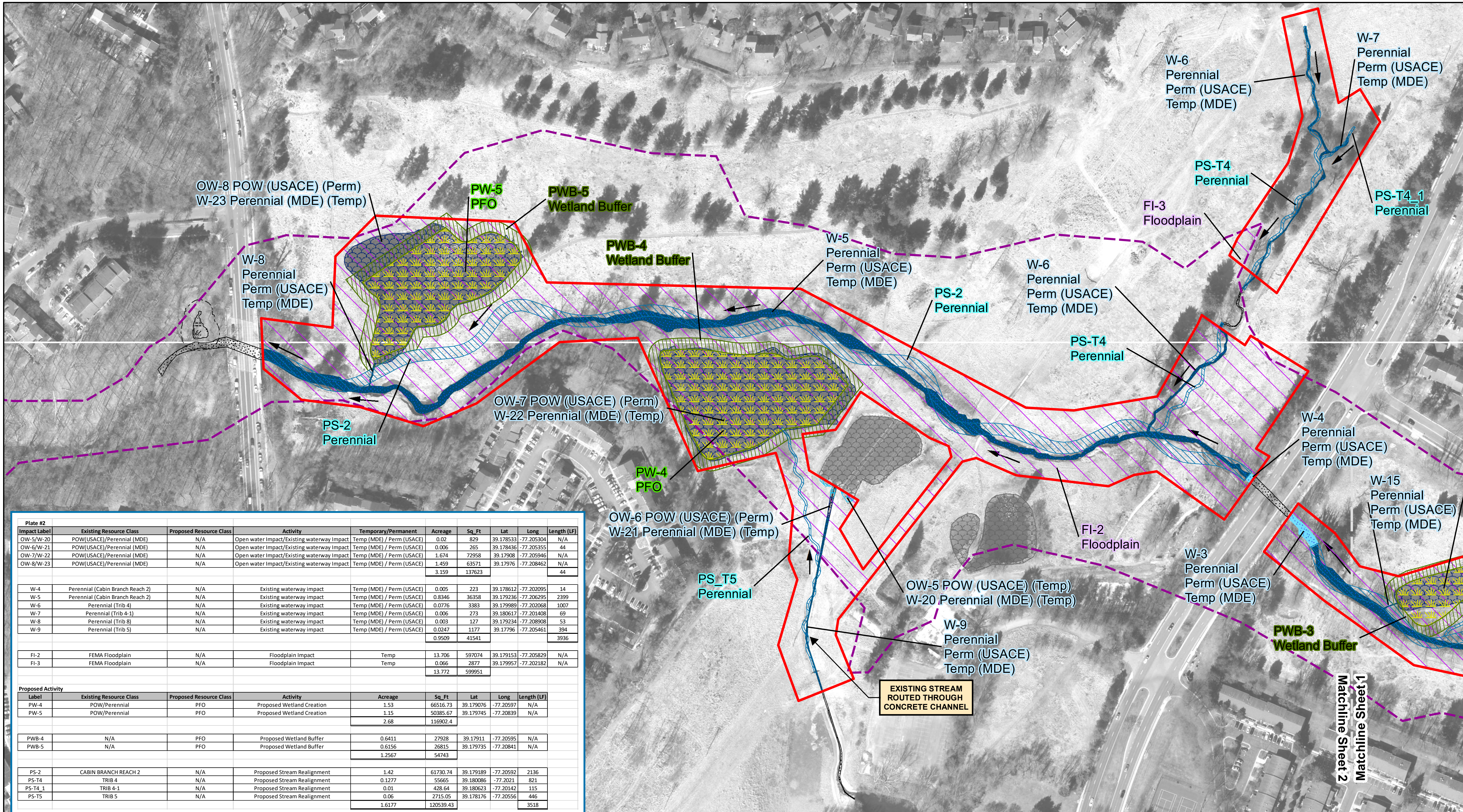

Plate #2

Impact Label	Existing Resource Class	Proposed Resource Class	Activity	Temporary/Permanent	Acreage	Sq_Ft	Lat	Long	Length (LF)
OW-5/W-20	POW(USACE)/Perennial (MDE)	N/A	Open water Impact/Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.02	829	39.178533	-77.205304	N/A
OW-6/W-21	POW(USACE)/Perennial (MDE)	N/A	Open water Impact/Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.006	265	39.178436	-77.205355	44
OW-7/W-22	POW(USACE)/Perennial (MDE)	N/A	Open water Impact/Existing waterway Impact	Temp (MDE) / Perm (USACE)	1.674	72958	39.17908	-77.205946	N/A
OW-8/W-23	POW(USACE)/Perennial (MDE)	N/A	Open water Impact/Existing waterway Impact	Temp (MDE) / Perm (USACE)	1.459	63571	39.17976	-77.208462	N/A
					3.159	137623			44
W-4	Perennial (Cabin Branch Reach 2)	N/A	Existing waterway impact	Temp (MDE) / Perm (USACE)	0.005	223	39.178612	-77.202095	14
W-5	Perennial (Cabin Branch Reach 2)	N/A	Existing waterway impact	Temp (MDE) / Perm (USACE)	0.8346	36358	39.179236	-77.206295	2399
W-6	Perennial (Trib 4)	N/A	Existing waterway impact	Temp (MDE) / Perm (USACE)	0.0776	3383	39.179989	-77.202068	1007
W-7	Perennial (Trib 4-1)	N/A	Existing waterway impact	Temp (MDE) / Perm (USACE)	0.006	273	39.180617	-77.201408	69
W-8	Perennial (Trib 8)	N/A	Existing waterway impact	Temp (MDE) / Perm (USACE)	0.003	127	39.179234	-77.208908	53
W-9	Perennial (Trib 5)	N/A	Existing waterway impact	Temp (MDE) / Perm (USACE)	0.0247	1177	39.17796	-77.205461	394
					0.9509	41541			3936
FI-2	FEMA Floodplain	N/A	Floodplain Impact	Temp	13.706	597074	39.179153	-77.205829	N/A
FI-3	FEMA Floodplain	N/A	Floodplain Impact	Temp	0.066	2877	39.179957	-77.202182	N/A
					13.772	599951			

Proposed Activity

Label	Existing Resource Class	Proposed Resource Class	Activity	Acreage	Sq_Ft	Lat	Long	Length (LF)
PW-4	POW/Perennial	PFO	Proposed Wetland Creation	1.53	66516.73	39.179076	-77.20597	N/A
PW-5	POW/Perennial	PFO	Proposed Wetland Creation	1.15	50385.67	39.179745	-77.20839	N/A
				2.68	116902.4			
PWB-4	N/A	PFO	Proposed Wetland Buffer	0.6411	27928	39.17911	-77.20595	N/A
PWB-5	N/A	PFO	Proposed Wetland Buffer	0.6156	26815	39.179735	-77.20841	N/A
				1.2567	54743			
PS-2	CABIN BRANCH REACH 2	N/A	Proposed Stream Realignment	1.42	61730.74	39.179189	-77.20592	2136
PS-T4	TRIB 4	N/A	Proposed Stream Realignment	0.1277	55665	39.180086	-77.2021	821
PS-T4_1	TRIB 4-1	N/A	Proposed Stream Realignment	0.01	428.64	39.180623	-77.20142	115
PS-T5	TRIB 5	N/A	Proposed Stream Realignment	0.06	2715.05	39.178176	-77.20556	446
				1.6177	120539.43			3518

LEGEND

Limits of Disturbance
Proposed Stream Realignment
100 Year Floodplain
Proposed PFO Wetland
Proposed PFO Wetland Buffer
Existing Wetlands
Existing Waterways
Wetland Buffer
Flow Direction

IMPACTS

Waterway (Perm)
Waterway (Temp)
Waterway (Outside)
Wetland Buffer (Temp)
Wetland Enhancement
Open Water (USACE) (Perm) Perennial (MDE) (Perm)
Open Water (Temp)
Floodplain

Montgomery Village Golf Course
Stewartown Rd
02
01

0 100 200 400
Scale: 1 " = 200 '
February 2021

RFP-2
Wetland and Waterway Impact Plates

Plate 02 of 02

495 270 MANAGED LANES STUDY