
May 3, 2022

Mr. Joseph DaVia
Chief, Maryland Section Northern
US Army Corps of Engineers Baltimore District
Regulatory Branch
2 Hopkins Plaza
Baltimore, MD 21201

Ms. Amanda Sigillito
Division Chief
Maryland Department of the Environment
Wetland and Waterways Program
Nontidal Wetlands Division
1800 Washington Boulevard
Baltimore, MD 21230

Dear Mr. DaVia and Ms. Sigillito:

The Maryland Department of Transportation State Highway Administration (MDOT SHA) is submitting an amended Joint Federal/State Application and supporting documentation for the alteration of any floodplain, waterway, tidal or nontidal wetland within the Limits of Disturbance (LOD) of the Preferred Alternative of the I-495 & I-270 Managed Lanes Study (MLS), located in Montgomery County in Maryland and Fairfax County in Virginia (see attached Vicinity Map). This application is submitted pursuant to the requirements of the Code of Maryland Regulations, Sections 26.17 and 26.23, and Section 404 of the Clean Water Act and supported by the publicly available MLS Final Environmental Impact Statement. One electronic copy of the following documents is provided for review and processing of this permit request:

- Joint Permit Application and Billing Approval Form
- Impact Plates
- USACE Impact Tables
- MDE Impact Tables

Supporting information for this permit application has been posted to the project's FTP site, accessible via the following link: <https://sftp1.mdot.state.md.us/>
The login is: Username: NEPAUSACE
Password: pthreeuser1

* Please note, the FTP site works best using Google Chrome

Page Two

Supporting information includes:

- GIS Data (Resources, Impacts, MSMF)
- Wetland Delineation Memos
- Avoidance, Minimization and Impacts Report
- Final Compensatory Wetlands and Waterways Mitigation Plan

MDOT SHA is proposing the MLS to provide a travel demand management solution(s) that addresses congestion and improves trip reliability on I-495 and I-270 within the Study limits and enhances existing and planned multimodal mobility and connectivity. The Preferred Alternative, also referred to as Alternative 9 – Phase 1 South, includes building a new American Legion Bridge and delivering two high-occupancy toll (HOT) managed lanes in each direction on I-495 from the George Washington Memorial Parkway in Virginia to east of MD 187 on I-495, and on I-270 from I-495 to north of I-370 and on the I-270 eastern spur from east of MD 187 to I-270. The Preferred Alternative includes construction activities that would result in unavoidable impacts to wetlands and waterways, including: roadway widening and reconfiguration, additional drainage improvements, staging and stockpiling areas, construction access areas, culvert extension and augmentation, outfall stabilization, bridge replacement, and off-site stormwater quality treatment.

Project activities would occur within the following 5 Maryland 12-digit watersheds: Potomac River/Rock Run, Cabin John Creek, Rock Creek, Watts Branch, and Muddy Branch. The MLS Preferred Alternative would result in USACE and MDE impacts that are shown on the impact plates and included in the impact tables.

If you need further assistance, please contact Ms. Caryn J. G. Brookman, I-495 & I-270 P3 Office Environmental Program Manager, MDOT SHA, at 410-637-3335 or via email at cbrookman@mdot.maryland.gov. Ms. Brookman will be happy to assist you.

Sincerely,



Jeffrey T. Folden, PE, DBIA
Director, I-495 & I-270 P3 Office

CC: Ms. Jeanette Mar, Environmental Program Manager, Federal Highway Administration
Ms. Caryn J. G. Brookman, Environmental Program Manager, I-495 & I-270 P3 Office,
MDOT SHA

JOINT FEDERAL/STATE APPLICATION FOR THE ALTERATION OF ANY FLOODPLAIN, WATERWAY, TIDAL OR NONTIDAL WETLAND IN MARYLAND

FOR AGENCY USE ONLY

Application Number _____ Date Determined Complete _____
Date Received by State _____ Date(s) Returned _____
Date Received by Corps _____
Type of State permit needed _____ Date of Field Review _____
Type of Corps permit needed _____ Agency Performed Field Review _____

- +++++
- Please submit 1 original and 6 copies of this form, required maps and plans to the Wetlands and Waterways Program as noted on the last page of this form.
 - Any application that is not completed in full or is accompanied by poor quality drawings may be considered incomplete and result in a time delay to the applicant.

Please check one of the following:

RESUBMITTAL: _____ APPLICATION AMENDMENT: _____ MODIFICATION TO AN EXISTING PERMIT: _____
JURISDICTIONAL DETERMINATION ONLY: _____ APPLYING FOR AUTHORIZATION _____
PREVIOUSLY ASSIGNED NUMBER (RESUBMITTALS AND AMENDMENTS) _____

DATE November 11, 2021, amended May 3, 2022

1. APPLICANT INFORMATION:

APPLICANT NAME:

A. Name: Jeff Folden B. Daytime Telephone: (410) 637-3321
C. Company: MDOT SHA D. Email Address: JFolden1@mdot.maryland.gov
E. Address: 601 N. Calvert Street
F. City: Baltimore State: MD Zip: 21202

AGENT/ENGINEER INFORMATION:

A. Name: Karen Kahl B. Daytime Telephone: (410) 462-9243
C. Company: MDOT SHA/RK&K D. Email Address: Kkahl.consultant@mdot.maryland.gov
E. Address: 601 N. Calvert Street
F. City: Baltimore State: MD Zip: 21202

ENVIRONMENTAL CONSULTANT:

A. Name: Justin Reel B. Daytime Telephone: (410) 462-9348
C. Company: RK&K D. Email Address: jreel@rkk.com
E. Address: 700 E Pratt Street, Suite 500
F. City: Baltimore State: MD Zip: 21202

CONTRACTOR (If known): Environmental Consultant Reviewer

A. Name: Emily Dolbin B. Daytime Telephone: (410) 462-7400
C. Company: McCormick Taylor, Inc. D. Email Address: EBDolbin@mccormicktaylor.com
E. Address: 509 South Exeter Street, 4th Floor
F. City: Baltimore State: MD Zip: 21202

PRINCIPAL CONTACT:

A. Name: Caryn Brookman B. Daytime Telephone: (410) 637-3335
C. Company: MDOT SHA D. Email Address: Cbrookman.consultant@mdot.maryland.gov
E. Address: 601 N. Calvert Street
F. City: Baltimore State: MD Zip: 21202

2. PROJECT DESCRIPTION

a. GIVE WRITTEN DESCRIPTION OF PROJECT:

A description of the project is provided in Section 1 of the I-495 & I-270 Managed Lanes Study FEIS

Has any portion of the project been completed? Yes No If Yes, explain:

Is this a residential subdivision or commercial development? Yes No _____ acres
 If yes, yes, total number of acres on property _____

Will there be temporary or permanent tree clearing occurring on the overall project site (i.e., uplands and wetlands), including but not limited to, tree clearing for site development, road/highways, utilities, mining, stormwater management, restoration, energy production and transmission, etc.)? Yes No

If yes, total estimated acres of tree clearing for the overall project site: 454.96 acres

b. ACTIVITY: Check all activities that are proposed in the wetland, waterway, floodplain, and nontidal wetland buffer as appropriate.

- A. filling
- B. dredging
- C. excavating
- D. flooding or impounding water
- E. draining
- F. grading
- G. removing or destroying vegetation
- H. building structures

Area for item(s) checked: Wetland 170,802 (sq. ft.) Buffer (Nontidal Wetland Only) 282,922 (sq. ft.)
 Expanded Buffer (Nontidal Wetland Only) _____ (sq. ft.)

Area of stream impact 960,216 (sq. ft.)

Length of stream affected 42,286 (linear feet)

Area of floodplain impact: 1,374,482 SF

(See Impact Tables for breakdown of impacts)

c. TYPE OF PROJECTS: Project Dimensions **(***Reference Attachments for Specific Impacts***)**

For each activity, give overall length and width (in feet), in columns 1 and 2. For multiple activities, give total area of disturbance in square feet in column 3. For activities in tidal waters, give maximum distance channelward (in feet) in column 4. For dam or small ponds, give average depth (in feet) for the completed project in column 5. Give the volume of fill or dredged material in column 6.

	Length (Ft.) 1	Width (Ft.) 2	Area (Sq. Ft.) 3	Maximum/Average Channelward Encroachment 4	Pond Depth 5	Volume of fill/dredge material (cubic yards) below MHW or OHW 6
A. <input type="checkbox"/> Bulkhead	_____	_____	_____	_____	_____	_____
B. <input type="checkbox"/> Revetment	_____	_____	_____	_____	_____	_____
C. <input type="checkbox"/> Vegetative Stabilization	_____	_____	_____	_____	_____	_____
D. <input type="checkbox"/> Gabions	_____	_____	_____	_____	_____	_____
E. <input type="checkbox"/> Groins	_____	_____	_____	_____	_____	_____
F. <input type="checkbox"/> Jetties	_____	_____	_____	_____	_____	_____
G. <input type="checkbox"/> Boat Ramp	_____	_____	_____	_____	_____	_____
H. <input type="checkbox"/> Pier	_____	_____	_____	_____	_____	_____
I. <input type="checkbox"/> Breakwater	_____	_____	_____	_____	_____	_____
J. <input type="checkbox"/> Repair & Maintenance	_____	_____	_____	_____	_____	_____
K. <input checked="" type="checkbox"/> Road Crossing	_____	_____	(See Attachment A and Impact Tables)	_____	_____	_____
L. <input type="checkbox"/> Utility Line	_____	_____	_____	_____	_____	_____
M. <input type="checkbox"/> Outfall Construction	_____	_____	_____	_____	_____	_____
N. <input type="checkbox"/> Small Pond	_____	_____	_____	_____	_____	_____
O. <input type="checkbox"/> Dam	_____	_____	_____	_____	_____	_____
P. <input type="checkbox"/> Lot Fill	_____	_____	_____	_____	_____	_____
Q. <input type="checkbox"/> Building Structures	_____	_____	_____	_____	_____	_____
R. <input checked="" type="checkbox"/> Culvert	_____	_____	(See Attachment A and Impact Tables)	_____	_____	_____
S. <input type="checkbox"/> Bridge	_____	_____	_____	_____	_____	_____
T. <input type="checkbox"/> Stream Channelization	_____	_____	_____	_____	_____	_____
U. <input type="checkbox"/> Parking Area	_____	_____	_____	_____	_____	_____
V. <input type="checkbox"/> Dredging	_____	_____	_____	_____	_____	_____

1. New 2. Maintenance 3. Hydraulic 4. Mechanical
 W. Other (explain) _____

d. PROJECT PURPOSE: Give brief written description of the project purpose:

The purpose and need for the project is provided in the I-495 & I-270 Managed Lanes Study FEIS.

3. PROJECT LOCATION:

a. LOCATION INFORMATION:

A. County: MO B. City: _____ C. Name of waterway or closest waterway Multiple

D. State stream use class designation: Use I and Use I-P

E. Site Address or Location: The study corridor is described in the I-495 and I-270 Managed Lanes Study FEIS

F. Directions from nearest intersection of two state roads: _____

The project location is described in the I-495 & I-270 Managed Lanes Study FEIS

Is your project located in the Chesapeake Bay Critical Area (generally within 1,000 feet of tidal waters or tidal wetlands)?:

 Yes x No

H. County Book Map Coordinates (Alexandria Drafting Co.); Excluding Garrett and Somerset Counties:
Map: Multiple Letter: _____ Number: _____ (to the nearest tenth)

I. FEMA Floodplain Map Panel Number (if known): _____

J. 1. 39° 02' 35.80777" latitude 2. -77° 09' 52.15340 longitude

b. ACTIVITY LOCATION: Check one or more of the following as appropriate for the type of wetland/waterway where you are proposing an activity:

- A. Tidal Waters
- B. Tidal Wetlands
- C. Special Aquatic Site (e.g., mudflat, vegetated shallows)
- D. x Nontidal Wetland
- E. x 25-foot buffer (nontidal wetlands only)
- F. 100-foot buffer (nontidal wetland of special State concern)
- G. x In stream channel
 - 1. Tidal
 - 2. x Nontidal
- H. x 100-year floodplain (outside stream channel)
- I. x River, lake, pond
- J. Other (Explain)

c. LAND USE:

A. Current Use of Parcel Is: 1. Agriculture: Has SCS designated project site as a prior converted cropland? Yes x No

2. Wooded 3. Marsh/Swamp 4. Developed

5. x Other: Various, see the I-495 & I-270 Managed Lanes Study FEIS

B. Present Zoning Is: 1. Residential 2. Commercial/Industrial 3. Agriculture 4. Marina 5. x Other

C. Project complies with current zoning x Yes No

THE FOLLOWING INFORMATION IS REQUIRED BY THE STATE (blocks 4-7):

4. REDUCTION OF IMPACTS: Explain measures taken or considered to avoid or minimize wetland losses in F. Also check Items A-E if any of these apply to your project.

A. x Reduced the area of disturbance B. x Reduced size/scope of project C. x Relocated structures D. x Redesigned project

E. x Other See the I-495 & I-270 Managed Lanes Study Avoidance, Minimization, and Impacts Report

F. Explanation See the I-495 & I-270 Managed Lanes Study Avoidance, Minimization and Impacts Report

Describe reasons why impacts were not avoided or reduced in Q. Also check Items G-P that apply to your project.

- | | | |
|---|--|--|
| G. <input checked="" type="checkbox"/> Cost | K. <input type="checkbox"/> Parcel size | N. <input checked="" type="checkbox"/> Safety/public welfare issue |
| H. <input checked="" type="checkbox"/> Extensive wetlands on site | L. <input checked="" type="checkbox"/> Other regulatory requirement | O. <input type="checkbox"/> Inadequate zoning |
| I. <input checked="" type="checkbox"/> Engineering/design constraints | M. <input checked="" type="checkbox"/> Failure to accomplish project purpose | P. <input type="checkbox"/> Other |
| J. <input checked="" type="checkbox"/> Other natural features | | |

Q. Description

See the I-495 & I-270 Managed Lanes Study Avoidance, Minimization and Impacts Report

5. LETTER OF AUTHORIZATION: If you are applying for a letter of authorization for activities in nontidal wetlands and/or their buffers, explain why the project qualifies:

- | | |
|---|--|
| A. <input type="checkbox"/> No significant plant or wildlife value and wetland impact | B. <input type="checkbox"/> Repair existing structure/fill |
| 1. <input type="checkbox"/> Less than 5,000 square feet | C. <input type="checkbox"/> Mitigation Project |
| 2. <input type="checkbox"/> In an isolated nontidal wetland less than 1 acre in size | D. <input type="checkbox"/> Utility Line |
| E. Other (explain) | 1. <input type="checkbox"/> Overhead |
| | 2. <input type="checkbox"/> Underground |
| F. <input checked="" type="checkbox"/> Check here if you are not applying for a letter of authorization. | |

IF YOU ARE APPLYING FOR A LETTER OF AUTHORIZATION, PROCEED TO BLOCK 10

6. ALTERNATIVE SITE ANALYSIS: Explain why other sites that were considered for this project were rejected in M. Also check any items in D-L if they apply to your project. **(If you are applying for a letter of authorization, do not complete this block.)**

- | | | |
|------------------------------------|---|--|
| A. <input type="checkbox"/> 1 site | B. <input type="checkbox"/> 2 - 4 sites | C. <input checked="" type="checkbox"/> 5 or more sites |
|------------------------------------|---|--|

Alternative sites were rejected/not considered for the following reason(s):

- | | | |
|--|---|--|
| D. <input checked="" type="checkbox"/> Cost | H. <input type="checkbox"/> Greater wetlands impact | L. <input checked="" type="checkbox"/> Other |
| E. <input type="checkbox"/> Lack of availability | I. <input type="checkbox"/> Water dependency | |
| F. <input checked="" type="checkbox"/> Failure to meet project purpose | J. <input type="checkbox"/> Inadequate zoning | |
| G. <input type="checkbox"/> Located outside general/market area | K. <input checked="" type="checkbox"/> Engineering/design constraints | |

M. Explanation: See the I-495 & I-270 Managed Lanes Study Avoidance, Minimization and Impacts Report

7. PUBLIC NEED: Describe the public need or benefits that the project will provide in F. Also check Items in A-E that apply to your project. **(If you are applying for a letter of exemption, do not complete this block.)**

- | | | |
|---|--|--|
| A. <input checked="" type="checkbox"/> Economic | C. <input checked="" type="checkbox"/> Health/welfare | E. <input checked="" type="checkbox"/> Other |
| B. <input checked="" type="checkbox"/> Safety | D. <input type="checkbox"/> Does not provide public benefits | |

F. Description

See the I-495 & I-270 Managed Lanes Study FEIS

8. MITIGATION PLAN: Please provide the following information. **(If you are applying for a letter of authorization outside of the Critical Area, do not complete this block.)**

a. Description of a monetary compensation proposal, if applicable (for **state requirements** only). Attach another sheet if necessary.

N/A

b. Give a brief description of the proposed mitigation project.

See the I-495 & I-270 Managed Lanes Study Final Compensatory Wetlands and Waterways Mitigation Plan

c. Describe why you selected your proposed mitigation site, including what other areas were considered and why they were rejected.

See the I-495 & I-270 Managed Lanes Study Final Wetlands and Waterways Compensatory Mitigation Plan

d. Describe how the mitigation site will be protected in the future.

See the I-495 & I-270 Managed Lanes Study Final Wetlands and Waterways Compensatory Mitigation Plan

9. HAVE ADJACENT PROPERTY OWNERS BEEN NOTIFIED? A. Yes B. x No

Provide names and mailing addresses below (Use separate sheet, if necessary). **(If you are applying for a letter of exemption, do not complete this block.)**

- a. Adjacent property owners will be notified via certified mail prior to the commencement of the Public Comment Period, anticipated from mid-July to the end of September 2022.
- b. A final list of adjacent property owners and elected officials to be notified will be provided 15-days prior to the notification.
- c.

10. OTHER APPROVALS NEEDED/GRANTED:

A. a. Agency	b. Date Sought	c. Decision		d. Decision Date	e. Other Status
		1. Granted	2. Denied		
USACE AJD	10/2019	X		12/12/2019	Jurisdictional change, AJD no longer valid. 09/2021
Sediment and Erosion Control	TBD				
401 Water Quality Certification	04/2022			Pending	
Dam Safety Approvals	TBD				
VWPP Approval	04/2022			Pending	

B. FEDERALLY AUTHORIZED CIVIL WORKS PROJECTS: Does the project require permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers' federally authorized civil works project, structure, property, or easement (e.g., federal navigation channel, flood control levees, dams and reservoirs, lake property, etc.)?

 Yes x No

If yes, have you submitted a written request for Section 408 permission from the Corps district having jurisdiction over that project (i.e., Baltimore district in Maryland or Philadelphia district in C & D canal)? Yes No

If yes, please provide the date your request was submitted to the Corps district: _____

11. HISTORIC PROPERTIES: Is your project located in the vicinity of historic properties? (For example: structures over 50 years old, archeological sites, shell mounds, Indian or Colonial artifacts). Provide any supplemental information in Section 12.

A. Yes B. _____ No C. _____ Unknown

12. ADDITIONAL INFORMATION: Use this space for detailed responses to any of the previous items. Attach another sheet if necessary:

Additional information regarding historic properties and other approvals can be found in Section 5.7 of the I-495 & I-270 Managed Lanes Study FEIS.

Check box if data is enclosed for any one or more of the following (see checklist for required information):

- | | | |
|--|--|---|
| A. _____ Soil borings | D. <input checked="" type="checkbox"/> Field surveys | G. <input checked="" type="checkbox"/> Site plan |
| B. <input checked="" type="checkbox"/> Wetland data sheets | E. <input checked="" type="checkbox"/> Alternate site analysis | H. <input checked="" type="checkbox"/> Avoidance and
minimization analysis |
| C. <input checked="" type="checkbox"/> Photographs | F. _____ Market analysis | |
| I. <input checked="" type="checkbox"/> Other (explain) | | |

This application is supported by the I-495 & I-270 Managed Lanes Study FEIS, AMR, CMP, and wetland delineation reports. We have also included a set of impact plates, impact tables, and electronic impact data. See Attachment A for a list of bridges, culverts, and stormwater outfalls carrying intermittent and perennial waters within the Preferred Alternative that may be extended or replaced. See Attachment B for information regarding additional MDE permits.

CERTIFICATION:

Application is hereby made for a permit or permits to authorize the work described in this application. I hereby designate and authorize the agent named above to act on my behalf in the processing of this application and to furnish any information that is requested. I certify that the information on this application form and on the attached plans and specifications is true and accurate to the best of my knowledge and belief. I understand that any of the agencies involved in authorizing the proposed works may request information in addition to that set forth herein as may be deemed appropriate in considering this proposal. I certify that all wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and all streams have been identified and delineated on site, and that all jurisdictional wetlands have been delineated in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and appropriate regional supplement(s). I grant permission to the agencies responsible for authorization of this work, or their duly authorized representative, to enter the project site for inspection purposes during working hours. I will abide by the conditions of all permit(s) or license(s) if issued and will not begin work without the appropriate authorization. I also certify that the proposed works are consistent with Maryland's Coastal Zone Management Plan. All information, including permit applications and related materials, submitted to MDE may be subject to public disclosure consistent with the Maryland Public Information Act, §4-101 et seq., General Provisions Article of the Maryland Code and the Freedom of Information Act, 5 USC Section 552 et seq. Pursuant to Clean Water Act Section 404(o), 33 USC 1344 (o), permit applications and permits will be available to the public. I understand that I may request that additional required information be considered confidential under applicable laws. I further understand that failure of the landowner to sign the application will result in the application being deemed incomplete.

LANDOWNER MUST SIGN: Jeffrey T. Folden DATE: 4/27/2022

PRINTED NAME OF LANDOWNER Jeffrey T. Folden

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers, 33 CFR 320-332. Principal Purpose: Information provided on this JPA will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice. Submission of requested information is voluntary, however, if information is not provided, the permit application cannot be evaluated nor can a permit be issued.

State Authorities: Nontidal Wetlands Protection Act, Md. Ann. Code, Envir., Title 5, Subtitle 9; Waterway Construction, Md. Ann. Code, Envir., Title 5, Subtitle 5; Tidal Wetlands Act, Md. Ann. Code, Envir., Title 16.

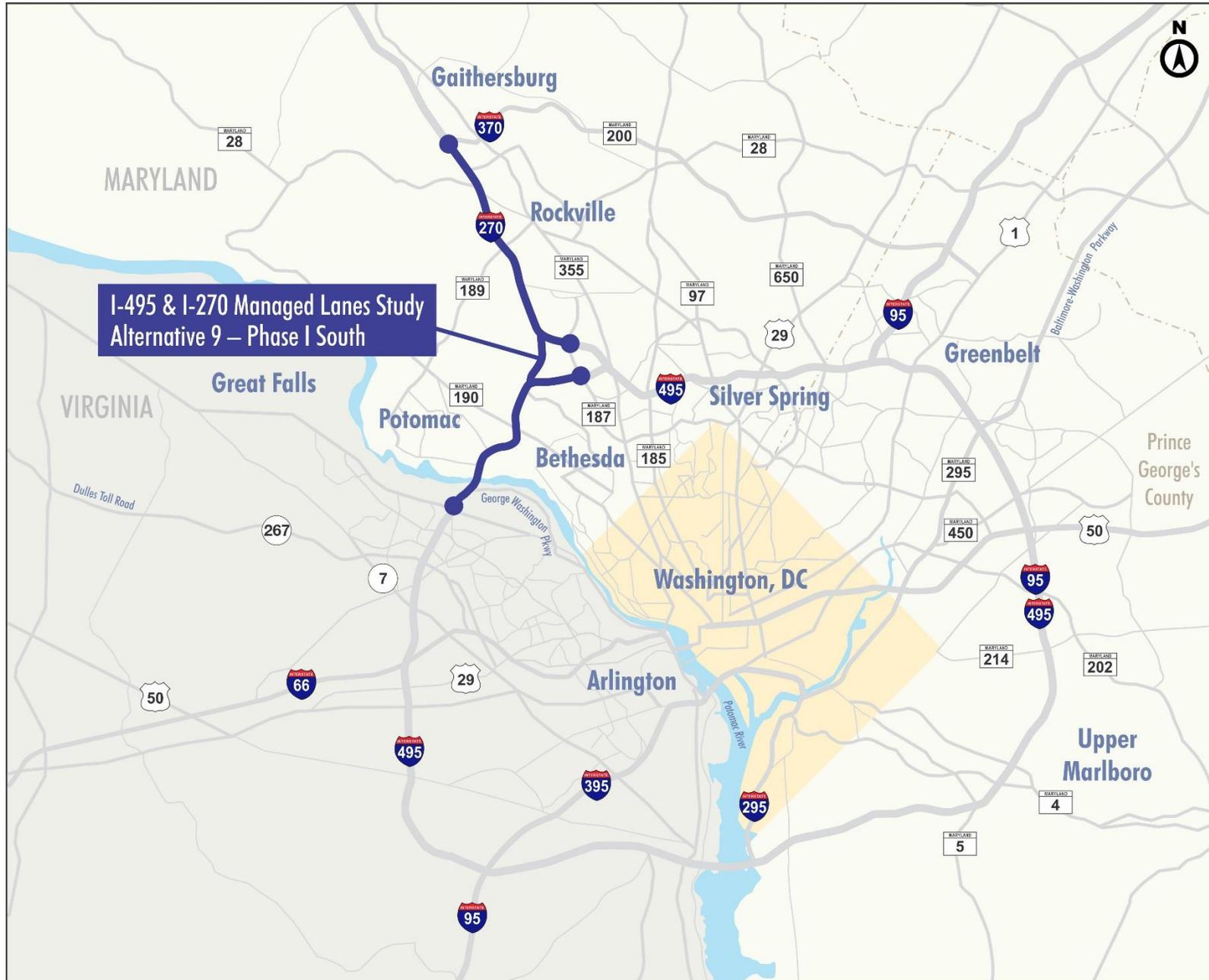
BEST MANAGEMENT PRACTICES VERIFICATION: I verify that my project will meet all Endangered Species Act Best Management Practices applicable to work in tidal waters and wetlands as required by the MDSPGP (see Section VII.B.4.c.i-iii).

Yes No Unknown

Refer to the application instructions and the MDSPGP for additional information regarding these Best Management Practices.

I am the property owner/applicant and do not want to be contacted by MDE. All correspondence should occur with my authorized agent /principal contact designated in Section 3, located on the 1st page of this application. (By initializing the box, you are acknowledging that you will not receive any correspondence directly from MDE). I understand a copy of MDE's final decision regarding this application will be sent to me. This opt-out option does not apply to the U.S. Army Corps' correspondence, which will continue to be with the applicant/permittee.

Vicinity Map



Attachment A - Bridges, Culverts, and Stormwater Outfalls Carrying Intermittent and Perennial Waters within the Preferred Alternative that May Be Extended or Replaced

Feature ID	Impact Plate	Location	Offset	Structure Type	Roadway
22MM_B	2	0106+00	Md	Bridge	I-495 - ALB
22NN_B	2	0109+00	Md	Bridge	I-495 - ALB
22WW_C	2	0096+75	Md	Cross Culvert	VA - I-495
22T_B	3	0128+50	Md	Bridge	I-495
22T_B1	3	0128+75	LT	Bridge	Ramp - from I-495 SB to Clara Barton Pkwy WB
22V_B	3	0118+50	Md	Bridge	I-495
22V_B1	3	0118+75	RT	Bridge	Ramp - from I-495 NB to Clara Barton Pkwy
22AA_B	5	0200+00	LT	Bridge	Ramp - from River Rd to I-495 SB
22AA_B1	5	0199+00	Md	Bridge	I-495
22H_C	5	0198+00	RT	Cross Culvert	Ramp - from I-495 SB/River Rd to Cabin John Pkwy
21C_C1	6	0238+00	Md	Cross Culvert	I-495
21C_C2	6	0236+75	LT	Cross Culvert	I-495
21D_C	6	0225+00	Md	Cross Culvert	I-495
21D_C1	6	0228+50	LT	Cross Culvert	Ramp - from River Rd WB to I-495 SB
21F_C	6	0245+50	Md	Cross Culvert	I-495
22A_C	6	0220+00	LT	Cross Culvert	Ramps - to/from River Rd from/to I-495 SB/Cabin John Pkwy
22C_C	6	0218+75	LT	Culvert	Previously-removed Ramp from River Rd EB to I-495 SB/Cabin John Pkwy
21C_C	7	0261+50	Md	Cross Culvert	I-495
21L_C	7	0278+00	Md	Cross Culvert	I-495
21B_C	8	0297+25	Md	Cross Culvert	I-495
23A_C2	9	3751+00	RT	Cross Culvert	Ramp - from Democracy Blvd EB to I-270 Spur SB
23AA_C	9	3750+00	LT	Cross Culvert	Ramp - from Democracy Blvd EB to I-270 Spur NB
23AA_C1	9	3753+00	Md	Cross Culvert	I-270 Spur
23D_C	9	3760+00	Md	Cross Culvert	I-270 Spur
23A_C1	9, 10	3746+00	Md	Cross Culvert	I-270 Spur
23K	11	3701+00	RT	Stormwater Outfall	I-270
23K_C	11	3684+00	RT	Cross Culvert	Tuckerman Ln
24F_C2	13	3627+00	Md	Cross Culvert	I-270
24V_C	13	3641+50	Md	Cross Culvert	I-270
25H_C	16	3561+50	Md	Cross Culvert	I-270
26B_C	17	3509+50	Md	Cross Culvert	I-270
27A_C	18	3479+50	Md	Cross Culvert	I-270
27A_C1	18	3483+50	RT	Cross Culvert	MD-28
23N_C	22	4727+00	Md	Cross Culvert	I-270
23U_C	22	4719+00	RT	Cross Culvert	I-270
27L_C	19	3405+50	Md	Cross Culvert	I-270

Attachment B - Anticipated MDE Construction Permits

Permit/Approval	MDE Program and/or Division	Contact	Notes
Dam Safety Approval	Dam Safety Division and Wetland and Waterways Division	TBD	where significant or high hazard dams are involved, submittals are through a Joint Permit Application process.
Code 378 Low Hazard Embankment Approval	SSDS Plan Review Division	TBD	Amanda Malcolm
Water Appropriation permit	Water Supply Division	TBD	As needed, for construction excavation dewatering.
General Permit for Discharges of Stormwater Associated with Construction Activity	Industrial and General Permits Division	TBD	

Notes:

1. Permits are in addition to the wetlands/waterways permitting, not listed.
2. SWM/ESC will be reviewed and approved though the MDOT SHA Plan Review Division's Delegated authority so is not listed.
3. Permits listed are anticipated but may not be required or additional may be needed once final design is completed.
4. MS4 permit is not a *construction* permit. However, the proposed work will be accounted in MDOT SHA's MS4 permit and coordinated as needed with MDE.

	USACE Comment	MDOT SHA Response
	The Corps appreciates the opportunity to comment on the Draft JPA for I495 MLS. We found files well organized and easy to access, and the mitigation tables were particularly helpful. After review, additional discussions are needed regarding details of impacts for some locations and opportunities for additional avoidance and minimization. Additional comments will be provided after receipt of the final JPA. Our six major comments are:	
1	More detail is needed regarding bridge alternatives (Impacts, sequence of construction, etc.) regarding work at the American Legion Bridge. Some details are provided in Appendix G NPS SOF of the Draft EIS, and the Corps would like to discuss refined options in further detail. ALB impacts and approaches will be considered in review of the final JPA.	Please refer to the Avoidance, Minimization, and Impacts Report Section 2.2.1, included in the Revised JPA package for a more comprehensive summary of the alignments considered in the vicinity of the ALB. Sequence of constructions and design details are not available at this stage of design, but will be developed and provided by the section design builder in final design.
2	Stream restoration work proposed for Stormwater Management should be removed from the JPA package if they are unlikely to be used. Recent discussions indicate they are likely unneeded.	Stream restoration projects for stormwater quality credit are not included in the JPA.
3	General discussion is needed regarding permanent protection for mitigation sites.	The final CMP includes two permittee-responsible mitigation sites. The RFP-2 site, Cabin Branch, will be permanently protected with a conservation easement. The CA-5 mitigation site is located on M-NCPPC lands and will be permanently protected by M-NCPPC in accordance with the <i>Natural Resource Management Plan for Natural Areas in M-NCPPC Parkland in Montgomery County, Maryland</i> . The project team is happy to continue discussions on permanent protection of our permittee-responsible mitigation sites.
4	We need to look closer at the proposed conditions for stream reaches that are to be hardened with riprap (27 locations). A 2 hour meeting to walk through these is recommended using maps and existing condition photos.	A meeting was held on March 10, 2022 to discuss the proposed conditions for hardened channels and revisions were made as discussed.
5	Please summarize the status of NHPA Section 106 coordination? A draft agreement was circulated in early January 2022. Are there any updates?	The latest draft of the Programmatic Agreement was submitted during the last week of March 2022. The final draft will be executed between May and July 2022, and a signed version will be included in the FEIS or the ROD.
6	Detailed comments on mitigation proposals and stream impacts (see below).	See site-specific comment response below.

From Final CMP and Appendices Comments

4a	<p>Avoidance and minimization: Please describe actions taken to avoid and minimize impacts to the following waters (Each waterway is named then length and activity in parentheses). These represent some of the better quality areas (average quality) with larger impacts:</p> <p>21D (100 ft, fill), 22AA (260 ft, fill), 22AA 1, 2, 3 (Multiple impacts, large stream), 22MM S1 and S2 (Large river impacts), 22C (51, culvert), 23 A2 (128, hardened, 72 scour pool), 23n1s2 (35, scour pool, 149 harden), 27A1 (90, scour pool, 8, fill, 550, hardened), 21B (941, fill, 113, scour pool, 782, hardening), 21C (3795, pipe, 434, temp, 181, Scour Pool), 24 F2, Potomac River.</p>	See responses below.
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	USACE Comment	MDOT SHA Response
4b	Temporary impact validation: To verify quality of streams categorized as temporary impact sites, please plan to followup after construction to perform stream quality assessments for the following reaches: 22MM S.1 (354, temp), 22mmb (140, temp), 25G (164, Temp), 27A (141, temp), 20D (537 ft, temp), 21C (3795, pipe, 434, temp, 181, Scour Pool), 26B (Temp), 26C (355, temp), 26K (328, temp).	Stream quality assessments will be performed after construction to verify stream quality for the stream reaches listed, which were categorized as temporary impact sites.

Avoidance and minimization: Please describe actions taken to avoid and minimize impacts to the following waters (Each waterway is named then length and activity in parentheses). These represent some of the better quality areas (average quality) with larger impacts:	
23A_2 (128, hardened, 72 scour pool),	The design options near Thomas Branch are limited because of the restricted channel and limited space along the roadway. Roadway widening and resultant interchange improvements forced the abandonment of the original channel alignment. In the proposed condition, Thomas Branch will flow along the east side of the west I-270 spur through the interchange and will cross the spur near Station 3759+00. This new alignment results in shorter culverted sections of Thomas Branch.
21C (3795, pipe, 434, temp, 181, Scour Pool),	Feature 21C (Thomas Branch) runs very close to the existing roadway. Therefore, the ability to avoid and minimize impacts is limited. The impacts have been minimized where practicable, and the channel will be placed into culverts where necessary to allow for the movement of water while maintaining roadway integrity. Detailed A&M of Thomas Branch is discussed in the AMR.
21B (941, fill, 113, scour pool, 782, hardening),	The impact to this channel is necessary for roadway widening and ramp construction. Feature 21B will be relocated to an open channel (near 21U) and is within Limits of Restoration, which will be subject to further approval from MDE and USACE prior to clearing for construction.
21D (100 ft, fill),	21D is an intermittent channel complex for roadway drainage. The channel will be replaced with a pipe system and SWM to improve water quality in Cabin John Creek.
22AA (Assumed this meant 22A) (260 ft, fill),	22A is an intermittent channel that manages roadway drainage. The roadway widening will impact 22A. To accommodate the roadway widening and SWM, this system is proposed to be piped.
22C (51, culvert),	The impact to this feature is not able to be avoided or minimized since the ramp construction will be directly over the feature.
22AA 1, 2, 3 (Multiple impacts, large stream),	22AA will be impacted by two tie-ins with features 22D and 21C_C2. The impacts have been minimized to the extent possible, while accommodating the tie-in activity. Since the ramp/structure and roadway widening work is necessary over Cabin John Creek, the opportunity for avoidance and minimization is limited. However, the LOD has been minimized to the extent practicable along features 22AA_1, 2, and 3 while still allowing adequate construction access. Cabin John Creek 22AA_2 and _3 will be bridged and this is the location of the commitment to M-NCPPC for stream improvement as park mitigation.
23N_1.S2 (35, scour pool, 149 harden),	This channel is within a Limits of Stabilization and will be permanently impacted by outfall stabilization for the augmentation of 23U_C.
27A_1 (90, scour pool, 8, fill, 550, hardened),	Augmentation is proposed for both culverts on either side of 27A_1, and restoration of 27A_1 is required after construction. The feature is in a designated Limits of Restoration, which means that the design of this channel will be subject to further coordination with MDE and USACE before construction.
24F_2,	Impacts to 24F_2 are necessary to accommodate the augmentation of 24F_C2. The impacts have been minimized to the extent necessary, and a Limits of Stabilization was determined in this area to limit the impact to the upstream (24F_2) and downstream (24F_3) sections.
S1 and S2 (Large river impacts), Potomac River	The Potomac River (22MM) has undergone an extensive avoidance and minimization process between many agencies. The AMR details the avoidance and minimization steps near the American Legion Bridge and Potomac River.

Final Compensatory Wetlands and Waterways Mitigation Plan (CMP)		
Comment #	USACE Comment (02/04/22)	MDOT SHA Response (03/15/22)
A.	Virginia: You propose using mitigation banks in VA using their crediting methodologies to determine quantities for impacts. After review, the Corps concurs with this approach if there are credits available in the service area. Please provide letters from the Banks as indicated in Appendix M.	Noted. Credits are available in the service area. Letters from the bank have been added to Appendix M.
B.	Maryland	
	All Mitigation Sites	
1	Stream crediting: The Corps recommends using the new stream calculator MSMF Version 1. Available March 31, 2022 (public draft available February 18, 2022) when it becomes available. The February 2022 draft will provide better estimates in the near term (if needed), but crediting should rely on the March 31 version. The updated version will streamline mitigation crediting, overall credit accounting, and provides more detail and clarity regarding stream buffer crediting. The Corps expects any mitigation shortfall associated with application of MSMF Version 1 vs the Beta tool to be small compared to the mitigation credits produced by your mitigation proposals. However, discussions below may affect mitigation needed independent of implementation of MSMF Version 1. (See discussion on stream hardening below). If there is a mitigation shortfall, purchase from an approved mitigation bank in the applicable service area is acceptable. Further the order of preference outlined in the 2008 Mitigation Rule for mitigation prioritizes mitigation banks over permittee responsible sites unless the PRM site is ecologically preferable.	The Draft MSMF Version 1 stream calculator was used to determine the stream functional foot impacts and mitigation requirements for the MLS. Currently no mitigation banks are available in the Middle Potomac-Catoctin HUC-8 watershed in Maryland. Credits from the Even Flow Mitigation Bank under the RES UMBI will be available in the summer of 2022 and will be used to fulfill the remaining MLS stream mitigation credit requirements.
2	Mitigation Monitoring: The Corps and MDE have collaborated regarding mitigation monitoring. Please see MDE detailed comments regarding monitoring, as they reflect the Corps position.	Noted.
3	Wetland impacts and Mitigation: The Corps and MDE have collaborated regarding wetland impacts and mitigation. Please see MDE detailed comments regarding these items. Some limited additional comments regarding these are also provided below.	Noted.
4	Stream Impacts vs Mitigation and use of MSMF Beta Tool (Appendices F, I, G, H). The MDOT team did an excellent job using the MSMF Beta tool and tabulating information. A couple things that would have been helpful are including stream names in the table. You can hide the DA adjustment tab (but keep DA) to make room in the table. The team had mentioned that there was a geodatabase where impacts could be looked up on a map with data and photos. There was a note that it had been sent Jan 4th, but I cannot locate the link. Please resend the link with the final JPA. I would like to discuss some items regarding the impacts and channel hardening as well as temporary impacts. Values regarding complete fills and scour pools appear to be reasonable. The team appears to have used the correct stream quality assessment for all reaches except for one: Impact 27A1 should have used the SFPF assessment. However, given the long list of impacts, we can stick with the RBP on this one location. The team used the correct assessment for over 99% of the impact sites based on advisement provided to them by the Corps.	Stream names have been added to the tables in Appendices E, F, G, and I. The geodatabase is included with the latest JPA submittal.
4a	Avoidance and minimization: Please describe actions taken to avoid and minimize impacts to the following waters (Each waterway is named then length and activity in parentheses). These represent some of the better quality areas (average quality) with larger impacts: 21D (100 ft, fill), 22AA (260 ft, fill), 22AA 1, 2, 3 (Multiple impacts, large stream), 22MM S1 and S2 (Large river impacts), 22C (S1, culvert), 23 A2 (128, hardened, 72 scour pool), 23n1s2 (35, scour pool, 149 harden), 27A1 (90, scour pool, 8, fill, 550, hardened), 21B (941, fill, 113, scour pool, 782, hardening), 21C (3795, pipe, 434, temp, 181, Scour Pool), 24 F2, Potomac River.	See Responses in "4a Response A&M" tab.
4b	Temporary impact validation: To verify quality of streams categorized as temporary impact sites, please plan to followup after construction to perform stream quality assessments for the following reaches: 22MM S.1 (354, temp), 22mmb (140, temp), 25G (164, Temp), 27A (141, temp), 20D (537 ft, temp), 21C (3795, pipe, 434, temp, 181, Scour Pool), 26B (Temp), 26C (355, temp), 26K (328, temp).	See response 4(b) in "General" tab.
4c	Regarding Appendix H and channel hardening: Assumptions and quality scoring regarding channel fill, culverting, and scour pools appear to be appropriate. We need to revisit quality scores for streams that will be hardened with riprap. The scores in Appendix F seem high for proposed conditions after riprap is placed. I counted 27 locations where hardening is proposed. I am envisioning each of these reaches to be riprap lined. If so, probable quality values after would be nearer to 0.3. Are natural channel design options possible at any of the riprap locations to handle flows and prevent cutting and erosion? This may reduce the mitigation burden through impact minimization. We discussed some of these in a previous meeting, but we need to revisit. I recommend a 2 hour meeting to run through each of the 27 hardening locations with photos, mapping, and Appendix F and H and revisit assumptions. It would also be a good time to revisit avoidance and minimization efforts at the locations listed above. Some overlap with the channel hardening locations. Where existing riprap channels are proposed to be impacted, you can also adjust based on the table, which may reduce some impacts numbers. Impacts to Potomac River: We may want to revisit Potomac River impacts to examine whether a square footage approach would be more appropriate. The MSMF Beta tool may not capture impacts to large rivers well. These mitigation numbers may end up being reasonable, though we need to reexamine to be sure.	A meeting was held with the Corps on March 10th, 2022 to review the proposed condition scores for all hardened channel reaches. As a result of the meeting, revisions were made to the proposed condition assumptions for all hardened channels relating to the scores for channel alteration and channel flow status. Individual proposed condition scores were also updated based on the Corps guidance at the meeting. Proposed condition score assumptions and proposed condition scores for all reaches are documented in Appendix H and Appendix I respectively. Potomac River impacts and the respective FF requirement are determined based on a square foot approach. The FF requirement is discussed in section 4.1.1 of the CMP
5		Note. There is no comment #5 in the original USACE letter.
6	Wetland Impacts: See MDE comment letter. The Corps and MDE collaborated and most of their comments will reflect our position as well.	Noted.
7	Mitigation site location: The Corps considers the ecological potential of mitigation sites more important than the proximity to the impacts. Where substantial water quality impairments, utility constraints, and site protection challenges occur, sites that may be a few miles further from impacts but less constrained by the above three items are generally preferred (Mitigation Banks or PRM sites). If any of the three mitigation sites below exhibits substantial limitations based on the three items listed above, alternative mitigation sites or options should be proposed. The potential for success of a selected mitigation site is far more critical than its exact location in an approved service area.	Noted. The Even Flow Bank is currently the only available mitigation bank in the Middle Potomac-Catoctin HUC-8 watershed and all credits from the bank will be used to help meet the mitigation needs of the MLS. MDE and the USACE have been involved throughout the process of reviewing and selecting the best available permittee responsible mitigations sites in the Middle Potomac-Catoctin HUC-8 watershed.

Comment #	USACE Comment (02/04/22)	MDOT SHA Response (03/15/22)
8	Stream mitigation and stormwater management: Please confirm that proposed stream mitigation sites will not also be credited for stormwater management.	A statement has been added to the executive summary and final mitigation package sections of the Final CMP clarifying that the proposed mitigation sites will not be used for off-site stormwater management credits.
9	Compensatory Mitigation Plans: The documents were fairly well organized, but the information regarding alternative sites should be provided as an appendix (not in the main document itself, but a separate pdf). The alternative site info makes the main document too bulky and more difficult to navigate. Photos must be attached to data sheets and all data filled out in sheets including lat/long and bankfull metrics.	Information on the alternative sites in the RFP-2 and CA-5 Mitigation Plans is limited to 1-2 paragraphs. The CA-2/3 alternative site information was very detailed due to an MDE comment that requested the information, however the site has now been removed from the proposed MLS mitigation package. Photographs have been added to the stream reach data sheets and all data has been filled out on the datasheets.

Comment #	USACE Comment (02/04/22)	MDOT SHA Response (03/15/22)
1	Site Selection: After using remote tools, this appears to be a reasonable selection for a mitigation site. Converting a former golf course to a stream and wetland mitigation site undoubtedly provides potential for ecological lift. A few questions about the site? How severe are aquatic passage barriers upstream and downstream? How easily can watershed fauna reach the site? How encumbered is the site by existing utilities? How does this affect design options?	The only known barriers to aquatic passage exist on the project site and will be removed as part of the proposed restoration. The project site is also adjacent to MNCPPC property, which provided additional adjacent corridors for fauna movement. While the site does have several utility easements, RES has coordinated with each and the restoration work will be conducted through these areas despite the fact that they are not generating credit and have ultimately been removed from the project easement area.
2	Impact Balance: Some tree clearing is proposed on the mitigation site in the narrow existing riparian buffer. While this is a small amount of clearing, please explain the need for tree clearing at the Cabin Branch Site mitigation site. Please explain the ecological costs and benefits to removing the stand of trees and lowering the floodplain/replanting. Think long term, what will the floodplain look like? The newly vegetated area might provide a beneficial expansion of the nearby forest habitats for the watershed, although it appears to only be as wide as the existing vegetative buffer. Please elaborate. Can the buffer be expanded? It appears the proposed buffer is not much wider than existing (although this could be an artifact of appearances on the site figures).	RES understands the importance of saving trees whenever possible, however the overall ecological benefits of the project will far outweigh any immediate or temporal loss of existing trees. The current limits of grading only impacts eleven (11) large DBH trees but the entire riparian corridor will be replanted as part of this project or the adjacent development tree conservation plan. In addition, the proposed increased connection to the floodplain and the POW to PFO conversion will create a diverse riparian corridor that will further enhance the overall floodplain area.
3	Site Protection: A conservation easement will be used. The Corps will review the document (when it is prepared) for legal sufficiency. Has the title been cleared? Any issues? Please provide the title report. The easement is narrow and is limiting your credits and the ecological value of the project.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
4	Design: Please provide an H&H report including a 2D hydraulic model of existing and proposed shear stress for flows up to and including the 100 year flood in channel and on the 100 year floodplain and bankfull benches. We have no indication the work will be durable in the long term without this analysis. Appendix H analysis for 2 and 10 year storms is insufficient. I will assume the modeling is intended but had not been completed at this phase. A graphic display should be produced or a summary table of existing vs. proposed shear stress values by river station. Work on piped tributaries and converting ponds to natural wetlands will both provide unquestionable ecological life on the site. Can you provide a color coded Map showing proposed locations of all resources? Including: Streams, wetlands, credited stream buffer and any utility corridors on the project. See map from page 64 of the Magruder Branch mitigation project as an example.	Noted and requested data has been provided as part of this comment response submission.
5	Stream Assessments: Coordinates not filled out on assessment forms. Photos should be attached to all stream assessments. Please correct. For the Mainstem Cabin Branch Assessment " Entrenchment ratio not calculated in some locations." Did it vary throughout the project? If so, it may call for reaches to be broken up (different assessments). Same with if DA changed considerably. The cabin branch assessment noted a minimum ER <1.4? Cabin branch appears to have a wide floodplain. Is it not currently accessible at 2X Bankfull? I think we need to visit in the field to determine where to make breaks and validate the entrenchment ratios. Water appearance: how will proposed work improve water quality, clarity, etc per metric number 13? For biology, the site appears to be somewhat isolated due to barrier constraints. Do we think biology will score in the 8 range after construction? I have not yet seen the site in the field. How severe are the barriers to aquatic life movement? You are proposing a large amount of daylighting, which has clear benefits. However, what is the source of hydrology for each of these? Do any of the existing piped streams have questionable water quality?	Additional cross section data has been collected since the original submission of MSMF data sheets. The Cabin Branch assessment form has been updated with current ER data. While there is a relatively large floodplain area, no collected data shows access to this area at 2X bankfull. Prevention of future bank erosion should decrease sedimentation and nutrient enrichment within this reach (13) however, the proposed condition score has been reduced to be more conservative. There is a significant instream dam within the proposed reach that is major deterrent to aquatic passage. That will be removed as part of the proposed project. All currently piped channels have open upstream channels above the proposed restoration area.
6	Monitoring: See MDE Comments regarding mitigation monitoring. MDE And the Corps collaborated in creation of the monitoring comments provided.	Noted
7	MSMF Calculator: In general, the stream calculator was mostly used correctly. However, the following corrections/items need to be addressed: For site protection, you assumed "accredited easement." Please change this to "easement." Accreditation is a process requiring certification by the Land Trust Alliance. I doubt this process has been completed, if so, you can leave as is. For Site quality Is the drainage area approximately consistent throughout? If not, you may need to split this into different reaches. We need to schedule a field visit to examine the site with the quality rating forms in hand. All reaches are labeled as perennial. Is this accurate even for the smaller tributaries? You will want to include remarks next to each reach briefly describing the existing condition and what the reach will become and any other notes of interest.	Noted and MSMF sheets have been updated accordingly.
8	Longterm management: The Corps does not recommend chemical vegetative management techniques. Techniques were not specified, however non-chemical means are ecologically preferable.	Noted and will consider non-chemical techniques where appropriate.

Magruder Branch (CA-2/3): Mitigation Plan and Associated Documents

Comment #	USACE Comment (02/04/22)	MDOT SHA Response (03/15/22)
1	Site Selection: The Corps concurs that this is a promising site for stream and wetland mitigation work. Working within A Target Ecological Area, in a low impervious watershed, and connecting protected lands, we can expect this site to be used by native fauna following improvements to its current degraded condition. Are there any known impediments to aquatic movement that may limit colonization following construction?	The CA-2/3 site has been removed from the proposed MLS wetlands and waterways mitigation package. See the Final Compensatory Wetlands and Waterways Mitigation Plan for further details.
2	Baseline Conditions: The CMP package is lacking photographs of existing site conditions. Please include photographs of each stream reach to be restored, and other existing features such as the 3 acre stand of trees in the context of the site. Photos should always be attached to stream assessments (or referenced to their location in the form or caption below it).	
3	Impact Balance: Approximately 3 acres of tree clearing is proposed on the mitigation site. While this is a small amount of clearing considering the size of the mitigation site, please explain the need for tree clearing at the Magruder mitigation site. Please explain the ecological costs and benefits to removing the 3 acre stand of trees and lowering the floodplain/replanting.	
4	Longterm management: Pdf Pg 150 Element A5 for longterm management. The Corps does not recommend chemical vegetative management techniques. Techniques were not specified, however non-chemical means are ecologically preferable.	
5	Mapping Pdf pg 64: Wetland mitigation zone map. This is a very useful map showing the locations of proposed credited wetlands, streams, and stream buffer. A+++	
6	Stream Assessments and Crediting (pdf pg 52 and others): Site photos and a field visit would help to confirm values, should be attached to each stream assessment. The MSMF Beta tool appears to have been used correctly. One correction is needed. The stream credit table indicates in the remarks that a one point increase to site sensitivity for culverts is awarded. The MSMF Beta tool does not award credits for culverts, however the point is justified here due to its proximity to public lands, connection of Target ecological areas, and low impervious cover (yielding a value of 3 for site sensitivity for all reaches).	
7	<p>Stream and Wetland Design: Considered a low risk design due to excellent floodplain connection, and it has excellent potential for long-term success. However I have no photographs of baseline conditions for comparison attached to the stream assessments. I did eventually find some in the report. Question: Could underlayment of rock in some areas threaten wetland hydrology? Or is the floodplain low enough that this will not present a problem?</p> <p>Please provide an H&H report including a 2D hydraulic model of existing and proposed shear stress for flows up to and including the 100 year flood. I know the designer likely ran some models to create this stream design. A graphic display should be produced or a summary table of existing vs. proposed shear stress values by river station.</p> <p>Please see MDE comments for additional feedback. The Corps and MDE collaborated on review of several items regarding wetland mitigation.</p>	
8	Wetland Crediting: Please see MDE detailed comments regarding wetland crediting. Their proposal was also agreed upon by the Corps. (If I missed it in the report, please direct me to it).	
9	Site protection: PDF pg 5 pg 37: Site protection M-NCPPC Land management plan may not be adequate site protection. We need to review the land management plan, and perpetual protections that will be in place. We may need easements or declaration of restrictive covenants if proposed protections are inadequate.	
10	Monitoring: See MDE Comments regarding mitigation monitoring. MDE And the Corps collaborated in creation of the monitoring comments provided.	

Unnamed Tributary to Seneca Creek (CA-5): Mitigation Plan and Associated Documents

Comment #	USACE Comment (02/04/22)	MDOT SHA Response (04/01/22)
1	<p>Site selection: The BIBI scores are poor at this site? Why? Is it simply lacking habitat or is water quality preventing establishment of aquatic fauna? If so, is this an appropriate site for mitigation? The watershed draining to the site appears to be predominately impervious, which correlates with lower BIBI scores, likely due to impaired habitat conditions, but often water quality (chlorides, etc). This does not necessarily mean a federally protected species. Are there any major obstacles to mitigation site development, encroaching utilities, etc? The site scores a 0 in stream sensitivity, indicating that it is not in a prioritized location. This is negatively affecting stream credits. From photos, this site appears to have a coarse bedload supply issue, which can present challenges in stream designs. However, given the site location near the head of the watershed, addressing erosion on site should remedy most of the sediment challenge.</p>	<p>CA-5 was selected, based on feedback from the agencies as a site for partial compensatory mitigation for the I-495/270 MLS project. As indicated in the TMDL Implantation Plan, Seneca Creek watershed was found to have impairments related to Ammonia (Total), Chlorides, Mercury in Fish Tissue, Phosphorus (Total), Sedimentation/siltation, Temperature, and Total Suspended Solids (TSS). Approximately 15,835 linear feet of stream was identified in Seneca Creek watershed as suitable for future restoration. Upon site inspection approximately 3,868 linear feet of existing stream located within the identified CA-5 stream restoration site, was found in need of restoration and suitable for construction. However, approximately 600 linear feet of stream is located on property owned by The Potomac Electric Power Company (PEPCO) and will not be counted towards mitigation credit. Functional uplift proposed at this site is to hydraulics and geomorphology. As noted the high percentage of impervious cover and the fact that the reach begins at pipe outfalls, biologic uplift was not a goal. However, some increases in score will be obtained through the addition of in-channel substrate (gravels, logs, etc.) The site sensitivity scores were updated (1 for Mainstem 1 and 2 for Mainstem 2) and the total Functional Feet credits were updated in the spreadsheet and the report.</p>
2	<p>Mapping: Please show utility easements on Appendix B pdf page 342 of the CMP.</p>	<p>There are no utility easements on M-NCPPC property, however the PEPCO ROW Property is now shown on the Mitigation Map Map and labeled appropriately.</p>
3	<p>Stream and Wetland Design: Please provide an H&H report including a 2D hydraulic model of existing and proposed shear stress for flows up to and including the 100 year flood. A graphic display should be produced or a summary table of existing vs. proposed shear stress values by river station.</p>	<p>Attached is the semi-final report. The report contains maps showing the existing and proposed shear stress. The HEC RAS 2D model files can also be provided.</p>
4	<p>Stream Assessments: Assessment values generally appear reasonable, however the following comments apply: Lat/Long not filled out. Data not filled out regarding bankfull metrics. Please fill out this section on each data sheet. Some say "see report." The purpose of the table is a concise tabulation for rapid review and field validation (if needed). Water quality: You show improvements in metric 13, water quality. How does the designer propose improving water quality? Biology Metrics 15-17: Please describe the potential sources of colonization of this site and identify any potential barriers to faunal colonization of the site.</p>	<p>The lat/long and bankfull data was added to the data sheets. Questions 13, and 15-17 will be evaluated and the values will be revised or explanation will be provided on the sheet.</p>
5	<p>MMSMF Stream Calculator Results: Results appear reasonable, but we will revisit as development progresses.</p>	<p>Noted.</p>
6	<p>Impact Balance: Tree clearing is proposed on the mitigation site. How many acres of forest will be impacted? What is the approximate age of the forest? Please explain the need for tree clearing at the UT Great Seneca mitigation site. Please explain the ecological costs and benefits to removing the stand of trees and lowering the floodplain/replanting. Forest clearing may negatively affect stream crediting at this site.</p>	<p>Mass tree clearing within the LOD will not be performed on the site. The note on the E&S plans states "All trees within the LOD not marked for removal will receive tree protection fence and tree planking". Since the project is located on parkland owned by M-NCPPC, great care was given to only removing the trees needed to accomplish the project goals. A total of 110 trees will be removed within the forest for this project and we will be planting 602 trees and 260 shrubs within the LOD. The trees to be removed are shown on the plans with an X.</p>
7	<p>Site protection: How will this site be protected in perpetuity? What assurances do we have that MNCPP will continue to protect the site decades from now?</p>	<p>There will be an MOU with MDOT SHA and M-NCPPC that will guarantee the site will continue to be protected in perpetuity. That MOU will be provided once it has been finalized.</p>
8	<p>Stream and Wetland Monitoring: See MDE Comments regarding mitigation monitoring. MDE And the Corps collaborated in creation of the monitoring comments provided.</p>	<p>Noted</p>
9	<p>Wetland Mitigation: See MDE comments</p>	<p>Noted</p>
10	<p>Longterm management: The Corps does not recommend chemical vegetative management techniques. Techniques were not specified, however non-chemical means are ecologically preferable.</p>	<p>Noted</p>

45-Day Responses (2020.06.05)	MDE Comment	MDOT SHA Response
1	Please provide a schedule for when these permits will be applied for, and provide contact information for each permit/approval as it becomes available. Please provide an update on pre-application coordination as well.	The schedule for obtaining most of these permits has yet to be determined by the P3 section developers. We expect that all of these permits will be sought after the MDE wetlands and waterways permit is issued. Contact information and coordination updates will be provided as they become available. The SWM/Erosion and Sediment Control permit process is underway. The contact for MDOT SHA OHD PRD is Brandon Scott as team leader, and Division Chief is Matt Keenan and Assistant Chief Zhihua Kuang. The base PRD number is 20-SF-0040. Transfers of water quality (WQ) credit from previously completed TMDL projects, but no longer needed for TMDL credit, to the P3 WQ bank account under PRD # 20-SF-0040-08 have been completed. Additional transfers may be completed in the future. A preliminary concept submittal was made Oct 27, 2021 and supplemented Dec 14, 2021 under PRD # 20-SF-0040-10. This preliminary concept included an initial screening for Dam Safety/Code 278 embankments that will inform which embankments may need to be submitted to MDE for small pond approval and/or dam safety for dam permits. This preliminary concept is the basis of the stormwater design presented in the FEIS. MDOT SHA OHD PRD has been engaged in several meetings with AMP and OP3 answering questions on the preliminary concept comments. Additionally, there have been several RFIs for which MDOT SHA OHD PRD contributed to responses. These have been technical questions, typically to clarify the interpretation and application of the SWM regulations.
2		
2a	Please confirm that lists provided on 6/30/2020 are still accurate, including property owners removed due to the reduced project area, property owners adjacent to mitigation sites, and property owners adjacent to off-site stormwater management (regardless if the off-site stormwater management impacts regulated resources), as these sites will be part of the water quality certification review process.	We have provided MDE with a revised list of adjacent property owners.
2b	We understand that the Certification of Notification will be sent out concurrently with the second Public Hearing notice. Please provide the signed Certification of Notification form after the notice has been sent.	We will provide the signed Certification of Notification when available.
3	We have received the draft IWQC Application, and comments will come under separate cover.	Noted.
4		
5	Thank you for providing updates on the schedule; we look forward to receiving additional updates on the schedule as they become available. Since the final design and construction schedule may not be available until after the requested permit issuance date, special conditions will likely be added to the permit requiring schedule updates. Please provide a date by which all construction is expected to be complete (including mitigation sites).	May 2029 is an estimated time of construction completion, 5 years after the permit issuance plus a buffer.
6	Please provide the incentive language from the P3 developer's contract and section designers contracts (draft language is acceptable).	Incentive language has been provided to USACE and MDE under separate cover.
7	We look forward to reviewing the FEIS when it becomes available to review the Compensatory Stormwater Management Plan; however, at the publication of the FEIS, there is less flexibility to change the stormwater approach as needed. Please continue to work with MDE Stormwater, and MDE Wetlands and Waterways, and other agencies as appropriate to continue to receive feedback and make appropriate changes to the Stormwater approach. Also, if the Compensatory Stormwater Management Plan is submitted to MDE Stormwater prior to the FEIS, please also submit the plan to MDE Wetlands and Waterways.	Noted.
8		
8a	Since the HH information required by COMAR 26.17.04 may not be available until after the requested permit issuance date, special conditions will likely be added to the permit requiring approval of this information prior to construction of affected structures.	Noted.
8b	Please confirm the following culverts will not be extended or replaced: IP 3 – 125+00, RT – 22Q_C Perennial IP 5 – 200+00, RT – 22Z_C Perennial IP 14 – 3614+00, LT – 24F_C1 Perennial IP 17 – 3523+00, L/R – 26C_C Intermittent IP 20 – 3340+00, RT – 29A_C1/C2 Perennial IP 21 – 3330+00, L/R – 29B_C Perennial IP 25 – 324+00, RT, 20C Perennial	These culverts are included in the LOD, but will not be extended or replaced according to the preliminary design plans.

45-Day Responses (2020.06.05)	MDE Comment	MDOT SHA Response
8c	Since the required flood risk information may not be available until after the requested permit issuance date, special conditions will likely be added to the permit requiring approval of this information prior to construction in specific locations as required under COMAR 26.17.04.11.B(6).	Noted.
8d	We look forward to receiving continued coordination with MDOT SHA and DNR regarding passage of aquatic life where feasible. Note that the reference to culverts greater than 150-feet not supporting aquatic passage is not a correct interpretation of COMAR 26.17.04.06 B. (3) which states that culverts shall not exceed 150 feet unless adverse impacts are adequately mitigated. Culverts greater than 150 feet in length can and do often allow passage of aquatic life, and opportunities for improvement of passage often exist.	Acknowledged. We will continue to coordinate with MDE and DNR regarding aquatic life passage. We revised the text to address this comment.
9		
9a	See Attachment C for Responses.	See Attach C sheet.
9b	Addressed.	
9c	Addressed.	
10 a-e	Addressed.	
11		
11a	Noted. We look forward to updates regarding coordination with DNR.	We will update as coordination continues.
11a.i	Please provide the coordination with DNR regarding acceptance of the 2020 survey reports. The correspondence was not noted within the SDEIS or supporting documents.	MDOT SHA received an email from DNR on 7/23/2021 verifying that they accepted the findings of the 2020 survey reports. This email is included in the NRTR Appendix N - Agency Correspondence.
11a.ii	Addressed.	
11a.iii	Addressed.	
11b	Addressed.	
11c	Please provide an update on MNCPPC coordination to date, and provide copies of the meeting minutes.	An update on M-NCPPC coordination and copies of meeting minutes were provided under separate cover.
11d	Please provide updates regarding your coordination on Scenic & Wild Rivers (Andrew Mengel) including any meeting minutes.	Correspondence with Andrew Mengel, the Scenic and Wild River coordinator, have been included in the NRTR Appendix N, Agency Correspondence. No meetings have taken place.
11e	Please provide updates on the status of the DRAFT Programmatic Agreement based on the Fall 2021 comments received. What is the general timeline for the signed Programmatic Agreement? Do you anticipate the Programmatic Agreement will be signed prior to the requested MDE permit issuance date?	The latest draft of the Programmatic Agreement was submitted during the last week of March 2022. The final draft will be executed prior to May 2023 and will be included as part of the ROD.
12		
12a	Please provide the incentive language from the P3 developer's contract and section designers contracts (draft language is acceptable). Special conditions will likely be added to any permit requiring submittal of designs for review of avoidance and minimization prior to construction impacting regulated resources.	Incentive language has been provided to USACE and MDE under separate cover.
12b	Addressed.	
12c	Addressed.	
12d	Addressed.	
12e	Addressed.	
12f	Addressed.	
12g	Addressed.	
12h	Special conditions will likely be added to any permit specifically requiring detailed review of construction plans and phasing for work in and around the Potomac River. Be advised that access structures within the river will be required to meet stringent conditions (likely requiring engineering certification) to prevent damage or dislocation during high river flows. Also, plans to protect the swimming / boating public during construction may be required including signage and portage instructions.	Noted.
12i	MD 378 regulations are referenced twice on page 32 of the AMR without explanation. Consider removing references or adding an explanation.	This section was revised to better reflect the methodology used to determine culvert augmentation or replacement locations.
12j	Addressed.	
12k	Please update the status of this design consideration. Could this work be done for either stream or park mitigation? If it will be done, please include in AMR and impact plates and tables.	This is still a park mitigation element under consideration and has not been explored for potential as nontidal wetlands and waterways mitigation. M-NCPPC mitigation is not final and therefore not included in the FEIS and JPA. Aquatic resource impacts associated with M-NCPPC mitigation will be included as permit modifications for independent permit applications, depending on the proximity and independent utility of the mitigation action.
12l	Addressed. Note that Special Conditions will likely be included in any permit requiring review and approval of stabilization plans prior to any clearing in these locations.	Acknowledged.
12m	Addressed.	
13		
13a	Addressed.	

45-Day Responses (2020.06.05)	MDE Comment	MDOT SHA Response
13b		
13b.i	Addressed.	
13b.ii	Addressed.	
13b.iii	Addressed.	
13b.iv	Addressed.	
13b.v	Addressed.	
13b.vi	Addressed. Note that credit for improvements in the vicinity of the Cabin John Creek crossing (see comment 12k) would be considered.	Acknowledged.
13b.vii	Addressed.	
13b.vii.1		
13b.vii.2		
13b.vii.3		
13b.vii.4		
13b.vii.5		
13b.vii.6		
13b.viii	Addressed.	
13b.ix	Addressed.	
13b.x	Addressed.	
13b.xi	Addressed.	
13b.xii	Addressed. Please note, the Department and USACE will require that Version 1 of the MSMF stream calculator is used for all MLS Phase I stream mitigation projects. The USACE will provide the Version 1 stream calculator when available.	Noted.
13b.xiii	The text in this section was not changed with regard to clarifying that only certain resources were reviewed by the agencies and thus not all functions and values assessments were approved. Please revise this statement accordingly.	The Function & Value Impacts section in the Final CMP has been revised accordingly.
13b.xiv		
13b.xiv.1	Addressed.	
13b.xiv.2	Noted. Since the final design may not be available until after the requested permit issuance date, special conditions will likely be added to the permit requiring a design with ecological uplift for relocated channels, where possible, and the provision of stream design plans and reports, including H&H and geomorphic analyses for each relocated channel in accordance with COMAR 26.17.04.07. If ecological uplift as part of the design is not proposed, additional mitigation may be required.	Noted.
13b.xiv.3	Addressed.	
13b.xv	Please provide the MOU with M-NCPPC regarding long-term management and sign off for flood increases (CA-2/3 and CA-5). Please also provide the Conservation Easement for RFP-2 when available.	We will provide the CA-5 M-NCPPC MOU and RFP-2 Conservation Easement once they are available. Note, the CA-2/3 site has been removed from the proposed wetlands and waterways mitigation package. See the Final Compensatory Wetlands and Waterways Mitigation Plan for further details.
13b.xvi	Addressed.	
13b.xvii	Addressed.	
13b.xviii	Addressed.	
13b.xix	Noted. As stated in the response to Comment 9 for the CA-2/3 phase II mitigation plan, additional survey is required to add the overhead power line and utility poles along Watkins Road to the plans. This will be rectified at the next design milestone.	The CA-2/3 site has been removed from the proposed wetlands and waterways mitigation package. See the Final Compensatory Wetlands and Waterways Mitigation Plan for further details.
13b.xx	Site-specific comment responses have not been provided for the latest round of MDE comments for CA-5 and RFP-2. We have also included this as a comment in the Phase II mitigation plan comment trackers. Please provide.	Site-specific comment responses to previous and the most recent MDE comments on the CA-5 and RFP-2 site are included with the latest JPA submittal.
13b.xxi	Addressed.	
13b.xxii	Please provide final/complete advance mitigation plans for sites RFP-2 and CA-2/3, including lists of future projects with potential mitigation requirements.	Advance mitigation is not proposed for the RFP-2 site. The CA-2/3 site has been removed from the proposed wetlands and waterways mitigation package. See the Final Compensatory Wetlands and Waterways Mitigation Plan for further details.
13b.xxiii	Addressed. Site-specific comments related to these items, as applicable, will be provided in Phase II mitigation plan comment spreadsheets.	Noted. Site-specific comment responses to previous and the most recent MDE comments on the CA-5 and RFP-2 site are included with the latest JPA submittal.
13b.xxiii.1		
13b.xxiii.2		
13b.xxiii.3		
13b.xxiii.4		
13b.xxiii.5		
13b.xxiii.6		
13b.xxiii.7		
13b.xxiii.8		

45-Day Responses (2022.02.04)	Report/Section/Page	MDE Comment	MDOT SHA Response
1	AMR, Section 2.0, Page 6	The AMR states, "Following the Record of Decision (ROD), the developer will be required to document that the final design has equal or fewer impacts to the Preferred Alternative." The proposed MDE Wetlands and Waterways Permit would require additional avoidance and minimization throughout design and construction, not just equal to the ROD impacts.	The text was revised to indicate that additional avoidance and minimization will be required post-ROD and that the developer will be required to document that the final design has fewer impacts to the PA or submit a permit modification.
2	AMR, General	Recommend adding an acronym table of contents to the beginning of the report. Also, spell out first use of acronyms, for example, on page 8 CHOH is used without explanation until page 13. Also, CBP, GWMP, and CHOH are not defined.	Acronym list was added to the report and the first use of acronyms was checked/revised throughout the document.
3	AMR Section 2.2.1, Page 8	Paragraph 5 indicates that an offset alignment to the west would result in unacceptable impacts to two NPS Parks (CBP and CHOH). Won't these parks be similarly impacted by any alignment?	No, the NPS park land is impacted more by the west shift. An impact table and three figures have been added to display the roadway configuration of the west shift and on-center alignment, the two LOD differences, and the impact differences. Text was added referencing the added table and figures.
4	AMR Section 2.2.1, Page 8 & 9	Two references to alignments are "discussed further in Section 2.2.1.C." - Section 2.2.1.C. does not provide any meaningful further discussion. Please expand on this section.	This was meant to reference the discussion of minimizations options discussed in 2.2.1.A. The references were revised.
5	AMR Figure 2.	Figure as presented does not show "unacceptable impacts". Suggest showing view including impacted properties including Parks, Naval property and house. Reference on Page 9 indicates Figure shows impacts resulting from on center widening. Impacts are not shown.	Three figures have been developed to display the roadway configuration of the west shift and on-center alignment, the two LOD differences, and the impact differences and are included in this section for clarity.
6	AMR Section 2.2.1A. b.ii.	Fifth paragraph indicates that a "west shift" of the LOD to entirely avoid impacts to Plummers Island was also a viable option. Why is this no longer considered viable, is it related to the residential displacement?	While a viable option, the "west shift" was not chosen because of the conclusions in Section 2.2.1.C: the on-center alignment would impact the least amount of total NPS land; would not require re-configuration of the CBP interchange; and would not require residential displacement, as the west shift alignment would. Figures and an impact table were added to provide further clarity on this subject.
7	AMR Figure 3.	Show Access Path to East side for crane and other staging as needed.	There is no other access path on the east side. The only access will be on the west side of the bridge.
8	AMR Section 2.2.1.C.	Consider quantifying the impacts to NPS and other natural and cultural resources in support of the alignment choice.	An impact table and three figures have been added to display the roadway configuration of the west shift and on-center alignment, the two LOD differences, and the impact differences.

45-Day Responses (2022.02.04)	Report/Section/Page	MDE Comment	MDOT SHA Response
9	AMR Section 2.2.2	First paragraph indicates that the "entire headwaters" of the stream are contained in a stormwater pond - mapping shows a stream draining to the online SWM pond that would be the headwater. First paragraph also states that Thomas Branch has limited functional value... Can any reference be provided? Numerous species have been observed in the stream, despite its impacted state.	Removed sentence indicating that the entire headwaters of the stream are contained within a stormwater pond. Added a reference to the geomorphic analysis conducted by MDOT SHA in Thomas Branch. MDOT SHA concluded that Thomas Branch has limited functional value based on field observations during delineation, stream assessment, and geomorphic analysis.
10	AMR Section 2.2.3.F.	Impact Plate 18 includes Limit of Restoration for Watts Branch between W. Montgomery Avenue and I-270. Consider adding narrative to this section to describe what is proposed.	An augmented culvert and restoration of the stream are proposed, as described in Section 3.5.18.B. Further description of the area was added to this section.
11	AMR Sections 2.3.4A and 2.3.4B	It is not clear what the difference between Restoration and Stabilization are and how it was determined for each affected stream.	The Limits of Restoration and Limits of Stabilization were based on the LODs identified following the field investigations by the WR and NR teams. The Limits of Restoration envisions a natural channel design approach to channel restoration, whereas the Limits of Stabilization is a smaller scope of work and may just include stabilizing a bank or fixing a small erosion area, but not full pattern and profile type restoration. Revised the descriptions in this section to reflect the construction differences.
12	AMR Figure 3.	In figure 3, Rock Run Culvert is currently within the LOD, but not shown as an impact. Either revise the LOD or include it as an impact.	The figure was revised to show the complete impacts to features.
13	AMR Section 2.4	The meaning of the last sentence is not clear.	The last sentence was removed.
14	AMR	Some of the graphics in 3.1 are not coming out right in the PDF version of the AMR. They are at a weird angle or split in half with the two sides switched.	We checked the images in the PDF that was posted to the FTP site and did not identify any issues with the file.
15	AMR Section 2.2.1.B.	The final sentence references the SDEIS - should this be changed to FEIS as referenced elsewhere?	Yes, the SDEIS reference was updated to FEIS.
16	AMR Section 3 - General	Are any bridges / culverts being removed as part of intersection realignments? How are the uncovered streams counted in impact calculations?	All bridges are proposed for rehabilitation or replacement. No culverts are proposed for removal that would result in a newly daylight stream.
17	AMR Section 3.1.7	The meaning of the second sentence is unclear.	The second sentence was deleted.
18	AMR Section 3.1.8	In the diagram, it is unclear why the uppermost stream would be impacted. Narrative describes impacts associated with construction access but it appears the LOD could be revised to avoid the stream.	This area is required to construct the stormwater pond. The ephemeral channels in this area are currently functioning as drainage features for roadway runoff. The pond will improve water quality downstream of this area.

45-Day Responses (2022.02.04)	Report/Section/Page	MDE Comment	MDOT SHA Response
19	AMR Section 3.1.10	Why does the narrative only explain wetlands where hydrology loss would result in total take.? Was partial hydrology loss to wetlands evaluated? Such as hydrology loss resulting in a smaller wetland, or loss of some (but not all) functions? Are any wetlands likely to experience increased hydrology as a result of drainage changes that could either inundate the wetlands or otherwise reduce functions? Why was 'over half" of hydrology loss used to determine total impact/take? Meaning of final sentence is unclear, specifically the "except on a case by case basis" portion.	The methodology described was for the investigation of wetlands that are partially impacted by the LOD. Partial hydrology loss is possible for the wetlands partially within the LOD, and this was investigated. Wetlands entirely within the LOD were assumed entirely impacted. Increased hydrology as a result of drainage changes was not investigated. "Over half" and the loss of USACE definition of a wetland was used as the determination for "total take." Removed "except on a case-by-case basis" from the final sentence of this paragraph.
20	AMR Section 3.1.11	Shading impacts only described for ALB. What about other bridges being widened or relocated?	The ALB and Clara Barton Parkway are the only bridges with temporary LOD underneath the structure, which required describing the shading impacts for wetlands. All other bridge impacts are considered permanent impacts, as a result of shading or other types of impact and did not need to be described independently. The bridge over Clara Barton Parkway was added to this section.
21	AMR Section 3.3	Page 32, the first paragraph indicates that augmentation locations will likely be added. This could be problematic for permitting since new adjacent property owners would need to be notified. Consider taking a more conservative approach and including all locations where augmentation could occur. Second paragraph references future phases augmentation locations - suggest dropping this sentence to avoid confusion.	The project has been conservative with including all potential locations of augmentation or replacement based on existing data and preliminary analysis. However, detailed H&H analysis may determine that additional or alternative locations require augmentation. The detailed H&H cannot be conducted until final design. The future phase augmentation sentence was removed. New text was added to this section to clarify the process.
22	AMR Section 3.3.1	Second sentence - What does this mean? Suggest clarifying or deleting. Will the developer have the right to replace structures far in the future? How would permitting for this be handled?	The paragraph has been revised for clarification.

45-Day Responses (2022.02.04)	Report/Section/Page	MDE Comment	MDOT SHA Response
23	AMR Section 3.4	Consider rewriting the first paragraph - COMAR states that adverse impacts related to long culverts must be mitigated and makes no reference to passage being "not likely to be crossed by many species". Properly designed culverts longer than 150 feet can, and often do, allow passage for many forms of aquatic life. Recommend using "promote" or similar rather than "ensure". Second paragraph, final sentence - What is the PA - and how would the locations be determined? Final paragraph - Why is the commitment to maintaining or improving passage only within the LOD? Can the LOD be expanded to better accomplish passage if needed? What does "commits to considering" mean?	This section was re-written to include new information and for clarification. "Ensure" was replaced with "promote." "Commits to considering" was revised to "will consider." "PA" is the Preferred Alternative. Revised this abbreviation to "Preferred Alternative LOD." The Preferred Alternative LOD was expanded to accommodate potential aquatic life passage work, however, if additional area is determined to be necessary, a permit modification and re-evaluation can be considered.
24	AMR Section 3.5	Throughout section 3.5, Impact Narratives, please specify whether an impact is permanent or temporary for ALL impacted features. For example, in section 3.5.6.B.a, the sentence 'Intermittent culvert 21D_C1 will be impacted by roadway ramp shifts...' should read 'Intermittent culvert 21D_C1 will be permanently impacted by roadway ramp shifts...'.	Permanent or temporary language was verified for all impacts.
25	AMR Section 3.5	Throughout section 3.5.3, please add 'and its buffer' to all impacted wetlands whose buffer is also impacted.	This statement was added to all text about wetland impacts that also impact their buffers.
26	AMR Section 3.5.3	Section 3.5.3 of the AMR and the MDE Impact Tables indicate portions of intermittent waterways 22V_1 and 22V_B1 are permanently impacted. Please verify the permanently impacted areas are shown correctly on Impact Plate 3.	Impacts are shown correctly on Impact Plate 3.
27	AMR Section 3.5.5.A	In section 3.5.5.A, please include narrative for impact to Cabin John Creek segment 22AA_3.	Waterway 22AA_3 was added to the narrative.
28	AMR Section 3.5.6.A	In section 3.5.6.A, please add narrative that culverts 22A_C and 22C_C will be replaced.	The removal and replacement of 22A_C and 22C_C was added to the text.
29	AMR Section 3.5.8.B	In section 3.5.8.B, the sentence 'Downstream of the tie-in with 2B_C...' should read 'Downstream of the tie-in with 21B_C...'.	The feature reference was revised in the text.
30	AMR Section 3.5.9.A.c	Please revise section 3.5.9.A.c from 'Perennial waterway 23D...', to 'Intermittent waterway 23D...'.	Description was revised from perennial to intermittent.
31	AMR Section 3.5.13.C	Please revise section 3.5.13.C from 'Perennial waterway 24V will be impacted by a culvert extension for 234V_C...' to 'Intermittent waterway 24V will be impacted by a culvert extension for 24V_C...'.	Description was revised from perennial to intermittent.
32	AMR Section 3.5.14.A	Please note, the ephemeral waterway 24S is not shown on Impact Plate 14.	Feature 24S was discarded on 10/22/21 as an ephemeral, rip-rap manmade ditch excavated in and draining uplands.
33	AMR Section 3.5.17.B	Please include the small segment of intermittent waterway 26L and intermittent culvert 26C_C1 in the narrative for section 3.5.17.B.	These features have been added to the text.

45-Day Responses (2022.02.04)	Report/Section/Page	MDE Comment	MDOT SHA Response
34	AMR Section 3.5.18.B	In section 3.5.18.B, please revise 'perennial waterway 27H' and 'ephemeral channel 27P' to 'intermittent waterway 27H' and 'perennial channel 27P'.	Descriptions were revised to correct classifications.
35	AMR Section 3.5.22.A.b	In section 3.5.22.A.b, please revise 'perennial waterway 23N' and 'intermittent waterway 23N_1' to 'intermittent waterway 23N' and 'perennial waterway 23N_1'.	Descriptions were revised to correct classifications.
36	AMR Section 3.5.25	In section 3.5.25, please add narratives for impacts to intermittent waterways 20E and 20B.	Descriptions were added for 20E and 20B.
37	Wetland and Waterway Delineation Report for Compensatory Stormwater Management Sites	The report suggests that no potential SWM mitigation sites are located within the FEMA 100-year floodplain; however, it appears some of the proposed sites are within the FEMA-100 year floodplain. For example sites WAS-3622, WAS-4050, WAS-4045, WAS-4079, WAS-4375, WAS-4405, WAS-4497, and WAS-5308 appear to be within the FEMA 100-year floodplain. Please revise accordingly.	All sites referenced except for WAS-3622 are no longer included in the JPA Package. WAS-3622 FEMA 100-year floodplain impacts were reported in the Compensatory SWM MDE Impact Tables.
38	Wetland and Waterway Delineation Report for Compensatory Stormwater Management Sites	Please revise the classification of 32WWWW from perennial to intermittent and update Attachment A - Feature Table, Attachment C - Combined Datasheets, and Attachment D - Photolog accordingly.	The stormwater site in proximity of feature 32WWWW has been dropped.
39	Wetland and Waterway Delineation Report for Compensatory Stormwater Management Sites	Please note 32PPPP is not regulated by MDE.	The stormwater site in proximity to feature 32PPPP has been dropped.
40	Wetland and Waterway Delineation Report for Compensatory Stormwater Management Sites	Please revise the classification of 32EEEE from perennial to ephemeral. 32EEEE was observed to be ephemeral within the proposed LOD and is not classified as perennial until further downstream.	The stormwater site in proximity to feature 32EEEE has been dropped.
41	Wetland and Waterway Delineation Report for Compensatory Stormwater Management Sites	Please note 33N is not regulated by MDE.	The stormwater site in proximity to feature 33N has been dropped.
42	Wetland and Waterway Delineation Report for Compensatory Stormwater Management Sites	65 potential stormwater sites were provided on January 12, 2022. We originally received 255 sites, and 47 of the January 12, 2022 sites overlap the originally provided 255 sites. Confirmation of regulated resource presence at the remaining sites is ongoing.	A total of 67 sites will be included within the JPA Package, and only two of these sites impact waterways and/or floodplains. The proposed compensatory stormwater sites do not impact wetlands. The 67 sites included in the JPA Package are the final site selections.
43	General/FEIS	The draft amended JPA references the FEIS, which has not yet been received. Additional comments will be provided once the FEIS is received which may impact the JPA. Review of a draft of the FEIS prior to finalization may help resolve potential comments.	Noted.

45-Day Responses (2022.02.04)	Report/Section/Page	MDE Comment	MDOT SHA Response
44	General/FEIS	Will we receive updated agency correspondence, including RTE results, as part of the FEIS?	Yes, the updated RTE correspondence and information regarding species surveys is included in the revised Appendix N and Appendix R of the NRTR, respectively.
45	General/SWM	Offsite stormwater quality treatment continues to be a concern. There are discrepancies between the draft JPA AMR and draft WQC discussions of proposed offsite SWM, both referencing the FEIS (not provided for review). Clarity regarding the locations, treatment methods, and potential benefits to impacted waters from offsite SWM will assist permitting efforts.	A total of 67 proposed compensatory stormwater sites will be included within the JPA Package, and only two of these sites impact waterways and/or floodplains. The sites do not impact wetlands. The 67 sites included in the JPA Package are the final site selections.
46	General	Please consider revising impact plates to clearly show stream channels and culverts that are being abandoned. This could be done either by xing them out, comments with leader lines, or new hatching patterns.	The impact plates have been revised to clearly show culverts and stream channels that are being abandoned.

Additional Draft JPA Comments April 2022	Report/Section/Page	MDE Comment	MDOT SHA Response
1	General	Are the Financial incentives in the technical provisions to encourage further avoidance and minimization available for review?	The most recent incentive and disincentive language from the technical provisions will be provided under separate cover.
2	General	Any proposed Stormwater Management treatment options in Use III and IV watersheds should be evaluated to minimize potential thermal impacts.	Acknowledged. This is addressed in the WQC Request.
3	General	Will impacts to regulated resources due to NPS mitigation be included in the JPA for MLS as part of a single and complete project? Clarification whether this mitigation is exclusively for NPS and will not apply to MDE mitigation now or in the future is needed.	No, impacts to resources from NPS mitigation will not be included in JPA. The following sentence was included in Section 5.12.4.B of the FEIS and Section 2.3.4.C of the NRTR: "The CHOH-13 mitigation site is not included in the proposed MDE and USACE mitigation credit totals and has been identified for the sole purpose of fulfilling the NPS mitigation requirement."
4	General	Confirm whether stream mitigation credit will be requested for the stream stabilization commitment (now or in the future) in the Cabin John Stream Valley Unit 2. Will this work be included in JPA as part of a single and complete project?	The Cabin John Creek stream stabilization project is M-NCPPC park mitigation and stream mitigation credit will not be requested (now or in the future). Temporary and permanent impacts associated with this M-NCPPC park commitment cannot be included in the JPA these impacts will require a permit modification in the future.
5	General	Will the outfall stabilization at Tilden Woods Stream Valley Park be included in the JPA as part of a single and complete project?	No, the outfall stabilization at Tilden Woods Stream Valley Park will not be included in the JPA and will only count toward M_NCPC park mitigation.
6	Agency Correspondence	Please provide correspondence from DNR regarding the 2020 RTE plant survey results, including comments/acceptance, and any other ongoing coordination with DNR.	Correspondence with MDNR regarding the 2020 RTE plant surveys is now included in Appendix N of the NRTR and referenced in Section 2.10.2.D of the NRTR text.
7	Agency Correspondence	Please provide minutes of any meetings with the Scenic and Wild River Advisory Board.	There is no-longer a board, but there is a contact at DNR, Andrew Mengel, who has taken over coordination for Scenic and Wild Rivers. MDOT SHA is providing Mr. Mengel with NPS comments related to aesthetics around the Potomac River and will coordinate with him further on this subject. Correspondence with Mr. Mengel is now included in the NRTR, Appendix N.
8	Agency Correspondence	The state-rare (S2G4) Leatherwood (<i>Dirca palustris</i>), is described by the WFBC as occurring on Plummers Island. Please provide any agency coordination about this population, as applicable, or confirm that this population is outside of the LOD.	The state-rare Leatherwood was not included in our species survey list that was developed in coordination with MDNR and NPS. We do not have information about this rare plant or impacts to it and cannot discuss it in the document.
9	General, Impact Plates	The Water Quality Certification indicates resource 27L_C at STA 3405+50 will be extended upstream and abandoned and replaced downstream. This work is not consistent with the JPA Impact Plates. Please confirm this work and update the JPA and impact plates as necessary.	27L_C will be partially replaced upstream and partially replaced and extended downstream. The AMR text was revised to reflect this change and the pipe modifications will be shown on the impact plates.
10	General, Impact Plates	The Water Quality Certification indicates resource 23G at STA 4798+25 will be abandoned. This work is not consistent with Impact Plate 24 (impacts are not shown). Please confirm this work and update the JPA as necessary.	23G is not being impacted. The storm drain upstream of 23G is being abandoned, but this storm drain is not jurisdictional. A stormwater management vault structure is being installed within the LOD downstream of the non-jurisdictional storm drain and upstream of 23G.

Additional Draft JPA Comments April 2022	Report/Section/Page	MDE Comment	MDOT SHA Response
11	General, Impact Plates	The FEIS refers to potential augmentation of culvert under I-370. Please confirm if this work is shown on Impact plates?	This corresponds to feature 29A_C2 and is not proposed as a potential culvert augmentation and not shown on the Impact Plates. The downstream end of 29A_C2, which is within City of Gaithersburg park land, is within a limits of stabilization due to the construction of a SWM pond on the upstream end of the culvert. The text within Table 5-13 will be revised.
12	General, Impact Plates	Mutiple matchlines do not align properly. Examples include Impact Plates 2/3, 9/10, 10/22, 11/12, 12/13, 13/14, 15/16, and 22/23. Please review matchlines & adjust as needed. Verify that all regulated resources impacts are shown in their entirety.	Matchlines were reviewed and revised as needed to ensure that all regulated resource impacts are shown in their entirety.
13	Impact Plate 5 and 16	Regarding placement of noise barriers, please consider avoidance and minimization of wetland buffer impacts to 22GG and 26H. Also, please clarify the noise wall location in the area of 26H. The FEIS shows a noise wall within the buffer of 26H, while the JPA Impact Plates do not.	22GG will be eliminated by roadway fill and construction, therefore a SWM swale and vault are proposed to capture the flow previously captured by 22GG. The noise barrier is a secondary cause of impact while the roadway fill and construction are the primary impacts. 26H and its buffer will be impacted by roadway construction access and impacts have been minimized to the extent possible, the noise barrier is not causing the impacts to 26H. The proposed noise wall locations will be consistent between Appendix E and the final JPA Impact Plates.
14	General, Impact Plates	There are several areas between the FEIS Appendix E and the JPA Impact Plates where proposed noise barrier locations do not match. Please ensure the proposed noise walls match between these two documents as appropriate. For example, a proposed noise barrier is shown over 22AA_B1 on Map 8 of FEIS Appendix E, but is not shown in this area on the JPA Impact Plates. Barrier 495 MD-6/6A/7 is labeled as new barrier on App E/pg 4 but does not appear on IP 6/7, STA 232+00 - 247+00, RT. 21C_1 Perennial is in this area. Barrier 495 MD-5 is labeled as 'Existing to be Replaced' on App E/pg 5 but listed as 'Proposed' on IP 7/8, STA 262+00 - 292+00, LT. Thomas Branch is in this area. Barrier 495 MD-8 is labeled as 'Existing to be Replaced' on App E/pg 6 but listed as 'Proposed' on IP 8/25, STA 320+00, RT. 21_B Perennial is in this area.	The FEIS and JPA mapping elements differed due to the time at which the drafts were released. FEIS Appendix E and the JPA Impact Plates show the same noise barrier locations in the final versions.
15	Impact Plate 3	Wetland 22 W is not shown as having impacts extending through the bridge - Why is this? If presumption is that the area beneath the existing bridge is not changing, exclude from LOD. NPS impacts to this resource appear to be continuous.	The condition of wetland 22W, located under the existing 495 bridges over the Chesapeake and Ohio Canal, will not change as a result of the project, therefore impacts were not shown. Attempting to show an LOD donuthole here would be very confusing particularly, since work will need to occur over the wetlands as the new bridges are constructed.
16	Impact Plates 21, 23 and 24	Please label resources 29D on Plate 21, 23NN on Plate 23, and 23H and 23T on Plate 24.	Revised.
17	Impact Plate 24	Please correct the label location for 23G_C.	Revised.
18	Impact Plate 24	Please revise the label for 23Q_1 to 23Q. 23Q_1 is not listed within the wetland delineation report or NRTR.	Revised.
19	Impact Plate 17	Please change the classification label for 26A to PFO, as shown in the Wetland Delineation Memo.	Revised.

Additional Draft JPA Comments April 2022	Report/Section/Page	MDE Comment	MDOT SHA Response
20	Wetland Delineation Memo	Please revise the feature ID for 29E within the Mainline Wetland Delineation Report. Currently, it shows 'F23'.	Revised in the Wetland Delineation Memo.
21	Wetland Delineation Resource Mapping	Please confirm all Forest Conservation Act Easements shown on the Natural Resource Mapping within the FEIS and the NRTR, and ensure these areas match the resource mapping submitted with the JPA.	All Forest Conservation Act Easements shown on the FEIS Natural Resource Mapping in the FEIS, NRTR, and mapping submitted with the JPA will reference the same GIS layer in the final versions.
22	CMP	Have RTEs been coordinated for mitigation sites, and if so, please add to the FEIS agency coorespondance?	RTE USFWS and DNR WHS coordination letters have been added to the FEIS agency coorespondence.
23	CMP	Please ensure wetland and stream credits match between the FEIS and the revised Final CMP. The FEIS indicates this project will require 4.39 acres of wetland mitigation credits. The Draft JPA Amendment impacts require 4.46 acres of wetland mitigation. Confirm which is correct and adjust as needed, or explain why differences may occur.	The FEIS and Final CMP proposed mitigation numbers have been updated to be consistent. The MDE wetland mitigation requirement is 4.38 acres.
24	CMP	Please discuss the plan for any excess mitigation. Also, please update the current Wetlands and Waterways Compensatory Mitigation Plan as appropriate as some items may have recently changed (e.g. potential use of mitigation banks).	Advance mitigation is not proposed for the mitigation sites due to the small amount of excess wetland mitigation credits at the RFP-2 site. There are no excess stream mitigation credits. The Final CMP has been updated with the proposed Even Flow Mitigation Bank Credit purchases that will be used to fulfill the remaining stream mitigation requirements in Maryland.
Additional comments regarding NRTR			
25	NRTR Pg 10 Sec 2.1.1	Second paragraph indicates that 'FFPA does not apply to most of the Phase 1 South portion of the corridor...' . Was Form AD-1006 required? If so, please attach.	Form AD-1006 was not required.
26	NRTR Pg 15 Sec 2.2.4	3rd paragraph refers to a 'certified erosion and sediment control inspector...'. Please clarify what certification this is.	Refers to 2.1.4. Clarification was added to this paragraph. The certification refers to an MDE certified "Responsible Person."
27	NRTR Pg 22 Sec 2.3.1	Table 2-4 lists agency coordination meetings with general topics covered but several meetings listed do not have topics listed. Please clairy.	General topics were added for all meetings listed in the Final NRTR.

Attachment B		Our Previous Response	MDE Comment	MDOT SHA Response
1	done			
2	done			
3	addressed			
4	done			
5	done			
6	done			
7	done			
8	acknowledged			
9	addressed			
10	addressed			
11	done			
12	done			
13	done			
14	done			
15	addressed			
16	done			
17	done			
18	addressed			
19	done			
20	addressed			
21	addressed			
22	done			
23	done			
24	done			
25	done	<p>a. We are using the Maryland Stream Mitigation Framework Beta Version to determine stream mitigation required.</p> <p>b. Noted.</p> <p>c.</p> <p>-We continued to work with the Fish Passage Workgroup, but we have since removed fish passage from our mitigation package</p> <p>-Impacts within the Preferred Alternative LOD do not require mitigation within the Patuxent watershed.</p> <p>-Riparian buffer impacts are considered when determining stream mitigation credit under the MSMF.</p>	<p>Comments "b" and "d" through "m" are addressed.</p> <p>Comment a: The Department and USACE are requiring that the Maryland Stream Mitigation Framework Version 1 is used for all MLS Phase I stream mitigation projects. The USACE will provide the Version 1 calculator when available.</p> <p>Comment c: Please continue to coordinate with the fish passage work group regarding the mitigation projects. Please address the following comments we have recently received regarding fish passage:</p> <p>1. USACE has indicated that site sensitivity points cannot be added to the stream calculator for fish passage. A tool for crediting fish passage will be released in the future and there may be an opportunity to incorporate it for credit determination on this project when available.</p> <p>2. Cabin Branch (RFP-2): DNR understands that the Montgomery Village Avenue crossing on Sheets 24 & 25 is not in the project LOD. However, this crossing is in the lower part of the Cabin Branch Watershed and establishing or ensuring aquatic passage at this location would link upstream and downstream natural areas. Photos of the existing conditions appear that there's a fairly high water level in the pipes currently. DNR is interested in making sure that aquatic passage is maintained at this location. Please confirm.</p>	<p>Comment a: Noted. Proposed stream mitigation credits for the mitigation sites have been updated based on the Version 1 calculator.</p> <p>Comment c: Noted. The MLS team will continue to coordinate with the fish passage work group as necessary for the mitigation projects.</p> <p>1. Noted. No site sensitivity points are proposed for fish passage improvements at the mitigation projects.</p> <p>2. Comment to be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval. Note, this comment and response are included in the RFP-2 site specific comment responses spreadsheet.</p>
26	done			
27	done			
28	done			
29	done			

Attachment C - Impact Plate Comment Responses		MDE Comment	MDOT SHA Response
1	addressed		
2	addressed		
3	addressed		
4	addressed		
5	addressed		
6	addressed		
7	addressed		
8	addressed		
9	addressed		
10	addressed		
11	addressed		
12	addressed		
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25	addressed		
26	addressed		
27	addressed		
28	addressed		
29	addressed		
30	addressed		
31	addressed		
32	addressed		
33	addressed		
34	addressed		
35	addressed		
36	addressed		
37	addressed		
38	addressed		
39	addressed		
40	CAS/MBS	Impact Plate 22 does not appear to show the extent of the perennial channel (23 U_1?) upstream of 23U_C within the LOD. How will the proposed SWM affect this resource?	There is a culvert upstream of 23U_1; 23U_1 is a daylight portion. SWM will assist in filtering runoff from nearby parking lots.
41	addressed		
42	addressed		
43	addressed		

Project: CA-2/3 Upper & Lower Magruder Branch													Design Responses: Will Comply, if no explanation needed.		Comment Addressed	
Review: 65% Semi-Final Design													Provide clarification or explanation, when needed.		Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.	
The following comments must be addressed.													No Change Needed, with an explanation provided.		Comment no longer applicable	
Item	Sheet No. /Location	Reviewer	Comment Type	MDE Comments 7/7/2021		Design Team Response 9/17/21		MDE Follow-up Response (11/22/21)		Design Team Response (12/1/21)		MDE Follow-up Response (2/4/22)		Design Team Response (3/15/22)		
				Date:		Date:		Date:		Date:		Date:		Date:		
1		MDE		7/7/2021	Please address the follow-up comments provided in the attached point-by-point comment errata from the original comments for CA-2/3 that were provided on June 5, 2020 (see attached).	9/17/2021	See the attached responses to the follow up comments that were originally provided on June 5, 2020.	11/22/2021	See MDEP1 Mitigation Plan Review - Comment Errata_20210917		See MDEP1 Mitigation Plan Review - Comment Errata_20210917_MDE_Responses_11222021	2/4/2022	See MDEP1 Mitigation Plan Review - Comment Errata_02042022	3/15/2022	The CA-2/3 site has been removed from the proposed MLS wetlands and waterways mitigation package. See the Final Compensatory Wetlands and Waterways Mitigation Plan for further details.	
2 a)		MDE		7/7/2021	Please note, the Interagency Review Team (IRT) is working on some potential changes to the Nontidal Wetland Performance Standards. The changes will likely be finalized by the end of this summer and will be required for the MLS Mitigation Projects. The potential major changes include: a) Wetland hydrology should be within an acceptable range similar to the hydrograph from an IRT-approved reference wetland. In absence of an acceptable reference wetland, wetland hydrology should be present based on inundation or water table 12 inches (30 cm) or less below the soil surface continuously for at least 12.5% of the growing season, at a minimum frequency of 5 years in 10.	9/17/2021	Noted.	11/22/2021	-							
2b)		MDE		7/7/2021	b) Requirement that 6" topsoil was salvaged or added. Alternatively, soils are similar to wetland	9/17/2021	Noted.	11/22/2021	-							
2c)		MDE		7/7/2021	c) Except for sites designed to be precipitation driven, the subsoil shall have a bulk-density of less than 85 lbs/cubic foot (1.35 g/cc) for loamy and finer textured soils and less than 107 lbs/cubic foot (1.70 g/cc) in sands (prior to adding topsoil or organic matter).	9/17/2021	Noted.	11/22/2021	-							
2d)		MDE		7/7/2021	d) If upland or wetland areas were cleared to provide access for construction, but will not be getting mitigation credit, they will still be required to meet the wetland buffer Performance Standards.	9/17/2021	Noted. The Monitoring Plan has been revised accordingly and proposed upland planting densities/sizes have been revised to meet the buffer Performance Standards.	11/22/2021	-							
2e)		MDE		7/7/2021	e) For forested buffers, tree height and canopy cover will be similar to that of wetland	9/17/2021	Noted. The Monitoring Plan has been revised accordingly and proposed	11/22/2021	-							
2f)		MDE		7/7/2021	f) Use analysis of normal precipitation ranges (not just APT).	9/17/2021	Noted.	11/22/2021	-							
2g)		MDE		7/7/2021	g) Remediation measures, if required, should be completed at least two full growing seasons prior to termination of monitoring to ensure the site is self-sustaining.	9/17/2021	Noted. Section 2.11 of the Phase II Mitigation Plan and Sections 1.2 and 2.7 of the Monitoring Plan have been revised accordingly.	11/22/2021	-							
2h)		MDE		7/7/2021	h) Provide hydrograph showing well data.	9/17/2021	Noted. Section 2.2 of the Monitoring Plan has been revised accordingly.	11/22/2021	-							
2i)		MDE		7/7/2021	i) Some plots will be random and some will be fixed.	9/17/2021	Noted. The Monitoring Plan states that 15 of the plot points will be fixed	11/22/2021	-							
3		MDE		7/7/2021	As previously discussed, the mitigation project shall be constructed under the supervision of an approved qualified restoration specialist. This will be a requirement for each mitigation site.	9/17/2021	Noted, and this is typically accommodated on all SHA mitigation projects.	11/22/2021	-							
4		MDE	Report - General	7/7/2021	Provide more information on the proposed tree impacts and what avoidance and minimization efforts are proposed to reduce tree impacts. Provide an update on coordination with M-NCPPC and DNR regarding tree impacts.	9/17/2021	Information regarding the proposed tree impacts and avoidance and minimization has been added to Section 2.6.1.11 of the Phase II Mitigation Report.	11/22/2021	Coordination with DNR is ongoing. MDE will provide additional comments as necessary.		Noted.	2/4/2022	Addressed. Please see additional comments from DNR, provided 1/18/2022, at the bottom of this spreadsheet.			
5 a)		MDE	Report - General	7/7/2021	Please make the following revisions in the Phase II Mitigation Report: a) In Table 2 under Section 2.1, Project Objectives, please use square feet in addition to acreage when referring to impacts and mitigation totals. Additionally, where did the 0.08 acres come from when referring to PFO impacts? According to the Impact Summary Table, permanent PFO impacts total 1,708 square feet, which equals about 0.04 acres.	9/17/2021	Columns for square feet have been added to Table 2 under Section 2.1. Impacts total 0.04 AC of PFO wetlands. PFO wetland impacts require a replacement ratio of 2:1 and therefore 0.08 AC of on-site mitigation is required and proposed for the PFO impacts.	11/22/2021	Revise Table 2 to show a 1:1 ratio (currently showing 2:1) for replacing/relocating wetlands impacted by the mitigation project onsite, and update the total mitigation required within the Phase II Report. Table 2: Wetland Mitigation Credits Summary indicates 59,514 SF of on-site permanent wetland impacts and the impact summary table indicates 57,806 SF of permanent wetland impacts. Please address this discrepancy.		Table 2 has been updated and revised accordingly.	2/4/2022	The onsite replacement requirement for permanent wetland impacts (56,098 SF of PEM and 1,708 SF of PFO) should be subtracted from the PEM and PFO wetland restoration mitigation credits, respectively, rather than the PEM Wetland Enhancement (Rehabilitation) and PSS Wetland Enhancement (Rehabilitation) mitigation categories. Please revise Table 2 accordingly.			
5b)		MDE		7/7/2021	b) Under Section 2.2, Site Selection, elaborate on the site selection process for this site in	9/17/2021	Section 2.2 has been revised accordingly with details on the site section	11/22/2021	Addressed. Please provide a copy of the							
5c)		MDE		7/7/2021	c) Section 2.5, Determination of Credits, states the project includes 3,781 linear feet of stream functional feet credit. Please update this total to match the stream mitigation calculator worksheet and Table 1: Stream Mitigation Credits Summary. Attachment F - Monitoring Plan also references the incorrect calculator results	9/17/2021	Section 2.5 and Appendix C of Attachment F - Monitoring Plan have been updated to match the stream mitigation calculator worksheet.		Addressed.							
5d)		MDE		7/7/2021	d) Under Section 2.7, Maintenance Plan, please elaborate on the plan for maintenance of the mitigation site prior to Long Term Management. Additionally, provide a draft of the referenced long-term agreement between SHA and M-NCPPC that will allow SHA future access to monitor and maintain the site.	9/17/2021	Additional information has been added to Section 2.7 regarding maintenance of the mitigation site prior to Long Term Management. The Memorandum of Understanding between MDOT SHA and M-NCPPC is currently under development and will be provided once available.	11/22/2021	First part of comment addressed; please provide the MOU between MDOT SHA and M-NCPPC when available.		The MOU between MDOT SHA and M-NCPPC will be provided as soon as it is available.					
5e)		MDE		7/7/2021	e) Address the following comments regarding property owner coordination and site protection:	9/17/2021	i) See attached Semi-Final Design Meeting Minutes from July 12, 2021.		Addressed. We look forward to receiving the							
6		MDE		7/7/2021	Provide a spreadsheet-based estimate outlining proposed financial assurance cost components with the financial assurances under separate cover for review and approval by the USACE and MDE, including financial assurances for Long Term Management. Submittal and approval of this spreadsheet is required prior to approval of the Phase II Mitigation Plan.	9/17/2021	A spreadsheet-based estimate is included in the attached "Supplemental Information" folder.	11/22/2021	The monitoring cost estimate indicates hydric soils will be monitored years 3 through 10 but the monitoring plan indicates years 1 through 10. Please clarify/revise as necessary. Are the costs for the stream functional assessment/Maryland Stream Mitigation Framework monitoring requirement for Years 1, 3, 5, 7 and 10 factored into the Visual and Physical Stream Monitoring categories in the spreadsheet?		The cost estimate for hydric soil monitoring has been revised to years 1 through 10. The cost for the MSMF is included in the Physical Stream Monitoring and Visual Inspection and Photo stations Tasks.	2/4/2022	Please provide the revised cost estimate spreadsheet.			
7		MDE		7/7/2021	Please update the Potential Advance Mitigation Need list in Attachment J to include estimated impacts requiring mitigation and the watershed for each future project. Additionally, the Advance Mitigation Plan should be reduced to be specific to the CA 2/3 Mitigation Site. This should be updated for each MLS Mitigation Site, as each will likely have its own Phase II Approval.	9/17/2021	The Potential Advance Mitigation Need List in Attachment J has been revised to include the watersheds and MDOT SHA projects for the CA-2/3 Mitigation site only. Impacts requiring mitigation are still being determined for each project and will be added to the list once available.	11/22/2021	Please provide the Potential Advance Mitigation Need List in Attachment J. The current attachment only includes the Watershed Implementation Plan. Additionally please note, sites cannot be added to the Advance Mitigation List once the site is approved/authorized.		The Potential Advance Mitigation Need List will be updated and included with the Final JPA submittal.	2/4/2022	Noted.			

Item	Sheet No. /Location	Reviewer	Comment Type	MDE Comments 7/7/2021		Design Team Response 9/17/21		MDE Follow-up Response (11/22/21)		Design Team Response (12/1/21)		MDE Follow-up Response (2/4/22)		Design Team Response (3/15/22)	
				Date:		Date:		Date:		Date:		Date:		Date:	
8 a)		MDE		7/7/2021	<p>Coordination with the Corps and the Mitigation and Technical Assistance Section is ongoing regarding crediting. Please address the following mitigation crediting comments in the report, tables, and mitigation mapping accordingly:</p> <p>a) The enhancement and rehabilitation (enhancement) credits ratios of 4:1 and 2:1, respectively, are under discussion with the Mitigation and Technical Assistance Section. Several wetlands are proposed for wetland enhancement but are shown in the planting plan as being planted with shrubs and live stakes, and not trees. We understand that scrub-shrub habitat is encouraged by DNR and M-NCPPC due to an RTE species near this site; however, we have concerns that eradicating the existing dominant presence of reed canary grass will not be possible without creating dense shade via tree plantings. Additionally, there is nothing proposed to prevent herbivory, which is a concern in this area. Please respond to the following comments.</p> <p>i) How will you ensure that the shrub plantings will not be constantly eaten by deer in the area? Planted shrubs have not been successful at past mitigation sites.</p> <p>ii) Would M-NCPPC be amenable to planting trees on-site if the shrub plantings fail/reed canary grass is not able to be controlled? Alternatively, credit may be reduced if the shrub plantings/reed canary grass control are not successful, which can be discussed in more detail with the Corps and the Mitigation and Technical Assistance Section if necessary.</p> <p>iii) In the northern wetland creation area, only live stakes are proposed. Provide an explanation for this. Why aren't shrub plantings also proposed here?</p>	9/17/2021	<p>i) Deer protection cages have been added to the proposed floodplain shrub and tree plantings.</p> <p>ii) M-NCPPC is amenable to planting trees on-site if the shrub plantings fail/reed canary grass is not able to be controlled, however a reduction in credits may be the preferred option if the credits are not needed for the MLS Phase I South Project. It is important to note that M-NCPPC requested that "Floodplain shrub plantings should be reduced within the floodplain to sporadic groups not covering more than 15% of the total floodplain" during their review of the Phase II Mitigation Package. The landscape plans were revised based on this comment. See the attached meeting minutes in the "Supplemental Information" folder.</p> <p>iii) Container grown shrubs are not proposed in the northern wetland creation area due to the proposed rock underlayment and shallow soils in this area.</p>	11/22/2021	Internal coordination with MDE and USACE is ongoing. MDE will provide additional comments as necessary.	Noted.	2/4/2022	<p>We have coordinated with MDE and USACE and have the following additional comments:</p> <p>(i) addressed</p> <p>(ii) and (iii) We have concerns regarding proposed planting as it relates to the rock underlayment areas. The inability to plant larger shrub stock (container grown) may compromise the success of these planting areas. MDE and USACE agree the rock underlayment in these areas seems excessive. Have other alternatives to address floodplain shear stress been considered (e.g., leaving stream in diversion channel until vegetation establishes, using log placement instead of rock, live fencing/brush bundles to reduce stresses)?</p> <p>*Coordinating with Kelly and USACE</p>			
8b)		MDE		7/7/2021	b) Please note, on the Wetland Credit Mapping the first 35 feet of stream buffer is required as part of the stream mitigation credit, and only buffer beyond the first 35 feet should be accounted for as extra credit in the mitigation calculator. Discussions are ongoing with the Corps regarding riparian buffer credit for this project, as it is already forested and not proposed for enhancement.	9/17/2021	According to the USACE, the MSMF does not calculate additional stream gains until a buffer width greater than 35-feet is input and therefore no additional credit is being taken for the first 35 feet of stream buffer. We await the results of the USACE decision on credit for non-enhanced stream buffer and will revise our buffer estimates accordingly.	11/22/2021	Internal coordination with MDE and USACE is ongoing. MDE will provide additional comments as necessary.	Noted.		Addressed.			
8c)		MDE		7/7/2021	c) Please confirm that riparian buffer credit does not overlap with other wetland mitigation credit areas (e.g., riparian buffer enhancement credit cannot overlap with wetland buffer enhancement credit).	9/17/2021	No credits are proposed for wetland buffer enhancements and therefore the proposed stream buffer credit area does not overlap with other wetland mitigation credit areas. See the Wetland Mitigation Zones Map on the last page of Attachment C.	11/22/2021	Internal coordination with MDE and USACE is ongoing. MDE will provide additional comments as necessary.	Noted.	2/4/2022	Addressed.			
8d)		MDE		7/7/2021	d) Secondary channels are being created within the floodplain and are proposed for credit. Please confirm this was entered into the calculator correctly. The primary channel should receive full credit, but the remainder of the channels would receive decreasing percentages of credit. Coordination with the Corps regarding this crediting is ongoing.	9/17/2021	The secondary channels were entered into the calculator correctly as a "Second" Channel Thread. A minimum 35 foot buffer width is required to receive any credit for secondary channels, which was entered into the calculator for both secondary channels.	11/22/2021	Internal coordination with MDE and USACE is ongoing. MDE will provide additional comments as necessary.	Noted.	2/4/2022	Addressed.			
8e)		MDE		7/7/2021	e) Please provide an excel version of the Stream Mitigation Calculator results.	9/17/2021	An excel version of the Stream Mitigation Calculator is included in the attached "Supplemental Information" folder.		Addressed.						
8f)		MDE		7/7/2021	f) Stream impacts/required mitigation for the MLS project should be updated based on functions lost using the Maryland Stream Mitigation Framework.	9/17/2021	Stream impacts and required mitigation based on functions lost will be discussed in the Phase I South Final CMP.	11/22/2021	We look forward to reviewing the Phase I South Final CMP.	Noted.	2/4/2022	Addressed.			
9		MDE		7/7/2021	Confirm that there are no utility crossing conflicts present within the mitigation credit area. The Design Report indicates that overhead lines are located within the right-of-way along Watkins Road; however, the overhead line is not apparent on the design plans. Please show the overhead line and any associated right of ways on the plan sheets. Please indicate if any utility right of way agreements contain language that could conflict with future site needs and affect crediting.	9/17/2021	There is an overhead power line and utility poles present along Watkins Road that were not picked up by survey. This will be rectified at the next design milestone; however, the presence of these utility poles is not anticipated to impact the mitigation design or crediting.	11/22/2021	Please add the overhead power line and utility poles to the plans in the next design submittal.		2/4/2022	Additional survey is required to add the overhead power line and utility poles to the plans. This will be rectified at the next design milestone.	Noted. We will confirm with the next design submittal.		
10		MDE		7/7/2021	Confirm that stormwater management credit and/or TMDL credit are not also proposed for this project	9/17/2021	Stormwater management credit and/or TMDL credit is not proposed for this project.		Addressed.						
11		MDE		7/7/2021	Provide a GIS polygon layer showing the boundary of the area(s) getting mitigation credit, in accordance with the Phase II Wetland Mitigation Plan – Required Information Checklist dated January 23, 2020	9/17/2021	A geodatabase of the proposed mitigation credit boundaries is included in the attached "Supplemental Information" folder.		Addressed.		2/4/2022	Additional comment: please include a layer in the geodatabase for the mitigation site boundary and clearly show the boundary of the mitigation site on the mitigation map.			
12		MDE		7/7/2021	Please copy the Division when the NOI permit is submitted through MDE Compliance.	9/17/2021	Will comply.		Noted.						
13 a)		MDE		7/7/2021	Address the following regarding the Mitigation Summary Map: a. Add labels for existing wetlands that are proposed for enhancement	9/17/2021	Labels have been added to all existing wetland features proposed for enhancement.		Addressed.						
13b)		MDE		7/7/2021	b. Why is a 25-foot buffer not shown around the enhancement area at the northern extent of the site?	9/17/2021	The existing wetland extends north well outside of the proposed restoration site. A stream buffer has been added to the east of the wetland.	11/22/2021	Internal coordination with MDE and USACE is ongoing. MDE will provide additional comments as necessary.	Noted.	2/4/2022	We have coordinated with MDE and have the following comment: A 25-foot wetland buffer needs to be included around the entire wetland M enhancement area in order to receive mitigation credit. The protective buffer needs to be included within the CA-2/3 mitigation site but will not be counted towards extra buffer credit.			
13c)		MDE		7/7/2021	c. Please adjust the credit area to remove credit within 25-feet on both sides of Watkins Road.	9/17/2021	The credit areas have been revised to remove credit within 25 feet on both sides of Watkins Road.		Addressed.						
14 a)		MDE		7/7/2021	Please respond to the following regarding what was discussed during the PI meeting on October 16, 2020: a. Confirm that all of the trees M-NCPPC asked to be avoided on SR-05 are being avoided.	9/17/2021	All trees M-NCPPC asked to be avoided on SR-05 are being avoided. The LOD on SR-05 was developed based on M-NCPPC's recommendations for tree impact avoidance/minimization during the preliminary design stage.		Addressed.						
14b)		MDE		7/7/2021	b. Wetland L (northeast of Watkins Road) was determined to be a high-quality wetland that	9/17/2021	The high quality portion of Wetland L is located to the east, outside of		Addressed.						
14c)		MDE		7/7/2021	c. M-NCPPC requested that the 3:1 slopes be revised to 20:1 slopes on the downstream end; however, the plans still show these slopes at 3:1. MDE requires no steeper than 6:1 slopes for mitigation sites. The plans will need to be revised to reflect at least the 6:1 slope requirement. Provide an update on coordination with M-NCPPC regarding the slopes as well.	9/17/2021	The proposed floodplain and slopes have been coordinated closely with M-NCPPC to protect certain adjacent trees/forests and high quality wetlands, while restoring as much of the floodplain as possible. 3:1 slopes are proposed in areas that have adjacent resources of interest to M-NCPPC. 5:1 and 10:1 slopes are proposed in areas of the floodplain where open space allows. It's important to note that most of the existing valley slopes surrounding the floodplain have 3:1 or greater slopes and thus the proposed 3:1 valley slopes will provide a similar landscape setting.	11/22/2021	Internal coordination with MDE and USACE is ongoing. MDE will provide additional comments as necessary.	Noted.	2/4/2022	Addressed.			

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				Date:		Date:		Date:		Date:		Date:		Date:	
14d)		MDE		7/7/2021	d. During the meeting, there were M-NCPPC concerns about extending the work all the way to Great Seneca Creek. The work currently converges with Great Seneca Creek; is M-NCPPC amenable to this?	9/17/2021	M-NCPPC has reviewed and is amenable to the current limits of the design work and is even requesting potential additional design along Great Seneca Creek. Great Seneca Creek improvements, if required, will be designed and included at a future design milestone, but will not be proposed as mitigation. We recognize that any expansion of the LOD would require permit modifications if they occur after permit issuance and could require additional public notice.	11/22/2021	Noted. Note, MNCPPC coordination must be finalized before the site can be approved.			2/4/2022	Addressed.		
15 a)		MDE		7/7/2021	Address the following regarding the Impact Plates: a. Please label all wetland features on the Impact Plates regardless of whether they are located within the LOD.	9/17/2021	Labels have been added to all wetland features.		Addressed.						
15b)		MDE		7/7/2021	b. Wetland T is being riprapped but shown as temporary impact. Update to permanent and update impact and mitigation totals accordingly.	9/17/2021	Permanent impacts to Wetland T and mitigation totals have been revised accordingly.		Addressed.						
15c)		MDE		7/7/2021	c. The majority of wetland Q is being permanently impacted. Please provide justification that the small sliver of this wetland that is shown as a temporary impact will remain wetland, or update to show the entire wetland impacted.	9/17/2021	Wetland Q impacts has been revised to show the entire wetland as permanent impact.		Addressed.						
15d)		MDE		7/7/2021	d. The realigned stream (Waters A) intersects existing Wetland L (Plate 1), Wetland J (Plate 1), and Wetland C (Plates 1 and 2); however, permanent wetland impacts are not accounted for. Update the plates to show permanent wetland impact in these areas and update the mitigation totals in the report accordingly.	9/17/2021	The impact plates have been revised accordingly.	11/22/2021	Table 2: Wetland Mitigation Credits Summary indicates 59,514 SF of on-site permanent wetland impacts and the impact summary table indicates 57,806 SF of permanent wetland impacts. Please address this discrepancy.		Table 2 has been updated and revised accordingly.	2/4/2022	Addressed.		
16 a)		MDE		7/7/2021	Address the following regarding the Design Plans and Report: a. Provide justification that hydrology will not decrease in the wetlands beyond the floodplain restoration area, including in the enhanced wetlands that are proposed to receive 4:1 mitigation credit. The wetland enhancement areas will be required to be monitored following the latest performance standards (including hydrology, vegetation, anaerobic soils, a wetland delineation, etc.).	9/17/2021	The wetlands beyond the floodplain restoration area consist of perched wetlands with dense clay soils that receive hydrology from groundwater seeps outside the proposed work area and thus should retain their hydrology after construction completion. Micro-berms are proposed to further aid in keeping existing hydrology present at key wetlands.		Addressed						
16b)		MDE		7/7/2021	b. Has sediment transport / accumulation been evaluated? How will sediment accumulation be handled to ensure the created and enhanced wetlands will not get filled in? Will the sediment sink that is proposed in the upstream extent be self-sustaining? Please add sediment accumulation to the adaptive management plan list.	9/17/2021	By filling the channel in the upstream end of the project it is expected that sediment deposition will occur primarily upstream of the project such that the sediment load entering the proposed mitigation site will be limited. Additionally, some deposition of sediment within the upper reaches of the project site is not anticipated to be a negative impact to the proposed stream and wetland system.		Addressed						
16c)		MDE		7/7/2021	c. Please provide updated groundwater well data to include March through April of 2021.	9/17/2021	Updated groundwater well data including March through April 2021 is included in Appendix L of the Semi-Final Design Report.		Addressed						
16d)		MDE		7/7/2021	d. On TS01 and TS02 the typical sections include references to stabilization treatments, they also reference DE02 of 07. The delineation of Flexible Growth Medium Stabilization, Type D Soil Stabilization Matting, and Streambed Material are inconsistently labeled. Please clarify. The Matting could be assumed to be across the entire channel limits via TS01 and TS02 and the Flexible Growth Medium is not discussed on DE02.	9/17/2021	The limits of Type D SSM are delineated in the typical sections. Please provide specific examples of inconsistencies. The matting on TS-01 is shown to an extent of 10' beyond top of bank, as shown with vertical lines and arrows indicating where the matting ends. The matting does go across the entire floodplain on TS-02. These scenarios are further detailed on DE-02. FGM is proposed as final stabilization anywhere that SSM is not proposed, which is also shown on the typical sections. SSM limits are also shown on ES-07 - ES-12.	11/22/2021	Internal coordination with MDE and USACE is ongoing. MDE will provide additional comments as necessary.		Noted.	2/4/2022	For the Buried Channel Log Placement details (DE-03), the Type D Soil Stabilization matting appears to cover the full length of the section. The streambank stabilization area indicated ten feet beyond the top of bank. Also, with microtopography, it will be difficult to keep fabric to soil contact throughout the floodplain. This may limit the effectiveness of the treatment. Consider a stabilization alternative in areas with microtopography.		
16e)		MDE		7/7/2021	e. DE04 – Can a plan view or additional detail be provided to clarify the offset geometry of the channel and floodplain boulder sills?	9/17/2021	Plan view has been added.		Addressed						
16f)		MDE		7/7/2021	f. SR-01 – The extent of class II imported streambed material is substantial. We have concerns about the difficulty to vegetate, particularly with woody vegetation to limit the reestablishment of reed canary grass, in compromised soil conditions. We recognize the increased velocities and shear stresses in this region, but are there potential alternatives to this treatment that reduce the extent of underlayment stone?	9/17/2021	The proposed Class II riprap is being placed at a depth of 1 x the d100 of the material to allow for large void spaces where soil will be choked in and seeded. Results from the hydraulic modeling performed indicate the need for riprap of this size and extent to promote sustainability within this area. We have had good success establishing vegetation on other similar/recent projects.	11/22/2021	Internal coordination with MDE and USACE is ongoing. MDE will provide additional comments as necessary.		Noted.	2/4/2022	MDE and USACE agree the rock underlayment in these areas seems excessive. Have other alternatives to address floodplain shear stress been considered (e.g., leaving stream in diversion channel until vegetation establishes, using log placement instead of rock, live fencing/brush bundles to reduce stresses)?		
16g)		MDE		7/7/2021	g. Can additional descriptions be provided for the strategy and decisions for the cross-section	9/17/2021	Secondary channels were designed to convey approximately 25% of the		Addressed						
16h)		MDE		7/7/2021	h. SR-05 – The Plan form geometry from 137+50 – 142+83 is atypical of the rest of the project, in particular there are long tangent sections. Why is this geometry simplified? Would habitat variety be improved if it followed similar patterns to the upstream limits?	9/17/2021	The plan form was adjusted in this lower reach as the restored floodplain width becomes much more limited due to M-NCPPC comments to limit tree impacts. As such, the design team strived to keep the active channel in the location where the higher velocity vectors are projected to occur for the flows the fill this restored floodplain area.		Addressed						
16i)		MDE		7/7/2021	i. Please show all regulated resources (wetlands, wetland buffers, waterways, and 100-year floodplains) on all construction plan sets.	9/17/2021	Some regulated resource symbology was initially left off of some ESC sheets to provide clarity on proposed ESC measures. This symbology has been added back to the ESC sheets they were missing from.	11/22/2021	Please show the 100-Year Floodplain on all plan sets.		The 100-Year Floodplain has been added to all the plan sets.	2/4/2022	Addressed.		
16j)		MDE		7/7/2021	j. What is proposed to protect the site from human encroachment (e.g., signage)?	9/17/2021	Signage along the perimeter of the site to prevent human encroachment will be further coordinated with M-NCPPC and incorporated into the next submittal to MDE.	11/22/2021	Please address with the next design submittal.		Conservation Area Signs have been added to the Landscape Details sheet (LD-01) and will be placed every 50 feet along the perimeter of the site.	2/4/2022	Addressed.		

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				Date:		Date:		Date:		Date:		Date:		Date:	
16k)		MDE		7/7/2021	k. Soil preparation: i. Specify in the plans that the soil in the wetland creation areas must be disked or chisel plowed to a depth of at least 8 inches prior to adding topsoil. ii. Topsoil to depth of at least 6 inches and organic matter amendments are not specified in the plans/report. The hydric soils that are proposed to be reused should be tested to ensure they have sufficient organic content. If not, topsoil amendments will be required. The plans/report should also specify that topsoil and supplemental organic matter will be used when hydric soils are not present or are inadequate.	9/17/2021	i. The specific need of disking or chisel plowing to a depth of at least 8 inches will be discussed with MDE in the near future. ii. Visual inspections of the existing hydric soils on site indicated that there is adequate organic material in the hydric soils. Additional soil testing can be conducted if necessary.	11/22/2021	i. MDE looks forward to discussing the need of disking or chisel plowing. ii. Internal coordination with MDE is ongoing. MDE will provide additional comments as necessary.		i. Noted. The need of disking or chisel plowing will be discussed with MDE prior to the next submittal. ii. Noted	2/4/2022	i. Awaiting discussion with designer, please send an email to set up a call with available dates. Confirm if disking/chisel plowing is proposed in areas outside of the rock underlayment transition zones, and specify if the minimum topsoil depth will be greater in these areas. ii. We have coordinated with MDE and have the following comment: Soil testing to determine organic content will be required in areas where topsoil to a depth of 6 inches and organic amendments are not proposed. Please also specify the minimum depth of hydric soil and/or topsoil in the plan details (MDE will require a depth of at least 6 inches).		
16j)		MDE		7/7/2021	l. Specify the rate per acre of supplemental large woody debris that is proposed within the wetland credit areas.	9/17/2021	This is provided in the woody debris spec.		Addressed.						
16m)		MDE		7/7/2021	m. Address the following on the Landscape Plans: i. Provide the method of plant protection in the floodplain shrub, floodplain forest, floodplain transition shrub and wetland transition shrub planting zones or alternatively provide reasoning for not including plant protection for these zones. If tree protection is not proposed, overplanting of the proposed vegetation should be used to combat herbivory.	9/17/2021	Deer protection cages have been added to the proposed floodplain shrub and tree plantings.		Addressed.						
16n)		MDE		7/7/2021	n. Address the following on the Invasive Management Plan: i. Reed canary grass is dominant on-site. Please provide a detailed plan for reed canary grass control. See the Brookeville Bypass Mitigation Plan for example. Based on recent guidance, it is important to stay on top of management of reed canary grass each year in order to be successful with the control. The management areas should also be overseeded, in addition to the proposed plantings. ii. With limited tree plantings, how can the long-term success of reed canary grass treatment/removal be ensured? iii. What are the light gray dots that are speckled throughout the floodplain restoration area? Update the legend to include a label for this.	9/17/2021	i. Additional information regarding the invasive species management plan has been added to Section 8.3.8 of the Semi-Final Design Report and Section 2.5.1.10 of the Phase II Mitigation Plan. The "Vegetation Management Work Crew" specification that includes details regarding treatment of the reed canary grass is included in the attached "Supplemental Information" folder. ii. The proposed design entails removing approximately three vertical feet of floodplain material, which will also remove the reed canary rhizomes and seed bank. The excavated material will be disposed of at an off-site location. The proposed floodplain meadow seed includes a mix of warm and cool season grasses that will establish the site at different successional stages and help prevent re-infestations. The perimeter of the site, where no excavation is proposed, will be mowed and treated with glyphosate, and seeded/planted with dense, fast growing shrubs and tree species to help shade and out-compete reed canary grass along the perimeter of the site overtime. The perimeter treatment and plantings extend 20 feet beyond the LOD where reed canary is present. Vegetation will be closely monitored during the 10-year monitoring period. Any areas that do not meet the performance standards due to reed canary grass will be treated. iii. The light gray dots are the "Proposed Floodplain Area/Woody Debris Placement", which is included in the Standard Proposed Symbols on Sheet No. 2. of the design plans. The symbology has been removed from the invasive species treatment plans considering it is not necessary to show on these plans.		i. Addressed. ii. Addressed iii. Addressed						
16o)		MDE		7/7/2021	o. Address the following comments regarding the Erosion and Sediment Control (E&S) Plans: i. On ES-05, what is proposed in the area labeled as Soil Waste Area? Is grading or tree removal proposed? Confirm that sediment removed from the floodplain restoration area will be removed off-site. ii. The SOC says that construction will be in three phases, but the plans do not reflect that. Additionally, some of the work appears to be missing from the E&S plans. For example, ES-04 shows no work within the large LOD; however, stream relocation and grading are proposed in that area. iii. Include TAC in the Standard Symbols chart on EN-01. iv. Parts of Staging Area #1 and #2 are within a wetland. Per the BMPs for working in non-tidal wetlands, wetland buffers, waterways, or the 100-year floodplain, "no excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain." Can these staging areas be moved or adjusted? v. SCE 02-1 and SCE 02-4 are within wetlands. Can these entrances be moved out of the wetland? vi. Why is a mulch road proposed through the wetlands instead of matting? vii. SSF is being shown crossing the channel within the designated work area (ES-01, ES-02, ES-03, ES-05, ES-06). Per the waterway construction guidelines, SF or SSF should not receive direct flow. Please revise.	9/17/2021	i. This area has been identified by M-NCPPC as a potential area to lose soil being excavated in within the proposed floodplain in order to reduce cost. This would involve tree removal and grading. ii. ES-01 - ES-08 show the temporary grading being proposed for the stream diversion, access roads, and staging/stockpile areas. The subsequent ESC sheets show the proposed permanent grading. These sheets are being progressed and refined in conjunction with SHA-PRD review and are anticipated to change at future milestones. iii. Will comply. iv. Both staging areas are within the overall proposed grading where these wetlands will be either restored or permanently impacted by the proposed side slopes. v. Both SCEs are within the overall proposed grading where these wetlands will be either restored or permanently impacted by the proposed side slopes. vi. All access roads are within the overall proposed grading where these wetlands will be either restored or permanently impacted by the proposed side slopes. vii. These sections of SSF are being placed along the access road and above the TACs proposed so as not to conflict with channel flow.	11/22/2021	i. Coordination is ongoing with DNR regarding tree removal in this location. ii. OK iii. Addressed. The MDE detail for TAC should also be included in the next submittal of the design plans. iv. Internal coordination with MDE and USACE is ongoing. MDE will provide additional comments as necessary. v. Internal coordination with MDE and USACE is ongoing. MDE will provide additional comments as necessary. vi. Internal coordination with MDE and USACE is ongoing. MDE will provide additional comments as necessary. vii. OK	Noted.	2/4/2022	i. Please see additional comments from DNR, provided 1/18/2022, regarding soil placement and tree removal at this location, at the bottom of this spreadsheet. iii. Please include a detail for TACs in the next design submittal. iv. If temporary staging and/or stockpiling of erodible materials within the FEMA mapped 100-year floodplain cannot be avoided, please note, special conditions regarding flood action plan requirements may be included in the Permit. v. Addressed. vi. Addressed.			
17 a)		MDE		7/7/2021	Address the following regarding the Long-Term Management Plan (Attachment H): a. Please provide signed documentation from M-NCPPC committing to Long Term Management responsibilities, including funding, for the site as outlined in the SHA Long Term Management Plan template (Appendix IV). Is the Memorandum of Agreement memorializing the long-term management roles that is referenced in Section 2.10 of the report available for review? Is SHA funding the long term management of the site?	9/17/2021	SHA will be the long-term steward for the site. The Long-Term Management Plan has been revised accordingly. The Memorandum of Understanding between MDOT SHA and M-NCPPC is currently under development and will be provided once available. SHA is funding the long term management of the site.	11/22/2021	OK, please provide the MOU as soon as available.		The MOU between MDOT SHA and M-NCPPC will be provided as soon as it is available.				
17b)		MDE		7/7/2021	b. Update the Long-Term Steward (Section D, page 8) to M-NCPPC. This appears to be the SHA LTM template.	9/17/2021	SHA will be the long-term steward for the site. The Long-Term Management Plan has been revised accordingly.		Okay.						
18 a)		MDE		7/7/2021	Address the following on the Monitoring Plan (Attachment F): a. A BEHI Cruise Protocol should be conducted each monitoring year. Please update Table 1: Monitoring Summary to include a row for the BEHI Cruise Protocol. Include a column for Preconstruction.	9/17/2021	The BEHI measurements will be performed during the same years as the Maryland Stream Mitigation Framework, which is listed in the table. Additional details regarding the BEHI cruise protocol have been included in the Stream Functional Assessment Performance Standards in Section 3.5.2.		Okay.						
18b)		MDE		7/7/2021	b. Section 3.1 Vegetation, in the list of vegetation data to be collected at each plot, please add the percentage of dominant species FAC or wetter (in accordance with the Ecological Performance Standards and Monitoring Protocols for Permittee-Responsible Nontidal Wetland Mitigation Sites in Maryland, October 30, 2020).	9/17/2021	Percentage of dominant species across all strata and their wetland indicator status (UPL, FACU, FAC, FACW, OBL, or NI) has been added to the list in section 2.1. (Note the original Section 3.1 has been changed to Section 2.1)		Addressed						
18c)		MDE		7/7/2021	c. In Section 3.2 Hydrology, add that any surface water present at the monitoring wells will be	9/17/2021	The note has been added to the end of paragraph 2, Section 2.2. (Note		Addressed						
18d)		MDE		7/7/2021	d. Section 3.3 Soils, add more information on alpha-alpha dipyriddy testing (i.e., soils should be	9/17/2021	Additional information regarding alpha-alpha dipyriddy testing has been		Addressed						

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				Date:	Date:	Date:	Date:	Date:	Date:	
18e)		MDE		7/7/2021 e. Section 3.6 Performance Standards, in Table 2: IRT Wetland Mitigation Monitoring Standards, PFO Wetland Vegetation Cover – YR 5, Please correct the Performance Requirements to state "Average tree height..... shall be at least five feet in height".	9/17/2021 The table has been updated accordingly. (Note the original Section 3.6 has been changed to Section 2.7)		Addressed.			
18f)		MDE		7/7/2021 f. Please address the following comments regarding the proposed Stream Performance Standards under Section 4.4 of Attachment F. i. Discuss how the riparian buffer area will be monitored and the proposed standards that will be used. The riparian buffer is required to meet performance standards similar to the wetland buffer performance standards. ii. Provide a narrative detailing each stream performance standard proposed for restoration and how each will be assessed based on parameters shown in Table 3. iii. In Table 3, please add parameters and measurement methods for stream success including, but not limited to bank height ratio, bedform diversity, lateral and vertical stability, habitat assessment, non-native and invasive species, and riparian vegetative cover. Please add a column to show how each condition (e.g., functioning, functioning-at-risk, not functioning) will be quantified for each parameter. iv. Include a category for success of the in-stream structures shown on the design plans within the success criteria, and detail how these will be assessed and monitored within the monitoring requirements section. v. Specify in this section that the stream will be re-evaluated, using the Maryland Stream Mitigation Framework (MSMF) stream calculator each monitoring year. Credits will then be revised accordingly. Update this in the Phase II Mitigation Report as well.	9/17/2021 i. Stream buffer monitoring protocols and performance standards have been added to Section 3.3 and 3.5.1 of the Monitoring Plan and are based on the IRT buffer area performance standards. ii. The stream performance standards in Section 3.5.2 have been revised accordingly. iii. Table 4, has been revised accordingly. (Note the original Table 3 has been changed to Table 4). iv. Details regarding structure stability assessments and performance standards have been added to Section 3.4.2 and 3.5.3 v. Section 3.6 and the Phase II Mitigation Report have been revised accordingly.	11/22/2021 i. OK ii. OK iii. OK (now Table 5) iv. OK v. OK Stream performance standards are under discussion with the Corps and MDE Chiefs.	Noted.	2/4/2022 Stream monitoring protocols and performance standards to be used across all MLS stream mitigation sites will be sent to the P3 team separately.		
19		MDE		7/7/2021 Provide an update on MHT coordination. Coordination dated September 4, 2020, stated that there would be adverse impacts and that Phase I investigations are warranted.	9/17/2021 The adverse impacts and Phase I investigations mentioned in the MHT letter dated September 4, 2020 are referring to the MLS mainline and mitigation sites AN-6, AN-7, PA-1, RFP-3, RFP-4, and RFP-6. Proposed work at CA-2/3 will not impact archaeological resources and thus no further work is warranted. See Table 5. of the letter to MHT dated July 23, 2020 in Appendix D of the Wetland Delineation Memo.		Noted.			
20 a)		MDE		7/7/2021 Address (or note) the following comments from the Maryland Department of Natural Resources (DNR). All other comments previously provided by DNR continue to apply and further coordination with DNR is ongoing. Additional comments from the Corps are pending and will be provided when available: a. DNR generally agrees with the floodplain reconnection approach, which the agencies recommended in the field visit.	9/17/2021 Noted.	11/22/2021 Comment responses are still under review by DNR and additional comments are forthcoming.	Noted.	2/4/2022 Addressed.		
20b)		MDE		7/7/2021 b. WHS accepts the findings of the rare plant survey and has no further concerns with potential impacts to the rare plant species known to occur nearby.	9/17/2021 Noted.	11/22/2021 Comment responses are still under review by DNR and additional comments are forthcoming.	Noted.	2/4/2022 Addressed.		
20c)		MDE		7/7/2021 c. Based upon the report, Wetland L appears to be a diverse wetland with extensive cover of native species and hydrology sustained by groundwater seepage. We would hope that restoration plans minimize impacts to the areas dominated by native vegetation and do not interfere with groundwater seepage. Based on the plant survey results and the mitigation plan, there appears to be grading into Wetland L. DNR's question to the designer would be if there is opportunity for further minimization of impacts in these areas?	9/17/2021 The high quality portion of Wetland L is located to the east, outside of the limits of disturbance. The proposed grading in Wetland L is located in a portion of the wetland dominated by a monoculture of invasive reed canary grass.	11/22/2021 Comment responses are still under review by DNR and additional comments are forthcoming.	Noted.	2/4/2022 Addressed.		
20d)		MDE		7/7/2021 d. DNR is interested in how this project will fit in with mitigation options for a reduced Managed Lane Study proposed action. DNR and the other resource agencies have participated in many meetings and reviews for the MLS mitigation package. DNR encourages an interagency meeting to discuss preferred mitigation sites if not all mitigation sites are going to move forward.	9/17/2021 At this time all the proposed mitigation sites in the Middle Potomac-Catoctin watershed will be included in the MLS Phase I South Final Compensatory Mitigation Plan. If any sites are deemed unnecessary for the project, an interagency meeting will be scheduled to discuss the removal of site(s).	11/22/2021 Comment responses are still under review by DNR and additional comments are forthcoming.	Noted.	2/4/2022 Addressed.		
Additional Comments 11/22/2021										
1		MDE				11/22/2021 Wetland enhancement credits in Table 2: Wetland Mitigation Credits Summary and the Wetland Mitigation Zones Map do not match. Please clarify and revise as necessary.	12/1/2021 The wetland enhancement credits in Table 2 have been updated and revised to match the Wetland Mitigation Zones Map.	2/4/2022 The PSS Wetland Restoration credits in Table 2 (100,960 SF) do not match the Wetland Mitigation Zones Map (110,960 SF). Please revise as necessary.		The CA-2/3 site has been removed from the proposed MLS wetlands and waterways mitigation package. See the Final Compensatory Wetlands and Waterways Mitigation Plan for further details.
2		MDE				11/22/2021 The Mitigation Summary Map is still showing wetland enhancement in part of Wetland Q, where it is a total take permanent wetland impact. Please revise.	12/1/2021 The Mitigation Summary Map has been revised to show all of Wetland Q as a permanent impact.	2/4/2022 Addressed.		
3		MDE				11/22/2021 On the Mitigation Summary Map, Wetland M is shown completely as PSS enhancement; however, it is not shown within an LOD or L-LOD on the plans. Please update the Mitigation Summary Map and/or the plans to show the work that is proposed to occur in Wetland M, and update the totals throughout the Mitigation Plan accordingly.	12/1/2021 The southern portion of Wetland M is shown within an LOD and L-LOD on the plans. The entire wetland is not being enhanced because it extends well outside the L-LOD and wetland boundaries displayed on the plans to the north.	2/4/2022 Addressed.		
4		MDE				11/22/2021 The wetland enhancement and restoration area just south of Watkins Road is shown as PEM enhancement and restoration; however, this area is shown as floodplain shrub and herbaceous live stake planting area on the Landscape Plan, which includes shrub live stakes. Is this area meant to be enhancement to PSS or PEM?	12/1/2021 The PEM wetland enhancement and restoration areas just south of Watkins Road have been changed to PSS Wetland Restoration and PSS Wetland Enhancement (Rehabilitation) areas on the Wetland Mitigation Zones Map.	2/4/2022 Addressed.		
5		MDE				11/22/2021 On LS-05, the Floodplain Forest planting extends to the south side of Great Seneca Creek; however, the Mitigation Summary Plan doesn't show mitigation credit on that side of the stream. Is this planting area related to M-NCPPC's planting requests, and mitigation credit is not proposed here? Please clarify and revise if necessary.	12/1/2021 The floodplain forest planting area to the south of Great Seneca Creek will be seeded/planted because it is within the LOD, however stream buffer credits are not proposed for the area because it is not a buffer to Magruder Branch. Stream Mitigation credits are not proposed for Great Seneca Creek.	2/4/2022 Addressed.		
6		MDE				11/22/2021 The boundary between PSS wetland creation and PEM wetland restoration on the Wetland Mitigation Zones Map does not correspond to the planting boundary between Floodplain Live Stake & Herbaceous Plug Planting and Wetland Meadow Seeding, respectively, on sheet LS-01. Please clarify or revise crediting/mapping as necessary.	12/1/2021 The boundary between PSS wetland creation and PEM wetland restoration has been revised on the Wetland Mitigation Zones map to match the landscape plans (LS-01).	2/4/2022 Addressed.		
7		MDE				11/22/2021 The boundary between PEM wetland restoration	12/1/2021 The boundary between the PEM wetland restoration	2/4/2022 Addressed.		

Item	Sheet No. /Location	Reviewer	Comment Type	MDE Comments 7/7/2021		Design Team Response 9/17/21		MDE Follow-up Response (11/22/21)		Design Team Response (12/1/21)		MDE Follow-up Response (2/4/22)		Design Team Response (3/15/22)	
				Date:		Date:		Date:		Date:		Date:		Date:	
8		MDE						11/22/2021	There is a note on Sheet L5-02 on the northern side of Watkins Road (within Wetland J) that says "Fill area/potential expanded park area along shoulder of roadway." Please explain what this note means- is the fill area within the wetland or should there be a leader line pointing to the roadway shoulder?	12/1/2021	The note is outdated and has been removed from the plans.	2/4/2022	Addressed.		
9		MDE						11/22/2021	Proposed credit within the PSS and PEM enhancement areas where there is rock underlayment is under discussion with USACE and MDE's Mitigation and Technical Assistance Section (e.g. (1) PSS wetland enhancement (rehabilitation) area for existing Wetland L- live stake/herbaceous plug planting and class II imported streambed material underlayment proposed, dominant vegetation is reed canary grass, and (2) PEM wetland enhancement (rehabilitation) for Wetland E and portion of existing Wetland C- live stake/herbaceous plug planting and class I imported streambed material underlayment proposed, dominant vegetation is reed canary grass and cattail). Clarify why the proposed credit increased from 2:1 to 1.5:1 in these areas.	12/1/2021	Noted. The proposed credit increased from 2:1 to 1.5:1 based on MDE's recent guidance in the "MD Mitigation Ratios Nontidal Wetlands_June2021" document that states Wetland Rehabilitation credit ratios can range from 1.5:1 - 4:1. The proposed design will completely alter the landscape, including the hydrology, soils, and vegetation in the existing wetlands. The removal of legacy sediments and reconnection to the groundwater aquifer will provide uplift to numerous functions and values that are discussed in further detail in the Phase II Mitigation Plan.	2/4/2022	We have coordinated with MDE and USACE and have the following comment: The Department maintains that the 1:5:1 credit ratio is too high for the PSS wetland enhancement (rehabilitation) and PEM wetland enhancement (rehabilitation), particularly in the areas with proposed rock underlayment. The Department has concerns regarding functional uplift, the quality of hydric soils, and the success of Phalaris management in these areas. The Department will accept a 4:1 credit ratio for PSS wetland enhancement within the proposed rock underlayment areas, and a 2:1 credit ratio for PSS and PEM wetland enhancement (rehabilitation) outside of the proposed rock underlayment areas, provided that the topsoil and bulk density performance standards, provided in a new comment below, are met. Care should be taken during construction to avoid tracking over/compacting placed topsoil/hydric soils, particularly in the underlayment areas where disking or chisel plowing cannot be performed. Please note, if invasive or non-native species cannot be controlled to meet the IRT nontidal wetland performance standards, less credit will be provided for these areas.		

Additional Comments 2/4/2022

Project		CR-5 Sewers Creek - Stream Restoration		Design Response: Will Comply, if no explanation needed.				Comment Addressed			
Review		Phase II Plan		Provide clarification or explanation, when needed.				Comment Unaddressed - To be addressed at Final Design, after MDC Phase II and USACE Final Mitigation Plan approval.			
				The following comments must be addressed.				Comment to be larger applicable.			
Item	Sheet No./Location	Reviewer	Comment Type	MDC Comment (8/2/20)		Design Team Response (3/15/21)		MDC has reviewed the following comment responses with the Mitigation Technical Assistance Section and the Corps, and we have the following additional comments (2/20/21):		Design Team Response (4/12/2022)	
				Date		Date		Date		Date	
1	Site Specific Phase I Mitigation Comments	MDC	Plans - General	6/1/2020	1. Please provide an update on the sewer and power lines that are within/adjacent to the project area, and how this will be handled regarding easements and construction.	3/15/2021	The work within the PEFCO easement will not be claimed as mitigation credit. A temporary construction easement will be obtained for this work but it is not included in the list of mitigation addressed at the site.	3/23/2021	Coordination is ongoing with the Mitigation and Technical Assistance Section regarding the mitigation proposed on the sewer easement, and what type of protection is required for the restoration area proposed within the utility easements.	4/1/2022	Noted.
2	Site Specific Phase I Mitigation Comments	MDC	Plans - General	6/1/2020	2. Provide an update on the utility easement regarding the easement point along the left bank at the downstream end of the site.	3/15/2021	The parcel was excavated and the easement is less than three feet. No coordination with Sun Safety is required.	3/23/2021	Noted.	4/1/2022	Noted.
3	Site Specific Phase I Mitigation Comments	MDC	Plans - General	6/1/2020	3. During the site visit on November 7, 2020, M-NCRPC requested that the wetland level within the pond adjacent to the stream be lowered in order to turn the pond into a wetland. Has this been considered in the design? If not, additional information will be required regarding wetland creation credit. If you propose to use the wetland creation for mitigation, M-NCRPC also requested that the restoration be taken up to the vegetation border. Please provide an update on this.	3/15/2021	Currently there is not additional wetland mitigation credit being claimed on-site. Additional credits are needed, that area could be added as wetland mitigation credit in the next design phase.	3/23/2021	Noted.	4/1/2022	The wetlands impacted by the project will be mitigated for on site and will be monitored per the Ecological Performance Standards and Monitoring Protocol for Permittee Responsible Nonpoint Wetland Mitigation Sites in Maryland.
4	Site Specific Phase I Mitigation Comments	MDC	Plans - General	6/1/2020	4. Please revise the Phase I Mitigation Design Plan to include a stream buffer. The minimum riparian buffer width that must be provided as part of a stream mitigation project is a 30-foot riparian buffer on each side, although this buffer may be variable width (i.e., 25 feet on one side and 45 on the other to account for stream meandering). No additional credit is given for this 30-foot buffer on both sides, as it is considered an integral part of the stream mitigation work.	3/15/2021	The 35' stream mitigation buffer was added to the Phase plan.	3/23/2021	Provide a Mitigation Summary Map showing the proposed restoration, proposed riparian buffer credit (including the first 35-feet that is required as part of the restoration credit), and any wetland creation area that is being used to replace wetlands impacted onsite. See the Mitigation Master Plan for EIP-2 or the Mitigation Summary Plan for EIP-5 for an example. Comment update: guidance regarding riparian buffer crediting may change as a result of changing to Version 1 of the MDC stream mitigation calculator.	4/1/2022	A mitigation summary map was provided with the submittal. This will be updated as needed with the submission for Version 1 of the MDC stream mitigation calculator.
5	Site Specific Phase I Mitigation Comments	MDC	Plans - General	6/1/2020	5. There appears to be substantial tree cover within the project area. How will tree impacts be avoided and minimized? Has M-NCRPC approved the removal of trees within the project area for this proposed mitigation?	3/15/2021	M-NCRPC has reviewed the concept plans and proposed extensive comments. Mass tree clearing within the LOD will not be performed on the site. The design limits tree impacts as much as possible and will utilize as many trees as possible in all stream riparian districts.	3/23/2021	Noted. Provide an update on coordination with M-NCRPC regarding tree impacts.	4/1/2022	M-NCRPC has made several rounds of comments involving tree tables, and the stream alignment, structure choice and placement, and LOD have been optimized to minimize the number of tree takes at the site.
6		MDC		6/1/2020	Will the final roadway mitigation designs result in increased risk of flooding on any adjacent properties during a 2-, 10- or 100-year event? If so, notification or permission from the adjacent property owners will likely be required.	3/15/2021	The design will change the 100-yr floodplain but all flooding will be contained to the M-NCRPC property. Notifications and permissions will be coordinated at final design.	3/23/2021	Has M-NCRPC signed off on WSE increases on this property?	4/1/2022	M-NCRPC has reviewed the increases and will sign off the final design phase.
7		MDC		6/1/2020	Provide a schedule on the progress of each mitigation site, including if the wetland delineation has been completed, design milestones, and draft schedule for construction/implementation of each mitigation site. The wetland delineation at each site will likely change the proposed credit table and should be completed as soon as possible to ensure there is enough mitigation in each watershed and no-net-loss to meet. Impact plates will be required for each mitigation site.	3/15/2021	Will Comply	3/23/2021	Impact plates are required for this site. Please provide an update on the impact plates and the requested schedule.	4/1/2022	Impact plates are provided with the PHA and Phase II submittal.
8		MDC		6/1/2020	If any wetting wetlands are permanently impacted by any of the stream restoration/wetland mitigation projects, then wetland impacts will be required to be repaired in-kind onsite or at one of the other mitigation sites within the same watershed. If these wetland impacts cannot be repaired, additional public notice may be required.	3/15/2021	Noted.	3/23/2021	It appears there will be wetlands permanently impacted by the stream restoration/relaxation. What is the plan to replace these wetlands? Onsite or as part of the overall project mitigation?	4/1/2022	The wetlands impacted by the project will be mitigated for on site and will be monitored per the Ecological Performance Standards and Monitoring Protocol for Permittee Responsible Nonpoint Wetland Mitigation Sites in Maryland.
9		MDC		6/1/2020	The Corps released the Stream Function Calculator for use on mitigation projects, which will be required for this project. Please update impacts and proposed mitigation accordingly.	3/15/2021	Will Comply	3/23/2021	We look forward to receiving the updated impacts based on the calculator.	4/1/2022	An updated mitigation calculator was provided with the 11/2021 submittal. Any updates will be made with the next submittal.
10		MDC		6/1/2020	Provide more information for each mitigation site regarding the functions that each mitigation site will provide to replace lost functions and values of riparian wetlands and streams and the functional upland provider, specifically for sites that are proposing wetland enhancement credit. Please provide information to justify the sustainability of proposed enhancement and preservation.	3/15/2021	Will Comply	3/23/2021	Provide an update.	4/1/2022	The wetlands impacted by the project will be mitigated for on site and will be monitored per the Ecological Performance Standards and Monitoring Protocol for Permittee Responsible Nonpoint Wetland Mitigation Sites in Maryland.
11		MDC		6/1/2020	Provide details of each proposed mitigation site within each link's Mitigation Plan.	3/15/2021	Will Comply	3/23/2021	Comment addressed.	4/1/2022	
12		MDC		6/1/2020	Ensure all utility easements are shown on each mitigation plan (can be either field surveyed or from approved as-built). Easement and delineation of the site area shall be provided.	3/15/2021	Will Comply	3/23/2021	Comment addressed.	4/1/2022	
13		MDC		6/1/2020	Please note, discussions with the Mitigation and Technical Assistance Section are ongoing regarding site stream and easements, wetland and stream buffers, and water determinations.	3/15/2021	Noted.	3/23/2021	Noted.	4/1/2022	Noted.
14		MDC		6/1/2020	Please note, wetland monitoring will be required for ten years with reports at years 1, 3, 5, 7, and 10. Stream restoration monitoring will be required for seven years, with reports at years 1, 3, 5, and 7. However, MDC has the right to extend monitoring if the performance standards are not met.	3/15/2021	Will Comply	3/23/2021	Please update Section 2.6 Maintenance Plan, Section 2.6. Monitoring Requirements (and sub-sections), and Table 3 Monitoring Summary/Timeline to indicate that stream monitoring will be required for 10 years (with reports at years 1,3,5,7,10). Please also update throughout the remainder of Section 2.6 of the report to reference Year 10 as the last year, instead of Year 7. Recent guidance from the Corps and MDC Mitigation and Technical Assistance Section determined that MDC mitigation projects will require 10 years of monitoring for streams. Please note, starting at the end of Year 3 of monitoring, if the mitigation site meets all final year performance standards for at least two consecutive monitoring years, the Permittee may request termination of the active monitoring period.	4/1/2022	Will Comply.
15		MDC		6/1/2020	Please ensure the following comments are addressed in the Phase II Mitigation Plan, some of which are contained from the pre-regulation comments. Additionally, please incorporate all elements of the Phase II Wetland Mitigation Plan - Required Information Checklist (Attachment I) in the Phase II Mitigation Plan package. 1. Ultimate credit ratios for fish passage as determined by the Fish Passage Work Group. 2. Clarification/justification for wetland enhancement credit ratios. 3. Additional wetland mitigation within the stream watershed is needed. Please continue to locate potential mitigation sites and report on progress. 4. Detailed/quantification of riparian buffer impacts at stream restoration sites. 5. Additional information regarding long-term management (e.g., hydrology, herbivory, invasive species control) maintenance, and adaptive management specific to each mitigation site. 6. Specify areas (including riparian buffers) that will be protected from development and other significant alteration, including timber removal. This is a particular concern for WFA, which is planned for extensive further development, but should be made clear for all sites. 7. Water budgets and monitoring data for each wetland mitigation site. 8. HSI Analyses for each stream restoration site.	3/15/2021	Will Comply	3/23/2021	Coordination is ongoing.	4/1/2022	Will Comply.
16	Agency Review	MDC		1/13/2021	Please provide signed documentation of the agreement with the landowner to construct this mitigation site prior to the final easements being acquired.	3/15/2021	The Right of Way Agreement with M-NCRPC and with PERCO are included in the Phase II appendix. MOU is being developed between M-NCRPC and MDCOT SW.	3/23/2021	The MOU with M-NCRPC expired on January 1, 2023. Is there an updated version? The agreement with PERCO appears to only be for wetland delineation and topographic survey. Please provide the temporary construction access agreement when available.	4/1/2022	An MOU with PERCO and M-NCRPC is currently being drafted and will be provided when finalized.
17	Agency Review			1/18/2021	Only the Maryland Stream Mitigation Framework Calculator should be used to determine stream restoration crediting. Report should include the results/impact crediting (based on in situ, not ratio) using the Maryland Stream Mitigation Framework. Please ensure the Stream Restoration Performance Standards are incorporated based on the results of the calculation.	3/15/2021	The report was updated to refer to the functional test of credit.	3/23/2021	Comment addressed.	4/1/2022	

Project: CA-5 Seneca Creek - Stream Restoration

Design Responses: Will Comply, if no explanation needed.

Comment Addressed

Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.

Review: PI/Preliminary

Provide clarification or explanation, when needed.

No Change Needed, with an explanation provided.

Comment no longer applicable

The following comments must be addressed.

Item	Sheet No. /Location	Reviewer	Comment Type	MDE Comment (12/15/2020)		Design Team Response (3/15/2021)		Reviewer Concurrence (2/4/2022)	
				Date:		Date:		Date:	
1	Report Section 7.2	MDE/Lindsey Forester	Other	12/15/2020	Section 7.2 Stream Restoration Approach (page 24) states the proposed riffle slopes are selected to stabilize stream unit power and to provide consistent sediment transport capacity. Please provide additional descriptions in addition to the information provided in Appendix E.	3/15/2021	Since the two streams are both headwater stream with no upstream sediment source and the channel was designed as a threshold channel, therefore sediment capacity was not explicitly evaluated. The report was updated to reflect this.	2/4/2022	Addressed.
2	Report	MDE/Lindsey Forester	Other	12/15/2020	The proposed channel design appears to reduce the channel slope. Can the existing and proposed design slopes per reach be described in more detail?	3/15/2021	The design channel is not split up into the exact same reaches, but in the design section additional description of the channel slopes in relation the ex. Channel was added.	2/4/2022	Addressed.
3	Report	MDE/Lindsey Forester	Other	12/15/2020	Please describe the placement strategy of the clay channel blocks. Clay channel block placement overall is significant, please evaluate locations for conflicts with instream structures, planting zones, etc.	3/15/2021	Clay channel blocks were placed where the stream was relocated from the existing channel. The blocks were placed to prevent flow from cutting back into the existing channel. The size of the blocks were kept to a minimum in order to reduce the interference with structures/planting.	2/4/2022	Addressed.
4	Plans - General	MDE/Lindsey Forester	Other	12/15/2020	The grading plan impacts a large amount of riparian trees. Have tree impacts been discussed with M-NCPPC and DNR? Any changes to tree protection could have significant changes to the grading plan and may change the hydraulic design criteria of the approach.	3/15/2021	There have been multiple meetings with M-NCPPC discussing the design and the tree impacts. Once of the goals of the design is to minimize forest impacts and to re-use as many trees onsite as possible.	2/4/2022	Coordination regarding tree impacts is ongoing based on recent M-NCPPC and DNR comments and the meeting held with M-NCPPC on September 29, 2021. Please provide a copy of M-NCPPC's comments on next design submittal (Semi Final Re-Design) when received.
5	Report - H&H	MDE/Lindsey Forester	Other	12/15/2020	Hydrologic calibration should be revisited, Q100 (WINTR-55) is roughly half of Fixed Region 100-year flow and well below the calibration window.	3/15/2021	The Hydrologic calibration was revised.	2/4/2022	Refer to latest milestone comments for update.
6	Report - H&H	MDE/Lindsey Forester	Other	12/15/2020	Please include ultimate conditions hydrology in the analysis for use in Hydraulic analysis when completed.	3/15/2021	Will Comply	2/4/2022	Refer to latest milestone comments for update.
7	Report - H&H	MDE/Lindsey Forester	Other	12/15/2020	Add the HEC-RAS Sections to the 2-D graphics.	3/15/2021	Will Comply	2/4/2022	Refer to latest milestone comments for update.
8	Report - Wet Del	MDE/Lindsey Forester	Report - General	12/15/2020	Please note, we will be field-verifying the wetland delineation and may have additional comments on the Wetland Delineation Memo.	3/15/2021	Noted	2/4/2022	Addressed.
9	Report - H&H	MDE/Lindsey Forester	Report - General	12/15/2020	It would be helpful if the 1D HEC-RAS section locations could be superimposed over the 2D HEC-RAS model graphics to aid in our review of the results of the models versus the design goals.	3/15/2021	Noted	2/4/2022	Refer to latest milestone comments for update.

Item	Sheet No. /Location	Reviewer	Comment Type	MDE Comment (4/23/2021)		Design Team Response (10/23/2021)		MDE Comment (2/4/2022)		Design Team Response (4/1/2022)	
				Date:		Date:		Date:		Date:	
1	Phase II Report	MDE	Report – General	4/23/2021	Provide a mitigation summary map or plan sheet outlining the mitigation proposed, including the proposed restoration, proposed riparian buffer credit (excluding additional credit from the first 35-feet that is required/built in as part of the restoration credit), and any wetland creation area that is being used to replace wetlands impacted onsite. See the Mitigation Master Plan for RFP-2 or the Mitigation Summary Plan for RFP-5 for an example. A table should be provided if wetland creation is proposed to offset onsite impacts.	10/23/2021	A mitigation map is provided in the Phase II in Appendix III Attachment C.	2/4/2022	Please show the required 35-foot stream buffer and any additional stream buffer area proposed for mitigation credit within the mitigation site. Please ensure the boundary of the mitigation site is clear on the mitigation map. Additionally, it does not appear that the layers for "P-STRM_DETAIL-SYM" and "STRC-STONE-TOE" included in the legend are displayed in the mitigation mapping. Suggest removing these from the legend.	4/1/2022	The map has been updated
2	Phase II Report	MDE	Report – General	4/23/2021	Based on the site visit on January 14, 2021, please make the following revisions to the wetland delineation and associated documents: a. Update to show WC-1 as perennial instead of intermittent; b. Update the intermittent portion of WC-2 to perennial.	5/20/2021	The wetland delineation was revised	2/4/2022	Addressed in wetland delineation report and impact plates. Please also update the Watercourse 2 (WC2) description in Section 3.3 of the Phase II Report.	4/1/2022	WC2 description was updated in section 2.3
3	Phase II Report	MDE	Report – General	4/23/2021	The design plans show the proposed stream realignments crossing wetland areas (i.e., WL-6, WL-8) which would result in a permanent loss of wetlands. The permanently impacted wetland square footage will need to be replaced in-kind onsite or additional offsite wetland mitigation will be required and a table subtracting the wetland credits to offset the onsite impacts should be provided. Is the abandoned farm pond or floodplain depressional areas proposed for wetland creation? Please also confirm that the hydrology of the remaining portions of these wetlands, and other smaller adjacent wetlands to the realigned streams (e.g., WL-4, WL-7) will not be lost or negatively impacted (e.g reduction in hydrology).	10/26/2021	The design is raising the channel which should enhance the existing wetlands by providing increased flooding and raising the groundwater. The stream still crosses a couple of wetlands areas, however there are proposed oxbow wetlands that will offset any impacts to existing wetlands. There are not plans to claim mitigation credit for any offsite wetlands and the wetlands will not be monitored as created wetlands.	2/4/2022	Noted. Section 3.8.6(B) of the Phase II Report notes that the oxbow wetlands and farm pond enhancement area will be monitored in years 1, 3, 5, and 10. Please add year 7 to the monitoring schedule and reference the Ecological Performance Standards and Monitoring Protocol for Permittee-Responsible Nontidal Wetland Mitigation Sites in Maryland for monitoring the replacement wetlands.	4/1/2022	year 7 has been added and protocol reference updated in section 2.8.5
4	Phase II Report	MDE	Report – General	4/23/2021	Please note, if wetlands are being replaced onsite, monitoring will be required following the same monitoring schedule and performance standards as the other MLS mitigation sites, in accordance with the most current <i>Ecological Performance Standards and Monitoring Protocol For Permittee-Responsible Nontidal Wetland Mitigation Sites in Maryland</i> . The mitigation summary map (referenced in Comment No. 2 above) and the plans should be updated to show the areas that will be designated for wetland creation/replacement.	10/26/2021	See Response above.	2/4/2022	See follow-up comment for Comment 3 above.	4/1/2022	protocol reference updated in section 2.8.5
5	Phase II Report	MDE	Report – General	4/23/2021	Please note, credit ratios are subject to change if this site is used for a future MLS phase II report.	4/27/2021	Noted	2/4/2022		4/1/2022	
6	Phase II Report	MDE	Report – General	4/23/2021	As previously discussed, provide a centralized document that presents the impacts for the entire Managed Lanes Study (MLS) project, including the impacts at each mitigation site. Also, could a table be provided showing the above information and any excess that is proposed for advance mitigation as a living document that can be updated with the submittal of each Phase II Mitigation Plan? This will be used to confirm that there is no net loss and that wetlands are being replaced appropriately (based on cover type, watershed, stream use, etc.). Specifically discuss the impacts from MLS in this watershed and the lost functions and values from those impacts.		Need from RKK	2/4/2022	Noted. We look forward to receiving the centralized document.	4/1/2022	Project impacts and mitigation are discussed in the MLS final CMP. No advance mitigation is proposed for the site.
7	Phase II Report	MDE	Report – General	4/23/2021	As noted in the Phase II Report, the mitigation project shall be constructed under the supervision of an approved qualified restoration specialist. This will be a requirement for each mitigation site.		Will Comply. There is a specification for a Stream Restoration Specialist provided with the design submittal.	2/4/2022	Addressed.	4/1/2022	
8	Phase II Report	MDE	Report – General	4/23/2021	In Section 2.3 Baseline Information, include a narrative discussing the current quality and proposed impacts for each regulated resource onsite (e.g., streams, wetlands, wetland buffer, 100-year floodplain, upland forest).		Wetland, waters of the US, upland forest/floodplain impacts and descriptions have been added to the baseline information section	2/4/2022	Addressed.	4/1/2022	
9	Phase II Report	MDE	Report – General	4/23/2021	There does not appear to be an invasive management plan provided as part of the Phase II package. Please provide a narrative detailing the proposed invasive species management plan.		Will Comply. There is an invasive species treatment specification that was provided with the package. A description of the plan was added to the report.	2/4/2022	Please confirm where the invasive species treatment specification is within the package. Section 3.8.5 states that invasive species will be monitored in years 1, 3, 5, and 10. Please also add monitoring for year 7.	4/1/2022	Invasive species specification is included with the design package. Species to be treated were provided by M-NCPPC. Year 7 was added to section 2.8.4 of the report.
10	Phase II Report	MDE	Report – General	4/23/2021	Please update Section 2.6 Maintenance Plan, Section 2.8, Monitoring Requirements (and sub-sections), and Table 3: Monitoring Summary/Timeline to indicate that stream monitoring will be required for 10 years (with reports at years 1,3,5,7,10). Please also update throughout the remainder of Section 2.8 of the report to reference Year 10 as the last year, instead of Year 7. Recent guidance from the Corps and MDE Mitigation and Technical Assistance Section determined that MLS mitigation projects will require 10 years of monitoring for streams. Please note, starting at the end of Year 5 of monitoring, if the mitigation site meets all final year performance standards for at least two consecutive monitoring years, the Permittee may request termination of the active monitoring period.		Sections 2.6 and 2.8 have been updated to reflect 10 years of monitoring with reporting in years 1, 3, 5, 7 and 10.	2/4/2022	Addressed.	4/1/2022	
11	Phase II Report	MDE	Report – General	4/23/2021	Update the Stream Performance Standards in Section 2.7 to include that the stream be re-evaluated, using		Section 2.7 has been updated	2/4/2022	Recent guidance from the Corps is that the streams should be re-evaluated using the MSMF in years 3, 5, 7 and 10. Notes can be made in the calculation runs on earlier years (3,5,7) where further improvements are expected to occur and with any remedial actions needed to maintain the project and vegetation. Please update the Stream Performance Standards in Section 3.7 and the Monitoring Plan accordingly.	4/1/2022	Section 2.7 performance standards were updated
12	Phase II Report	MDE	Report – General	4/23/2021	To meet the requirements for Financial Assurances, please submit a spreadsheet-based estimate outlining proposed financial assurance cost components with the financial assurances under separate cover for review and approval by the USACE and MDE. This should be broken out by Design/Construction Fund, Maintenance and Monitoring Fund, and Long-Term Management/Catastrophic Event Fund, and should include itemized tasks and associated dollar amounts.		SHA will need to provide. M-NCPPC info also.	2/4/2022	Noted. We look forward to receiving the spreadsheet-based estimate.	4/1/2022	A spreadsheet based construction, monitoring and maintenance cost estimate is provided with this submittal.
13	Phase II Report	MDE	Report – General	4/23/2021	Appendix I, Attachment B – Projects with Potential Mitigation Requirements: Update this list to include the anticipated impact total requiring mitigation for each project.		Need from RKK	2/4/2022	Noted. We look forward to receiving the updated projects list.	4/1/2022	No advance mitigation credits are proposed at the CA-5 site. The project impacts and required mitigation are discussed in the MLS final CMP. Appendix I was removed from the CA-5 Phase II Report.
14	Phase II Report	MDE	Report – General	4/23/2021	Section 2.2 Site Protection Instrument- update the last sentence to reference Appendix II instead of III.	4/29/2021	The sentence was updated	2/4/2022	Addressed.	4/1/2022	

Item	Sheet No. /Location	Reviewer	Comment Type	MDE Comment (4/23/2021)		Design Team Response (10/23/2021)		MDE Comment (2/4/2022)		Design Team Response (4/1/2022)	
				Date:		Date:		Date:		Date:	
15	Phase II Report	MDE	Report – General	4/23/2021	Provide an update on coordination with M-NCPPC regarding work proposed on their property, including regarding proposed tree impacts.		Meeting Minutes from ongoing coordination meetings are include in the appendices.	2/4/2022	Thank you for providing the comments/responses and meeting minutes to date. Coordination regarding tree impacts and floodplain grading is ongoing based on recent M-NCPPC and DNR comments and the meeting held with M-NCPPC on September 29, 2021. Please provide a copy of M-NCPPC's comments on the next design submittal (Semi Final Re-Design) when received.	4/1/2022	M-NCPPC comments are provided with these responses.
16	Phase II Report	MDE	Report – General	4/23/2021	Provide a copy of the long-term agreement between SHA and M-NCPPC that is referenced in Section 2.2 Site Protection. Confirm that this will allow MDE, the USACE, and their authorized agents, access to visit the mitigation site. There is a right of entry (ROE) agreement that is included in the appendices, but that expired on January 1, 2019.		A final MOU has not been signed. Once a final agreement has been reached and signed it will be provided with this report.	2/4/2022	Noted. Please provide the signed MOU when available.	4/1/2022	MOU will be provided when available.
17	Phase II Report	MDE	Report – General	4/23/2021	Provide an update on coordination with PEPCO regarding the stream restoration that is proposed within their utility easement and provide the temporary construction access agreement when available.		Meeting Minutes from any coordination meetings with PEPCO are provided in the appendices.	2/4/2022	Addressed (provided with CMP appendices in JPA package).	4/1/2022	
18	Phase II Report	MDE	Report – General	4/23/2021	Section 2.2 Site Protection states that only temporary access will be granted within the PEPCO easement where restoration will occur between the proposed credit areas. How do you plan to handle monitoring and address any adaptive management or maintenance issues that arise with the restoration within the PEPCO easement?		Will be part of the temporary access agreement which will include construction and monitoring.	2/4/2022	Noted. Please provide the temporary access agreement when finalized.	4/1/2022	Temporary access agreement will be provided once obtained.
19	Phase II Report	MDE	Report – General	4/23/2021	The report discusses several sewer line crossings. Please provide an update on access/coordination regarding the work proposed within the sewer line easements. Please note, generally the Department does not allow credit within utility easements. If an acceptable long-term site protection mechanism can be put in place within the sewer line easements, credit may be allowed. Otherwise, please remove proposed credit from these locations.		Since M-NCPPC doesn't allow easements this site will be part of the overall Phase I SHA/M-NCPPC agreement.	2/4/2022	Please provide the MOU between SHA and M-NCPPC when available, including a long-term site protection mechanism for the areas that may be accessed by WSSC for the sewer lines crossing the site. Credit may be adjusted/removed from these areas if protection of these areas in perpetuity can not be secured.	4/1/2022	MOU will be provided when available.
20	Phase II Report	MDE	Report – General	4/23/2021	The Stream Mitigation Calculator shows the proposed length of restoration as 3,369 linear feet; however, the Phase II Report and Design Report state that 3,868 linear feet of stream restoration is proposed (with 3,637 linear feet suitable for mitigation credits). Confirm which is accurate and revise accordingly.		The 3868 LF of stream restoration includes the 600 LF within the PEPCO easement that we are not claiming restoration credit for.	2/4/2022	Please note, since MDE does not regulate ephemeral channels, we will not give stream mitigation credit for Tributaries 1 and 2 (51 functional feet).	4/1/2022	Tributaries 1 and 2 will be removed from the MSMF calculations.
21	Phase II Report	MDE	Report – General	4/23/2021	According to the Stream Mitigation Calculator results, it appears that riparian buffer credit is built into the proposed functional feet of credit. If stream credit is proposed for riparian buffer, please ensure there are performance standards proposed for the riparian buffer credit areas (e.g. assessments of woody vegetation planting success, tree height, canopy cover, and invasive species coverage). See the Performance Standards for Buffer Areas in the attached <i>Ecological Performance Standards and Monitoring Protocol For Permittee-Responsible Nontidal Wetland Mitigation Sites in Maryland</i> . Please note, a new version of the Performance Standards will be out soon, and those standards will be required for the MLS projects. The new Performance Standards will potentially include a requirement of inundation/saturation for 12.5% of the growing season for wetlands.		Performance standards for the monitoring of the riparian vegetation are included with the Functional Uplift Stream Monitoring in Section 2.8.2.	2/4/2022	Please add additional performance standards to Table 9 (Section 3.8.3 (B)(a)) using the Performance Standards for Buffer Areas in the <i>Ecological Performance Standards and Monitoring Protocol for Permittee-Responsible Nontidal Wetland Mitigation Sites in Maryland</i> as a guide. For example, add rows for Aerial Cover Vegetative Standards, Non-Native and Invasive Species, and Vegetation Density for Forested Buffers and include the specified performance standards for each.	4/1/2022	Noted. Performance standards for Buffer Areas will be added to Table 9 and section 2.8.2.1
22	Phase II Report	MDE	Report – General	4/23/2021	Stream impacts/required mitigation for the MLS project should be updated based on functions lost using the Maryland Stream Mitigation Framework.		Need from RKK	2/4/2022	Information is provided within the Final CMP included with the JPA amendment submittal. Please note, Section 2, Site Description (last paragraph) is outdated. Please update with information from the Final CMP, including the Preferred Alternative impacts and discussion of stream functional feet impact/mitigation requirement from the MSMF. Consider moving this paragraph to Section 1.3.	4/1/2022	The project impacts and required mitigation are discussed in the MLS Final CMP and the text was removed from Section 2, Site Description.
23	Appendix IV	MDE	Report – General	4/23/2021	Please provide signed documentation from M-NCPPC committing to Long Term Management responsibilities, including funding, for the site as outlined in the SHA Long Term Management Plan template (Appendix IV). IS SHA funding the long term management of the site?		From SHA	2/4/2022	Please provide the Memorandum of Understanding regarding long-term management between MDOT SHA and M-NCPPC once available.	4/1/2022	MOU will be provided when available.
24	Appendix IV	MDE	Report – General	4/23/2021	Appendix IV - Update the Long-Term Steward (Section D, page 8) to M-NCPPC. This appears to be the SHA LTM template.	4/29/2021	The long term steward was updated	2/4/2022	Addressed.	4/1/2022	
25	Appendix IV	MDE	Report – General	4/23/2021	Appendix IV -The address for MDE on Page 9 should be 1800 Washington Blvd.	4/29/2021	The address was revised	2/4/2022	Addressed.	4/1/2022	
26	Phase II Report	MDE	Report – General	4/23/2021	Provide a GIS polygon layer showing the boundary of the area(s) getting mitigation credit, in accordance with the Phase II Wetland Mitigation Plan – Required Information Checklist dated January 23, 2020.		Will Comply.	2/4/2022	Addressed.	4/1/2022	
27	Phase II Report	MDE	Report – General	4/23/2021	Please copy the Division when the NOI permit is submitted through MDE Compliance.		Will Comply.	2/4/2022	Noted.	4/1/2022	Will comply.
28	Draft Impact Plates	MDE	Report – General	4/23/2021	Please note, the impact plates will need to be included in the JPA submittal.		Noted. Not in our scope, impact plates will be completed by the P3 during the next stage of design.	2/4/2022	Addressed. Please see additional comments on impact plates in new comments section below.	4/1/2022	
29	Draft Impact Plates	MDE	Report – General	4/23/2021	For the Department, the impacts associated with stream restoration and temporary construction impacts shall be considered temporary. However, it should be clear which wetland impacts require either on-site replacement or mitigation (e.g., wetland impacts due to stream relocation).	5/20/2021	A summary of wetland impacts and on-site wetland creation was added to the report. A mitigation map is provided in Appendix III Attachment C.	2/4/2022	Add a footnote to Table E-6 in the impact plates noting that the permanent wetland impacts will be replaced onsite via oxbow wetland creation.	4/1/2022	A footnote will be added to the permanent wetland table E-6 and the mitigation map in the phase II report.
30	Draft Impact Plates	MDE	Report – General	4/23/2021	Please include an impact summary table with the impact plates.		Noted. Not in our scope, impact plates will be completed by the P3 during the next stage of design.	2/4/2022	Addressed. Please see additional comments on the impact tables in new comments section below.	4/1/2022	
31	H&H Analysis	MDE	Report – General	4/23/2021	Provide a Hydrology and Hydraulics report.	4/29/2021	The Hydrology and Hydraulics analysis is included in the Semi-Final design report in Appendix II/Attachment B	2/4/2022	Please respond to the following comments on the H&H Report: a. For determination of hydrology, please justify the use of two different models (TR-20, HEC-HMS) and the mixing and matching of data from each to determine 2, 10 and 100-year design storms. Consistent use of a single model is typical. Of note: Fixed Region results for Mainstem 2 are 36% higher than Mainstem 1 (consistent w similar land use and a larger DA) however Q2 HMS results used for MS1 are notably higher (198 cfs vs 164 cfs) than the TR-20 values used for MS2, which is inconsistent with expectations. Recommend calibrating a single model/method for use in the analysis. b. For Table 5 where do "HMS w/o SWM" values come from, as these values cannot be found in the HEC-HMS output results. c. HECRAS 2D results indicate several locations (many of them overbank) with significant increases in shear stress over existing conditions to proposed values > 4 psf, including Sta 2+00, 2+75, 6+10, 7+50, 14+25, 16+90, 23+40 and Mainstem 2 Sta. 0+10. Please demonstrate shear increases in these locations are adequately addressed in final design.	4/1/2022	a. A single method (TR-20) was used for calibrating the models according to the Application of Hydrologic Methods in Maryland. HEC-HMS was used with TR-20/TR-55 methodology to develop the flow hydrographs in a compatible form to input flow hydrographs into HEC RAS 2D. Calibration is done without the stormwater pond in Mainstem 2 and as a single watershed in TR-20 which is consistent with the Application of Hydrologic Methods in Maryland. The HEC-HMS model has multiple watersheds to determine the Q's at different locations in the watershed. The 2-year rainfall amount was discovered to be 2.65" in the HEC-HMS model without the SWM pond. This was a previous iteration where the 12 hour storm duration was used. This has been corrected to 2.19" in the calibration hydrology and the value is consistent with TR20 model now. For the HEC HMS model that was used to obtain flow hydrographs, the 2.65" rainfall is still used. The resulting HEC RAS modeling will have a 2 year return period storm that is larger than the calibration TR20 model. This will only make the structures more conservatively built. It should not have any negative effects on the design. Please contact me directly for further information/discussion: Katie Scott 443-837-2153. The report was updated with this information. b. The output results for HMS w/o SWM have been added to the report. They are showing the consistency in the two models (TR-20 and HEC-HMS). c. We addressed any areas over 8 psf by adding rock/structures or bedrock was present. Fischenich (2001, USAERDC) documents that vegetated coir matting can withstand shear stresses up to 8 psf. Table 25 in the report provides justification for areas with shear over 8 psf.

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				Date:		Date:		Date:		Date:	
32	H&H Analysis	MDE	Report – General	4/23/2021	Has M-NCPPC signed off on WSEL increases on their property?		This will be provided in final design by the P3 in the next phase of design.	2/4/2022	Noted. Please provide sign-off for the WSEL increases with the next design submittal.	4/1/2022	Will provide when it is received
33	SD-01	MDE	Plans - General	4/23/2021	Channel dimensioning to the hundredth of a foot is likely impractical. We would suggest staying to the tenth at a minimum.	4/27/2021	Channel dimensions were revised to the tenth of a foot	2/4/2022	Addressed.	4/1/2022	
34	SD-02	MDE	Plans - General	4/23/2021	Log J-Hook - Plan View - The detail references point E, where is this location and elevation designated?	4/27/2021	The reference to point E was removed	2/4/2022	Addressed.	4/1/2022	
35	SD-03	MDE	Plans - General	4/23/2021	Rock J-Hook Section A-A' – what material is proposed to be placed as fill under the boulder stones?	4/27/2021	The detail was revised to specify the backfill under the boulder stones	2/4/2022	Addressed.	4/1/2022	
36	SD-06	MDE	Plans - General	4/23/2021	Riffle Grade Control with Rock Sill - Please describe the decision process for selecting to add a sill versus not including a sill.	4/29/2021	The rock sill is used as a drop structure at the pond outlet to provide a stable drop over the short distance between the pond outlet and mainstem	2/4/2022	Please provide a more detailed description. This is unclear.	4/1/2022	The only location there is a proposed rock sill is at the pond outlet. There are no RGC's with a rock sill at the end. The detail was updated to better represent this application of a rock sill.
37	SR-01	MDE	Plans - General	4/23/2021	Consider a less aggressive treatment for CA-5 Tributary 1. The Bed seems stable with only minor bank erosion noted. Similarly, consider removing RGC-1 and beginning stabilization in the vicinity of RJH-2.	4/27/2021	The approach for Tributary 1 was designed to ensure future stability through the steep drop in the channel from the existing pipe under the pedestrian bridge to the confluence with the mainstem. It may be reevaluated at the next design phase. Similarly, RGC-1 ensures a stable tie in to the existing mainstem as well as a stable confluence at a pool with Trib 1.	2/4/2022	Unresolved. Please address in the next design submittal.	4/1/2022	The tie in of Tributary 1 is being realigned so that the confluence with Mainstem 1 occurs at a more favorable angle, and into a pool. As noted on the plans, RG-1 and the plunge pool downstream of the trib 1 culvert will just be rearranging existing riprap. The J-hook upstream of the pedestrian bridge will direct the water through the center of the bridge. This area may be re-evaluated with the P3 contractor at the next phase of design.
38	Plans-General	MDE	Plans - General	4/23/2021	Clarify whether the structure tables start and end point indicate locations of the glide	4/27/2021	The start and end point refer to the riffle portion of the feature only. The profile view gives additional information on the structures.	2/4/2022	Addressed.	4/1/2022	
39	SR-02	MDE	Plans - General	4/23/2021	After consultation with M-NCPPC – we recommend against use of the Floodplain Log Sills. The wetland disturbance and impacts to stable vegetation do not justify the temporary value of adding wood sills which are likely to degrade during periods of non-saturation. Evaluate use of other methods to prevent secondary channel formation if this is a concern at this location.	4/29/2021	Noted. The floodplain log sills will be re-evaluated at the next design phase	2/4/2022	Addressed.	4/1/2022	
40	SR-03	MDE	Plans - General	4/23/2021	The clay channel block placements are large and very close to the stream, please consider offsetting the blocks 4-5 feet from the channel and in locations where they can be placed perpendicular to a more narrow existing channel section to minimize the clay placement.	4/27/2021	The clay channel blocks will be re-evaluated at the next design phase.	2/4/2022	Unresolved. Please address in the next design submittal.	4/1/2022	The CCBs were re-evaluated and shifted where possible. The blocks may be evaluated further during the next phase of design.
41	SR-04	MDE	Plans - General	4/23/2021	Why is RGC-14 wider than the other riffle features?	5/20/2021	The RGC-14 is no longer wider than other riffles.	2/4/2022	Addressed.	4/1/2022	
42	SR-05	MDE	Plans - General	4/23/2021	Provide additional detail for the proposed outfall from the pond (consider a construction detail) showing how structures would be tied in to existing banks, sizing and types of materials proposed, and temporary and permanent stabilization.	4/27/2021	Additional detail notes and information was provided on the plans.	2/4/2022	Addressed.	4/1/2022	
43	DP-07	MDE	Plans - General	4/23/2021	The downstream tie in appears to be a steeper tie in than the recommended drops and slopes in the restoration. Please comment on the stability and long-term sustainability of the downstream tie in.	5/20/2021	The log J-Hook structure at the tie-in is intended to provide a stable drop into a pool at the tie in. The HECRAS results show that the tie-in will be stable.	2/4/2022	Please provide additional clarification and justification.	4/1/2022	During the re-design of Mainstem 2 which spurred from M-NCPPC interim comments and coordination, the confluence between MS-1 and MS-2 was shifted allowing for a more stable tie in from at the downstream extent of the project. There is a compound rock cross vane at the confluence of MS-1 and MS-2, and a riffle grade control and rock cross vane at the bottom of the project. The slopes of the last two structures fit within the existing design slopes and will provide protection at the downstream tie-in.
44	Design Report	MDE	Report - Hydrology/Hydraulics	4/23/2021	In the Design Report, the rock sizing is set to resist the shear at the Q2, which is a very low shear design for rock. This is under discussion with Bill Sieger, the Waterway Construction Division Chief.	5/20/2021	The shear and velocities within the channel are largest during the 2 year storm. During the 10 year storm the stream gets out of the banks and the shears and velocities within the channel are lower. A sentence was added to the design report clarifying this.	2/4/2022	The CA-5 HEC-RAS Graphs in the Appendices indicate that PR 10 YR Shear Stresses are higher than the 2 YR. There are no stresses that appear to be higher than the 2.7 on the mainstem (besides the first section) so the computations are likely sufficient for the mainstem. Some stresses on the tributaries are very high. Does an evaluation of the shear stresses at Q100 reveal any abnormal spikes that threaten any structure? The stability of the structures may need to be reevaluated.	4/1/2022	We evaluated the 2 and 10 year return period shear stresses. Typically, by the time the flow reaches the 100 year water surface elevation, the water has spread out onto floodplain areas and the shears are lower. There were no large spikes or problem areas to note in the 100-yr analysis.
45	Design Report	MDE	Report - Hydrology/Hydraulics	4/23/2021	In Appendix D.1 Existing Hydrologic Analysis, the M-NCPPC boundary is not visible on the Hydrology Map. Please add the site boundary to the map.	4/29/2021	The M-NCPPC property boundary was added to the map	2/4/2022	The M-NCPPC property boundary is included in the legend but is not apparent on the map- please add this layer to the map.	4/1/2022	The property lines are now shown on the map.
46	Plans - General	MDE	Plans - General	4/23/2021	Ensure all resources are shown on the plans. Currently, WUS lines for WC3 and WC-5 are missing from the plans (Sheets SR-02/ES-02 and SR-06/ES-06).	5/6/2021	The missing resources were added	2/4/2022	Addressed.	4/1/2022	
47	Plans - General	MDE	Plans - General	4/23/2021	What are the gray, lightly dashed lines that parallel the stream to the north and south? Is this a trail? Please add call-outs to the plans.	4/27/2021	Pedestrian trails were added to the standard symbols	2/4/2022	Addressed.	4/1/2022	
48	Plans - General	MDE	Plans - General	4/23/2021	What type of physical protective barrier is proposed to reduce human encroachment? Update the plans to include signage designating the area (including the protected riparian buffer) for conservation.	4/27/2021	Pedestrian detours and signage will be coordinated with M-NCPPC at the next design phase.	2/4/2022	Noted. Please provide signage details with the next design submittal and show the boundary on the landscape plans where the signs will be placed.	4/1/2022	OCF will be included around the entire LOD and additional tree planking/TPF is included outside the LOD where necessary to clearly indicate where construction will take place. The pedestrian bridge at the upstream end of the project will remain open providing pedestrians access to the entire length of the stream and connections to downstream trails by using the trail on the south side of the stream. Notes were added to the ESC plans based on comments from M-NCPPC to direct the contractor on trail closure restrictions, etc. M-NCPPC reviewed the plans and will provide additional guidance on trail detour signage, etc. as required.
49	Plans - General	MDE	Plans - General	4/23/2021	Confirm that any areas disturbed by construction (e.g., within the LOD but not requesting credit) will be restored.	4/27/2021	See Best Management Practices for Working in Nontidal Wetlands, Wetland Buffers, Waterways, and 100-year floodplains on sheet EN-01	2/4/2022	Please revise Landscape Plan sheets LS-01 and LS-02 to show wetland tree plantings within the disturbed portions of PFO wetland WL-2.	4/1/2022	Sheets LS-01 and LS-02 will be revised to show wetland tree plantings within the disturbed wetlands.
50	Plans - LS Plans	MDE	Plans - General	4/23/2021	Update the Landscape Plans to include planting dates per planting zone.		Will Comply.	2/4/2022	Not included. Please provide with next design submittal.	4/1/2022	Planting dates are now provided on the landscape schedule on LD-01.
51	Plans - LS Plans	MDE	Plans - General	4/23/2021	Specify the size of riparian planting stock.		Will Comply.	2/4/2022	Addressed.	4/1/2022	
52	Plans - LS Plans	MDE	Plans - General	4/23/2021	In the areas proposed for log sill placement between 2+00 and 3+50 RT (Sheet LS-02), are smaller trees/shrubs being cleared? If so, can woody plants be planted since the log sill placement is in a PFO wetland?	4/29/2021	The floodplain sill logs were removed from the project.	2/4/2022	Addressed.	4/1/2022	
53	Plans - ESC Plans	MDE	Plans - General	4/23/2021	Filter bags at STA 5+60 and (Sheet ES-02), STA 8+40 (sheet ES-03), and STA 10+30 (Sheet ES- 03) should be shown within the LOD.	4/27/2021	All ESC practices are now shown within the LOD.	2/4/2022	On sheet ES-01, the clean water pump (CWP) on CA-5 Trib 1 (WC-2) is outside of the LOD. Please ensure the pump is within the LOD.	4/1/2022	The CWP was moved to inside the LOD.
54	Plans - ESC Plans	MDE	Plans - General	4/23/2021	Super silt fence should be shown along the eastern perimeter of the staging area at STA 17+00 (Sheet ES-04).	4/29/2021	Silt fence was added	2/4/2022	Addressed.	4/1/2022	
55	Plans - ESC Plans	MDE	Plans - General	4/23/2021	Silt fence should be installed along the LOD where it is adjacent to WL-5 (Sheet ES-06).	4/27/2021	Super silt fence was added along WL-5	2/4/2022	Addressed.	4/1/2022	
56	Plans - ESC Plans	MDE	Plans - General	4/23/2021	What is the purpose of the LOD bump out (into WL-3) at approximately STA 26+00 (Sheet ES- 06)? Could the LOD be reduced to minimize wetland impact, or can matting be used in the wetland?	4/27/2021	The LOD is bumped out to treat a headcut near the manhole adjacent to WL-3	2/4/2022	Addressed.	4/1/2022	
57	Plans - ESC Plans	MDE	Plans - General	4/23/2021	Temporary staging and/or stockpiling of erodible materials is proposed within the FEMA mapped 100-year floodplain on Sheets ES-04 through ES-07. If this cannot be avoided, please note, special conditions regarding flood action plan requirements may be included in the Permit.	4/27/2021	A note was added to the plans	2/4/2022	Noted.	4/1/2022	Noted.
58	Phase II Report	MDE	Report – General	4/23/2021	Provide up to date coordination with MHT and USFWS.		need from SHA, handled in the next phase of permitting.	2/4/2022	Please provide up-to-date coordination with MHT and USFWS when available.	4/1/2022	Up-to-date RTE and MHT Coordination are provided in Appendix I of the Phase II Report

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				Date:		Date:		Date:		Date:	
59	Phase II Report	DNR	Report – General	4/23/2021	DNR believes that, in general, rock size in stream restoration projects tends to be larger than necessary. DNR encourages the use of the smallest rock size that will remain stable. Rock size should reflect natural stone size in viable habitats in the existing stream, and support spawning and other habitat requirements of the existing fish assemblage. Rock from on-site should be used to the extent possible. Any rock brought into the site should be similar to native material.	4/27/2021	Noted	2/4/2022	Noted.	4/1/2022	Noted. The rock sizing was increased because of M-NCPPC comments but a well graded mix of several classes of riprap along with natural channel material is proposed within the riffle material. All interstitial spaces are to be filled during construction to ensure surface flow but maintaining a rough area with flow variation.
60	Phase II Report	DNR	Report – General	4/23/2021	DNR requests that existing trees be preserved to the extent possible. The plans indicate that existing walking paths be used for construction access to some extent; however the floodplain grading, new stream plan, and access should minimize tree removal. However, DNR will generally defer to M-NCPPC on tree save issues. Recently, there have been some communities (Columbia, Fairfax) expressing concern about tree removal associated with stream restoration projects. The project team may want to consider additional coordination with the neighboring properties and community associations.	4/27/2021	Noted	2/4/2022	Noted. DNR will defer to M-NCPPC.	4/1/2022	M-NCPPC has made several rounds of comments involving tree takes, and the stream alignment, structure choice and placement, and LOD have been optimized to minimize the number of tree takes at the site.
61	Phase II Report	DNR	Report – General	4/23/2021	DNR will generally defer to M-NCPPC on design comments.	4/27/2021	Noted	2/4/2022	Noted.	4/1/2022	Noted.

Additional Comments 2/4/2022

1		MDE		2/4/2022	Please provide point-by-point responses for the Phase I set of comments, originally provided 6/5/2020 with follow up comments provided 3/23/2021 (see Phase I tab in this spreadsheet).	4/1/2022	Responses provided.
2		MDE		2/4/2022	According to the PEPCO meeting minutes from March 19, 2021, PEPCO indicated that herbaceous and shrub plantings would be acceptable in the PEPCO ROW, but not tree plantings. Please revise the planting schedule for this area to only include acceptable shrubs and seed mix, and revise the mitigation mapping to distinguish this planting type from the riparian planting/reforestation layer. Please also show in the mapping that the PEPCO ROW is excluded from mitigation credit (including riparian buffer).	4/1/2022	Coordination with PEPCO is ongoing and a list of acceptable herbaceous and shrubs has been requested. The Landscaping plans was updated showing riparian shrub planting and lowland meadow establishment in the PEPCO ROW. The PEPCO ROW is excluded from the mitigation credit.
3	Impact Plates/ Tables	MDE		2/4/2022	The area of permanent wetland impacts in the impact tables (3,550 square feet) does not match the area of permanent wetland impacts shown on the Mitigation Map and Table 1 of the Phase II Report (3,436 square feet). Please revise impact tables or the Mitigation Map/Phase II Report as necessary.	4/1/2022	The impact numbers have been reconciled between the mitigation map and table 1 in the phase II plan and the impact tables.
4	Impact Plates/ Tables	MDE		2/4/2022	Revise Tables E-1 and E-4 to reclassify the open water feature (WC10) as a perennial waterway for MDE. In Table E-1, remove the open water impact row and add the square footage of impacts to the temporary perennial stream impact cell. In Table E-4, revise the classification of WC10 to perennial (channel type should remain as pond).	4/1/2022	Tables E-1 and E-4 have been corrected
5	Plans - LS Plans	DNR		2/4/2022	Please respond to the additional comment received from DNR on 1/17/2022: The Landscape plans (sheets LS-01 through LS-09), indicate that the livestakes planting areas on either side of the new stream are 15-20 feet wide with riparian planting behind it. This seems like a lot of space that isn't getting trees. Can trees be planted amongst the live stakes or be a little closer to the edge?	4/1/2022	The livestake planting areas are 8' on either side of the stream so that approximately 2 rows of live stakes could be planted at 3' on center in a triangular arrangement. This is typical spacing for livestakes along a stream bank and should provide a dense cover.

Project:		RFP-2 Cabin Branch				Design Responses: Will Comply, if no explanation needed.			
Review:		Phase I Plan				Provide clarification or explanation, when needed.			
						No Change Needed, with an explanation provided.			
The following comments must be addressed.									
Item	Sheet No. /Location	Reviewer	Comment Type	MDE Comment (6/5/2020)		Design Team Response (7/13/2020)		After coordinating with the Mitigation and Technical Assistance Section and the Corps during review of the Phase II Mitigation Plan, we have the following follow-up comments:	
				Date:		Date:		Date:	
1		MDE		6/5/2020	How will potential contaminants from the onsite Montgomery Village Golf Course be handled? Will additional soil testing be required due to prior golf course pesticide use?	7/13/2020	The golf course has not been in operation for approximately 5 years. We feel that any historic pesticide residue is no longer an issue.	3/30/2021	Applicant shall develop and submit for approval a soil sampling and testing protocol for excavated soils to determine appropriate handling requirements due to possible contamination from past management practices. Particular focus should be placed on materials proposed to be excavated from pond areas
2		MDE		6/5/2020	Update Table 6.2 in the Mitigation Plan to include the proposed Stream Riparian Buffer Enhancement, and the ratio of credit proposed. Is 15:1 credit proposed? Update totals accordingly in this table.	7/13/2020	The easement area is currently being finalized and will maintain minimum buffer widths. Once this is completed, Table 6.2 will be updated if additional buffer credits are generated.	3/30/2021	See follow-up Comment No. 6 below.
3		MDE		6/5/2020	Clarify what the Phase I Plan's reference to Priority I vs Priority II restoration is referring to.	7/13/2020	Priority I refers to raising of the stream channel so that the top of bank is completely connected to the historic floodplain. Priority II refers to the channel generally left at the current elevation and the floodplain is lowered to the stream top of bank.	3/30/2021	Noted.
4		MDE		6/5/2020	Provide an update on coordination with the landowner.	7/13/2020	Option contracts and appraisals have been completed and sent to landowners for review. We anticipate the signed option contract within 30 days.	3/30/2021	Noted. Please see the Phase II Mitigation Plan comment letter for additional comments.
5		MDE		6/5/2020	Wetland Restoration credit is proposed for the conversion of ponds within the historic golf course into wetlands. Please confirm that these areas were historic wetlands in order to be considered for 1:1 restoration credit.	7/13/2020	As discussed, the underlying soils are hydric and the floodplain would have historically contained forested wetlands. Additional details will be provided in the design report.	3/30/2021	Noted. Please note, the portion of POW-3 that was determined to be PEM during the site visit on March 9, 2021 should be considered enhancement at a 4:1 credit ratio.
6		MDE		6/5/2020	Please revise the Phase I Mitigation Design Plan to include a stream buffer. The minimum riparian buffer width that must be provided as part of the overall stream mitigation project is a 35-foot riparian buffer on each side, although this buffer may be variable width (i.e., 25 feet on one side and 45 on the other to account for stream meandering). No additional credit is given for this first 35-foot buffer on both sides, as it is considered an integral part of the stream mitigation work. For the area adjacent to the stream proposing wetland credit, the required 35-foot stream buffer will still be required, but can be outside of the wetland.	7/13/2020	A stream buffer will be part of the overall proposed mitigation. Plans will be updated to show the preserved riparian areas. As discussed, additional adjacent areas will be included within forest conservation and will further enhance the riparian area.	3/30/2021	The Mitigation Master Plan (sheet 17 of 51) of the 65% Mitigation Plans (Rev), Credit Summary table, shows that riparian buffer enhancement is proposed at a 15:1 credit ratio, for a total of 0.61 acres of mitigation credit; however it does not show the immediate 35-foot riparian buffer called out, that should be excluded from the riparian buffer credit since it is part of the stream restoration credit. Additionally, Page 6 of the Phase II Report shows that no credit is being proposed for riparian buffer enhancement, and the Stream Calculator results show no proposed riparian buffer. Please confirm what credit is being proposed and exclude the required 35-foot riparian buffer from the riparian buffer enhancement total, as applicable. Please ensure that riparian buffer enhancement credit are is not overlapping with any other proposed credit (e.g riparian buffer enhancement credit cannot over lap with wetland buffer enhancement credit).

Item	Sheet No. /Location	Reviewer	Comment Type	MDE Comment (6/5/2020)		Design Team Response (7/13/2020)		After coordinating with the Mitigation and Technical Assistance Section and the Corps during review of the Phase II Mitigation Plan, we have the following follow-up comments:	
				Date:		Date:		Date:	
7		MDE		6/5/2020	Please provide an update on the Pepco power line that crosses the project area, and how this will be handled regarding easements and construction. What is the proposed planting plan for the required 35-foot riparian buffer within the Pepco easement?	7/13/2020	An application to work on PEPCO property has been submitted. We will continue to work through the process and update the IRT accordingly.	3/30/2021	There are multiple utility lines (sewer and transmission) crossing the stream restoration project area where stream restoration credit is proposed, and potentially wetland buffer enhancement credit (Sheet 27). More details are required regarding the proposed language in these utility easements before the Department can determine if credit will be allowed within the utility easements. A legal agreement will be required to document what can be done within the easements (e.g. no spraying, no tree removal). Please provide any recorded right of way agreements for these parcels and provide coordination with the utility companies regarding the proposed work within their utility easements.
8		MDE		6/5/2020	Is the dam within the Pepco easement that was discussed during the December 18, 2019 site visit proposed to be removed?	7/13/2020	It may not be physically removed but restoration will occur in that area to alleviate detrimental affects.	3/30/2021	Noted.
9		MDE		6/5/2020	Will any existing wetland resources be impacted by this work? If so, please confirm that they will be replaced onsite.	7/13/2020	Any impacts will be mitigated onsite and deducted from the total wetland restoration totals.	3/30/2021	Noted. Please continue to keep MDE updated if design changes will result in permanent wetland impacts.
10		MDE		6/5/2020	The realignment is crossing WSSC sanitary sewer line and will require their authorization. Please provide an update on this coordination and how the sewer line and its easement impact the project. Are there any other utility crossings?	7/13/2020	Coordination with all utilities is ongoing and will provide updates to the IRT as it progresses.	3/30/2021	Noted. Please provide updates to the Department.
11		MDE		6/5/2020	Provide an update on who the conservation easement will be transferred to following construction (M-MNCPPC or SHA) and who will be responsible for monitoring.	7/13/2020	The easement will be transferred to SHA.	3/30/2021	Noted.
12		MDE		6/5/2020	Will the final roadway or mitigation designs result in increased risk of flooding on any adjacent properties during a 2-, 10- or 100- year event? If so, notification or permission from the adjacent property owners will likely be required.	7/13/2020	No impact to adjacent properties is anticipated from the mitigation project.	3/30/2021	Noted. This will need to be verified with the hydraulic model. Please see Comment No. 30 in the Phase II mitigation plan comment letter.
13		MDE		6/5/2020	Provide a schedule on the progress at each mitigation site, including if the wetland delineation has been completed, design milestones, and draft schedule for construction/completion of each mitigation site. The wetland delineation at each site will likely change the proposed credit totals and should be completed as soon as possible to ensure there is enough mitigation in each watershed and no-net loss is met. Impact plates will be required for each mitigation site.	7/13/2020	A wetland delineation was completed as part of the owners development process. The RFP-2 plans reflect that information. Design is progressing and the Phase II Mitigation Plan is slated for submission to the IRT by September 10, 2020. The construction schedules for the mitigation sites have not been finalized, however, it is anticipated that compensatory mitigation will be required within the same watershed as the impacts, and construction of mitigation sites will occur within the impacted watersheds prior to or concurrent to the project impacts occurring. The Developer will be required to adhere to permit conditions related to mitigation and construction schedule requirements. The Cabin Branch site is located in the Middle Potomac-Catoctin basin (02070008) watershed. Phase 1 of the P3 project generally falls in the Middle Potomac-Catoctin basin (02070008); therefore, construction of the Cabin Branch site may occur during the first phase of the P3 project.	3/30/2021	Noted. Please keep us updated when it is determined if this site will remain in the Phase I JPA. Please note, credit ratios are subject to change if this site is used for a future MLS phase (i.e. the system/method that is in place for determining required mitigation/mitigation credit at the time of the impact project JPA submittal will be used).
14		MDE		6/5/2020	If any existing wetlands are permanently impacted by any of the stream restoration/wetland mitigation projects, those wetland impacts will be required to be replaced in-kind onsite at one of the mitigation sites within the same watershed. If these wetland impacts cannot be replaced, additional public notice may be required.	7/13/2020	Any impacts will be mitigated onsite and deducted from the total wetland restoration totals.	3/30/2021	Noted. Please continue to keep MDE updated if design changes will result in permanent wetland impacts.

Item	Sheet No. /Location	Reviewer	Comment Type	MDE Comment (6/5/2020)		Design Team Response (7/13/2020)		After coordinating with the Mitigation and Technical Assistance Section and the Corps during review of the Phase II Mitigation Plan, we have the following follow-up comments:	
				Date:		Date:		Date:	
15		MDE		6/5/2020	The Corps released the Stream Function Calculator for use on mitigation projects, which will be required for this project. Please update impacts and proposed mitigation accordingly.	7/13/2020	A functional assessment will be included with the formal Phase II Mitigation Plan submission.	3/30/2021	Noted. Please note that credit is subject to change if this site is used for a future MLS phase (i.e. the system/method that is in place for determining required mitigation/mitigation credit at the time of the impact project JPA submittal will be used).
16		MDE		6/5/2020	Please note, discussions with the Mitigation and Technical Assistance Section are ongoing regarding site design and constraints, wetland and stream buffers, and credit ratio determinations.	7/13/2020	Thank you for the update.	3/30/2021	N/A
17		MDE		6/5/2020	Please note, wetland monitoring will be required for ten years with reports at years 1, 3, 5, 7, and 10. Stream restoration monitoring will be required for seven years, with reports at years 1, 3, 5, and 7. However, MDE has the right to extend monitoring if the performance standards are not met.	7/13/2020	Will Comply	3/30/2021	Recent guidance from the Mitigation and Technical Assistance Section and the Corps determined that MLS Mitigation Projects will require 10 years of monitoring for streams and wetlands. Please update Section 1.6 of the report to indicate both wetland and stream monitoring will be required for 10 years (with reports at years 1,3,5,7,10). Please note, starting at the end of Year 5 of monitoring, if the mitigation site meets all final year performance standards for at least two consecutive monitoring years, the Permittee may request termination of the active monitoring period.
18		MDE		6/5/2020	Please ensure the following comments are addressed in the Phase II Mitigation Plan, some of which are reminders from the pre-application comments. Additionally, please incorporate all elements of the Phase II Wetland Mitigation Plan – Required Information Checklist (Attachment I) in the Phase II Mitigation Plan package. 1. Ultimate credit ratios for fish passage as determined by the Fish Passage Work Group. 2. Clarification/justification for wetland enhancement credit ratios. 3. Additional wetland mitigation within the Patuxent watershed is needed. Please continue to locate potential mitigation sites and report on progress. 4. Evaluation/quantification of riparian buffer impacts at stream restoration sites. 5. Additional information regarding long-term management (e.g., hydrology, herbivory, invasive species control) maintenance, and adaptive management specific to each mitigation site. 6. Specify areas (including riparian buffers) that will be protected from development and other significant alteration, including timber removal. This is a particular concern on RFP-1, which is planned for extensive further development, but should be made clear for all sites. 7. Water budgets and monitoring data for each wetland mitigation site. 8. H&H Analyses for each stream restoration site.	7/13/2020	Will Comply. All comments will be addressed in the Phase II Mitigation Plan.	3/30/2021	Please provide a discussion in the report evaluating/quantifying riparian buffer impacts from the project and the functional uplift provided by the mitigation project within the riparian buffer. Will any areas with significant tree cover be protected from grading and/or timber removal? Please see the Phase II Mitigation comment letter for additional comments.

Comments							
Comment No.	Location	MDE Comment (Sent 3/31/2021)	Design Team Response (Received 9/21/21)	Additional MDE Comments (10/25/2021)	Design Team Response	Additional MDE Comments (2/4/2022)	Design Team Response (3/10/2022)
1	General	1. Please address the follow-up comments provided in the attached point-by-point comment errata from the original comments for RFP-2 that were provided on June 5, 2020 (see attached).	ok	Please provide the point-by-point comment errata for our review.	Comments have been addressed below.	Follow up comments were provided on 3/31/2021 in the comment errata named "Agency Review- Phase 1 Comments RFP-2_RES." We have not received responses to these additional/follow-up comments. These comments/responses are not included below.	Responses have been updated and included with this correspondence. See "Phase I Plan" Tab.
2	General	2. Please note, credit ratios are subject to change if this site is used for a future MLS phase (i.e., the system that is in place for determining required mitigation/mitigation credit at the time of the impact project JPA submittal will be used).	ok	Ok.			
3	General	3. Provide more information about HGS, LLC. Is this company synonymous with RES? If not, please provide a signed agreement with HGS, LLC regarding the responsibilities proposed in the Mitigation Plan.	HCS, LLC is a RES Company	Addressed.			
4	General	4. Provide a centralized document that presents the impacts for the entire Managed Lanes Study (MLS) project, including the impacts at each mitigation site. Also, could a table be provided showing the above information and any excess that is proposed for advance mitigation as a living document that can be updated with the submittal of each Phase II Mitigation Plan? This will be used to confirm that there is no net loss and that wetlands are being replaced appropriately (based on cover type, watershed, stream use, etc). Specifically discuss the impacts from MLS in this watershed and the lost functions and values from those impacts.	MDOT SHA is conducting this work.	Noted. We look forward to reviewing this document when completed by SHA.			
5	Mit Plan Report	5. Update the List of Appendices to include Appendix E.	The Mitigation Report has been updated appropriately.	Addressed.			
6	Mit Plan Report	6. Section 1.0 Project Objectives, page 3, states that 7,180 linear feet of stream will be restored, but Table 1 (page 6) and the Mitigation Master Plan show 7,173 linear feet of stream restoration, plus an additional 810 linear feet of restoration on Pepco Property. Confirm which is accurate and revise.	Numbers have been corrected.	This same section (Section 1.0 Project Objectives) and Section 1.4 reference 11.57 acres of non-tidal wetland and riparian buffer enhancement. This does not seem to match the total of wetland/wetland buffer/riparian buffer enhancement listed in the Credit Summary Table in the Mitigation Master Plan (total 11.73 acres). Please revise or clarify as necessary.	Credit numbers have been updated accordingly.	Addressed.	
7	Mit Plan Report	7. In Section 1.0 Project Objectives, please include the State 8-digit watershed in the report in addition to the Federal 8-digit HUC.	Done	Addressed.			
8	Mit Plan Report	8. Update Section 1.0 Project Objectives to elaborate on the specific goals of the wetland and stream designs. Include discussion regarding the proposed functions and values and how they will replace lost functions and values from the MLS project. Ensure that the proposed performance standards are based on the goals of the mitigation site.	Updated	Ok.			
9	Mit Plan Report	9. Please provide a discussion in the report evaluating/quantifying riparian buffer impacts from the project and the functional uplift provided by the mitigation project within the riparian buffer. Will any areas with significant tree cover be protected from grading and/or timber removal?	The project site was historically a golf course so there is very little existing riparian buffer along the stream. There will be no significant impacts to existing riparian areas as a result of this work. After restoration, the adjacent riparian areas will be planted in accordance with the details as defined by the planting plan.	Not addressed. Please provide additional information in the report regarding measures to protect areas with existing riparian tree cover. The plans do not show trees either proposed for removal or protection. Please note on the plans which trees will be retained and protected during construction.	All specimen trees (24" DBH or higher) are now shown with an X if marked for removal or orange safety fence if they are being retained. This is shown on the Existing Conditions sheets.	Addressed.	
10	Mit Plan Report	10. Update Section 1.5 Mitigation Work Plan (page 6) to break down/summarize the work proposed in each stream restoration, wetland creation, and wetland buffer and riparian buffer enhancement area.	Updated	Not fully addressed. Please provide a brief description of the work proposed for each mitigation credit type (e.g., wetland creation, wetland enhancement, riparian buffer enhancement and stream restoration), particularly in terms of the lift in ecological function that will be achieved in each mitigation credit area.	Additional information has been added to Section 1.5. There is also detailed proposed restoration summaries included in Appendix A: RFP-2 Cabin Branch Stream and Wetland Restoration Phase II Mitigation Design Report in the RFP-2 FMP.	Please add a brief discussion of the proposed wetland enhancement of existing wetland PEM-1 in the mitigation plan report. The entire wetland is 0.06 acres but only half (0.03) acres is proposed for enhancement. Why isn't the entire PEM wetland being incorporated into the proposed forested wetland cell #2 and planted with wetland trees?	The PEM wetland has now been incorporated into the adjacent proposed PFO and the mitigation report has been updated.
11	Mit Plan Report	11. Under Section 1.6 Maintenance Plan, page 6, update the first paragraph to indicate that both wetland and stream monitoring will be required for 10 years (with reports at years 1,3,5,7,10). Recent guidance from the Corps and MDE Mitigation and Technical Assistance Section determined that MLS mitigation projects will require 10 years of monitoring for streams and wetlands. Please note, starting at the end of Year 5 of monitoring, if the mitigation site meets all final year performance standards for at least two consecutive monitoring years, the Permittee may request termination of the active monitoring period.	Done	Addressed.			
12	Mit Plan Report	12. Section 1.6 Maintenance Plan, page 7, says "HGS, LLC will adhere to the following Invasive Species Management Plan...as outlined below:" but there is no Invasive Species Management Plan written below this. Please update to include the proposed invasive species management plan for this site.	Has been added to the monitoring plan.	Addressed. Please update the text in the last paragraph of this section to "The presence of invasive species as defined in Section 1(A)(3) of Performance Standards..."	Done.	Addressed.	
13	Mit Plan Report	13. Update the Stream Performance Standards in Section 1.7 and the Monitoring Plan (Page 50 of the 65% Plans) to include that the stream be re-evaluated, using the Maryland Stream Mitigation Framework (MSMF) stream calculator, at least two times during the monitoring period (typically at least midway and near the end). Credits will then be revised accordingly.	Done	Recent guidance from the Corps and the Mitigation and Technical Assistance Section is that the stream should be re-evaluated using the MSMF each monitoring year. Please update the report and the Monitoring Plan. Additionally, Section 1.7 has a reference to "Appendix XX," please update the reference.	Done.	Stream monitoring protocols and performance standards to be used across all MLS stream mitigation sites will be sent to the P3 team separately. The USACE requests that stream reaches are reevaluated with the MSMF Stream Calculator during monitoring years 3, 5, 7, and 10. Notes can be made in the calculation runs on earlier years (3, 5, 7) where further improvements are expected to occur and with any remedial actions needed to maintain the project and vegetation. Please revise Section 1.7, last sentence, and the Monitoring Plan (sheet 50 of 51) with this stream monitoring requirement.	Monitoring Plan has been updated with this stream monitoring requirement.

Comment Addressed
Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
Comment no longer applicable

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14	Mit Plan Report	14. In Table 2: Mitigation Plan Performance Standards (page 7), the stream stability standards say "...will not vary significantly from as-built profile/cross section geometry." Define significantly.	Performance standards have been updated in the monitoring plan.	Addressed.			
15	Mit Plan Report	15. Section 1.8 Monitoring Requirements references the old version of the Ecological Performance Standards and Monitoring Protocol for Permittee-Responsible Nontidal Wetland Mitigation Sites in Maryland. Please update to reference the October 30, 2020 version. Additionally, please update this section to reference the Monitoring Plan Sheets (Sheets 50-51 of the 65% Plans).	Done	Addressed.			
16	Mit Plan Report	16. Section 1.11 Financial Assurance, page 9, states that HGS, LLC will submit a spreadsheet-based estimate outlining proposed financial assurance cost components with the financial assurances under separate cover for review and approval by the USACE and MDE. What is the schedule for this, including financial assurances for Long Term Management? Submittal and approval of this spreadsheet is required prior to approval of the Phase II Mitigation Plan.	Financial requirements are currently being calculated and will be submitted to the IRT upon completion.	Please submit to MDE and the Corps reviewers for this project when ready.	Noted and will provide once complete.	Awaiting financial assurance cost estimate.	Draft financial assurances are included with this comment response.
17	Mit Plan Report	17. In Section 1.12 Advance Mitigation, please provide Attachments A through F referenced in this section. Additionally, please update the last paragraph to provide report-/site-specific information for the placeholders.	SHA is will be providing this information.	Provide more details. This site will not be able to be used for Advance Mitigation if a complete Advance Mitigation Plan is not provided for review and approved prior to authorization of the MLS project.	SHA will provide this information.	These attachments are not provided. How do these attachments fit in with the organization of the Phase II Mitigation Plan Report? The Table of Contents also lists appendices. Recommend consolidating the list of attachments/appendices. The paragraph for Future Projects with Potential Mitigation Requirements in Section 1.12 references "Attachment X" - please change to Attachment E.	There will be no potential future mitigation related to this project and Section 1.12 has been updated accordingly.
18	Mit Plan Report	18. The mitigation project shall be constructed under the supervision of an approved qualified restoration specialist. This will be a requirement for each mitigation site.	See section 1.5 Mitigation Work Plan for a statement confirming this.	Addressed.			
19	Appendix B	19. Address the following comments regarding site protection:					
	Appendix B	a. Please update the Permanent Easement Option Contract to include language to allow permanent authority to the United States Army Corps of Engineers and the Maryland Department of the Environment and agents to enter upon the Mitigation Area for the purpose of inspecting the Mitigation Area.	SHA is coordinating these changes to the template easement with the real estate division based on comments from the IRT.	Noted.			
	Appendix B	b. Please provide the final Permanent Easement Option Contract when available.		Please provide the final Permanent Easement Option Contract when available.	Noted and will provide once available.	Noted.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
19	Appendix B	c. What is the status of the Grant of Mitigation Easement? Please provide a draft if available.	Draft is included as appendix in the design report.	Please provide the Conservation Easement when available and include language to allow permanent authority to the United States Army Corps of Engineers and the Maryland Department of the Environment and agents to enter upon the Mitigation Area for the purpose of inspecting the Mitigation Area.	Language will be amended and CE will be provided for review.	Noted.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
	Appendix B	d. Are temporary easements for access and construction in place?	Yes, there are contracts in place between RES and the landowner that allows for the work to be completed.	Noted, please provide the final Permanent Easement Option Contract when available.	Noted and will provide once available.	Noted.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
20	General	20. It appears that the work will partially occur on M-NCPPC property. Provide an update on coordination.	This work is per their request, coordination meetings between MNCPPC, RES & the landowner have occurred twice to address this work.	Has anything been formalized in writing from MNCPPC?	MNCPPC has agreed verbally to the proposed work on their property. During the County level permitting process a MNCPPC permit will be obtained for this work.	Please provide a copy of the M-NCPPC permit when available. Will the portions of this mitigation project that occur on M-NCPPC property be incorporated into the MOU between MDOT SHA and MOU for monitoring and long-term management?	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
21		21. There are multiple utility lines (sewer and transmission) crossing the stream restoration project area where stream restoration credit is proposed, and potentially wetland buffer enhancement credit (Sheet 27). More details are required regarding the proposed language in these utility easements before the Department can determine if credit will be allowed within the utility easements. A legal agreement will be required to document what can be done within the easements (e.g., no spraying, no tree removal). Please provide any recorded right of way agreements for these parcels and provide coordination with the utility companies regarding the proposed work within their utility easements.	As shown on Sheet 17 of 51 although the restoration is continuous across/through those utility crossings, we are not claiming restoration credit (gas, water, & Sewer). In the section underneath of the overhead transmission lines, this area is separated as we realize this area would require additional documentation/agreements etc.	Is there a recorded right of way agreement for section beneath the overhead transmission lines (PEPCO easement)?	RES is currently in discussions with PEPCO to possibly transfer ownership to landowner that the rest of the project is being completed on. The area in question would still maintain a PEPCO easement but this option would give an easier path forward for obtaining a ROW agreement in these areas. RES will update once more information has been obtained.	Please provide updates on potential ownership transfer/ROW agreements for monitoring, maintenance, and long-term management of the stream restoration areas within the PEPCO easement.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
22	general	22. During the site visit on July 14, 2020, USFWS noted that there were tree plantings on site and asked if there is an easement for the plantings. Please provide an update on this. If there is an existing conservation easement, it could affect credit allowed.	There is now overlap between the Forest Conservation Easements and the proposed mitigation areas.	Please confirm that the response intended to say there is 'no' overlap. Can the boundaries of the Forest Conservation Easement be added to plans?	There is no overlap between the FCE area and proposed mitigation. The FCE and project limits are shown on Sheet 17 of the Phase II FMP.	Addressed.	
23		23. Coordination with the Corps is ongoing regarding mitigation crediting. Please address the following mitigation crediting comments in the report, tables, and mitigation mapping accordingly:					
	Mit Plan Report & Plan	a. The Mitigation Master Plan (Sheet 17 of 51) of the 65% Mitigation Plans (Rev), Credit Summary table, shows that riparian buffer enhancement is proposed at a 15:1 credit ratio, for a total of 0.61 acres of mitigation credit; however, it does not show the immediate 35-foot riparian buffer called out, that should be excluded from the riparian buffer credit since it is part of the stream restoration credit. Additionally, page 6 of the Phase II Report shows that no credit is being proposed for riparian buffer enhancement, and the Stream Calculator results show no proposed riparian buffer. Please confirm what credit is being proposed and exclude the required 35-foot riparian buffer from the riparian buffer enhancement credit total, as applicable. Please ensure that riparian buffer enhancement credit area is not overlapping with any other proposed credit (e.g., riparian buffer enhancement credit cannot overlap with wetland buffer enhancement credit).	The 35-foot riparian buffer has been excluded from the mitigation credits and relevant areas have been updated.	Addressed.			

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	Mit Plan Report	b. If stream credit is proposed for riparian buffer, please ensure there are performance standards proposed for the riparian buffer credit areas.	Performance standards are included in the mitigation monitoring plan.	Addressed.			
	Mit Plan Report	c. Stream impacts/required mitigation for the MLS project should be updated based on functions lost using the Maryland Stream Mitigation Framework.	MDOT SHA is in the process of calculating the impacts from the MLS using the MSMF tool. Total impacts from the proposed roadway project will be submitted to the agencies with the MLS JPA separate from the individual mitigation Phase II plans.	Noted.			
24	General	24. Provide a draft Long-Term Management Plan for review. Additionally, please provide signed documentation from SHA committing to Long Term Management of the site.	SHA will provide the draft long-term management plan.	Section 1.9 Long-term Management Plan states that "The long-term management plan will be prepared by HGS, LLC and implemented by MDOT SHA." Please provide the long-term management plan when available.	Noted and will be provided when available.	Awaiting Long-Term Management Plan.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
32	General	25. Confirm that stormwater management credit and/or TMDL credit are not also proposed for this project.	No, no TMDL or Stormwater management credit is associated with the work shown in the plan.	Addressed.			
26	General	26. Please update the GIS polygon layer to include the boundaries of all the areas getting mitigation credit. Is the PR_MV_ESMT layer the mitigation easement boundary?	Shapefiles have been updated.	Please provide the shapefiles for the mitigation easement boundary and proposed mitigation credit areas.	Included in the comment response folder.	The shapefiles provided with the most recent submittal do not include shapefiles for the mitigation area boundary and areas receiving mitigation credit. Please provide the mitigation shapefiles.	Included as part of this comment response
27	General	27. Has an NOI permit been applied for through MDE Compliance for over an acre of disturbance?	No, that is part of Phase II of the Contract	Please clarify what is meant by Phase II of the Contract.	County level permitting, construction, and construction support services will occur under a separate contract between RES and SHA. Work related to those items is not being completed at this time.	Noted. Please copy the Nontidal Wetlands Division when the NOI permit is submitted through MDE Compliance.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
28	Delineation/Impacts	28. Based on the site visit on March 9, 2021, update the delineation to show the eastern portion of POW-3 as PEM, and update the report, Master Mitigation Plan, Impact Plates, Plans, and crediting accordingly. The PEM portion of the wetland can receive 4:1 credit for wetland enhancement.	Done	Please update Impact Plate No.1 by removing the open water impact hatching and replace with wetland impact hatching. This impact area should be labeled as PEM. The Impacts Table should be updated accordingly with PEM impacts. The Mitigation Master Plan should be updated to show this wetland with wetland enhancement credit and the wetland buffer for PFO wetland #2 should be adjusted accordingly (see new comment #2 below).	Done.	The wetland impacts were added; however, please remove the open water impact hatching from the PEM wetland and label the PEM wetland name and cover type with a call-out.	Updated
	Delineation/Impacts	29. Address the following comments regarding the impact Plates:					
	Delineation/Impacts	a. Please note, the impact plates will need to be included in the JPA submittal.	RES submitted the impacts plates to SHA.	Please provide revised impact plates as necessary.	Updated impact plates are included with these comment responses.	Addressed. Please see additional comments on impact plates in new comments below and above in Comment 28.	Updated
	Delineation/Impacts	b. For the Department, the impacts associated with stream restoration, wetland creation, and temporary construction impacts shall be considered temporary.	Done	The Impact Plates still show impacts associated with the stream restoration/wetland creation as permanent. Impacts associated with the stream restoration/wetland creation are temporary for MDE. Please provide an impact table separating Corps and MDE regulated impacts.	Done.	Addressed.	
	Delineation/Impacts	c. Please include an impact summary table with the impact plates.	Done	Please remove proposed activity from the Impacts Table; the table should only show impacts to existing resources. Likewise, please remove PW-1 through PW-5 from the Impacts Table and recategorize as existing resource impacts as applicable. Additionally, total/summarize the impacts in each resource category including streams, POW wetland, wetland buffers and 100-year floodplain.	Done.	Partially addressed. Please include total impacts for each resource category. A separate table with total impacts for PEM, POW, 25-foot wetland buffer, and perennial streams is recommended.	Updated
				Please show the FEMA 100-year floodplain on the Impact Plates and include floodplain impacts on the Impacts Table.	Done.	Addressed.	
				Please label all existing resources on the Impact Plates, even if not impacted.	Done.	Not addressed- label all POW areas and the PEM wetland on Impact Plate 1. Add the 25-foot wetland buffer line around the PEM wetland.	Updated
				Existing Resource Class for the wetland buffer should be "Wetland Buffer" instead of "PFO".	Done.	Not addressed.	
29	Delineation/Impacts	d. Impact Plate 2/3 shows a section of W-6 as 'proposed future impacts by others' within the LOD. If this stream section will not be impacted by this restoration project, please remove this section of the stream from the LOD. Additionally, provide details regarding the future proposed work in this location (e.g., why it is not part of this restoration and how the proposed work will affect the mitigation site, specifically hydraulics and passage of aquatic life as this is a triple 60-inch culvert proposed in this location?).	Done	Please update the impact plate and plans to remove this area from the LOD if it is not part of the mitigation project. Provide additional information requested in the original comment regarding details of the future proposed work as it relates to the mitigation site in the report (e.g., tie-in to stream restoration, hydraulics, fish passage).		We have concerns regarding the hydraulic impact of the proposed stream crossing (currently shown as a pipe) on the stability of the stream restoration design. For instance, downstream protection from scour may be necessary. Please address the following: a. As the pipe installation is a new crossing that has not been permitted, the Applicant will be required to demonstrate the purpose and need of the crossing, and why a spanning structure is not proposed. We will refer to the crossing as "proposed stream crossing" since it has not been demonstrated that a pipe would be acceptable at this time. b. Provide a schedule for the proposed stream crossing and how this would fit in with construction of the mitigation site. c. Provide updates on coordination between the stream designer and proposed stream crossing designer to MDE and USACE as design progresses. d. Address in the report(s) how potential instability caused by this crossing will be addressed during monitoring or long-term management. e. Please also update the plan sheets to remove the area related to the proposed stream crossing installation from the LOD.	The proposed pipe crossing is part of the planned development on the same property containing this mitigation project. RES is not associated with this work and is unable to comment on the permitting status of this area. RES has coordinated with the stream crossing engineer to ensure the channel profiles match upstream and downstream and that the culvert is properly backwatered to allow for fish passage. A stilling basin will be added as part of the final design process and the LOD has been removed from this area.

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	Delineation/Impacts	e. The impact plates show several streams called out as 'existing stream routed through storm sewer' that are being realigned as part of the restoration, but impacts are not shown. Does perennial or intermittent flow inlet into the pipes? If so, please account for the temporary impacts to these systems to daylight/realign as part of the restoration.	Done	Addressed			
	Delineation/Impacts	f. Will stream flow within W-3/W-4 be diverted beneath Montgomery Village Avenue during construction? If so, please update the impact plate to show temporary impacts to the stream.	We are not pumping around the culvert under Montgomery Village Avenue. Thus, the area under Montgomery village avenue will not be impacted by the work.	OK			
	H&H	30. Address the following comments regarding the Hydrology and Hydraulics (H&H) Analysis provided by our waterway reviewer, Chris Brooks:					
30	H&H	a. There are discrepancies between the drainage area (DA) maps and computations. For example, Plan Sheet 3 DA map notes approximately 2,525 acres drainage area to R1 (main channel) but computations indicate 2,252 (transcription error?). Additionally, computations are annotated as DA1, DA2, etc. but the DA map labels are noted by tributary name. DA maps and computations should be annotated consistently, and matching values should be used for clarity.	The 2,525 AC DA called out on sheet 3 is the DA to the Bottom of Reach 1, this is a different drainage area then DA1 which has a drainage area of 2,252 Ac. noted in the Hydrology computations. An important distinction is that the Hydrology computations are what were used for the development of 2/10/100 yr flows as will be needed for MDE submission & floodplain analysis. These divides/breaks are different from those used in the stream restoration design hence the differentiation between DA maps and labeling.	Noted. Please provide drainage area maps in the hydrology report that correspond with the hydrologic calculations used specifically for the HECRAS analysis for MDE approval. Annotations on the maps for this purpose should match the DAs as identified in said hydrologic calculations, and correspondence between locations and Q values used in the HECRAS should be made clear to the reviewer.	Sheets 3A, 3B and 3C included in the plans correspond with the hydrologic analysis calculations in the design report. They have been added to Appendix C of the Design Report.	Addressed.	
30	H&H	b. For hydrology, DA1 Time of Concentration computations use a single channel section from headwaters to 3.5 miles downstream for channel flow calculations and no supporting information is provided. This variable should be examined more clearly with multiple channel sections where notable changes in cross section and/or channel grade exist, as it represents a key variable in the overall watershed hydrology.	Noted	Previous comment still outstanding.	More detailed and final H&H will be completed as the design is refined and as part of the Montgomery County permitting process.	Previous comment outstanding.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
30	H&H	c. The H&H Report contains partial HECRAS output data, but the summary tables do not have any data associated with velocity or shear. There is also no floodplain map showing the WSEL relative to property lines or locations of the sections for the model. Please provide this missing information. Review of the H&H will continue once this information is provided for our use.	The comparison of 2/10 shear & velocity & the final floodplain study / WSEL limits map will come with phase 2 of the contract. The HEC-RAS output that was provided was part of a preliminary analysis to show that we are close to achieving no rise. The final design/completion of the plans would aim to remove all rises in WSEL	Noted; review of hydraulic variables will continue as design is refined.	More detailed and final H&H will be completed as the design is refined and as part of the Montgomery County permitting process.	Pending final data noted. Comment still outstanding	Preliminary 2/10/100 year shear & velocity comparisons are included in the Appendix H. The neighboring development has an approved floodplain study FPDS No. 281949, this study will serve as the pre-development study for the restoration work.
	Design Plans / Report	31. Address the following regarding the Design Plans and Report:					
	Design Plans / Report	a. The report does not show existing versus proposed for the 2- and 10-year shear or the 100-year WSEL. Provide a list of existing versus proposed hydraulic conditions for those parameters. Show what stations are closest together and a plan view overlay of the 100-year WSEL if section to section cannot match.	The comparison of 2/10 shear & velocity & the final floodplain study / WSEL limits map will come with phase 2 of the contract. The HEC-RAS output that was provided was part of a preliminary analysis to show that we are close to achieving no rise. The final design/completion of the plans would aim to remove all rises in WSEL	The design cannot be approved until this information is provided. Please also clarify what is meant by Phase 2 of the contract.	A table showing 2/10 velocity and shear stress comparisons has been added to Appendix H in the design report. Final WSEL, velocity, and shear stress values will be provided once completed as part of the Montgomery County level permitting process.	Pending final data noted. Tables currently shown in Appendix H include either 2 or 10 year data for a given section - both values should be included for each section.	Preliminary 2/10/100 year shear & velocity comparisons are included in the Appendix H. The neighboring development has an approved floodplain study FPDS No. 281949, this study will serve as the pre-development study for the restoration work.
	Design Plans / Report	b. The confluence geometry of Trib1-1 to Trib 1 and Trib 1 to Reach 1 is approximately a 90-degree angle. With relocations, the confluence angles should typically be closer to 45 degrees. Please either revise this or provide justification for the current design.	Noted. This area is being examined and any changes to geometry will be included in the final construction plans.	Please update in the next submittal.	Noted and updates will be made available as the design is finalized.	Please update in the next submittal.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
	Design Plans / Report	c. Update EC-1 (Sheet 5 of 51) to show the 25-foot wetland buffer around the PFO wetland.	These will be added to the plan.	Please update in the next submittal.	Noted and updates will be made available as the design is finalized.	Previously addressed.	
31	Design Plans / Report	d. The plans indicate that the clay bottoms of the ponds will be ripped to restore free groundwater movement. Will any pond bottoms remain intact? How will you ensure hydrology will remain in the bottoms that are ripped?	No pond bottoms will remain intact. Wetland hydrologic input will be from four sources: an observed high groundwater table, precipitation runoff, direct stream flow, and streambank flooding. The wetlands were designed to only rely on a high groundwater table and precipitation for adequate wetland hydrology, and any flooding and streamflow will be a supplemental input. The elevation of the pond bottoms have been designed to correspond with the observed groundwater table. Additionally, the wetland cells themselves are nearly flat and have low-profile earthen berms along the downslope edges. Berms are generally 0.4' taller than the wetland floor. This will prolong surface water inundation as it infiltrates downward while allowing for any excess flooding to slowly discharge over a weir/outlet.	Addressed.			
	Design Plans / Report	e. Is any fencing proposed to protect the tree plantings from wildlife?	No, the planting density has been adjusted to account for die-off and grazing, and still meet success criteria.	Addressed.			
	Design Plans / Report	f. Confirm that any areas disturbed by construction (e.g. within the LOD but not requesting credit) will be restored.	Per the planting plan, all areas within the LOD will be replanted.	Addressed.			
	Planting	g. Revise the following on the Landscape Plans:					
	Planting	i. Riparian seed mix is shown within the wetland creation areas on the Landscape Plans. However, this seed mix contains a FACU species. FACU species should not be planted within wetland creation areas. Please update the plans to remove Partridge Pea (Chamaecrista fasciculata) from the planting schedule for Riparian Seed Mix.	All planting schedules have been updated to accommodate appropriate hydrologic regime, transplant success rates, and nursery availability.	Addressed.			
	Planting	ii. Update the Landscape Plans to include planting dates per planting zone.	Planting dates are indicated in the "Planting Notes":	Addressed.			
	E&S	h. Revise the following on the Erosion and Sediment Control (E&S) Plans:					
	E&S	i. Consider revising the line type for the existing 100-year floodplain to be more visible and verify that it is shown throughout.	This has been adjusted.	Addressed.			

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31	E&S	ii. Please add a representative from MDE nontidal to the notification requirement for the pre-construction meeting.	Done	Addressed.			
	E&S	iii. The E&S plans call for using the dewatered ponds (proposed wetland areas) as temporary stockpile areas. Many are within the 100-year floodplain. MDE typically conditions permits to not allow stockpiling within the 100-year floodplain. Please explain why this is necessary with so much area outside the 100-year floodplain available to use for stockpiling or remove this notation. Material stockpiled in the 100-year floodplain may require a flood action plan as a permit condition to prevent release of sediment and other contaminants during high water events.	This is necessary / recommended since the final use of the soil will be in these ponds for the creation of the wetlands. It doesn't make logistical sense to excavate the soil from along the stream, move it to a location outside the 100 yr floodplain to just need to bring it back to the wetlands. The reality is that although from an ESC perspective they are called stockpiles the construction sequencing would be such that the soil would be used for wetland construction as it was generated elsewhere on the site.	Please provide a Floodplain Action Plan. On Sheet ESC-2, consider adding silt fencing for additional protection along the proposed wetland area.	Additional silt fence has been added to the ESC plan in this area.	If temporary staging and/or stockpiling of erodible materials within the FEMA mapped 100-year floodplain cannot be avoided, please note, special conditions regarding flood action plan requirements may be included in the Permit. Silt fencing is shown upgradient of the proposed grading around the wetland area- please add a sediment and erosion control between the proposed stockpiling area and the existing PEM wetland.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
	E&S	iv. In several areas (for example, in two locations along the proposed wetland on Sheet 5 of 18) there is dark hatching that is not shown on the legend. What is proposed in these areas?	Soil Stabilization Matting. The overflow areas between the wetland cells and the stream are going to be lined with coir matting.	Addressed. Hatching has been added to the legend.			
	E&S	v. Areas currently proposed for EC-2 matting appear to be weir locations. Please provide a typical weir detail. Please clarify how the current proposed elevations will function as an outlet.	They are generally weirs however, are not intended to be highly engineered structural features requiring maintenance. Their elevations have been chosen in such a way as to prevent excess flooding in the wetland cells and to allow higher flows to have a point of re-entry to the stream system.	Noted.			
	E&S	vi. Review plans to assure that perimeter sediment controls are placed between all disturbed areas and receiving waters during all phases of construction unless specific notes indicate that disturbed area is to be stabilized daily.	Noted and will be addressed with final ESC plans.	Ok			
	E&S	vii. General – Many PVC pipes outfall to the existing and proposed channel – if they are to be removed – please indicate how (are they to be capped, cut back, etc.) and label as such.	Final procedures for proper identification and removal of drainage pipes will be addressed on the final construction plans.	Ok			
	E&S	viii. Sheet 15 of 18 (Notes) of the 65% E&S Plans states under Project Description that the purpose of this project is to create a mitigation bank. Please revise to say the purpose is to create a permittee responsible mitigation site.	This has been changed.	Confirmed.			
	E&S	ix. Sheet 15 of 18 (Notes) – Temporary Access Bridges should be installed over all streams not just flowing streams to reduce release of sediment during rain events. Alternately, wording could be added to address how crossings will be stabilized to prevent release of sediment.	The detail from the manual for a TAB has been added which details the use of curbs/geotech material etc to prevent any sediment entry into the waterway.	Confirmed.			
	E&S	x. Sheet 15 of 18 (Notes) – Construction Sequence – 10 b. indicates to “disconnect upstream stormwater inflows.” Additional detail is needed to address how these flows will be diverted to prevent release of sediment to receiving waters during precipitation events. How will diversions be sized and sloped?	Flow would be running through constructed tributary that will be replacing the piped flow.	Noted.			
	E&S	xi. Please add MDE’s Best Management Practices for Working in Nontidal Wetlands, Wetland Buffers, Waterways, and 100-Year Floodplains to the details section of the plan set.	It was previously added to the main plan set, sheet 2 of 51, but has now been added to the ESC notes sheet as well.	Confirmed.			
	Design Plans	xii. Sheet 19 of 51 – Plan and Profile – How will the existing RCP outfall near station 11+75 be addressed ?	Ongoing coordination with land development engineer, all outfalls will be tied into proposed stream in final plans.	Please address with final plan submittal. Outfall computations will be required.	Noted and updates will be made available as the design is finalized.	Previous comment outstanding.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
31	Design Plans	xiii. Sheet 20 of 51 – Plan and Profile – How will the existing 18” RCP outfall near station 15+75 be addressed?	Ongoing coordination with land development engineer, all outfalls will be tied into proposed stream in final plans.	Please address with final plan submittal. Outfall computations will be required.	Noted and updates will be made available as the design is finalized.	Previous comment outstanding.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
	Design Plans	xiv. Sheet 23 of 51 – Plan and Profile – how will the existing 33” CMP pipe near station 31+75 be addressed?	Ongoing coordination with land development engineer, all outfalls will be tied into proposed stream in final plans.	Please address with final plan submittal. Outfall computations will be required.	Noted and updates will be made available as the design is finalized.	Previous comment outstanding.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
	Design Plans	xv. Sheet 25 of 51 – Plan and Profile – how will the existing twin 30” RCP / 12” CMP outfall be addressed at station 41+50?	Ongoing coordination with land development engineer, all outfalls will be tied into proposed stream in final plans.	Please address with final plan submittal. Outfall computations will be required.	Noted and updates will be made available as the design is finalized.	Previous comment outstanding.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
	Design Plans	xvi. Is any grading or other technique needed to assure that the baseflow channel remains within the culvert under Montgomery Avenue? It seems if flood flows carve a new channel through another culvert it could destabilize the entire downstream area.	Final design will include armoring and a transitional area to converge potentially split flows, in & out of culverts.	Please address with final plan submittal.	Noted and updates will be made available as the design is finalized.	Previous comment outstanding.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
32	Monitoring Plan	32. Address the following regarding the Monitoring Plan (Sheets 50 – 51 of the 65% plans) in order to be in compliance with the attached Ecological Performance Standards and Monitoring Protocol for Permittee-Responsible Nontidal Wetland Mitigation Sites dated October 30, 2020:					
	Monitoring Plan	a. Revise the first sentence under As-Built Report to say that as-builts are required within 60 days instead of 90 days.	Done	Addressed.			
	Monitoring Plan	b. Address the following regarding the success criteria for wetlands:					
	Monitoring Plan	i. Add to the Aerial Cover Vegetative Standards section that volunteer species should support functions consistent with the project design goals.	Done	Addressed.			
	Monitoring Plan	ii. Add to the Non-Native and Invasive Species section that Phalaris arundinacea and Typha spp. May also be considered as invasive species by MDE and the Corps.	Done	Addressed.			
	Monitoring Plan	iii. Add to the Wetland Vegetation Density section that the planted trees/shrubs shall have a minimum height of 10 inches by the end of the first year.	Done	Addressed.			
	Monitoring Plan	iv. Update the Wetland Vegetation Cover for Forested Wetlands section to say: “For forested wetlands, average tree height of tallest five native wetland (FAC or wetter) trees within each sample plot shall be at least three feet in height at year three and at least five feet in height at year five and each monitoring year thereafter. Canopy cover of native wetland (FAC or wetter) trees and shrubs must be at least 30% by the end of the monitoring period.”	Done	Addressed.			
Monitoring Plan	v. Update Wetland Soils with the following criteria:						
Monitoring Plan	1. Free water must exist within 10 inches (25 cm) of the ground surface for at least 14 consecutive days; and	Done	Addressed.				

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	Monitoring Plan	2. Anaerobic conditions must exist within 10 inches (25 cm) of the ground surface for at least 14 consecutive days. Anaerobic conditions may be determined by one of the following methods, as detailed in the Hydric Soil Technical Standard: (1) Positive reaction to alpha-alpha dipyridyl, determined as least weekly. (2) Reduction of iron determined with IRIS devices (tubes or films) installed for 30 days. (3) Measurement of redox potential (Eh) using platinum electrodes, determined at least weekly.	Done	Addressed.			
	Monitoring Plan	vi. Add a bullet for Wetland Function Assessment, which should include conducting an assessment of the specific wetland functions and values being provided.	This has been added to the "Monitoring Provisions" section, as there is no specific success criterion associated with this assessment. Specifics regarding assessment methodology have been added	Addressed.			
	Monitoring Plan	c. Address the following regarding the success criteria for buffer areas:					
32	Monitoring Plan	i. Add to the Aerial Cover Vegetative Standards section that volunteer species should support functions consistent with the project design goals.	Done	Addressed.			
	Monitoring Plan	ii. Under Non-Native and Invasive Species, add Pueraria montana to the list of species that should not be greater than 5% of the relative plant cover over the entire site.	Done	Addressed.			
	Monitoring Plan	iii. Add to the Vegetation Density section that the planted trees/shrubs shall have a minimum height of 10 inches at the end of the first year.	Done	Addressed.			
	Monitoring Plan	d. Update the Monitoring Provisions section to state that site visits should preferably be during a period with normal precipitation and groundwater levels and that monitoring must be conducted a minimum of once per year during years that monitoring report are required.	Done	Addressed.			
	Monitoring Plan	e. Address the following under the monitoring provisions for wetlands:					
	Monitoring Plan	i. Add to the Vegetation section to "estimate the actual and relative percent cover by plant species, in order of dominance across all strata for each plot, shown in a table."	Done	Addressed.			
	Monitoring Plan	ii. Add to Hydrology section to "estimate percent of site that is inundated or saturated to the surface on the dates of the site visits".	Done	Addressed.			
	Monitoring Plan	iii. Add the following to soils: "Monitoring data to determine if hydric soils are actively developing. Data should be included for each sample location. This must include evidence that saturated and anaerobic soil conditions are being met, as measured by alpha-alpha dipyridyl, IRIS devices (tubes or films), or platinum electrodes.	Done	Addressed.			
	Monitoring Plan	f. Under the monitoring provisions for buffer areas, add "for each species, across all strata for each plot, shown in a table" to b).	Done	Addressed.			
	Monitoring Plan	g. Please add a narrative to the streams success criteria section detailing performance standards for the restoration and how they will be assessed, including but not limited to the addition of hydraulic goals, lateral stability, and bedform diversity.	Done	The stream monitoring plan and success criteria are under discussion with the MDE chiefs and USACE. Further discussion is required regarding the methods proposed for measuring lateral stability, vertical stability and bedform diversity for this project.	Noted and look forward to any additional comments and guidance.	Stream monitoring protocols and performance standards to be used across all MLS stream mitigation sites will be sent to the P3 team separately.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
Monitoring Plan	h. Please include a category for success of the in-stream structures shown on the design plans within the success criteria, and detail how these will be assessed and monitored within the monitoring provisions section.	Done.	Please add a bullet in the Monitoring Provisions section for streams detailing how in-stream structures will be assessed and monitored.	Structure invert elevations will be surveyed as part of the post construction monitoring. Language has been added to the monitoring plan to clarify.	Addressed.		
33		33. Provide up to date coordination with MHT and USFWS.					
34		34. Address (or note) the following comments from the Maryland Department of Natural Resources (DNR). All other comments provided from DNR previously continue to apply and further coordination with DNR is ongoing:	Coordination for the mitigation sites is being done on a project-wide basis by the MLS NEPA team	Thank you for the update. Please provide updated MHT and USFWS coordination from the NEPA team.	This information will be provided by the MSL NEPA group.	Noted. Awaiting up-to-date MHT and USFWS coordination.	Comment not applicable to RES
		a. In general, DNR supports a mitigation project at this location.					
		b. Regarding aquatic passage, there are several opportunities for improvement to fish passage. Some of these are addressed in the plans by eliminating instream impoundments. It is understood that this site is complicated by road and utility crossings. This project design should take every opportunity to improve aquatic passage:	Noted				
		i. Is there anything that can be done to improve aquatic and other wildlife passage under Montgomery Ave? Profiles on sheets 24 and 25 don't seem to indicate that the invert of the pipe is buried, but it may not be to scale.	This will be considered and addressed as necessary as part of the final construction plans.	DNR understands that the Montgomery Village Avenue crossing on Sheets 24 & 25 is not in the project LOD. However, this crossing is in the lower part of the Cabin Branch Watershed and establishing or ensuring aquatic passage at this location would link upstream and downstream natural areas. Photos of the existing conditions appear that there's a fairly high water level in the pipes currently. DNR is interested in making sure that aquatic passage is maintained at this location. Please confirm.	Noted.	Previous comment outstanding. Please address with the next design submittal.	Comment Unaddressed - To be addressed at Final Design, after MDE Phase II and USACE Final Mitigation Plan approval.
	ii. This may have been covered during the site visit- what is the reason for the piping of Trib 4 on Sheet 36/ 35?	The landowner / developer is putting a road across the stream connecting the new development (north of lower reach 2) to Montgomery Village Avenue. Our restoration is tying into/out-of their new road crossing.	Noted.				

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34		c. DNR appreciates incorporating a riparian buffer into the design plans. Please preserve all existing large trees to the extent possible.	Noted	Noted.			
		d. Generally, no instream work is permitted in Use I streams during the period of March 1 through June 15, inclusive, during any year.	A note is included on Sheet 2/51	Noted.			
		e. Has a fisheries information request or Wildlife and Heritage Service inquiry been submitted to DNR for this site?	Coordination for the mitigation sites is being done on a project-wide basis by the MLS NEPA team	Noted.			
		f. Please continue to coordinate with DNR as the project progresses.	Noted	Noted.			
Additional Comments 10/25/2021							
Comment No.		MDE Comment (10/25/2021)			Design Team Response	Additional MDE Comments (2/4/2022)	Design Team Response (3/10/2022)
1		Section 1.5 Mitigation Work Plan- suggest removing references to plan set dates in this section			Done.	Addressed.	
2		The Mitigation Master Plan shows existing wetland within wetland creation area PFO Wetland 2. Is this the 0.06 AC of proposed wetland enhancement? Exclude the existing area from the proposed forested wetland creation hatching and update credit acreages for creation if necessary. Wetland enhancement is not included in the legend. Please either update the hatching for enhancement of the existing wetland or add a call-out for the proposed wetland enhancement acreage. The proposed wetland buffer enhancement for the wetland creation area PFO Wetland 2 also covers half of the existing wetland. Will this wetland be permanently impacted or should the wetland boundary/wetland buffer boundary be adjusted?			All areas have been updated accordingly.	Last part of comment unaddressed. There is proposed wetland buffer enhancement through the existing PEM wetland. Can the entire existing PEM wetland be enhanced and proposed wetland buffer enhancement be relocated around the existing wetland? The corresponding Impact Plate shows wetland enhancement for the entire PEM wetland (see also Additional Comment # 1, 2/4/2022, below).	The entire PEM is now included for enhancement and impact plates have been updated accordingly.
3		The Design Report indicates that historic wetlands were likely present throughout the entire site. Update the Mitigation Master Plan and Report to show the areas currently proposed as wetland creation (1:1 credit) as wetland restoration (1:1 credit).			Done.	Addressed.	

Additional Comments 2/4/2022							
Comment No.	Location	MDE Comment (2/4/2022)	Design Team Response (3/10/22)				
1	Planting Plan/Mitigation Master Plan	Revise the planting plan (sheet 48 of 51) to show forested wetland tree planting within the entire existing PEM wetland (PEM-1) adjacent to POW-3, rather than riparian tree planting. Additionally, revise the Mitigation Master Map and credit summary table to show wetland enhancement for the entire PEM wetland (0.06 acres) and adjust the wetland buffer enhancement around this wetland accordingly.	Updated				
2	Impact Plates	Impact Plate 1: The PEM wetland labeled as WE-1 for Wetland Enhancement is shown with 0.06 acres of permanent impact. If this wetland is being enhanced and the entire wetland will remain, impacts to this wetland should be classified as temporary.	Updated				
3	Impact Plates	Impact Plate 1: Stream impacts should be shown within the existing stream channels rather than the proposed channels. For Perennial Streams PS-T2 and PS-T3/PS-T3_1, show impacts through the existing stream channel/stormwater pipes and remove impact hatching from the proposed realigned/daylighted channels.	Updated				
4	Impact Plates	Impact Plate 2: Show temporary impact hatching in existing Perennial Stream PS-T5 within the concrete channel and remove impacts from the proposed realigned channel.	Updated				
5	Impact Plates	Remove "Temporary/Permanent" column for the wetland Restoration and Creation tables on Impact Plates 1 and 2. The impacts associated with creating/restoring these wetlands are accounted for in the preceding impact tables.	Updated				
6	Impact Plates	Hatching is shown for POW impacts on Impact Plate 1 but impacts and POW labels are not included for these areas.	Updated				
7	Impact Plates	MDE will regulate the open water (POW) areas as perennial waterways rather than wetland. Please differentiate between MDE and Corps regulation of these resources (e.g., "POW (USACE)/Perennial (MDE)"). Remove 25-foot wetland buffer on mapping and associated wetland buffer impacts for the open water areas (rows WB-3 and WB-5 in the Plate #1 Impacts table). Rows for WB-1, WB-2, and WB-4 are associated with PEM/PFO wetlands and should remain; however, please relabel the existing resource class as wetland buffer for these rows for clarity.	Updated				
8	Impact Plates	In the Plate #2 Impacts table, please revise the existing resource class for OW-5, OW-6, OW-7, and OW-8 to differentiate between MDE and USACE regulation of these resources. Suggest revising to "POW (USACE)/Perennial (MDE)." Please include linear footage of temporary perennial stream impacts for OW-6 in the table.	Updated				
9	Impact Plates	Add 25-foot wetland buffer around the PEM wetland on Impact Plate 1 and account for temporary impacts on the impact plate/table.	Updated				
10	Impact Plates	The existing resource class for all streams should be perennial. Suggest putting name of stream (e.g., "Cabin Branch Reach 1," "TRIB 1") in parentheses following the classification (e.g., "Perennial (Cabin Branch Reach 1)").	Updated				
11	Impact Plates	Will there be loss of functions or values from the proposed loss of hydrology to OW-5?					There is no anticipated loss of hydrology to OW-5. The existing concrete channel only conveys stormwater runoff from an upstream stormwater facility. This is not considered the primary source of hydrology for this system.
12	Appendix D: MSMF Stream Mitigation Calculator	Please add remarks to explain why extra points were added for site sensitivity.					The WRR composite score for the proposed mitigation site is 1.
13	Plans - Mitigation Master Plan	Include both acreage and square feet of proposed wetland mitigation in the credit summary table.	Updated				

MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATER AND SCIENCE ADMINISTRATION
NONTIDAL WETLANDS AND WATERWAYS DIVISION
1800 WASHINGTON BLVD., SUITE 430
BALTIMORE, MARYLAND 21230
410-537-3745

PUBLIC NOTICE BILLING APPROVAL FORM

PROJECT NUMBER AW073A13

I agree to pay all expenses associated with the publishing of a public notice for the Nontidal Wetlands and Waterways Application submitted by MDOT SHA (Applicant's Name), which was dated and signed by you on 4/27/2022.


Applicant/Agent Signature

Jeffrey T. Folden

Printed Name of Signee

TRACKING NO. _____

Please Print

Billing Address 707 North Calvert Street, Mailstop P-601

Baltimore, MD 21202

Contact Person: Catherine Agostino

Phone Number 410-637-3301

NOTICE TO APPLICANTS

Certain projects involving nontidal wetlands and waterways permits require that a description of the proposed project be published in a local newspaper. This advertisement is necessary to fulfill legal public notice requirements. Projects that require public notice include, but are not limited to, the following:

- Certain projects regulated by the U. S. Army Corps of Engineers that require a State Water Quality Certification.
- Projects resulting in a loss of more than 5,000 square feet of nontidal wetlands.
- Projects in nontidal wetlands of special State concern or wetlands having special plant or wildlife values.
- Projects resulting in a loss of more than 1 acre if isolated nontidal wetlands.
- Projects affecting waters of the State, including their 100 year frequency floodplain, except roads, bridges, and culverts that meet minimum design standards, temporary construction, minor repairs, or routine maintenance.

The Water and Science Administration will arrange advertisement of the project for you. However, as the applicant for the project, you are responsible for paying the publishing costs. In order for this process of public notice to occur, your approval is necessary prior to publishing. Please complete the form on the other side of this page and return it to the Water and Science Administration so that your proposed project may be advertised without delay. Please make sure to sign the form. Processing of your application cannot continue until a signed form is received.

Please call the Nontidal Wetlands and Waterways Division at 410-537-3745 if you have any questions.

Thank you for your assistance in this matter.

PLEASE COMPLETE THE OTHER SIDE OF THIS PAGE

Also, please provide the names and mailing addresses of adjacent property owners. Add additional pages if needed.

[The adjacent property owner list is being finalized and will be provided a minimum of 15 days](#)

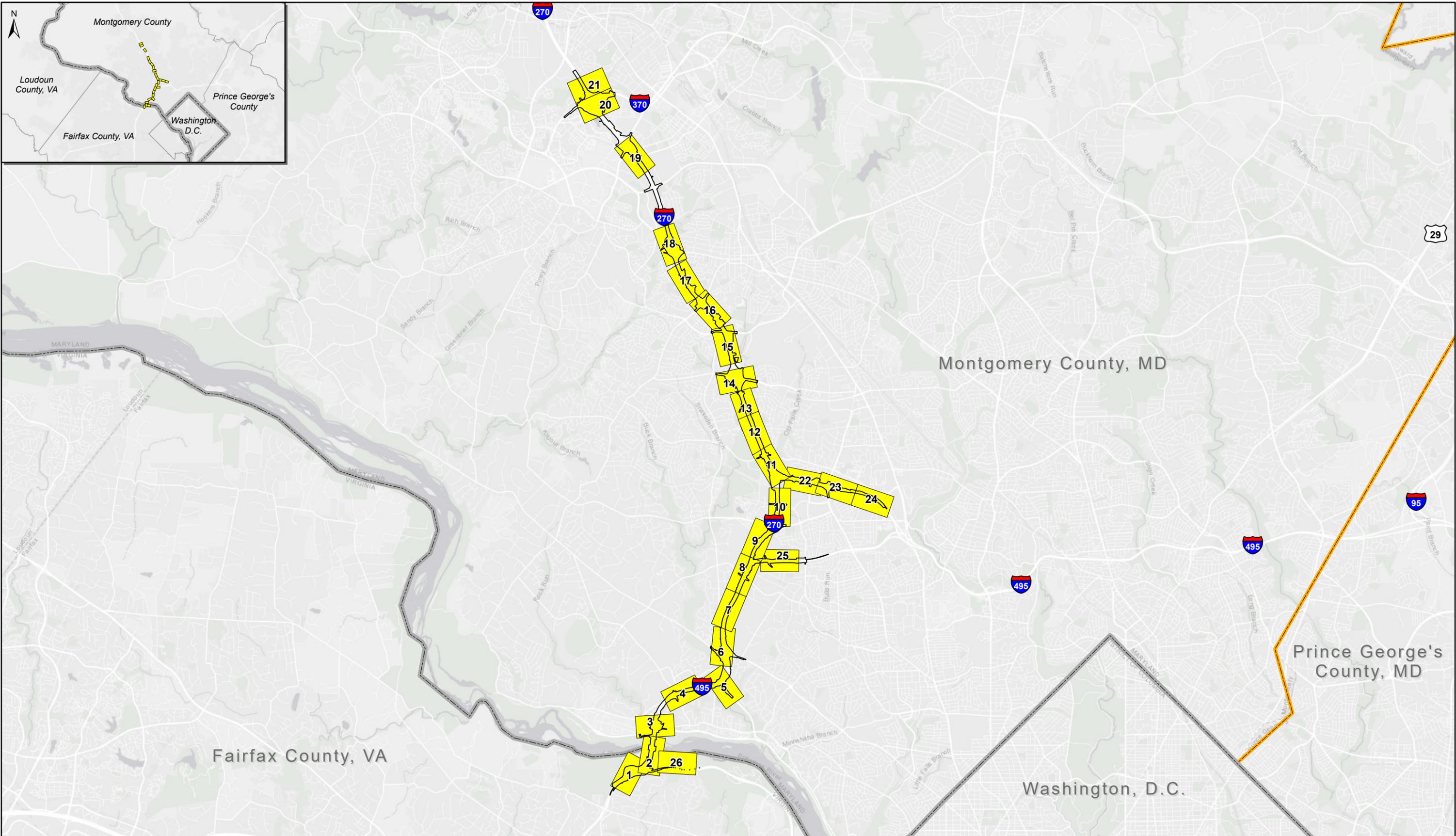
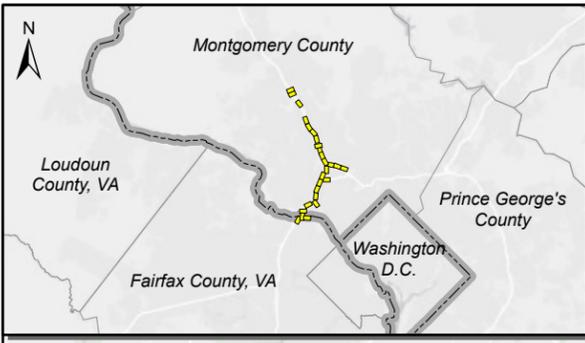
[prior to the commencement of the Public Comment Period.](#)

Wetland and Waterway Impact Plates



OP•LANES™
M A R Y L A N D

I-495 & I-270 Managed Lanes Study



LEGEND

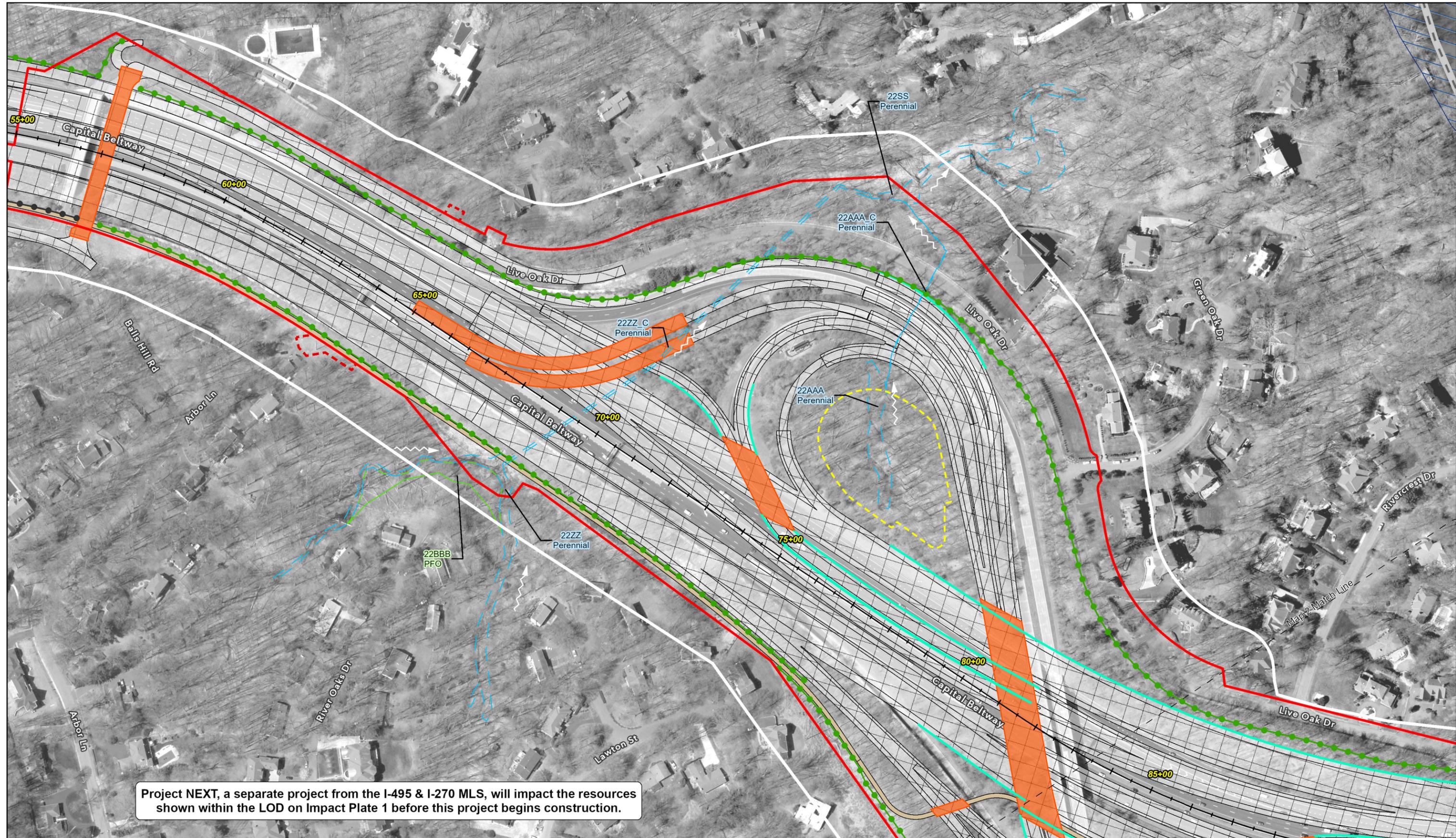
- Impact Plate
- Limit of Disturbance
- State Boundary
- County Boundary

0 0.75 1.5 3 Miles

May 2022

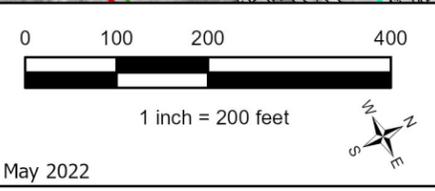
**Wetland and Waterway
Impact Plates
Key Sheet**





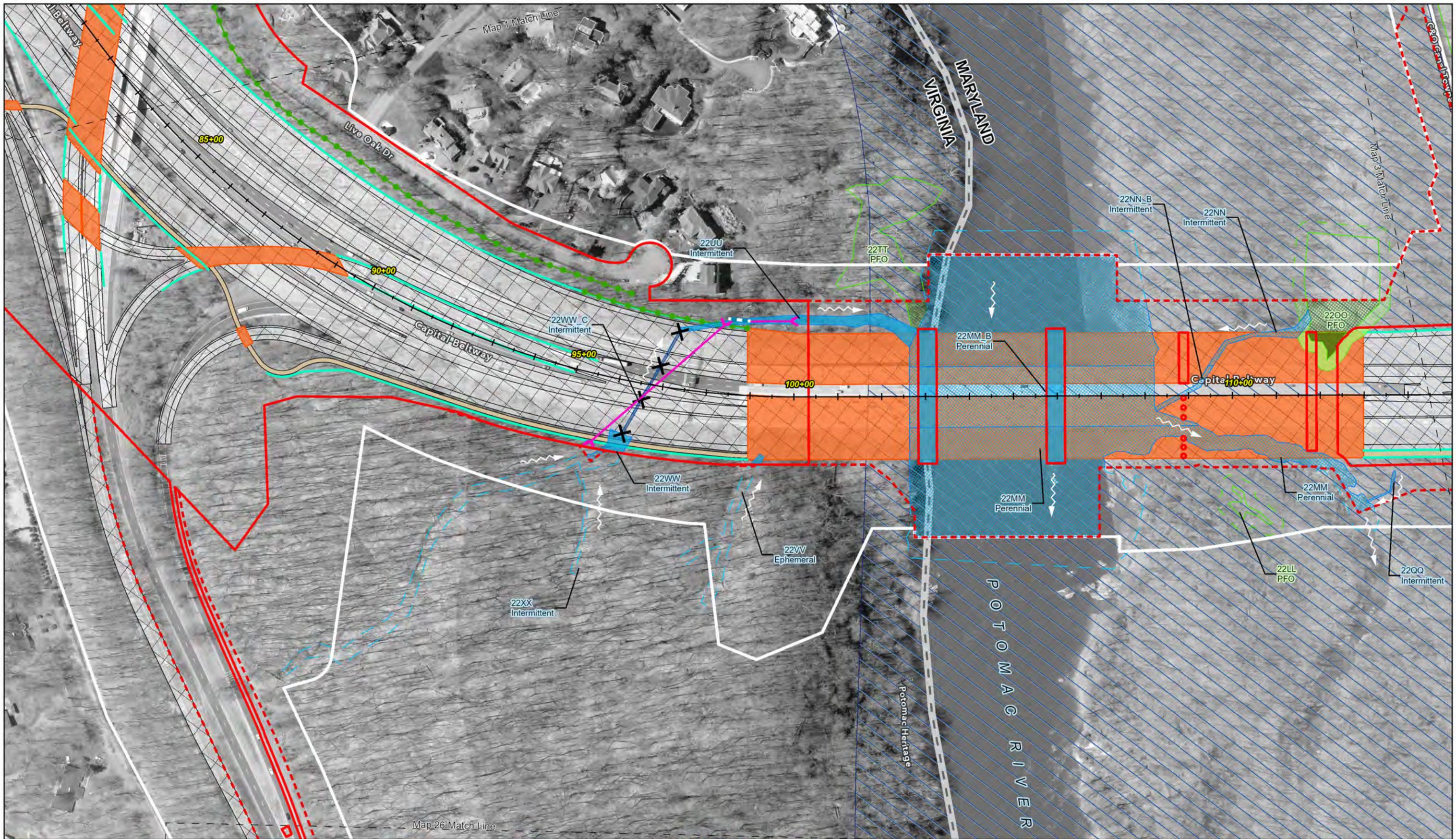
Project NEXT, a separate project from the I-495 & I-270 MLS, will impact the resources shown within the LOD on Impact Plate 1 before this project begins construction.

RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

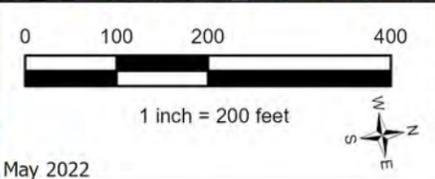


**Virginia
Wetland and Waterway
Impact Plates**
Mainline Impact Plate 1





- | | | | | |
|-------------------------------|----------------------------|---------------------------------|----------------------|----------------------------|
| RPA Limit of Disturbance Temp | Proposed Retaining Wall | Bridge | Waterway Impact Perm | Wetland Buffer Impact Perm |
| RPA Limit of Disturbance Perm | New/Augmented Pipe/Culvert | Limit Of Improved SWM / Storage | Waterway Impact Temp | Wetland Buffer Impact Temp |
| Delineation Limits | Relocated Channel | Limit Of Restoration | Culvert Impact Perm | Stream No Impact |
| Proposed Pavement | Proposed SWM - Pond | Limit Of Stabilization | Culvert Impact Temp | Wetland No Impact |
| Noise Wall Proposed | Proposed SWM - Swale | Shared Use Path | Wetland Impact Perm | Wetland Buffer No Impact |
| Noise Wall Existing | Proposed SWM - Vault | Flow Direction | Wetland Impact Temp | FEMA 100-Year Floodplain |



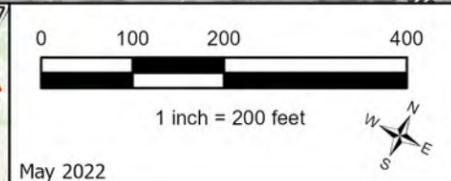
**Virginia
Wetland and Waterway
Impact Plates**

Mainline Impact Plate 2



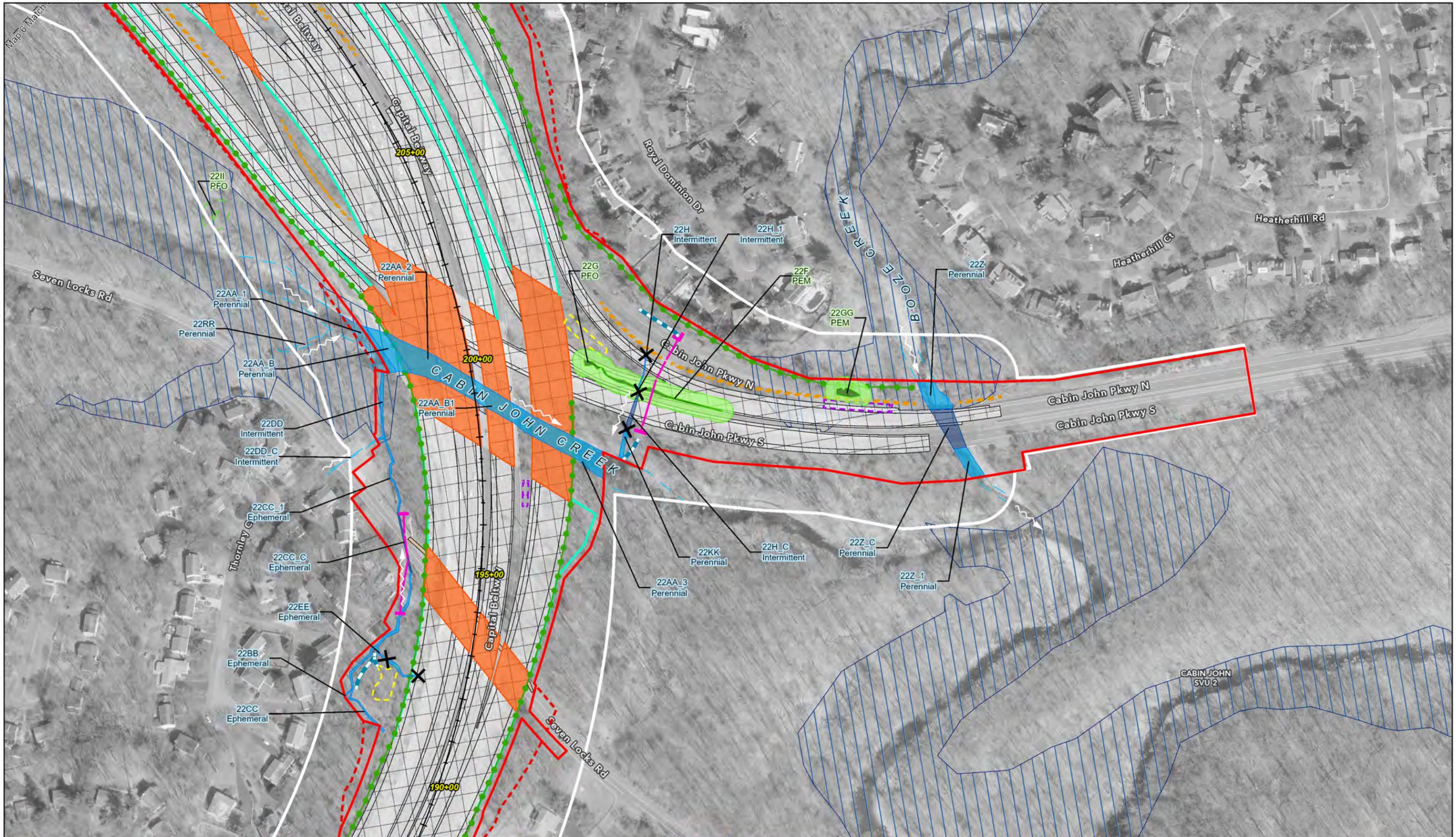


RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
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Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

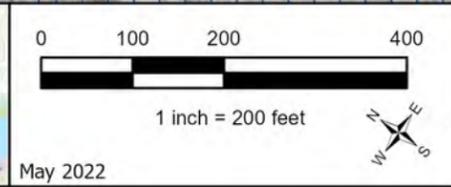


**Maryland
Wetland and Waterway
Impact Plates**
Mainline Impact Plate 4



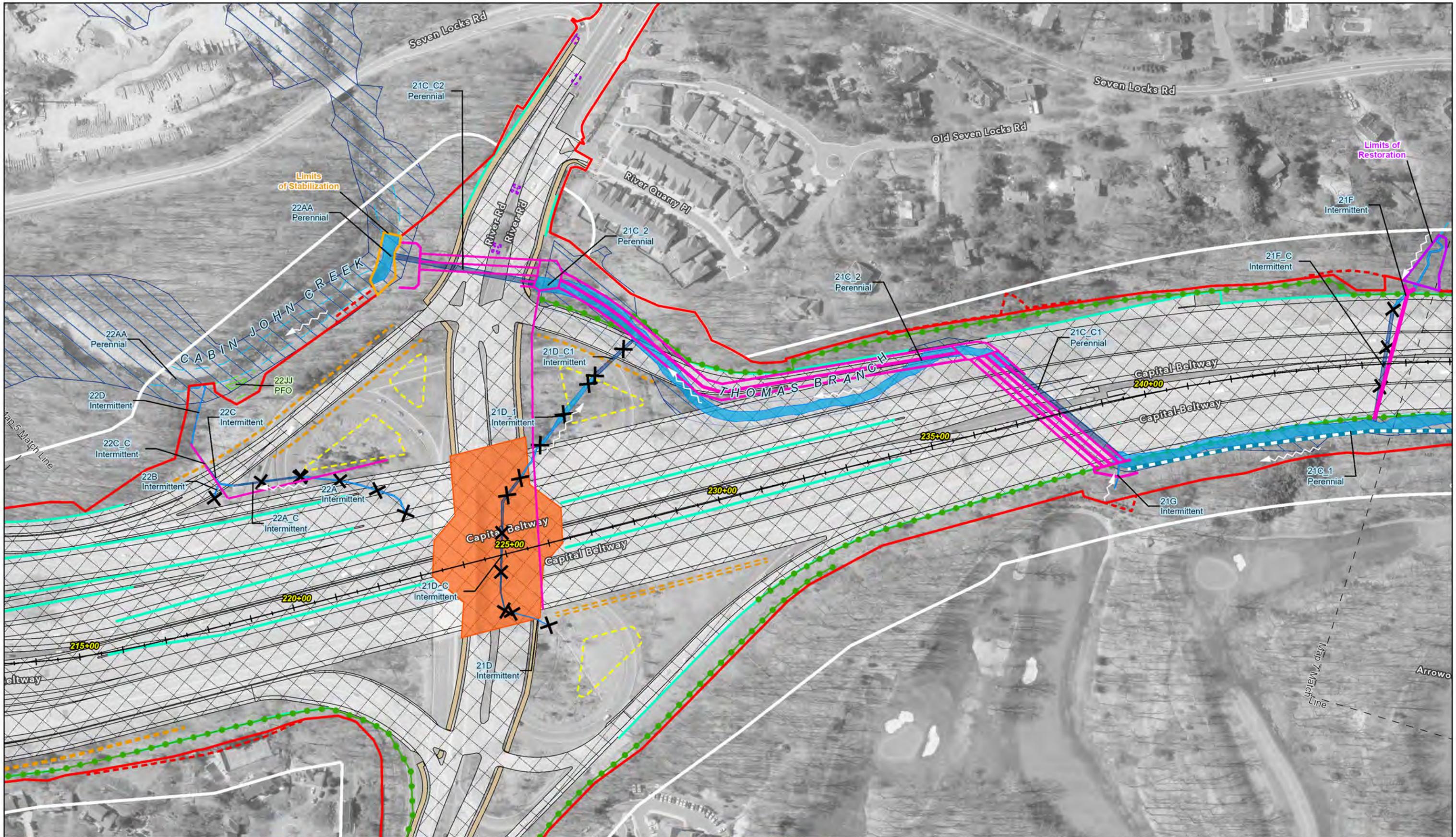


RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
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Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

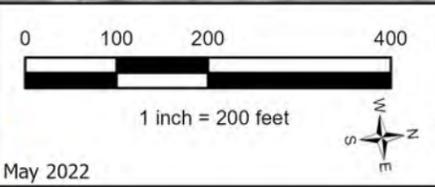
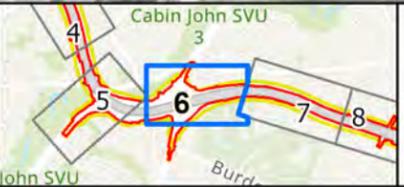


**Maryland
Wetland and Waterway
Impact Plates**
Mainline Impact Plate 5





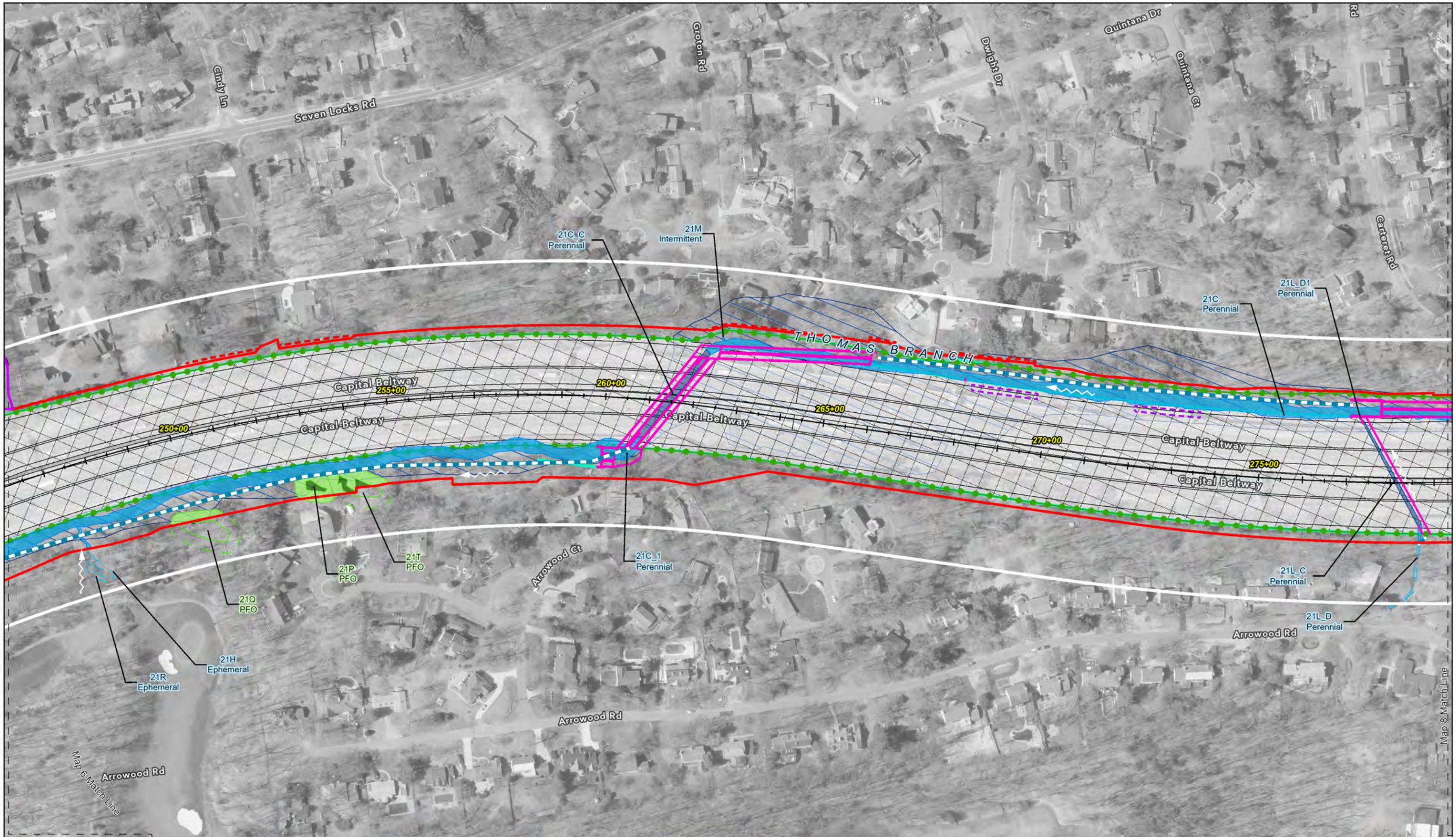
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RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



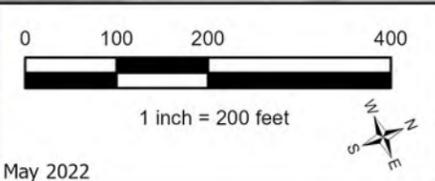
Maryland
Wetland and Waterway
Impact Plates
 Mainline Impact Plate 6



May 2022



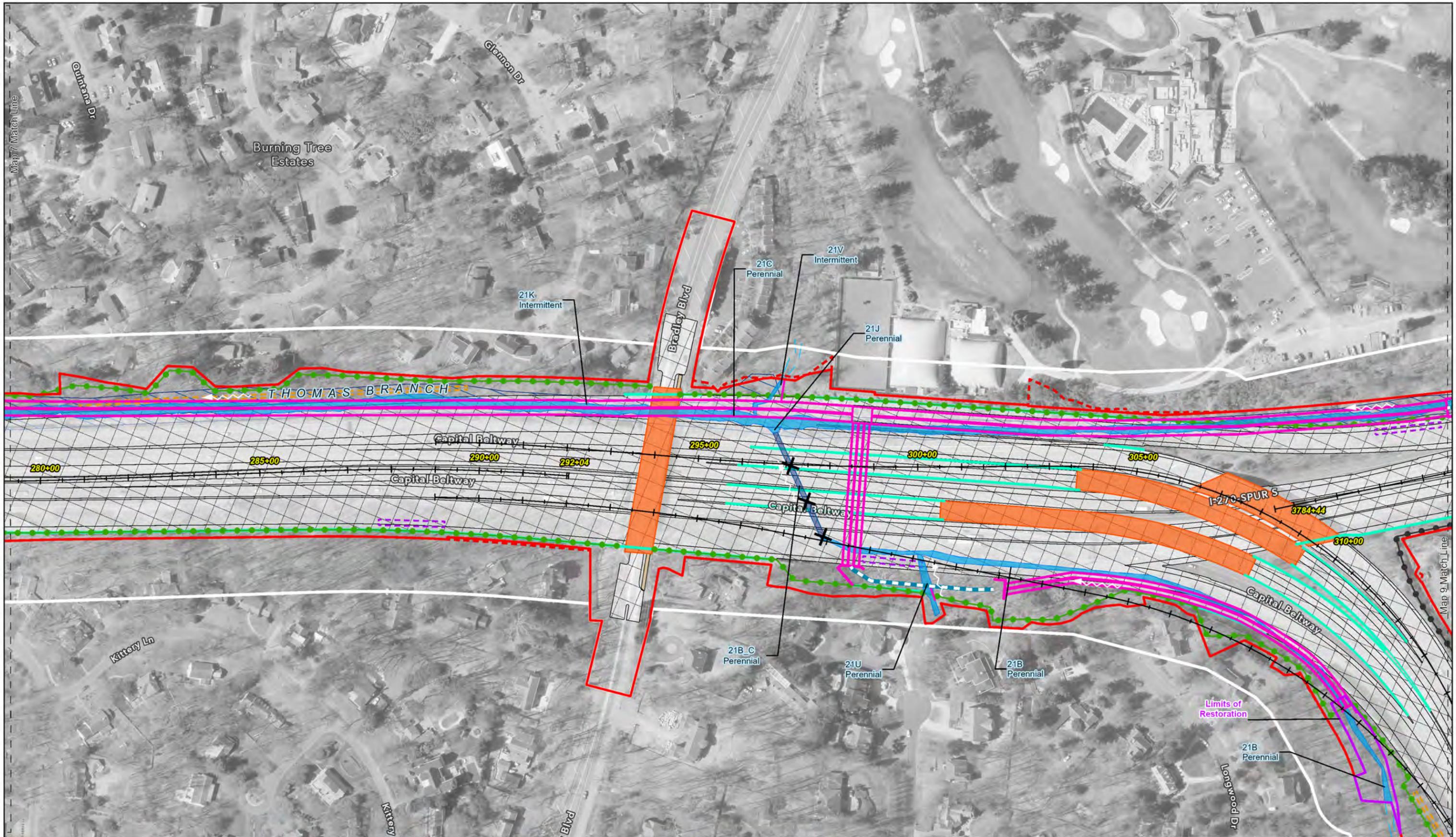
RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
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Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



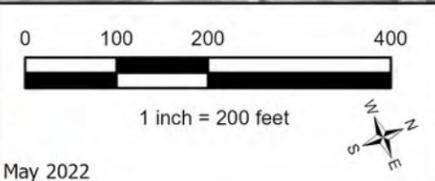
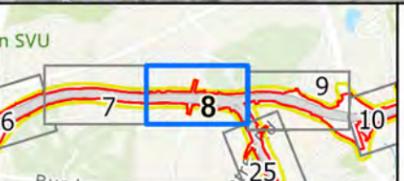
**Maryland
Wetland and Waterway
Impact Plates**

Mainline Impact Plate 7





RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
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Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

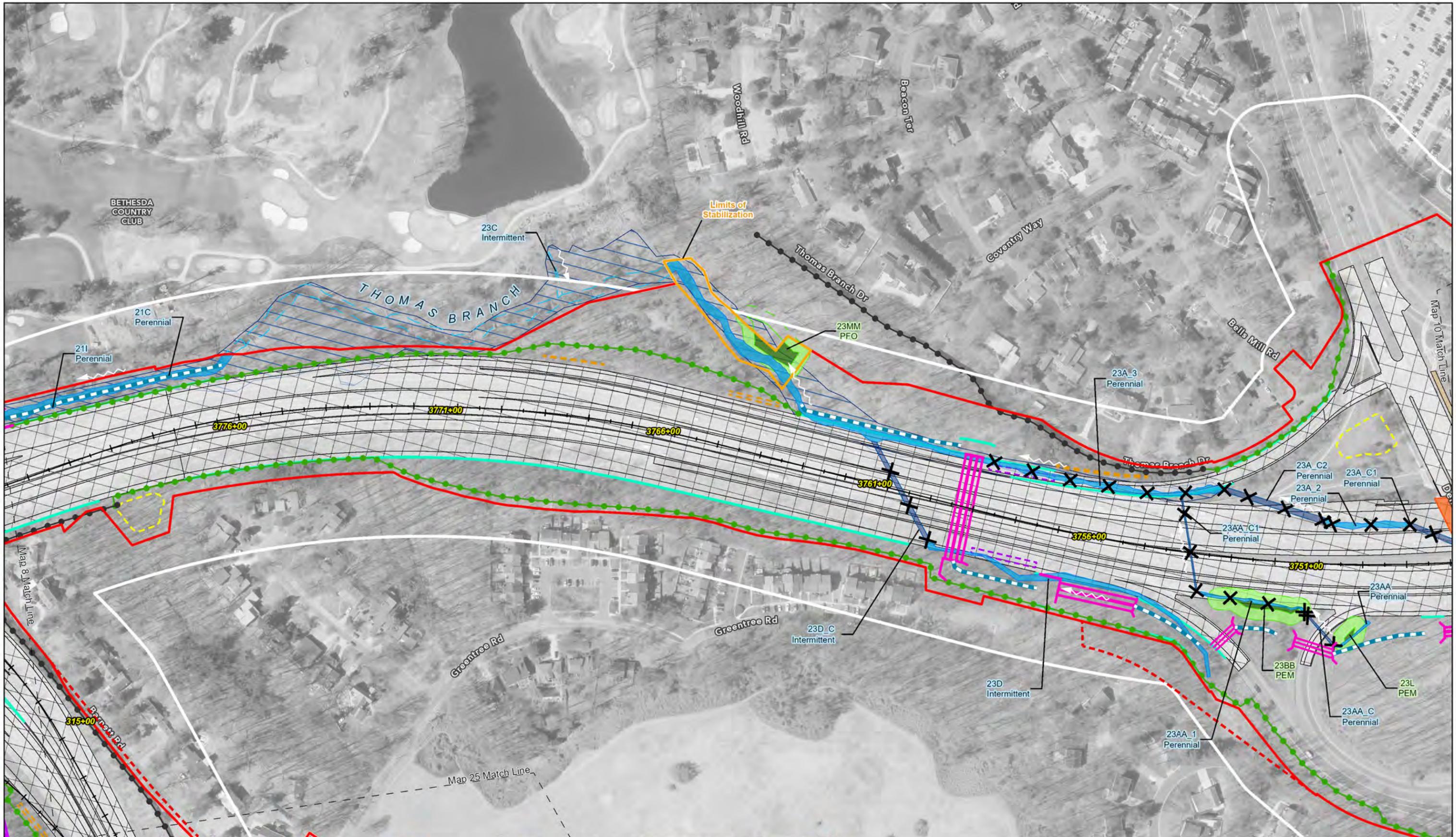


**Maryland
Wetland and Waterway
Impact Plates**

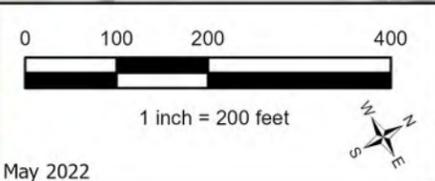
Mainline Impact Plate 8



May 2022



RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
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Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

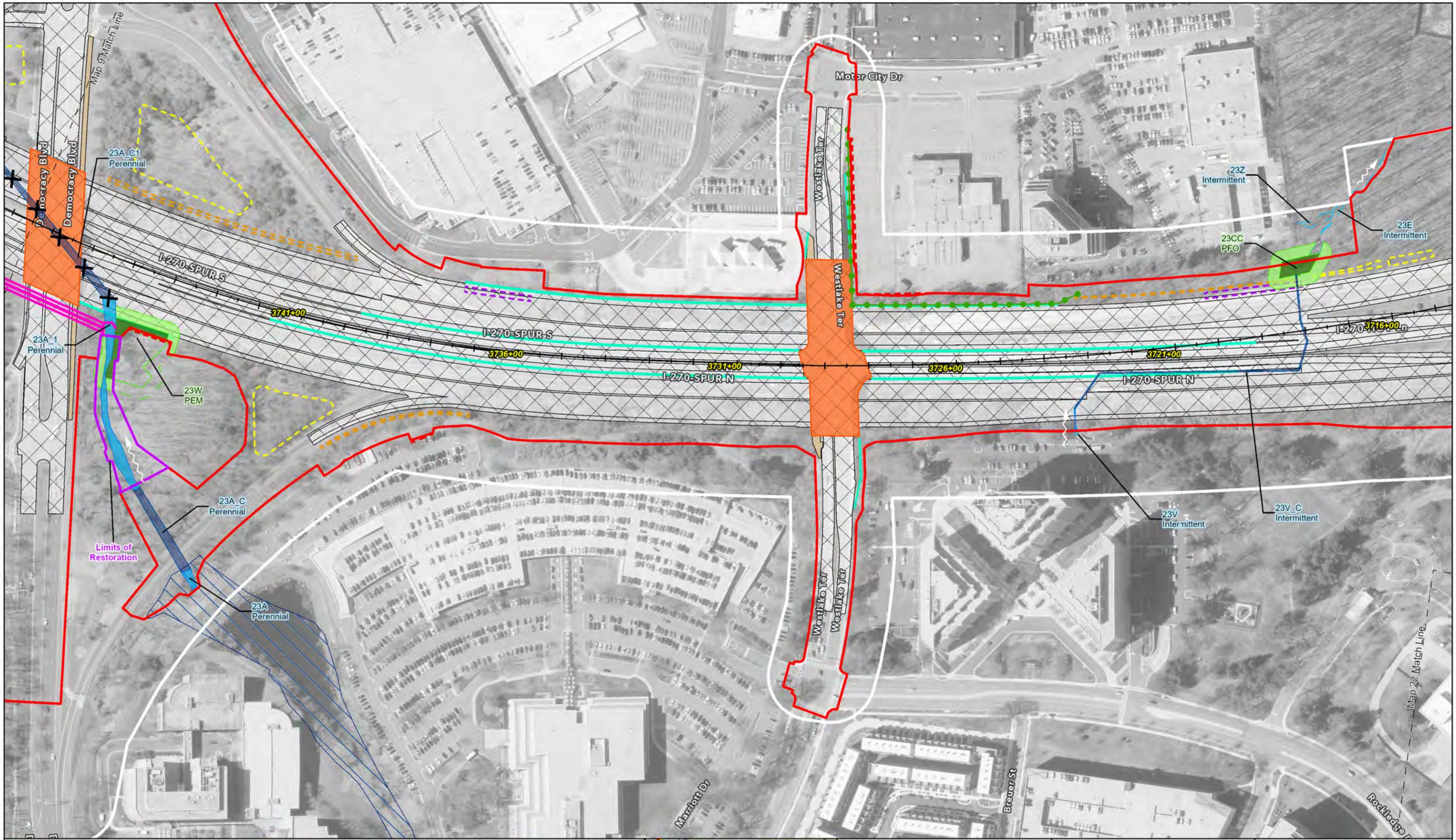


**Maryland
Wetland and Waterway
Impact Plates**

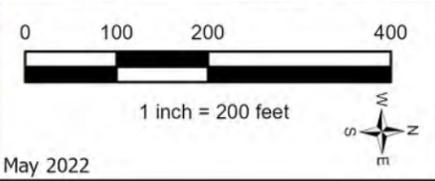
Mainline Impact Plate 9



May 2022



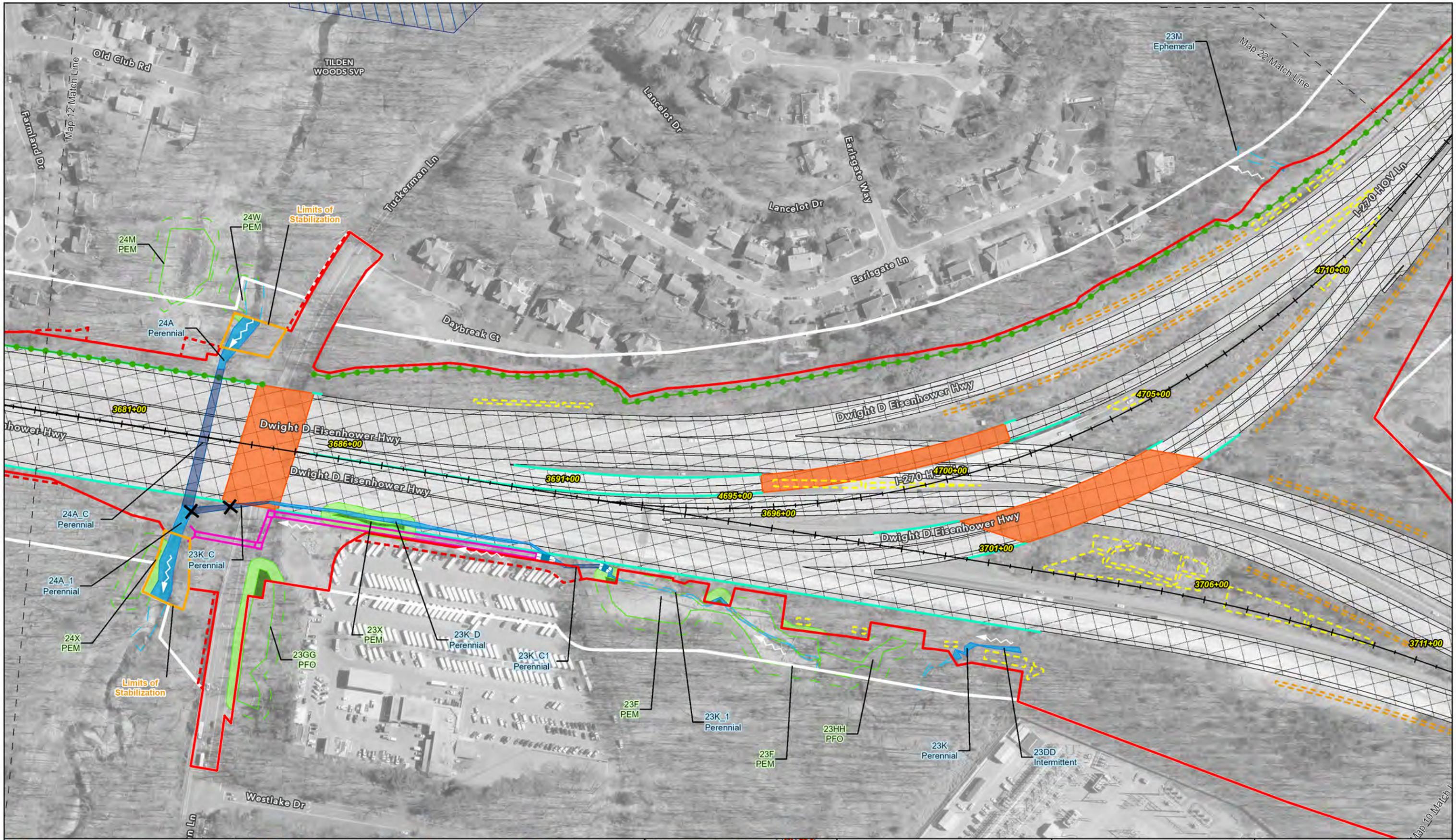
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- RPA Limit of Disturbance Perm
- Delineation Limits
- Proposed Pavement
- Noise Wall Proposed
- Noise Wall Existing
- Proposed Retaining Wall
- New/Augmented Pipe/Culvert
- Relocated Channel
- Proposed SWM - Pond
- Proposed SWM - Swale
- Proposed SWM - Vault
- Bridge
- Limit Of Improved SWM / Storage
- Limit Of Restoration
- Limit Of Stabilization
- Shared Use Path
- Flow Direction
- Waterway Impact Perm
- Waterway Impact Temp
- Culvert Impact Perm
- Culvert Impact Temp
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- Stream No Impact
- Wetland No Impact
- Wetland Buffer No Impact
- FEMA 100-Year Floodplain



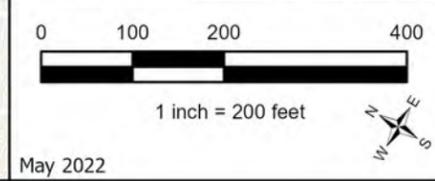
**Maryland
Wetland and Waterway
Impact Plates**

Mainline Impact Plate 10





RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
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Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

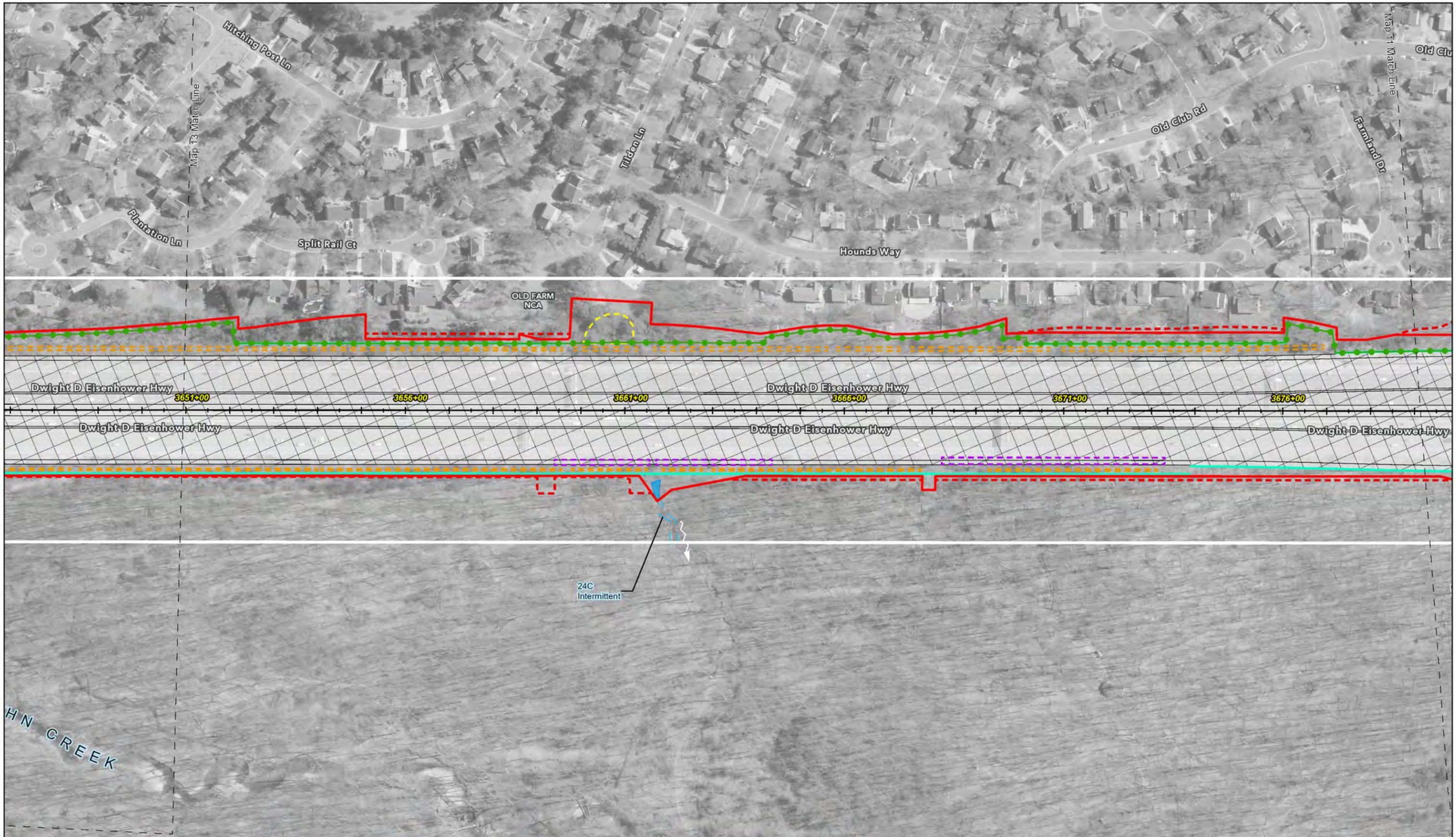


**Maryland
Wetland and Waterway
Impact Plates**

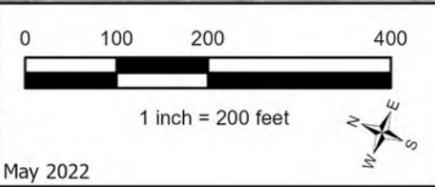
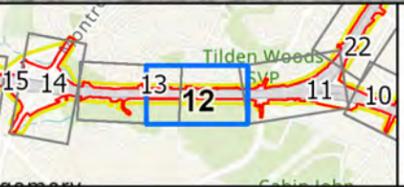
Mainline Impact Plate 11



May 2022



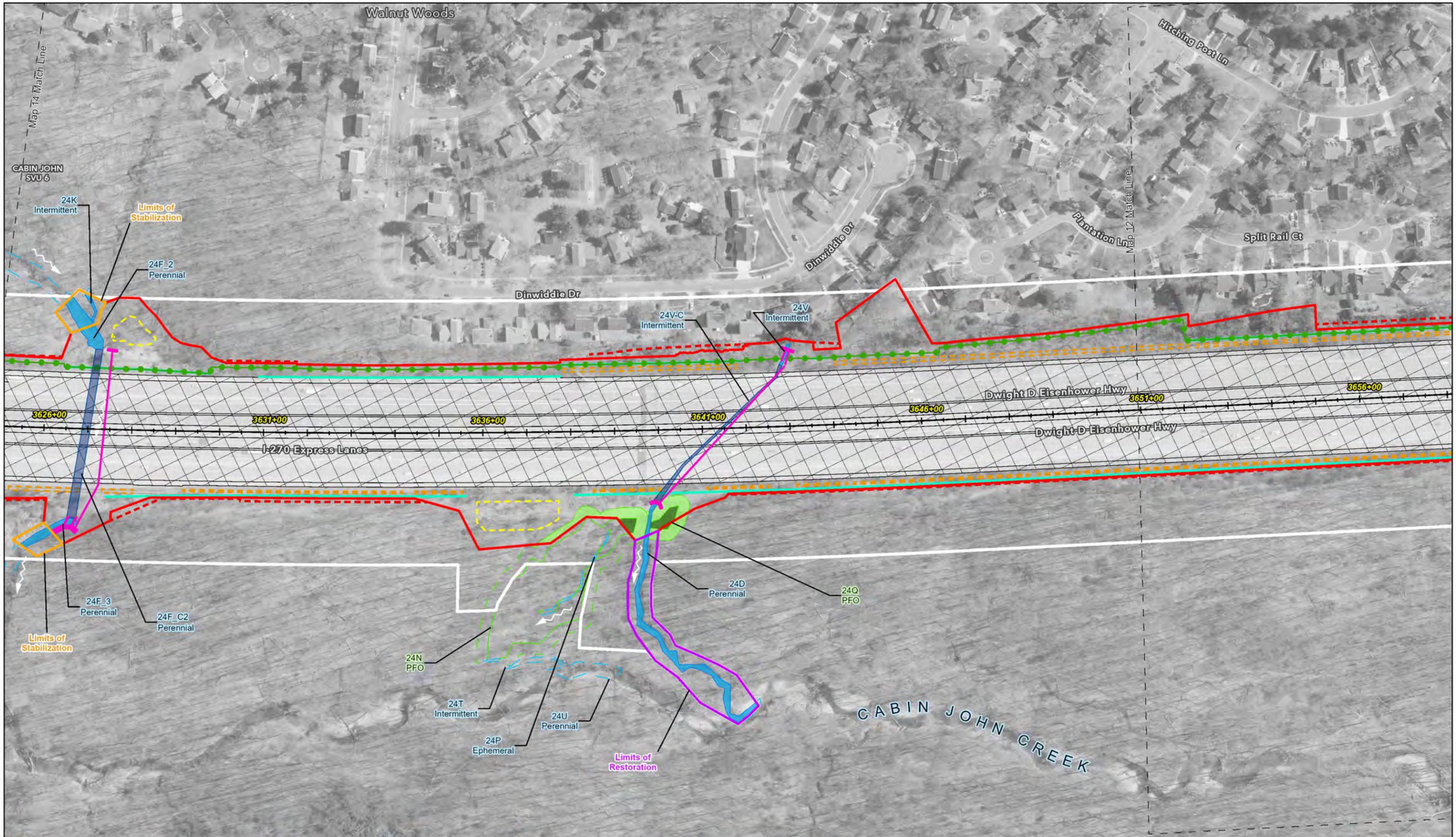
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RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
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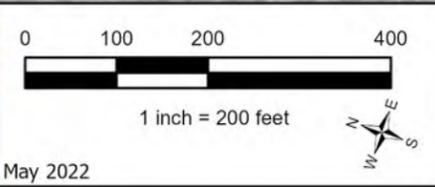
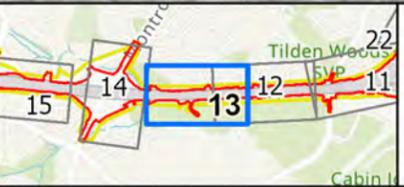
**Maryland
Wetland and Waterway
Impact Plates**

Mainline Impact Plate 12





RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
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Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



**Maryland
Wetland and Waterway
Impact Plates**

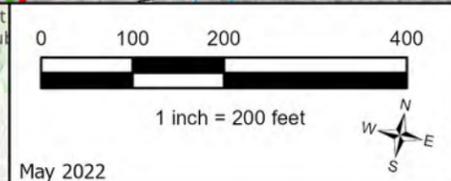
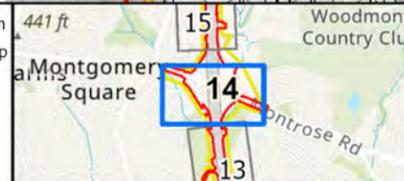
Mainline Impact Plate 13



May 2022



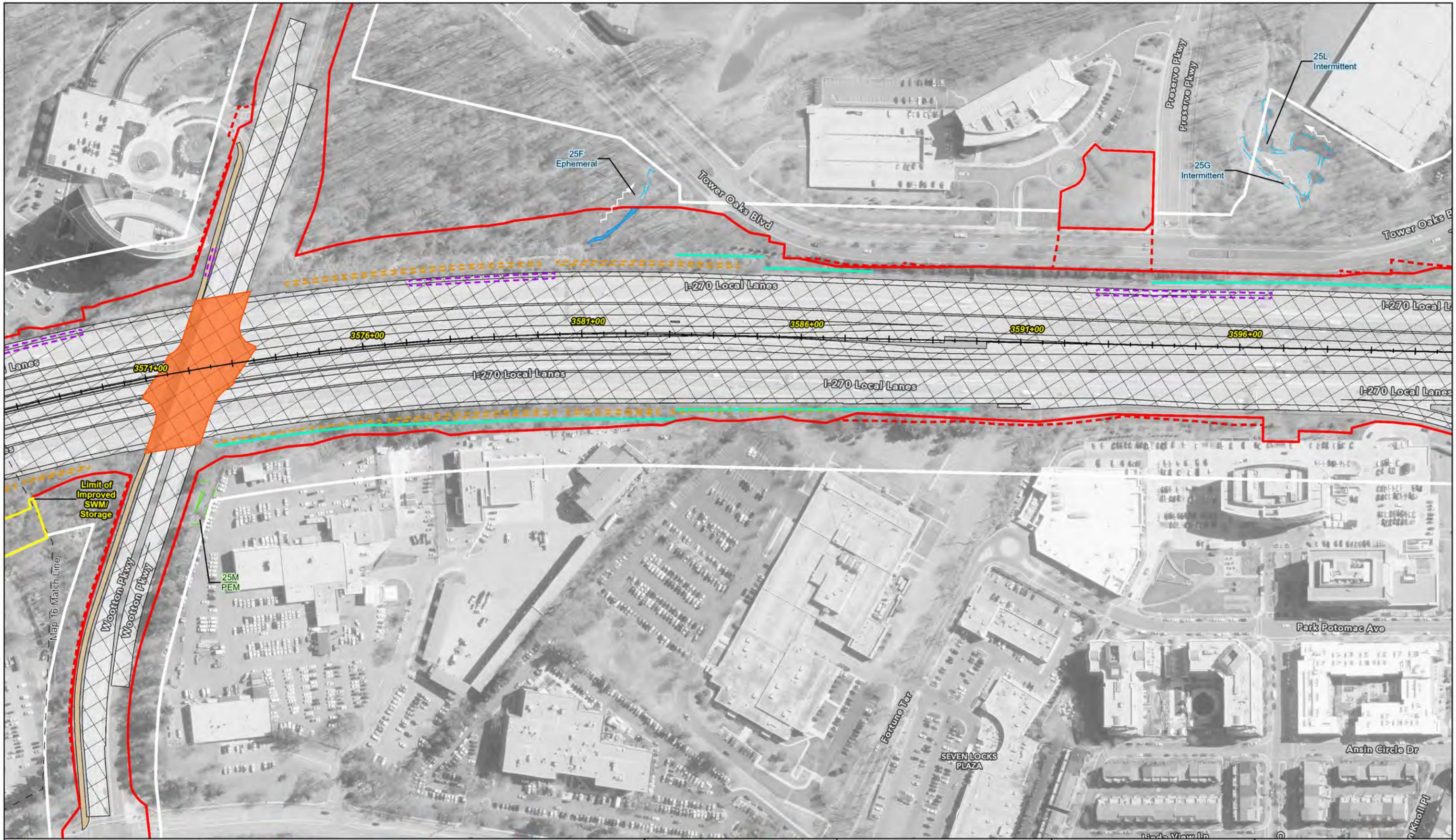
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RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
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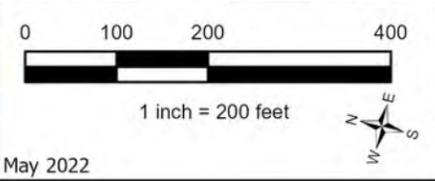
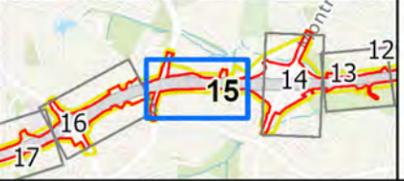
**Maryland
Wetland and Waterway
Impact Plates**

Mainline Impact Plate 14





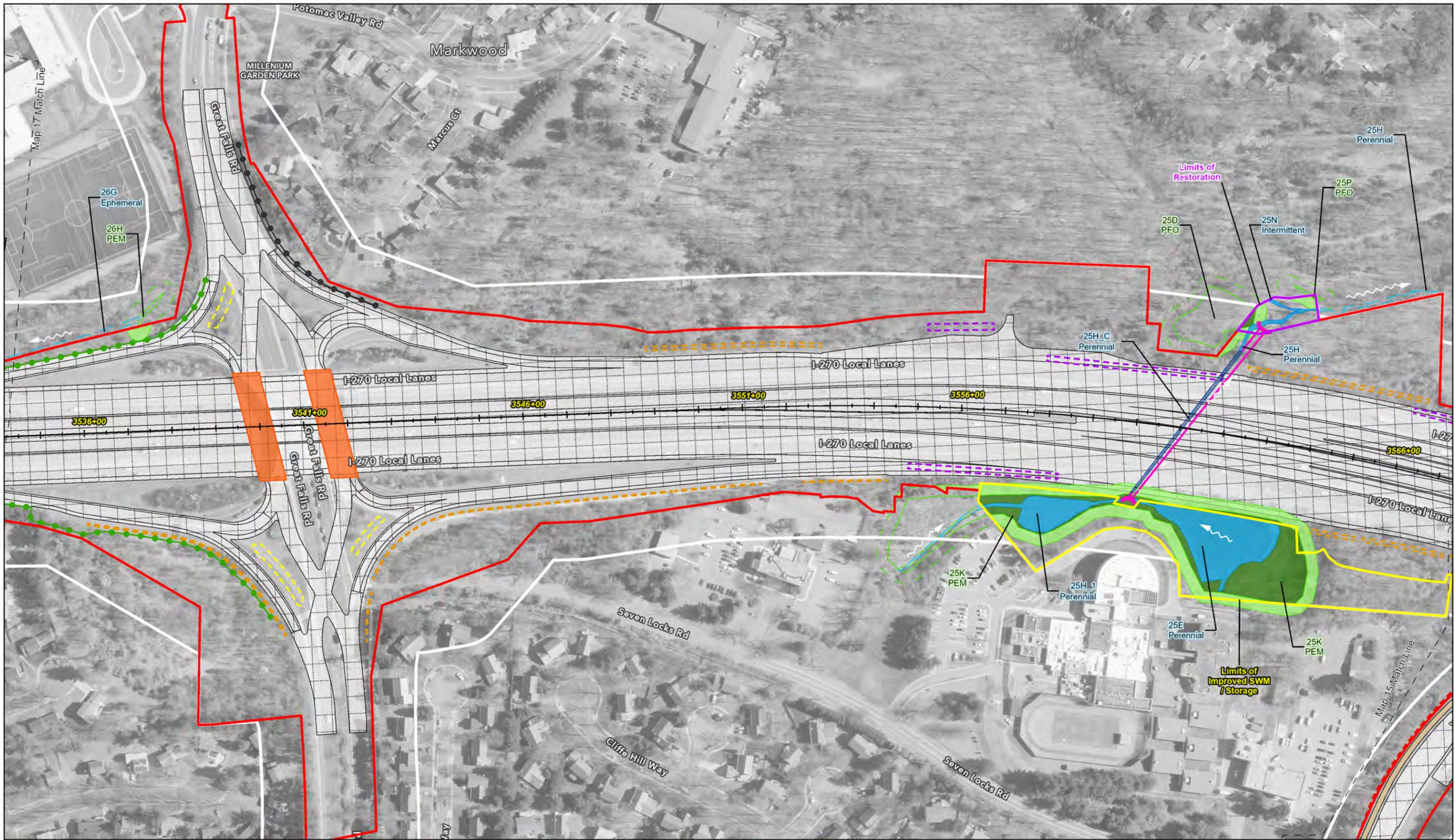
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| RPA Limit of Disturbance Temp | Proposed Retaining Wall | Bridge | Waterway Impact Perm | Wetland Buffer Impact Perm |
| RPA Limit of Disturbance Perm | New/Augmented Pipe/Culvert | Limit Of Improved SWM / Storage | Waterway Impact Temp | Wetland Buffer Impact Temp |
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| Proposed Pavement | Proposed SWM - Pond | Limit Of Stabilization | Culvert Impact Temp | Wetland No Impact |
| Noise Wall Proposed | Proposed SWM - Swale | Shared Use Path | Wetland Impact Perm | Wetland Buffer No Impact |
| Noise Wall Existing | Proposed SWM - Vault | Flow Direction | Wetland Impact Temp | FEMA 100-Year Floodplain |



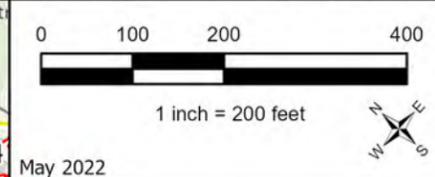
**Maryland
Wetland and Waterway
Impact Plates**

Mainline Impact Plate 15





RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



**Maryland
Wetland and Waterway
Impact Plates**

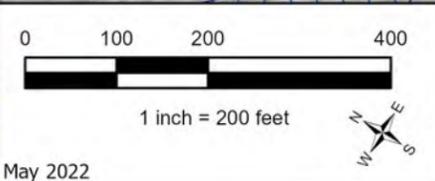
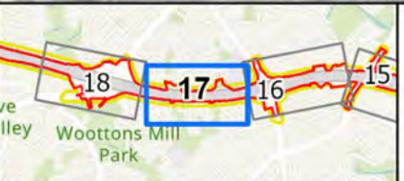
Mainline Impact Plate 16



May 2022



RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

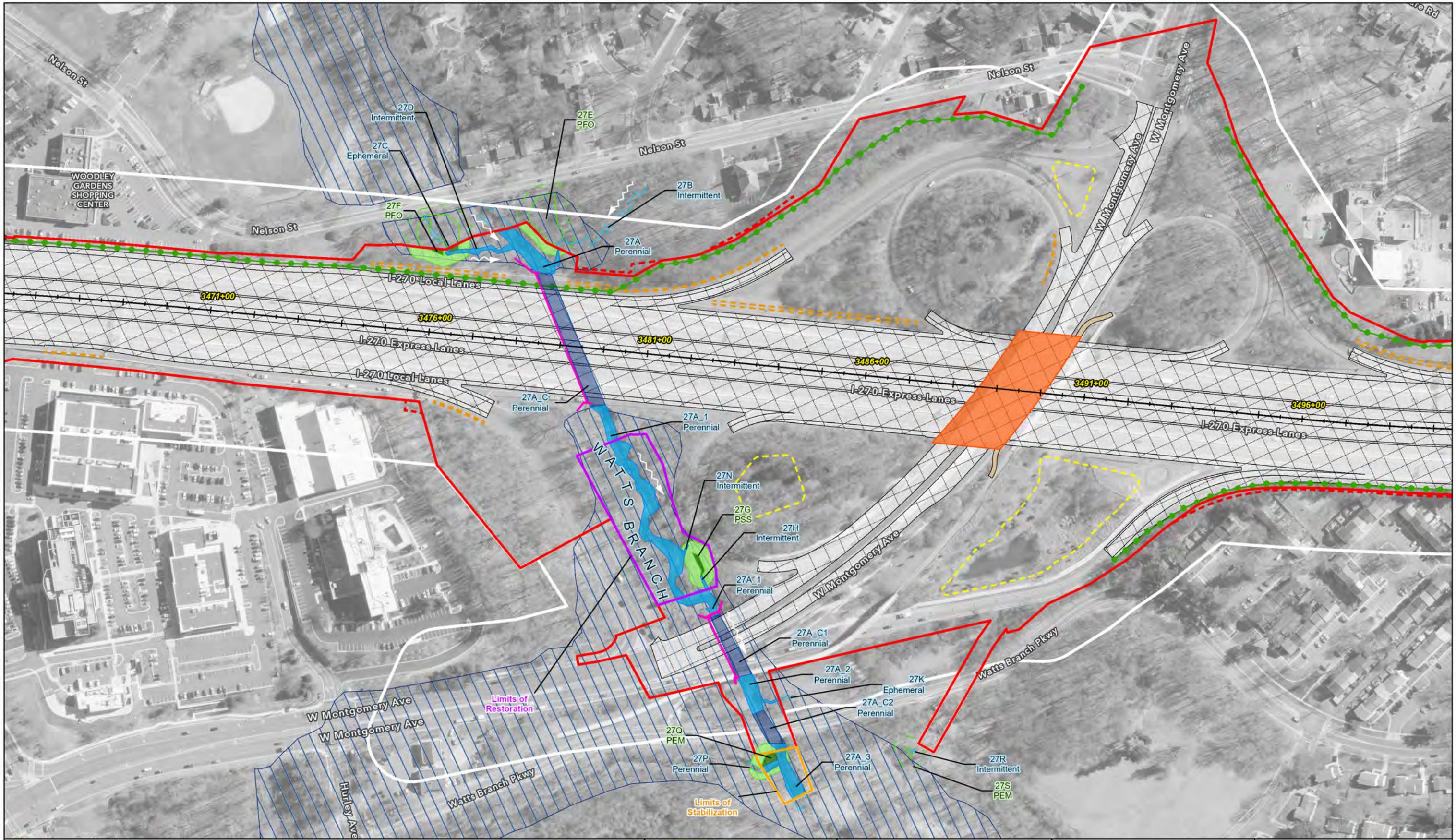


**Maryland
Wetland and Waterway
Impact Plates**

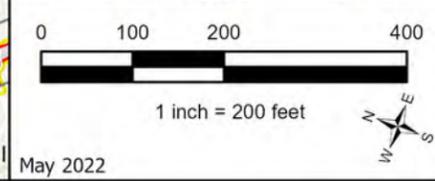
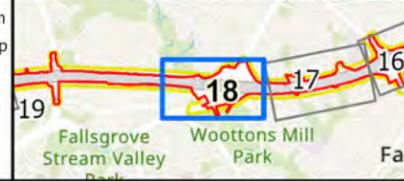
Mainline Impact Plate 17



May 2022



RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

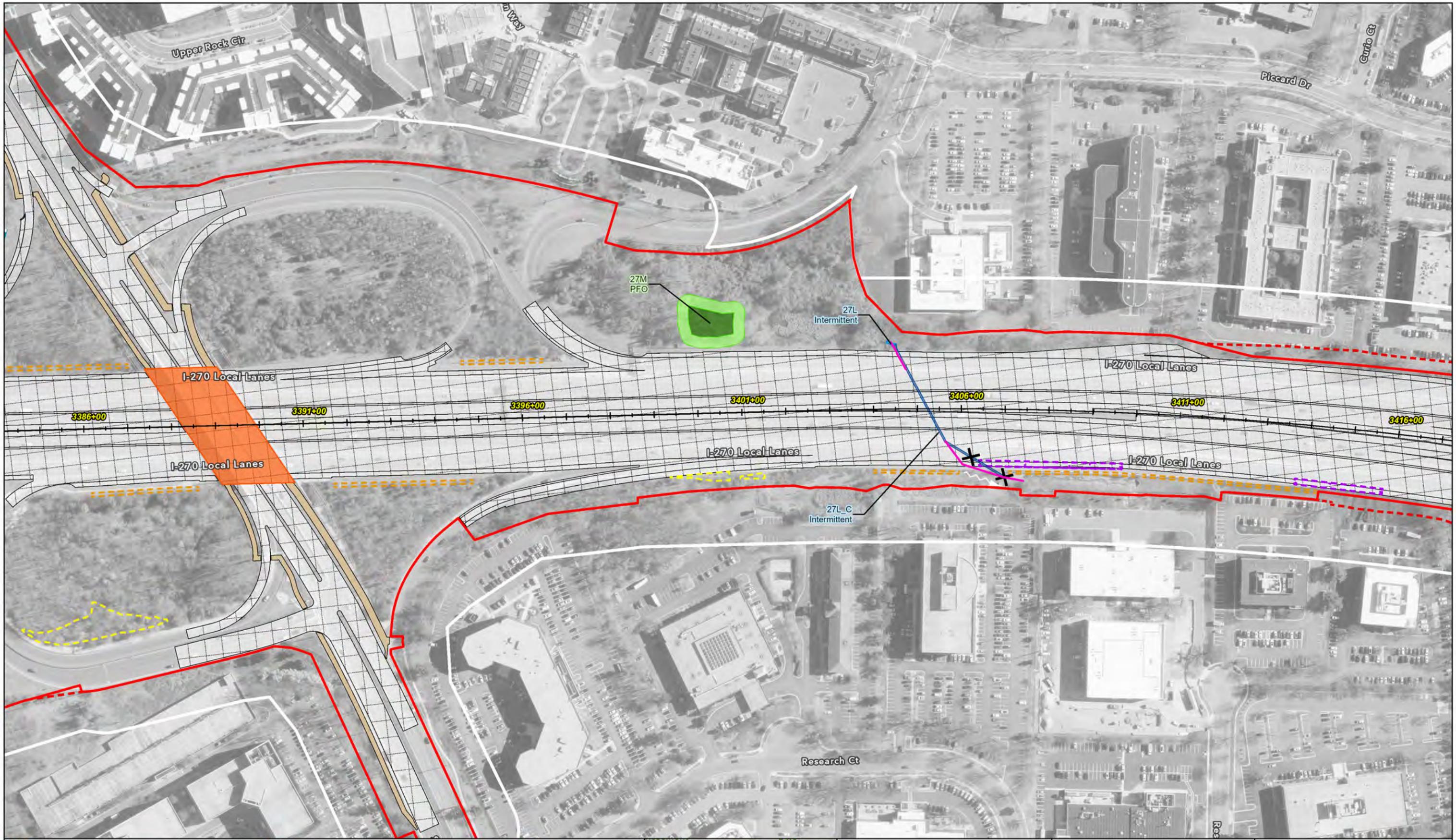


**Maryland
Wetland and Waterway
Impact Plates**

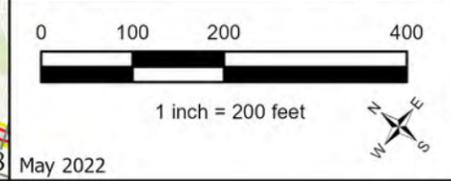
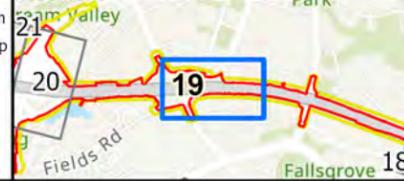
Mainline Impact Plate 18



May 2022



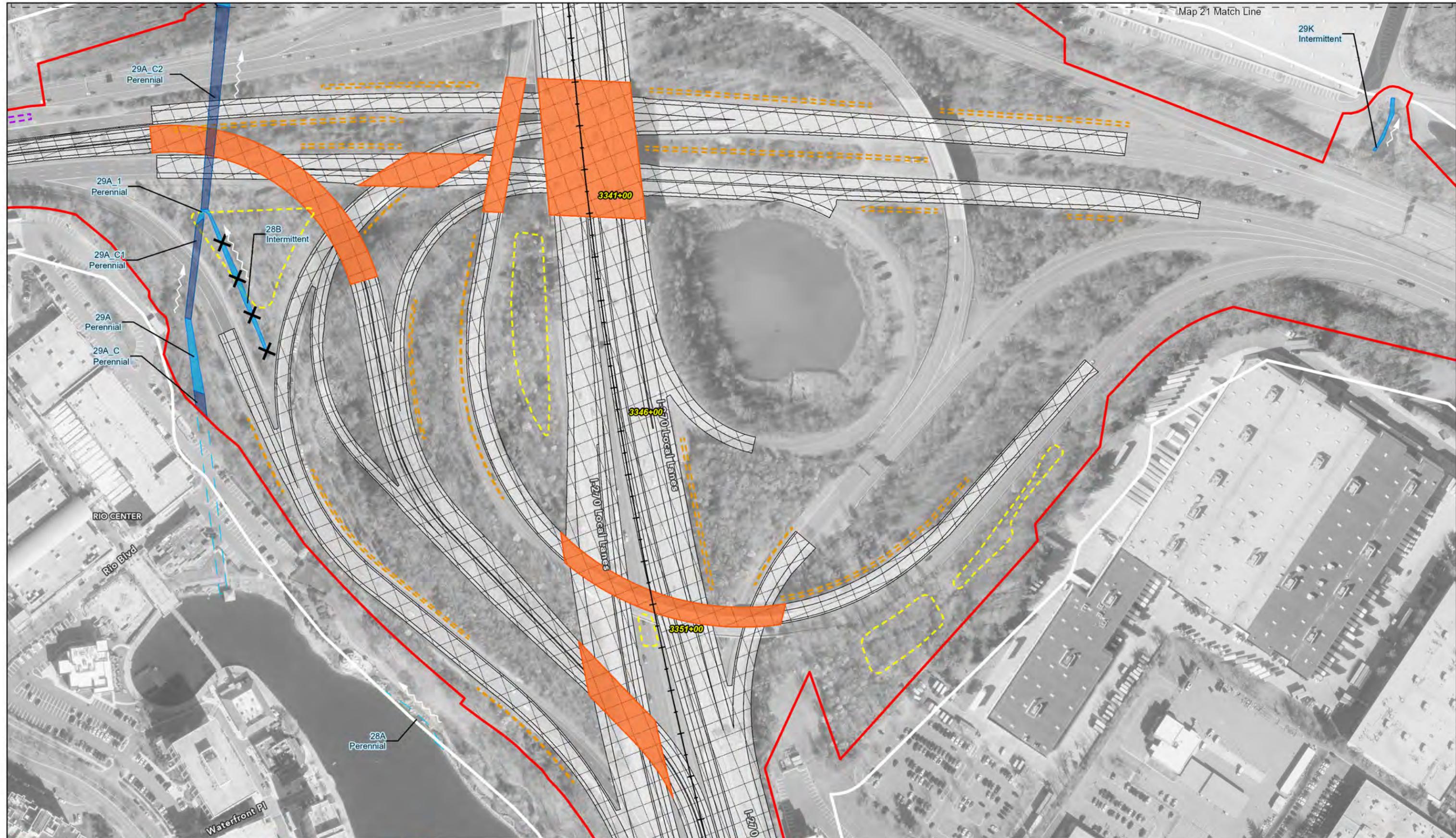
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|-------------------------------|----------------------------|---------------------------------|----------------------|----------------------------|
| RPA Limit of Disturbance Temp | Proposed Retaining Wall | Bridge | Waterway Impact Perm | Wetland Buffer Impact Perm |
| RPA Limit of Disturbance Perm | New/Augmented Pipe/Culvert | Limit Of Improved SWM / Storage | Waterway Impact Temp | Wetland Buffer Impact Temp |
| Delineation Limits | Relocated Channel | Limit Of Restoration | Culvert Impact Perm | Stream No Impact |
| Proposed Pavement | Proposed SWM - Pond | Limit Of Stabilization | Culvert Impact Temp | Wetland No Impact |
| Noise Wall Proposed | Proposed SWM - Swale | Shared Use Path | Wetland Impact Perm | Wetland Buffer No Impact |
| Noise Wall Existing | Proposed SWM - Vault | Flow Direction | Wetland Impact Temp | FEMA 100-Year Floodplain |



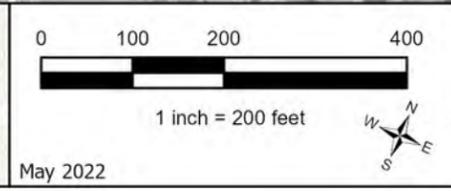
**Maryland
Wetland and Waterway
Impact Plates**

Mainline Impact Plate 19





RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



**Maryland
Wetland and Waterway
Impact Plates**

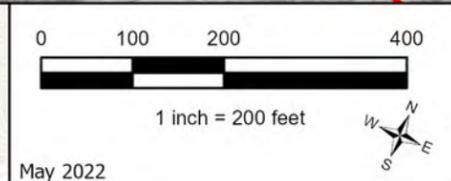
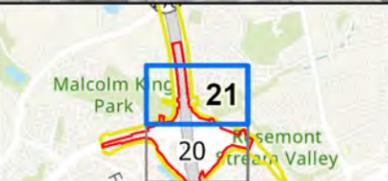
Mainline Impact Plate 20





Map 20 Match Line

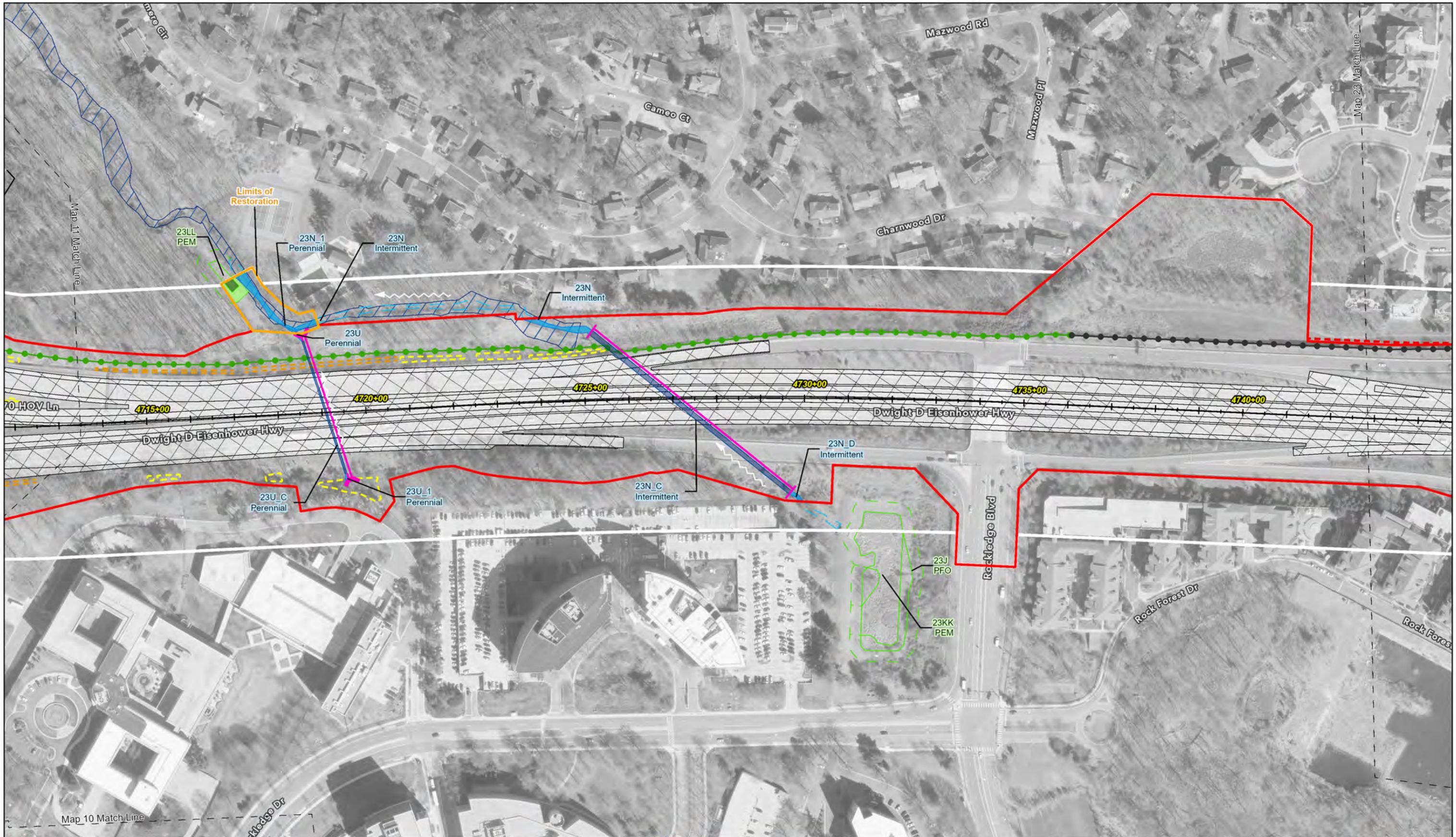
RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



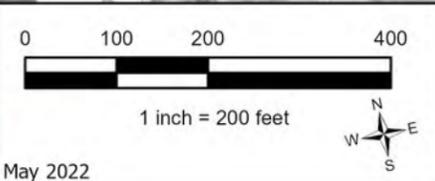
**Maryland
Wetland and Waterway
Impact Plates**

Mainline Impact Plate 21





RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



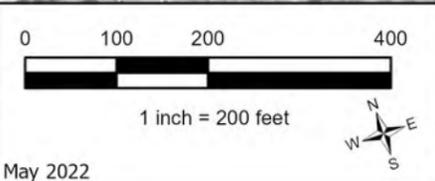
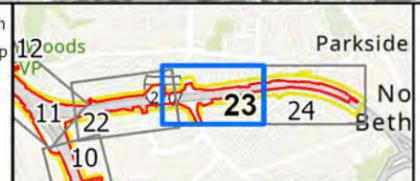
**Maryland
Wetland and Waterway
Impact Plates**

Mainline Impact Plate 22





- RPA Limit of Disturbance Temp
- RPA Limit of Disturbance Perm
- Delineation Limits
- Proposed Pavement
- Noise Wall Proposed
- Noise Wall Existing
- Proposed Retaining Wall
- New/Augmented Pipe/Culvert
- Relocated Channel
- Proposed SWM - Pond
- Proposed SWM - Swale
- Proposed SWM - Vault
- Bridge
- Limit Of Improved SWM / Storage
- Limit Of Restoration
- Limit Of Stabilization
- Shared Use Path
- Flow Direction
- Waterway Impact Perm
- Waterway Impact Temp
- Culvert Impact Perm
- Culvert Impact Temp
- Wetland Impact Perm
- Wetland Impact Temp
- Wetland Buffer Impact Perm
- Wetland Buffer Impact Temp
- Stream No Impact
- Wetland No Impact
- Wetland Buffer No Impact
- FEMA 100-Year Floodplain

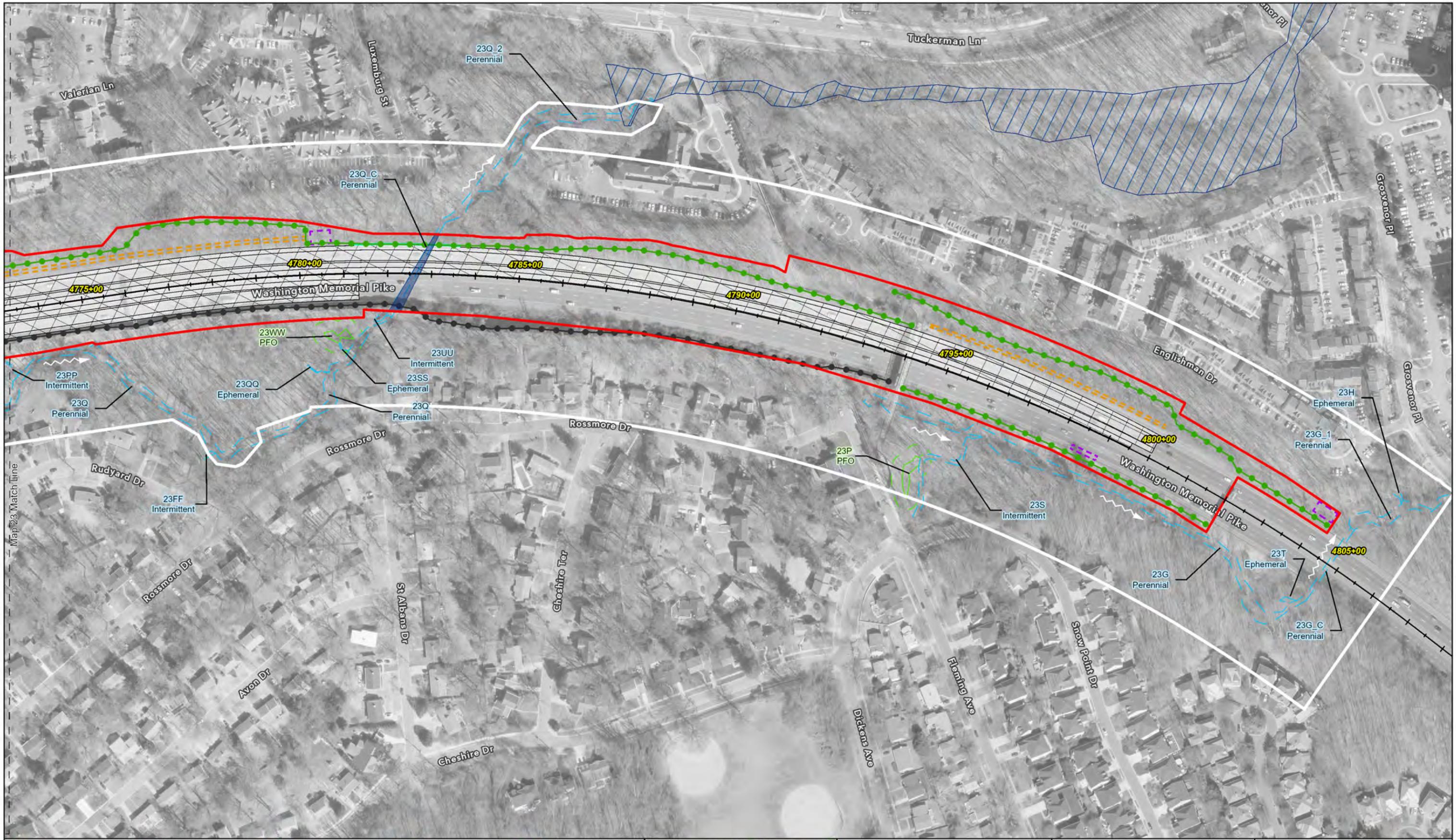


**Maryland
Wetland and Waterway
Impact Plates**

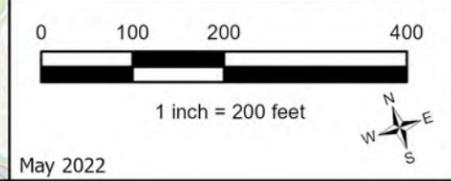
Mainline Impact Plate 23



May 2022



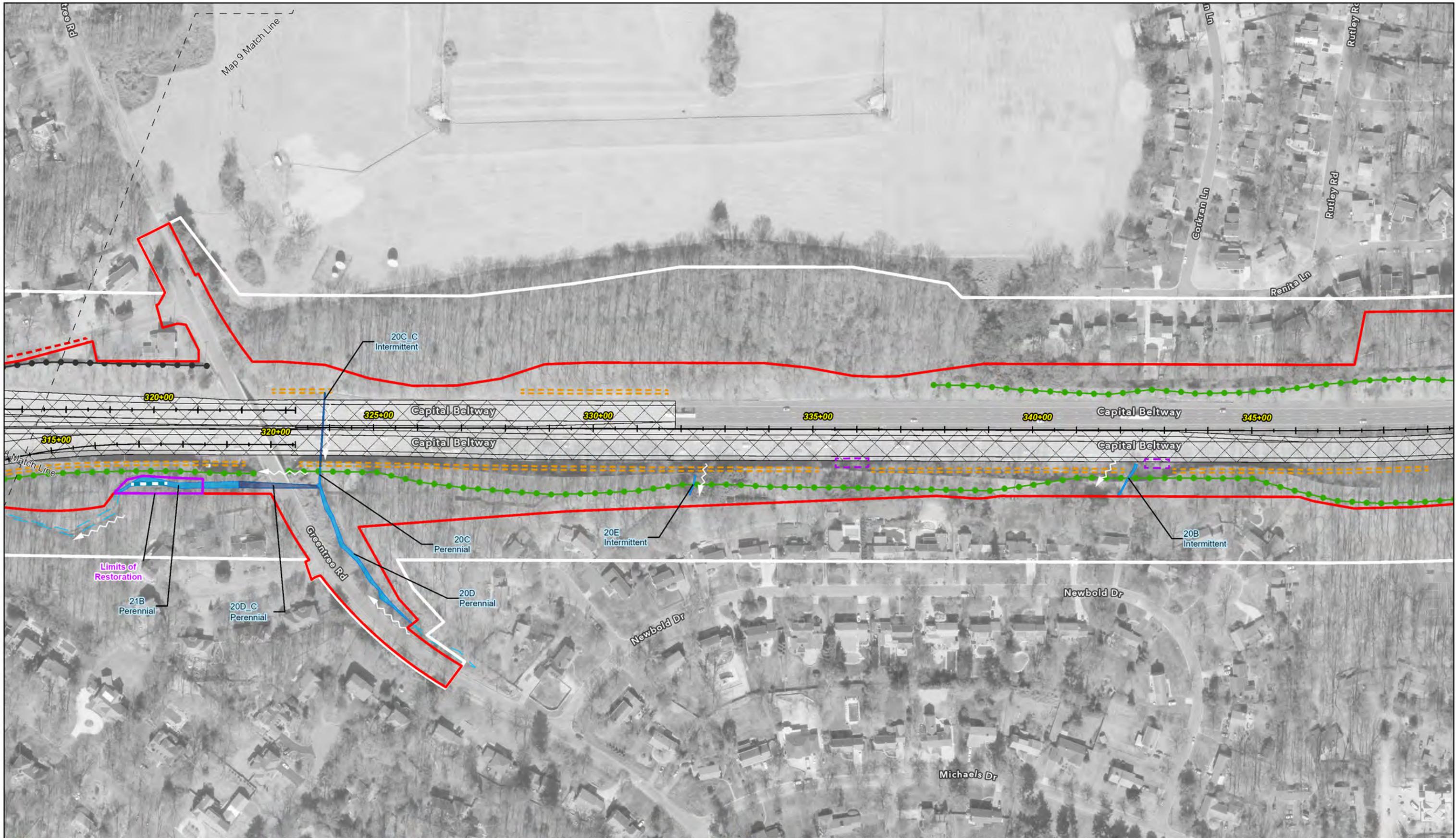
RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



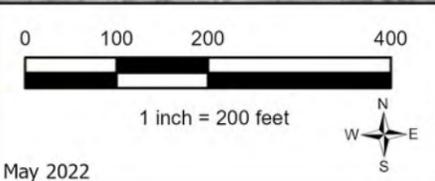
**Maryland
Wetland and Waterway
Impact Plates**

Mainline Impact Plate 24





RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



**Maryland
Wetland and Waterway
Impact Plates**
Mainline Impact Plate 25

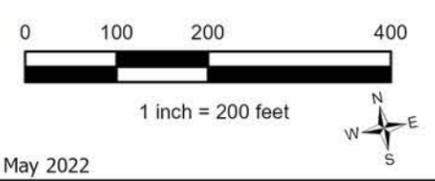


May 2022



LOD is limited to existing pavement and thus Dead Run will not be impacted.

RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



**Virginia
Wetland and Waterway
Impact Plates**
Mainline Impact Plate 26



May 2022

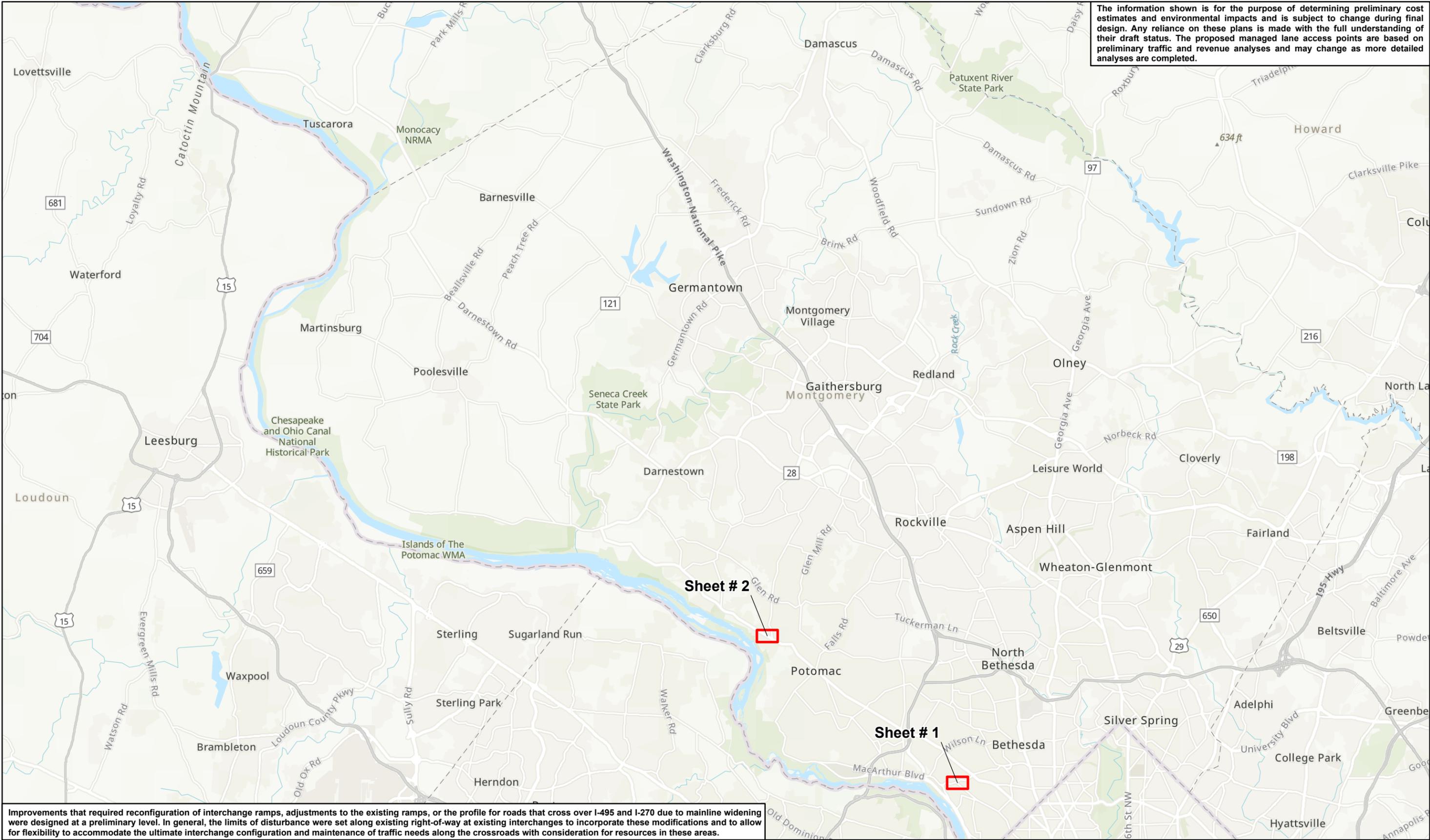
Compensatory Stormwater Management Wetland and Waterway Impact Plates



OP•LANES™
M A R Y L A N D

I-495 & I-270 Managed Lanes Study

The information shown is for the purpose of determining preliminary cost estimates and environmental impacts and is subject to change during final design. Any reliance on these plans is made with the full understanding of their draft status. The proposed managed lane access points are based on preliminary traffic and revenue analyses and may change as more detailed analyses are completed.

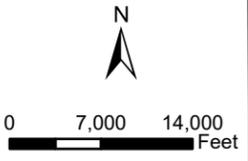


Improvements that required reconfiguration of interchange ramps, adjustments to the existing ramps, or the profile for roads that cross over I-495 and I-270 due to mainline widening were designed at a preliminary level. In general, the limits of disturbance were set along existing right-of-way at existing interchanges to incorporate these modifications and to allow for flexibility to accommodate the ultimate interchange configuration and maintenance of traffic needs along the crossroads with consideration for resources in these areas.

 Plate Number

May 2022

**Key
Map**



**Wetland and Waterway
Impact Plates
Compensatory SWM**

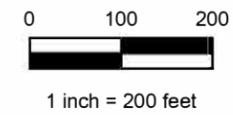




Limit of Disturbance - SWM Site
 Delineation Limits - SWM Site

<p> Waterway Impact</p> <p> Culvert Impact</p> <p> Wetland Impact</p> <p> Wetland Buffer Impact</p>	<p> Waterway - No Impact</p> <p> Culvert - No Impact</p> <p> Wetland - No Impact</p> <p> Wetland Buffer - No Impact</p>
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FEMA 100-Year Floodplain



Wetland and Waterway Impact Plates

Compensatory SWM Impact Plate 1





 Limit of Disturbance - SWM Site
 Delineation Limits - SWM Site

 Waterway Impact
 Culvert Impact
 Wetland Impact
 Wetland Buffer Impact

 Waterway - No Impact
 Culvert - No Impact
 Wetland - No Impact
 Wetland Buffer - No Impact

 FEMA 100-Year Floodplain


 May 2022

0 100 200

 1 inch = 200 feet

Wetland and Waterway Impact Plates

Compensatory SWM Impact Plate 2



USACE IMPACT SUMMARY TABLES



OP•LANES™
M A R Y L A N D

I-495 & I-270 Managed Lanes Study

May 2022

USACE IMPACT TABLES

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USACE IMPACT TABLES

IMPACT ID DESIGNATION KEY

FEATURE NAMING CONVENTION ¹	DESCRIPTION
IMPACT ID_ 1 ²	Used to designate separate segments of a waterway feature to characterize differences such as channel type, classification, watershed, or geography.
IMPACT ID_ C	Used to designate a culvert channel type, usually flowing between two segments of a waterway feature that have different channel types. Some features may have a “culvert” channel type without the “_C” designation if they do not have multiple segments.
IMPACT ID_ D	Used to designate a ditch channel type. Some features may have a “ditch” channel type without the “_D” designation if they do not have multiple segments.
IMPACT ID_ B	Used to designate features that are bridged. All features that are underneath bridges are given this designation.
IMPACT ID_ C1	Used to designate more than one culverted, bridged, or ditched section of a feature.

¹ Impact IDs are not limited to one naming convention. An impacted feature may have multiple designations (e.g. 11M, 11M_1, 11M_B).

² Impact IDs with “_1” are not limited to one number. An impacted feature may have multiple segments (e.g. 21C_1, 21C_2).

USACE IMPACT TABLES

SUMMARY OF IMPACTS TO WATERWAYS BY HUC 8 WATERSHED

WATERSHED	WATERWAYS (SF)				WATERWAYS (LF)			
	Ephemeral	Intermittent	Perennial	Total	Ephemeral	Intermittent	Perennial	Total
02070008	6,290	101,909	848,136	956,335	1,345	12,573	27,961	41,879
Permanent	6,225	93,523	533,451	633,199	1,334	11,347	26,845	39,526
Temporary	65	8,386	314,685	323,136	11	1,226	1,116	2,353
02070010	0	635	3,246	3,881	0	204	203	407
Permanent	0	635	3,246	3,881	0	204	203	407
Total	6,290	102,544	851,382	960,216	1,345	12,777	28,164	42,286

SUMMARY OF IMPACTS TO WETLANDS BY HUC 8 WATERSHED

IMPACT TYPE	WETLANDS (SF)				WETLANDS (AC)			
	PEM	PFO	PSS	Total	PEM	PFO	PSS	Total
Permanent	110,771	37,346	481	148,598	2.54	0.86	0.01	3.41
Temporary	10,372	11,832	0	22,204	0.24	0.27	0.00	0.51
Total	121,143	49,178	481	170,802	2.78	1.13	0.01	3.92

Note: All wetlands and their buffers are located in the Middle Potomac-Catoctin (HUC8 02070008) watershed.

USACE IMPACT TABLES

PLATE 2 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
22MM	Perennial	Open Channel	14,142	167	Permanent
22MM	Perennial	Open Channel	243,446	855	Temporary
22MM_B	Perennial	Bridge	11,563	0	Permanent
22MM_B	Perennial	Bridge	67,060	140	Temporary
22NN	Intermittent	Open Channel	3,474	276	Temporary
22NN_B	Intermittent	Bridge	10	8	Permanent
22NN_B	Intermittent	Bridge	1,589	159	Temporary
22QQ	Intermittent	Open Channel	469	106	Temporary
22UU	Intermittent	Open Channel	10,481	543	Permanent
22VV	Ephemeral	Open Channel	358	26	Permanent
22VV	Ephemeral	Open Channel	31	5	Temporary
22WW	Intermittent	Open Channel	2,188	56	Permanent
22WW	Intermittent	Open Channel	424	42	Temporary
22WW_C	Intermittent	Culvert	1,360	272	Permanent

PLATE 2 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
22OO	PFO	2,471	Permanent
22OO	PFO	9,666	Temporary
22TT	PFO	2,166	Temporary

USACE IMPACT TABLES

PLATE 3 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
22HH	Intermittent	Ditch	1,157	230	Permanent
22HH_1	Intermittent	Ditch	925	154	Permanent
22HH_2	Intermittent	Open Channel	608	117	Permanent
22HH_C	Intermittent	Culvert	422	47	Permanent
22HH_C	Intermittent	Culvert	590	67	Temporary
22M_C	Perennial	Culvert	1,094	39	Temporary
22P	Intermittent	Open Channel	26	10	Permanent
22Q	Perennial	Open Channel	1,112	136	Permanent
22Q_C	Perennial	Culvert	1,263	223	Permanent
22T	Intermittent	Open Channel	127	9	Permanent
22T_1	Intermittent	Open Channel	261	35	Permanent
22T_2	Intermittent	Open Channel	497	92	Permanent
22T_B	Intermittent	Bridge	1,803	153	Permanent
22T_B1	Intermittent	Bridge	194	28	Permanent
22V	Intermittent	Ditch	190	76	Temporary
22V_1	Intermittent	Ditch	2	1	Permanent
22V_1	Intermittent	Ditch	91	40	Temporary
22V_2	Intermittent	Ditch	1,083	255	Temporary
22V_B	Intermittent	Bridge	331	168	Temporary
22V_B1	Intermittent	Bridge	2	2	Permanent
22V_B1	Intermittent	Bridge	67	27	Temporary

USACE IMPACT TABLES

PLATE 3 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
22PP	PFO	643	Permanent
22U	PFO	1,007	Permanent
22W*	PEM	4,099	Temporary
22W	PEM	5,842	Temporary
22X	PFO	1,120	Permanent
22Y	PEM	1,791	Permanent

*Shown as permanent on impact plates.

PLATE 4 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
22FF	Ephemeral	Open Channel	364	126	Permanent

USACE IMPACT TABLES

PLATE 5 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
22AA_1	Perennial	Open Channel	1,439	24	Permanent
22AA_1	Perennial	Open Channel	2,912	53	Temporary
22AA_2	Perennial	Open Channel	5,477	99	Permanent
22AA_3	Perennial	Open Channel	10,295	332	Permanent
22AA_B	Perennial	Bridge	3,245	42	Permanent
22AA_B1	Perennial	Bridge	8,112	201	Permanent
22BB	Ephemeral	Open Channel	44	24	Permanent
22CC	Ephemeral	Open Channel	2,135	451	Permanent
22CC	Ephemeral	Open Channel	34	6	Temporary
22CC_1	Ephemeral	Open Channel	682	184	Permanent
22CC_C	Ephemeral	Culvert	442	139	Permanent
22DD	Intermittent	Open Channel	945	167	Permanent
22EE	Ephemeral	Open Channel	647	126	Permanent
22H	Intermittent	Ditch	170	78	Permanent
22H_1	Intermittent	Open Channel	51	10	Permanent
22H_C	Intermittent	Culvert	760	95	Permanent
22KK	Perennial	Open Channel	556	58	Permanent
22Z	Perennial	Open Channel	3,177	75	Permanent
22Z_1	Perennial	Open Channel	2,210	81	Permanent
22Z_C	Perennial	Culvert	3,601	99	Permanent

PLATE 5 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
22F	PEM	928	Permanent
22G	PFO	850	Permanent
22GG	PEM	804	Permanent

USACE IMPACT TABLES

PLATE 6 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
21C_1	Perennial	Open Channel	15,733	645	Permanent
21C_2	Perennial	Open Channel	30,835	1,233	Permanent
21C_C1	Perennial	Culvert	4,836	321	Permanent
21C_C2	Perennial	Culvert	3,824	328	Permanent
21D	Intermittent	Ditch	105	106	Permanent
21D_1	Intermittent	Ditch	1,952	291	Permanent
21D_C	Intermittent	Culvert	1,035	316	Permanent
21D_C1	Intermittent	Culvert	798	119	Permanent
21F	Intermittent	Open Channel	1,054	228	Permanent
21F_C	Intermittent	Culvert	1,837	258	Permanent
21G	Intermittent	Ditch	128	54	Permanent
22A	Intermittent	Ditch	724	269	Permanent
22A_C	Intermittent	Culvert	439	152	Permanent
22AA	Perennial	Open Channel	3,545	181	Permanent
22AA	Perennial	Open Channel	1	1	Temporary
22B	Intermittent	Ditch	99	36	Permanent
22C	Intermittent	Ditch	146	51	Permanent
22C_C	Intermittent	Culvert	203	91	Permanent
22D	Intermittent	Ditch	305	144	Permanent

USACE IMPACT TABLES

PLATE 7 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
21C	Perennial	Open Channel	39,681	1,702	Permanent
21C_1	Perennial	Open Channel	38,400	1,487	Permanent
21C_C	Perennial	Culvert	3,633	252	Permanent
21H	Ephemeral	Open Channel	366	61	Permanent
21L_C	Perennial	Culvert	1,743	270	Permanent
21L_D	Perennial	Ditch	298	40	Permanent
21L_D1	Perennial	Ditch	83	20	Permanent
21M	Intermittent	Ditch	57	25	Permanent

PLATE 7 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
21P	PFO	709	Permanent
21T	PFO	1,054	Permanent

USACE IMPACT TABLES

PLATE 8 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
21B	Perennial	Open Channel	15,123	1,547	Permanent
21B_C	Perennial	Culvert	2,746	261	Permanent
21C	Perennial	Open Channel	67,012	3,286	Permanent
21J	Perennial	Ditch	243	13	Permanent
21K	Intermittent	Open Channel	28	5	Permanent
21U	Perennial	Open Channel	2,082	143	Permanent
21V	Intermittent	Open Channel	827	115	Permanent
21V	Intermittent	Open Channel	78	10	Temporary

USACE IMPACT TABLES

PLATE 9 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
21C	Perennial	Open Channel	10,501	551	Permanent
21I	Perennial	Open Channel	22	6	Permanent
23A_2	Perennial	Open Channel	2,301	200	Permanent
23A_3	Perennial	Open Channel	21,607	1,460	Permanent
23A_C1	Perennial	Culvert	1,619	147	Permanent
23A_C2	Perennial	Culvert	2,977	236	Permanent
23AA	Perennial	Open Channel	551	104	Permanent
23AA_1	Perennial	Open Channel	1,332	257	Permanent
23AA_C	Perennial	Culvert	453	101	Permanent
23AA_C1	Perennial	Culvert	675	220	Permanent
23D	Intermittent	Ditch	7,793	775	Permanent
23D_C	Intermittent	Culvert	2,456	255	Permanent

PLATE 9 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
23BB	PEM	1,406	Permanent
23L	PEM	253	Permanent
23MM	PFO	2,932	Permanent

USACE IMPACT TABLES

PLATE 10 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23A	Perennial	Open Channel	732	44	Permanent
23A_1	Perennial	Open Channel	7,762	454	Permanent
23A_C	Perennial	Culvert	4,185	216	Permanent
23A_C1	Perennial	Culvert	4,001	260	Permanent
23V	Intermittent	Ditch	117	51	Permanent
23V_C	Intermittent	Culvert	2,245	777	Permanent

PLATE 10 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
23CC	PFO	2,985	Permanent
23W	PEM	3,981	Permanent
23W	PEM	357	Temporary

USACE IMPACT TABLES

PLATE 11 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23DD	Intermittent	Open Channel	641	98	Permanent
23K	Perennial	Open Channel	766	89	Permanent
23K_1	Perennial	Open Channel	598	102	Permanent
23K_C	Perennial	Culvert	1,711	178	Permanent
23K_C1	Perennial	Culvert	505	64	Permanent
23K_C1	Perennial	Culvert	122	20	Temporary
23K_D	Perennial	Ditch	5,035	691	Permanent
23K_D	Perennial	Ditch	50	8	Temporary
23M	Ephemeral	Open Channel	50	8	Permanent
24A	Perennial	Open Channel	4,008	138	Permanent
24A_1	Perennial	Open Channel	6,789	224	Permanent
24A_C	Perennial	Culvert	6,427	320	Permanent

PLATE 11 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
23F	PEM	365	Permanent
23GG	PFO	1,389	Permanent
23X	PEM	1,039	Permanent
24X	PEM	91	Permanent

USACE IMPACT TABLES

PLATE 12 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
24C	Intermittent	Open Channel	600	44	Permanent

PLATE 13 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
24D	Perennial	Open Channel	8,048	697	Permanent
24F_2	Perennial	Open Channel	3,902	135	Permanent
24F_3	Perennial	Open Channel	2,276	134	Permanent
24F_C2	Perennial	Culvert	7,102	390	Permanent
24K	Intermittent	Open Channel	449	67	Permanent
24V	Intermittent	Open Channel	292	52	Permanent
24V_C	Intermittent	Culvert	2,544	425	Permanent

PLATE 13 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
24N	PFO	917	Permanent
24Q	PFO	1,744	Permanent

PLATE 14 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
24F_C1	Perennial	Culvert	3,688	191	Permanent

USACE IMPACT TABLES

PLATE 15 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
25F	Ephemeral	Open Channel	897	141	Permanent

PLATE 16 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
25E	Perennial	Open Channel	27,438	360	Permanent
25H	Perennial	Open Channel	1,589	220	Permanent
25H_1	Perennial	Open Channel	10,254	336	Permanent
25H_C	Perennial	Culvert	2,682	420	Permanent
25N	Intermittent	Open Channel	350	72	Permanent

PLATE 16 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
25D	PFO	637	Permanent
25K	PEM	34,215	Permanent
25P	PFO	85	Permanent
26H	PEM	10	Permanent

USACE IMPACT TABLES

PLATE 17 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
26B	Intermittent	Open Channel	5,791	432	Permanent
26B_1	Intermittent	Open Channel	315	22	Permanent
26B_C	Intermittent	Culvert	6,809	306	Permanent
26B_C1	Intermittent	Culvert	489	47	Permanent
26C	Intermittent	Open Channel	2,814	373	Permanent
26C_1	Intermittent	Open Channel	388	30	Permanent
26C_C	Intermittent	Culvert	4,317	360	Permanent
26C_C1	Intermittent	Culvert	376	22	Permanent
26J	Intermittent	Open Channel	191	31	Permanent
26K	Intermittent	Open Channel	3,920	328	Permanent
26L	Intermittent	Open Channel	69	11	Permanent

PLATE 17 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
26A	PFO	12,406	Permanent
26D	PEM	817	Permanent
26E	PEM	356	Permanent
26E	PEM	74	Temporary
26F	PEM	63,439	Permanent

USACE IMPACT TABLES

PLATE 18 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
27A	Perennial	Open Channel	4,702	141	Permanent
27A_1	Perennial	Open Channel	15,652	648	Permanent
27A_2	Perennial	Open Channel	2,914	89	Permanent
27A_3	Perennial	Open Channel	3,463	131	Permanent
27A_C	Perennial	Culvert	10,081	325	Permanent
27A_C1	Perennial	Culvert	4,089	152	Permanent
27A_C2	Perennial	Culvert	2,472	85	Permanent
27B	Intermittent	Open Channel	352	46	Permanent
27C	Ephemeral	Open Channel	30	6	Permanent
27D	Intermittent	Open Channel	1,468	162	Permanent
27H	Intermittent	Open Channel	207	35	Permanent
27K	Ephemeral	Open Channel	210	42	Permanent
27N	Intermittent	Open Channel	98	19	Permanent
27P	Perennial	Open Channel	529	39	Permanent

PLATE 18 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
27F	PFO	535	Permanent
27G	PSS	481	Permanent
27Q	PEM	706	Permanent

USACE IMPACT TABLES

PLATE 19 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
27L	Intermittent	Open Channel	101	19	Permanent
27L_C	Intermittent	Culvert	1,632	405	Permanent

PLATE 19 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
27M	PFO	5,862	Permanent

PLATE 20 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
28B	Intermittent	Ditch	3,222	354	Permanent
29A	Perennial	Open Channel	2,956	169	Permanent
29A_1	Perennial	Open Channel	280	26	Permanent
29A_C	Perennial	Culvert	1,065	48	Permanent
29A_C1	Perennial	Culvert	3,346	224	Permanent
29A_C2	Perennial	Culvert	10,314	461	Permanent
29K	Intermittent	Open Channel	896	129	Permanent

USACE IMPACT TABLES

PLATE 21 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
29A_2	Perennial	Open Channel	5,233	280	Permanent
29A_C2	Perennial	Culvert	101	4	Permanent
29B_C	Perennial	Culvert	6,703	366	Permanent
29D_D	Intermittent	Ditch	1,363	119	Permanent

PLATE 22 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23N	Intermittent	Open Channel	2,095	199	Permanent
23N_1	Perennial	Open Channel	2,225	184	Permanent
23N_C	Intermittent	Culvert	6,176	583	Permanent
23N_D	Intermittent	Ditch	275	33	Permanent
23U	Perennial	Ditch	184	31	Permanent
23U_1	Perennial	Open Channel	77	18	Permanent
23U_C	Perennial	Culvert	1,225	317	Permanent

PLATE 22 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	IMPACT TYPE
23LL	PEM	570	Permanent

PLATE 23 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23R_C	Intermittent	Culvert	635	204	Permanent

USACE IMPACT TABLES

PLATE 24 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23Q_C	Perennial	Culvert	3,246	203	Permanent

PLATE 25 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
20B	Intermittent	Open Channel	351	83	Permanent
20C	Perennial	Ditch	112	37	Permanent
20C_C	Intermittent	Culvert	455	169	Permanent
20D	Perennial	Open Channel	3,027	390	Permanent
20D_C	Perennial	Culvert	1,895	180	Permanent
20E	Intermittent	Open Channel	140	47	Permanent
21B	Perennial	Open Channel	3,261	289	Permanent

MDE IMPACT SUMMARY TABLES



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M A R Y L A N D

I-495 & I-270 Managed Lanes Study

May 2022

MDE IMPACT TABLES

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IMPACT ID DESIGNATION KEY

FEATURE NAMING CONVENTION ¹	DESCRIPTION
IMPACT ID_1 ²	Used to designate separate segments of a waterway feature to characterize differences such as channel type, classification, watershed, or geography.
IMPACT ID_C	Used to designate a culvert channel type, usually flowing between two segments of a waterway feature that have different channel types. Some features may have a “culvert” channel type without the “_C” designation if they do not have multiple segments.
IMPACT ID_D	Used to designate a ditch channel type. Some features may have a “ditch” channel type without the “_D” designation if they do not have multiple segments.
IMPACT ID_B	Used to designate features that are bridged. All features that are underneath bridges are given this designation.
IMPACT ID_C1	Used to designate more than one culverted, bridged, or ditched section of a feature.

¹ Impact IDs are not limited to one naming convention. An impacted feature may have multiple designations (e.g. 11M, 11M_1, 11M_B).

² Impact IDs with “_1” are not limited to one number. An impacted feature may have multiple segments (e.g. 21C_1, 21C_2).

MDE IMPACT TABLES

SUMMARY OF IMPACTS TO WATERWAYS BY HUC 8 WATERSHED

WATERSHED	WATERWAYS (SF)			WATERWAYS (LF)		
	Intermittent	Perennial	Total	Intermittent	Perennial	Total
02070008	87,456	848,136	935,592	11,660	27,961	39,621
Permanent	79,494	533,451	612,945	10,476	26,845	37,321
Temporary	7,962	314,685	322,647	1,184	1,116	2,300
02070010	635	3,246	3,881	204	203	407
Permanent	635	3,246	3,881	204	203	407
Total	88,091	851,382	939,473	11,864	28,164	40,028

SUMMARY OF IMPACTS TO WETLANDS BY HUC 8 WATERSHED

IMPACT TYPE	WETLANDS (SF)				WETLANDS (AC)			
	PEM	PFO	PSS	Total	PEM	PFO	PSS	Total
Permanent	115,107	37,346	481	152,934	2.64	0.86	0.01	3.51
Temporary	6,273	9,666	0	15,939	0.15	0.22	0.00	0.37
Total	121,380	47,012	481	168,873	2.79	1.08	0.01	3.88

NOTE: All wetlands and their buffers are located in the Middle Potomac-Catoctin (HUC8 02070008) watershed.

SUMMARY OF IMPACTS TO WETLAND BUFFERS BY HUC 8 WATERSHED

IMPACT TYPE	WETLAND BUFFER (SF)				WETLAND BUFFER (AC)			
	PEM	PFO	PSS	Total	PEM	PFO	PSS	Total
Permanent	146,183	121,535	4,841	272,559	3.36	2.79	0.11	6.26
Temporary	6,908	3,455	0	10,363	0.16	0.08	0.00	0.24
Total	153,091	124,990	4,841	282,922	3.52	2.87	0.11	6.50

NOTE: All wetlands and their buffers are located in the Middle Potomac-Catoctin (HUC8 02070008) watershed.

MDE IMPACT TABLES

SUMMARY OF IMPACTS TO 100-YEAR FLOODPLAINS

ASSOCIATED WATERWAY	RELATED FEATURES	FIRM PANEL	IMPACT PLATE	HUC 8 NAME	PERMANENT IMPACT (SF)	TEMPORARY IMPACT (SF)	TOTAL IMPACT (SF)	TOTAL IMPACT (AC)
Watts Branch 1	27A, 27A_C, 27D	24031C0333D, 51059C0075E	18	Middle Potomac-Catoctin	14,366	108	14,474	0.33
Watts Branch 2	27A_1, 27A_2, 27A_3, 27A_C1, 27A_C2, 26C_1	24031C0333D, 51059C0075E	17, 18	Middle Potomac-Catoctin	136,456	0	136,456	3.13
Thomas Branch 1	23A, 23A_C	24031C0345D, 51059C0075E	10	Middle Potomac-Catoctin	4,918	0	4,918	0.11
Thomas Branch 2	21C, 21C_1, 21C_2, 21C_C, 21C_C1, 23A_3	24031C0345D, 24031C0435D, 51059C0075E	6, 7, 8, 9	Middle Potomac-Catoctin	581,793	2,313	584,106	13.41
Cabin John Creek	22AA, 22AA_1, 22AA_2, 22AA_B, 22AA_B1, 22DD	24031C0435D, 51059C0160E	5, 6	Middle Potomac-Catoctin	30,058	3,386	33,444	0.77
Potomac River	22HH_2, 22M_C, 22MM, 22MM_B, 22NN, 22NN_B, 22P, 22QQ, 22UU	24031C0435D, 51059C0160E	2, 3	Middle Potomac-Catoctin	158,691	315,859	474,550	10.89
Unnamed tributary to Old Farm Creek	23N, 23N_C, 23U	24031C0342D, 51059C0075E	22	Middle Potomac-Catoctin	8,369	0	8,369	0.19
Booze Creek	22Z, 22Z_C	24031C0435D, 51059C0160E	5	Middle Potomac-Catoctin	42,362	0	42,362	0.97
Muddy Branch	29B, 29B_1, 29B_C, 29P	24031C0327D, 51059C0075E	21	Middle Potomac-Catoctin	67,903	0	67,903	1.56
Rock Run	22HH_2, 22M, 22N	24031C0435D, 51059C0160E	3	Middle Potomac-Catoctin	2,849	0	2,849	0.07
Unnamed tributary to Muddy Branch	29D_D	24031C0327D, 51059C0075E	21	Middle Potomac-Catoctin	3,460	0	3,460	0.08
Unnamed tributary to Watts Branch	26C_1, 26C_C, 26C_C1	24031C0333D, 51059C0075E	17	Middle Potomac-Catoctin	0	1,591	1,591	0.04
TOTAL					1,051,225	323,257	1,374,482	31.55

NOTE: Floodplain impacts are not shown in their entirety on the impact plates

MDE IMPACT TABLES

PLATE 2 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
22MM	Perennial	Open Channel	14,142	167	Permanent
22MM	Perennial	Open Channel	243,446	855	Temporary
22MM_B	Perennial	Bridge	11,563	0	Permanent
22MM_B	Perennial	Bridge	67,060	140	Temporary
22NN	Intermittent	Open Channel	3,474	276	Temporary
22NN_B	Intermittent	Bridge	10	8	Permanent
22NN_B	Intermittent	Bridge	1,589	159	Temporary
22QQ	Intermittent	Open Channel	469	106	Temporary

PLATE 2 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
2200	PFO	2,471	5,706	Permanent
2200	PFO	9,666	3,455	Temporary

PLATE 2 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Potomac River	73,160	Permanent
Potomac River	198,809	Temporary

MDE IMPACT TABLES

PLATE 3 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
22HH	Intermittent	Ditch	1,157	230	Permanent
22HH_1	Intermittent	Ditch	925	154	Permanent
22HH_2	Intermittent	Open Channel	608	117	Permanent
22HH_C	Intermittent	Culvert	422	47	Permanent
22HH_C	Intermittent	Culvert	590	67	Temporary
22M_C	Perennial	Culvert	1,094	39	Temporary
22P	Intermittent	Open Channel	26	10	Permanent
22Q	Perennial	Open Channel	1,112	136	Permanent
22Q_C	Perennial	Culvert	1,263	223	Permanent
22T	Intermittent	Open Channel	127	9	Permanent
22T_1	Intermittent	Open Channel	261	35	Permanent
22T_2	Intermittent	Open Channel	497	92	Permanent
22T_B	Intermittent	Bridge	1,803	153	Permanent
22T_B1	Intermittent	Bridge	194	28	Permanent
22V	Intermittent	Ditch	190	76	Temporary
22V_1	Intermittent	Ditch	2	1	Permanent
22V_1	Intermittent	Ditch	91	40	Temporary
22V_2	Intermittent	Ditch	1,083	255	Temporary
22V_B	Intermittent	Bridge	331	168	Temporary
22V_B1	Intermittent	Bridge	2	2	Permanent
22V_B1	Intermittent	Bridge	67	27	Temporary

MDE IMPACT TABLES

PLATE 3 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
22K	PEM	0	44	Temporary
22O	PFO	0	1,512	Permanent
22PP	PFO	643	5,433	Permanent
22U	PFO	1,007	7,449	Permanent
22W	PEM	4,099	5,469	Permanent
22W	PEM	5,842	5,807	Temporary
22X	PFO	1,120	6,040	Permanent
22Y	PEM	1,791	9,133	Permanent

PLATE 3 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Potomac River	117,050	Temporary
Potomac River	85,531	Permanent
Rock Run	2,849	Permanent

PLATE 4 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
22E	PEM	237	4,256	Permanent

MDE IMPACT TABLES

PLATE 5 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
22AA_1	Perennial	Open Channel	1,439	24	Permanent
22AA_1	Perennial	Open Channel	2,912	53	Temporary
22AA_2	Perennial	Open Channel	5,477	99	Permanent
22AA_3	Perennial	Open Channel	10,295	332	Permanent
22AA_B	Perennial	Bridge	3,245	42	Permanent
22AA_B1	Perennial	Bridge	8,112	201	Permanent
22DD	Intermittent	Open Channel	945	167	Permanent
22H	Intermittent	Ditch	170	78	Permanent
22H_1	Intermittent	Open Channel	51	10	Permanent
22H_C	Intermittent	Culvert	760	95	Permanent
22KK	Perennial	Open Channel	556	58	Permanent
22Z	Perennial	Open Channel	3,177	75	Permanent
22Z_1	Perennial	Open Channel	2,210	81	Permanent
22Z_C	Perennial	Culvert	3,601	99	Permanent

PLATE 5 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
22F	PEM	928	10,820	Permanent
22G	PFO	850	8,444	Permanent
22GG	PEM	804	4,339	Permanent

PLATE 5 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Booze Creek	42,362	Permanent
Cabin John Creek	1,773	Temporary
Cabin John Creek	22,689	Permanent

MDE IMPACT TABLES

PLATE 6 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
21C_1	Perennial	Open Channel	15,733	645	Permanent
21C_2	Perennial	Open Channel	30,835	1,233	Permanent
21C_C1	Perennial	Culvert	4,836	321	Permanent
21C_C2	Perennial	Culvert	3,824	328	Permanent
21D	Intermittent	Ditch	105	106	Permanent
21D_1	Intermittent	Ditch	1,952	291	Permanent
21D_C	Intermittent	Culvert	1,035	316	Permanent
21D_C1	Intermittent	Culvert	798	119	Permanent
21F	Intermittent	Open Channel	1,054	228	Permanent
21F_C	Intermittent	Culvert	1,837	258	Permanent
21G	Intermittent	Ditch	128	54	Permanent
22A	Intermittent	Ditch	724	269	Permanent
22A_C	Intermittent	Culvert	439	152	Permanent
22AA	Perennial	Open Channel	3,545	181	Permanent
22AA	Perennial	Open Channel	1	1	Temporary
22B	Intermittent	Ditch	99	36	Permanent
22C	Intermittent	Ditch	146	51	Permanent
22C_C	Intermittent	Culvert	203	91	Permanent
22D	Intermittent	Ditch	305	144	Permanent

PLATE 6 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Cabin John Creek	1,613	Temporary
Cabin John Creek	7,369	Permanent
Thomas Branch 2	79,181	Permanent

MDE IMPACT TABLES

PLATE 7 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
21C	Perennial	Open Channel	39,681	1,702	Permanent
21C_1	Perennial	Open Channel	38,400	1,487	Permanent
21C_C	Perennial	Culvert	3,633	252	Permanent
21L_C	Perennial	Culvert	1,743	270	Permanent
21L_D	Perennial	Ditch	298	40	Permanent
21L_D1	Perennial	Ditch	83	20	Permanent
21M	Intermittent	Ditch	57	25	Permanent

PLATE 7 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
21P	PFO	709	3,844	Permanent
21Q	PFO	0	2,342	Permanent
21T	PFO	1,054	3,935	Permanent

PLATE 7 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Thomas Branch 2	298,330	Permanent
Thomas Branch 2	1,974	Temporary

MDE IMPACT TABLES

PLATE 8 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
21B	Perennial	Open Channel	15,123	1,547	Permanent
21B_C	Perennial	Culvert	2,746	261	Permanent
21C	Perennial	Open Channel	67,012	3,286	Permanent
21J	Perennial	Ditch	243	13	Permanent
21K	Intermittent	Open Channel	28	5	Permanent
21U	Perennial	Open Channel	2,082	143	Permanent
21V	Intermittent	Open Channel	827	115	Permanent
21V	Intermittent	Open Channel	78	10	Temporary

PLATE 8 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Thomas Branch 2	111,623	Permanent
Thomas Branch 2	340	Temporary

MDE IMPACT TABLES

PLATE 9 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
21C	Perennial	Open Channel	10,501	551	Permanent
21I	Perennial	Open Channel	22	6	Permanent
23A_2	Perennial	Open Channel	2,301	200	Permanent
23A_3	Perennial	Open Channel	21,607	1,460	Permanent
23A_C1	Perennial	Culvert	1,619	147	Permanent
23A_C2	Perennial	Culvert	2,977	236	Permanent
23AA	Perennial	Open Channel	551	104	Permanent
23AA_1	Perennial	Open Channel	1,332	257	Permanent
23AA_C	Perennial	Culvert	453	101	Permanent
23AA_C1	Perennial	Culvert	675	220	Permanent
23D	Intermittent	Ditch	7,793	775	Permanent
23D_C	Intermittent	Culvert	2,456	255	Permanent

PLATE 9 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
23BB	PEM	1,406	10,320	Permanent
23L	PEM	253	3,661	Permanent
23MM	PFO	2,932	4,520	Permanent

PLATE 9 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Thomas Branch 2	92,659	Permanent

MDE IMPACT TABLES

PLATE 10 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23A	Perennial	Open Channel	732	44	Permanent
23A_1	Perennial	Open Channel	7,762	454	Permanent
23A_C	Perennial	Culvert	4,185	216	Permanent
23A_C1	Perennial	Culvert	4,001	260	Permanent
23V	Intermittent	Ditch	117	51	Permanent
23V_C	Intermittent	Culvert	2,245	777	Permanent

PLATE 10 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
23CC	PFO	2,985	7,657	Permanent
23W	PEM	3,981	6,751	Permanent
23W	PEM	357	44	Temporary

PLATE 10 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Thomas Branch 1	4,918	Permanent

MDE IMPACT TABLES

PLATE 11 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23DD	Intermittent	Open Channel	641	98	Permanent
23K	Perennial	Open Channel	766	89	Permanent
23K_1	Perennial	Open Channel	598	102	Permanent
23K_C	Perennial	Culvert	1,711	178	Permanent
23K_C1	Perennial	Culvert	505	64	Permanent
23K_C1	Perennial	Culvert	122	20	Temporary
23K_D	Perennial	Ditch	5,035	691	Permanent
23K_D	Perennial	Ditch	50	8	Temporary
24A	Perennial	Open Channel	4,008	138	Permanent
24A_1	Perennial	Open Channel	6,789	224	Permanent
24A_C	Perennial	Culvert	6,427	320	Permanent

PLATE 11 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
23F	PEM	365	3,677	Permanent
23GG	PFO	1,389	8,384	Permanent
23X	PEM	1,039	8,732	Permanent
24W	PEM	0	264	Permanent
24X	PEM	91	1,855	Permanent

MDE IMPACT TABLES

PLATE 12 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
24C	Intermittent	Open Channel	600	44	Permanent

PLATE 13 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
24D	Perennial	Open Channel	8,048	697	Permanent
24F_2	Perennial	Open Channel	3,902	135	Permanent
24F_3	Perennial	Open Channel	2,276	134	Permanent
24F_C2	Perennial	Culvert	7,102	390	Permanent
24K	Intermittent	Open Channel	449	67	Permanent
24V	Intermittent	Open Channel	292	52	Permanent
24V_C	Intermittent	Culvert	2,544	425	Permanent

PLATE 13 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
24N	PFO	917	6,399	Permanent
24Q	PFO	1,744	5,471	Permanent

MDE IMPACT TABLES

PLATE 14 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
24F_C1	Perennial	Culvert	3,688	191	Permanent

PLATE 14 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
24R	PFO	0	2,240	Permanent

PLATE 15 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
25M	PEM	0	81	Permanent
25M	PEM	0	54	Temporary

MDE IMPACT TABLES

PLATE 16 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
25E	Perennial	Open Channel	27,438	360	Permanent
25H	Perennial	Open Channel	1,589	220	Permanent
25H_1	Perennial	Open Channel	10,254	336	Permanent
25H_C	Perennial	Culvert	2,682	420	Permanent
25N	Intermittent	Open Channel	350	72	Permanent

PLATE 16 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
25D	PFO	637	3,032	Permanent
25K	PEM	34,215	45,608	Permanent
25P	PFO	85	1,185	Permanent
26H	PEM	10	1,374	Permanent

MDE IMPACT TABLES

PLATE 17 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
26B	Intermittent	Open Channel	5,791	432	Permanent
26B_1	Intermittent	Open Channel	315	22	Permanent
26B_C	Intermittent	Culvert	6,809	306	Permanent
26B_C1	Intermittent	Culvert	489	47	Permanent
26C	Intermittent	Open Channel	2,814	373	Permanent
26C_1	Intermittent	Open Channel	388	30	Permanent
26C_C	Intermittent	Culvert	4,317	360	Permanent
26C_C1	Intermittent	Culvert	376	22	Permanent
26J	Intermittent	Open Channel	191	31	Permanent
26K	Intermittent	Open Channel	3,920	328	Permanent
26L	Intermittent	Open Channel	69	11	Permanent

PLATE 17 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
26A	PFO	12,406	22,370	Permanent
26D	PEM	817	4,096	Permanent
26E	PEM	356	3,543	Permanent
26E	PEM	74	959	Temporary
26F	PEM	63,439	18,032	Permanent

PLATE 17 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Unnamed tributary to Watts Branch	1,591	Temporary
Watts Branch 2	5,396	Permanent

MDE IMPACT TABLES

PLATE 18 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
27A	Perennial	Open Channel	4,702	141	Permanent
27A_1	Perennial	Open Channel	15,652	648	Permanent
27A_2	Perennial	Open Channel	2,914	89	Permanent
27A_3	Perennial	Open Channel	3,463	131	Permanent
27A_C	Perennial	Culvert	10,081	325	Permanent
27A_C1	Perennial	Culvert	4,089	152	Permanent
27A_C2	Perennial	Culvert	2,472	85	Permanent
27B	Intermittent	Open Channel	352	46	Permanent
27D	Intermittent	Open Channel	1,468	162	Permanent
27H	Intermittent	Open Channel	207	35	Permanent
27N	Intermittent	Open Channel	98	19	Permanent
27P	Perennial	Open Channel	529	39	Permanent

PLATE 18 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
27E	PFO	0	2,108	Permanent
27F	PFO	535	3,562	Permanent
27G	PSS	481	4,841	Permanent
27Q	PEM	706	2,656	Permanent
27S	PEM	0	40	Permanent

PLATE 18 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Watts Branch 1	14,366	Permanent
Watts Branch 1	108	Temporary
Watts Branch 2	131,060	Permanent

MDE IMPACT TABLES

PLATE 19 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
27L	Intermittent	Open Channel	101	19	Permanent
27L_C	Intermittent	Culvert	1,632	405	Permanent

PLATE 19 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
27M	PFO	5,862	9,902	Permanent

PLATE 20 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
28B	Intermittent	Ditch	3,222	354	Permanent
29A	Perennial	Open Channel	2,956	169	Permanent
29A_1	Perennial	Open Channel	280	26	Permanent
29A_C	Perennial	Culvert	1,065	48	Permanent
29A_C1	Perennial	Culvert	3,346	224	Permanent
29A_C2	Perennial	Culvert	10,314	461	Permanent
29K	Intermittent	Open Channel	896	129	Permanent

MDE IMPACT TABLES

PLATE 21 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
29A_2	Perennial	Open Channel	5,233	280	Permanent
29A_C2	Perennial	Culvert	101	4	Permanent
29B_C	Perennial	Culvert	6,703	366	Permanent
29D_D	Intermittent	Ditch	1,363	119	Permanent

PLATE 21 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Muddy Branch	67,903	Permanent
Unnamed tributary to Muddy Branch	3,460	Permanent

MDE IMPACT TABLES

PLATE 22 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23N	Intermittent	Open Channel	2,095	199	Permanent
23N_1	Perennial	Open Channel	2,225	184	Permanent
23N_C	Intermittent	Culvert	6,176	583	Permanent
23N_D	Intermittent	Ditch	275	33	Permanent
23U	Perennial	Ditch	184	31	Permanent
23U_1	Perennial	Open Channel	77	18	Permanent
23U_C	Perennial	Culvert	1,225	317	Permanent

PLATE 22 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
23LL	PEM	570	1,476	Permanent

PLATE 22 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Unnamed tributary to Old Farm Creek	6,292	Permanent
Unnamed tributary to Old Farm Creek	2,077	Permanent

MDE IMPACT TABLES

PLATE 23 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23R_C	Intermittent	Culvert	635	204	Permanent

PLATE 24 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23Q_C	Perennial	Culvert	3,246	203	Permanent

PLATE 25 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
20B	Intermittent	Open Channel	351	83	Permanent
20C	Perennial	Ditch	112	37	Permanent
20C_C	Intermittent	Culvert	455	169	Permanent
20D	Perennial	Open Channel	3,027	390	Permanent
20D_C	Perennial	Culvert	1,895	180	Permanent
20E	Intermittent	Open Channel	140	47	Permanent
21B	Perennial	Open Channel	3,261	289	Permanent

COMPENSATORY SWM USACE IMPACT SUMMARY TABLES



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USACE IMPACT TABLES

SUMMARY OF IMPACTS TO WATERWAYS BY HUC-8 WATERSHED

IMPACT TYPE	WATERWAYS (SF)				WATERWAYS (LF)			
	Ephemeral	Intermittent	Perennial	Total	Ephemeral	Intermittent	Perennial	Total
Permanent	0	79	1,676	1,755	0	29	156	185
Total	0	79	1,676	1,755	0	29	156	185

Note: All waterway impacts are within the Middle Potomac-Catoctin (02070008) HUC-8 Watershed.

USACE IMPACT TABLES

PLATE 1 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	SITE
32L	Perennial	Open Channel	1,173	95	WAS-3622
32M	Perennial	Open Channel	503	61	WAS-3622

PLATE 2 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	SITE
31000	Intermittent	Open Channel	79	29	WAS-4641

COMPENSATORY SWM MDE IMPACT SUMMARY TABLES



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MDE IMPACT TABLES

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MDE IMPACT TABLES

SUMMARY OF IMPACTS TO WATERWAYS BY HUC-8 WATERSHED

IMPACT TYPE	WATERWAYS (SF)				WATERWAYS (LF)			
	Ephemeral	Intermittent	Perennial	Total	Ephemeral	Intermittent	Perennial	Total
Permanent	0	79	1,676	1,755	0	29	156	185
Total	0	79	1,676	1,755	0	29	156	185

Note: All waterway impacts are within the Middle Potomac-Catoctin (02070008) HUC-8 Watershed.

SUMMARY OF IMPACTS TO 100-YEAR FLOODPLAIN BY HUC-8 WATERSHED

ASSOCIATED WATERWAY	RELATED FEATURES	FIRM PANEL	IMPACT PLATE	HUC 8 NAME	PERMANENT IMPACT (SF)	TEMPORARY IMPACT (SF)	TOTAL (SF)	TOTAL (AC)
Minnehana Branch	32L, 32M	24031C0435D	1	Middle Potomac-Catoctin (02070008)	3,458	0	3,458	0.08

MDE IMPACT TABLES

PLATE 1 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	SITE
32L	Perennial	Open Channel	1,173	95	WAS-3622
32M	Perennial	Open Channel	503	61	WAS-3622

PLATE 1 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Minnehana Branch	3,458	Permanent

PLATE 2 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	SITE
31000	Intermittent	Open Channel	79	29	WAS-4641

404 MITIGATION IMPACT PLATES AND TABLES



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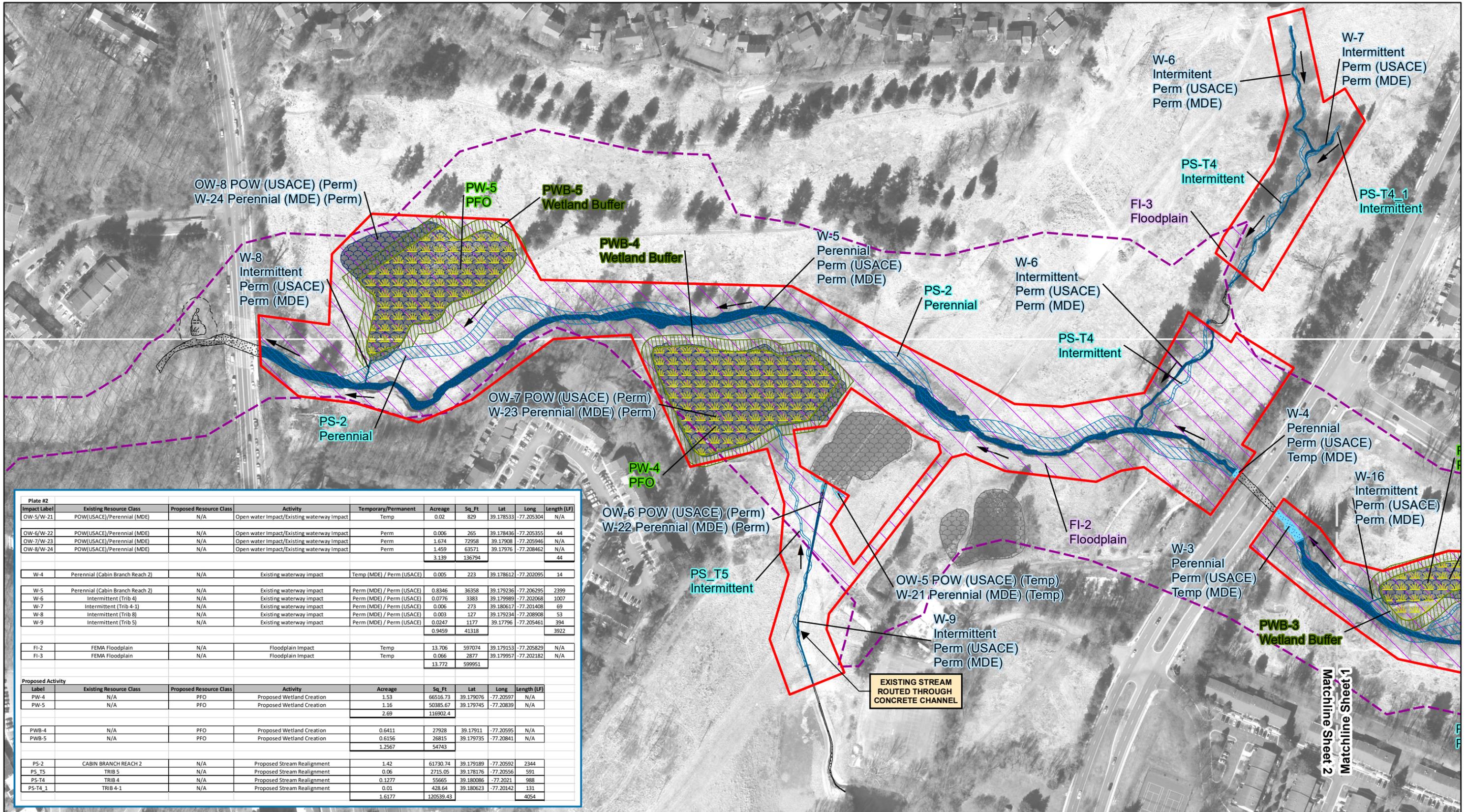


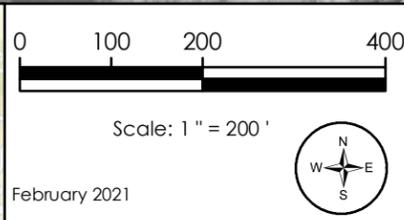
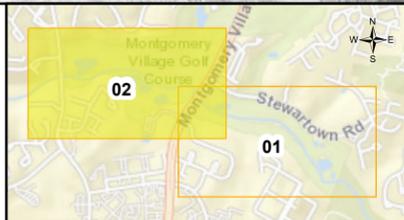
Plate #2	Impact Label	Existing Resource Class	Proposed Resource Class	Activity	Temporary/Permanent	Acres	Sq. Ft.	Lat	Long	Length (LF)	
	OW-5/W-21	POW(USACE)/Perennial (MDE)	N/A	Open water impact/Existing waterway impact	Temp	0.02	829	39.178533	-77.205304	N/A	
	OW-6/W-22	POW(USACE)/Perennial (MDE)	N/A	Open water impact/Existing waterway impact	Perm	0.006	265	39.178436	-77.205355	44	
	OW-7/W-23	POW(USACE)/Perennial (MDE)	N/A	Open water impact/Existing waterway impact	Perm	1.674	72958	39.17908	-77.205946	N/A	
	OW-8/W-24	POW(USACE)/Perennial (MDE)	N/A	Open water impact/Existing waterway impact	Perm	1.459	63571	39.17976	-77.208462	N/A	
						3.139	136794			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	Perm (MDE) / Perm (USACE)	0.8346	36358	39.179236	-77.206295	2399	
	W-6	Intermittent (Trib 4)	N/A	Existing waterway impact	Perm (MDE) / Perm (USACE)	0.0776	3383	39.179989	-77.202068	1007	
	W-7	Intermittent (Trib 4-1)	N/A	Existing waterway impact	Perm (MDE) / Perm (USACE)	0.006	273	39.180617	-77.201408	69	
	W-8	Intermittent (Trib 8)	N/A	Existing waterway impact	Perm (MDE) / Perm (USACE)	0.003	127	39.179234	-77.208908	53	
	W-9	Intermittent (Trib 5)	N/A	Existing waterway impact	Perm (MDE) / Perm (USACE)	0.0247	1177	39.17796	-77.205461	394	
						0.9459	41318			3922	
	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	Acres	Sq. Ft.	Lat	Long	Length (LF)		
	PW-4	N/A	PFO	Proposed Wetland Creation	1.53	66516.73	39.179076	-77.20597	N/A		
	PW-5	N/A	PFO	Proposed Wetland Creation	1.16	50385.67	39.179745	-77.20839	N/A		
					2.69	116902.4					
	PWB-4	N/A	PFO	Proposed Wetland Creation	0.6411	27928	39.17911	-77.20595	N/A		
	PWB-5	N/A	PFO	Proposed Wetland Creation	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	2344		
	PS-T5	TRIB 5	N/A	Proposed Stream Realignment	0.06	2715.05	39.178176	-77.20556	591		
	PS-T4	TRIB 4	N/A	Proposed Stream Realignment	0.1277	55665	39.180086	-77.2021	988		
	PS-T4_1	TRIB 4-1	N/A	Proposed Stream Realignment	0.01	428.64	39.180623	-77.20142	131		
					1.6177	120539.43			4054		

LEGEND

- Limits of Disturbance: Red outline
- Proposed Stream Realignment: Blue hatched area
- 100 Year Floodplain: Purple dashed line
- Proposed PFO Wetland: Yellow hatched area
- Proposed PFO Wetland Buffer: Green hatched area
- Existing Wetlands: Blue solid area
- Existing Waterways: Blue solid line
- Wetland Buffer: Purple dashed line
- Flow Direction: Yellow arrow

IMPACTS

- Waterway (Perm): Blue solid line
- Waterway (Temp): Blue dashed line
- Waterway (Outside): Blue dotted line
- Wetland Buffer (Temp): Purple dashed line
- Wetland Enhancement: Blue solid area
- Open Water (USACE) (Perm): Blue solid area
- Perennial (MDE) (Perm): Blue solid area
- Open Water (Temp): Blue solid area
- Floodplain: Purple dashed line

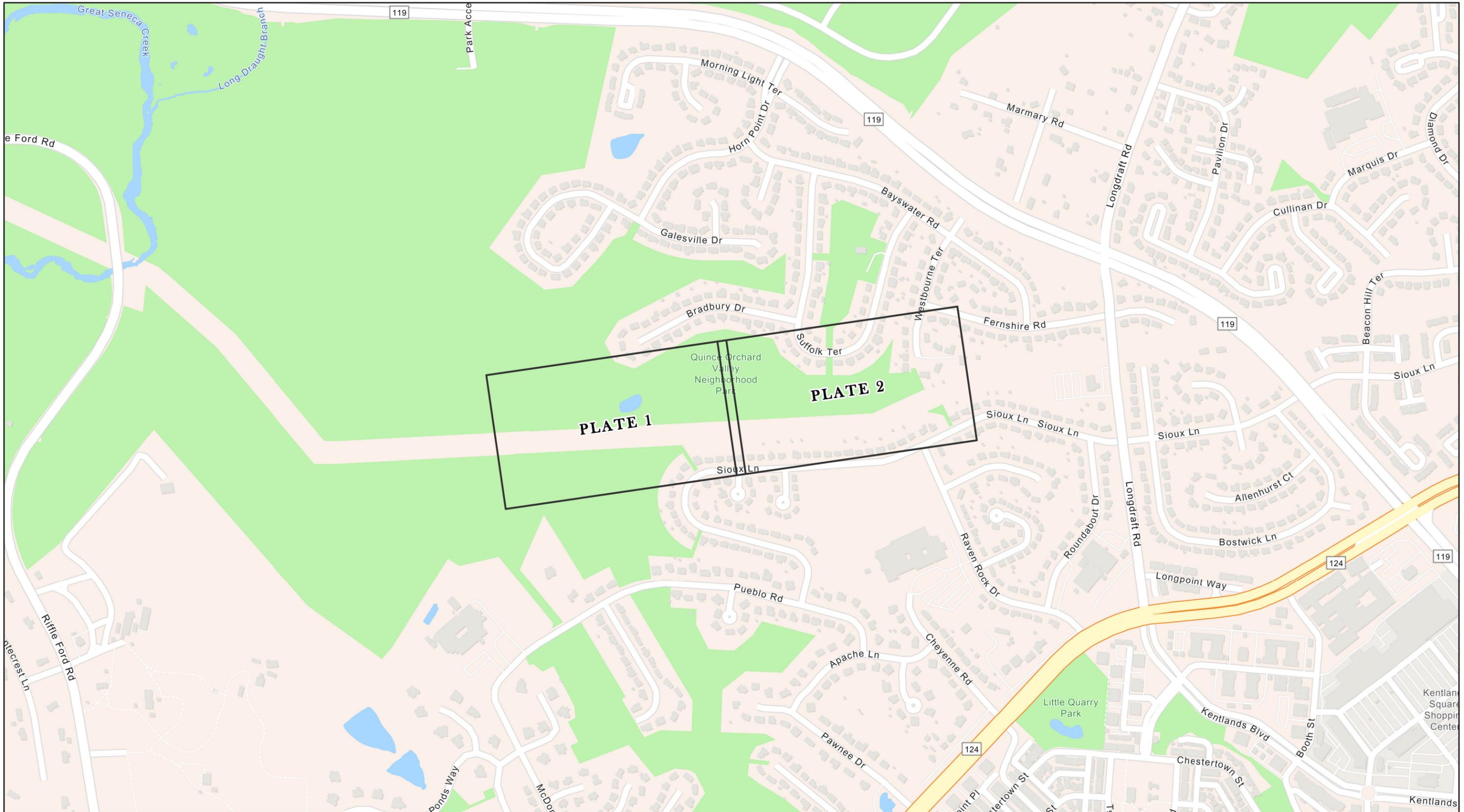


RFP-2
Wetland and Waterway
Impact Plates

Plate 02 of 02

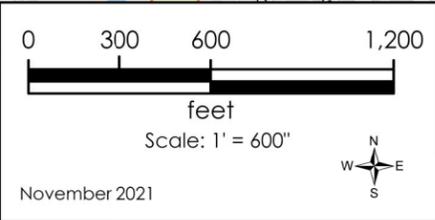


February 2021



Legend

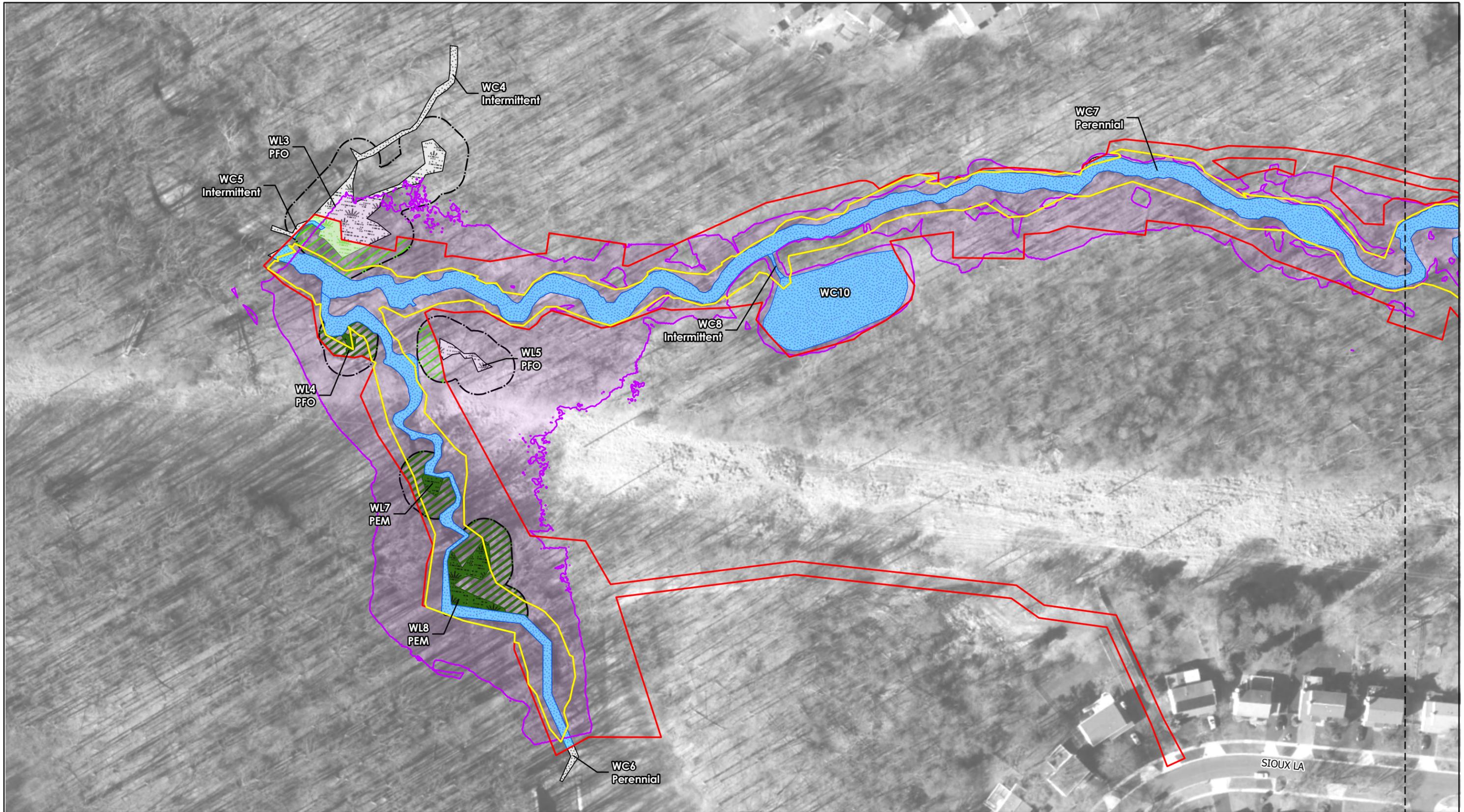
□ Impact Plate



**CA-5
Wetland and Waterway
Impact Plates**

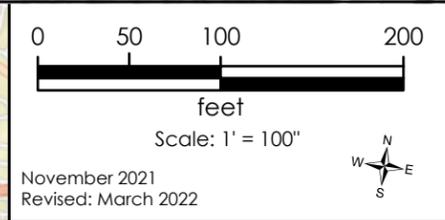
Key Sheet





Legend	
Limit of Disturbance	Wetland Buffer
Limit of Grading Area	Wetland, Outside LOD
Sheet Boundary	Water, Outside LOD
	Modeled 100-Year Floodplain

Impacts	Temporary		Permanent
	Waterway		N/A
Wetland			
Buffer			



**CA-5
Wetland and Waterway
Impact Plates**

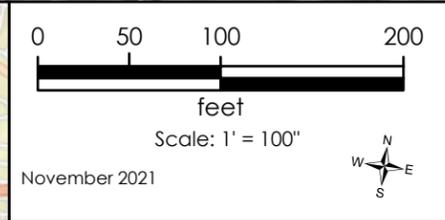
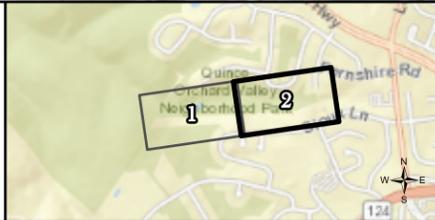
Plate 1 of 2





Legend	
	Limit of Disturbance
	Limit of Grading Area
	Sheet Boundary
	Wetland Buffer
	Wetland, Outside LOD
	Water, Outside LOD
	Modeled 100-Year Floodplain

Impacts	Temporary	Permanent
	Waterway	N/A
Wetland		
Buffer		



**CA-5
Wetland and Waterway
Impact Plates**

Plate 2 of 2



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 & USACE Wetland Impacts Summary

RESOURCE TYPE	TEMPORARY WETLAND IMPACT (SF)	TEMPORARY WETLAND BUFFER IMPACT (SF)	PERMANENT WETLAND IMPACT (SF)	PERMANENT WETLAND BUFFER IMPACT (SF)
PFO	2,343	11,100	1,172	2,929
PSS	0	0	0	0
PEM	0	0	2378	6689
Total:	2,343	11,100	3,550	9,618

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

Table E-4: 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-5: 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-6: MDE & USACE 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	0	0	177	1,645	Restoration
WL5	PFO	0	1,338	0	0	Restoration
WL6	PFO	683	1,392	995	1,284	Restoration
WL7	PEM	0	0	349	2,183	Restoration
WL8	PEM	0	0	2,029	4,506	Restoration
Total:		2,343	11,100	3,550	9,618	

100-Year Floodplain Temporary Impacts - 198,330 SF (4.55 AC)

Permanent wetland impacts will be replaced onsite via oxbow wetland creation.