July 17, 2024

Mr. Jake Holness
Maryland Department of the Environment
Regulatory Services Section
Montgomery Park Business Center, Suite 430
1800 Washington Boulevard

Dear Mr. Holness,

The Maryland Transportation Authority (MDTA) is submitting a Joint Federal/State Application for the Alteration of Any Floodplain, Waterway, Tidal or Non-Tidal Wetland in Maryland (JPA) and supporting documentation for the I-695 Francis Scott Key Bridge Rebuild project, located in Baltimore/Dundalk, Maryland (AI# 4229). The project is within the Baltimore Harbor Maryland 8-digit Watershed (02130903). This application is submitted pursuant to the requirements of the Code of Maryland Regulations, Sections 26.17, 26.23 and 26.24, and Section 404 of the Clean Water Act via MDE's E-collaboration tool. The application and supporting documentation include the following:

- Joint Permit Application
- Attachment A: Additional Information
- Attachment B: Project Location Map
- Attachment C: Impact Plates & Summary of Impacts
- Attachment D: Section 106 Consultation
- Attachment E: Rare Threatened and Endangered Species (RTE) Coordination
- Attachment F: Public Notice Billing Approval Form
- Attachment G: NAB Statement of Credit Availability Form
- Attachment H: Natural Resources Inventory / Forest Stand Delineation (NRI/FSD)

Work associated with this project includes installing new piers, bridge deck, and pier protection structures, reconfiguring the roadway approaches to accommodate the new bridge, temporary construction access, and installation of erosion and sediment control measures.

MDTA anticipates a USACE Nationwide Permit will authorize the impacts associated with the project. Due to the emergency nature of this project, we are asking for relief from the following time of year restrictions included in the regional conditions for NWPs in the State of Maryland.

- Regional Condition A. - Anadromous fish spawning restriction – February 15 to June 15
- Regional Condition B.4.b. - Pile driving in tidal waters – November 30 to March 15
- Regional Condition B.5. - Sediment disturbance – April 1 to June 30

The project will continue to coordinate with state and federal agencies protecting aquatic species, and follow aquatic species protection recommendations to the maximum extent practicable.

MDTA anticipates the need for a public hearing on the project and is providing the following hearing details for inclusion in the public notice.

Location:	Community College of Baltimore County Dundalk Campus 7200 Sollers Point Rd, Baltimore, MD 21222
Date:	September 17, 2024
Time:	5:00 PM to 8:00 PM

If you need further assistance, please contact our authorized agent Mr. Justin Reel at (703) 338-4139 or via email at jreel@rkk.com.

Sincerely,

Julie McCarthy

Julie McCarthy
Natural Resources Lead, Maryland Transportation Authority

CC: Joseph DaVia, Nicole Nasteff, Kathy Anderson - US Army Corps of Engineers
Jitesh Parikh, Alex Bienko, Melissa Toni - FHWA
Hal Pitts - USCG
Karen Greene, Brian Hopper, Jonathan Watson - NOAA Fisheries
Tammy Roberson, Danielle Spendiff, Matt Wallach - MDE
Melissa Williams, Brian Wolfe, Carl Chamberlin - MDTA
Eric Almquist, Rick Maddox, Justin Reel – RK&K
Scott Miller, Leyla Lange – JMT
Caryn Brookman, Stacy Hawver – Blackwater

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**	____

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- Please submit 1 original and 6 copies of this form, required maps and plans to the Wetlands and Waterways Protection 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 X
PREVIOUSLY ASSIGNED NUMBER (RESUBMITTALS AND AMENDMENTS) AI# 4229

DATE 7/17/2024

1. APPLICANT INFORMATION:

APPLICANT NAME:

A. Name: Julie McCarthy B. Daytime Telephone: (410) 537-7861
C. Company: Maryland Transportation Authority D. Email Address: jmccarthy@mdta.maryland.gov
E. Address: 300 Authority Drive
F. City: Baltimore State: MD Zip: 21222

AGENT/ENGINEER INFORMATION:

A. Name: Justin Reel B. Daytime Telephone: (703) 338-4139
C. Company: RK&K D. Email Address: jreel@rkk.com
E. Address: 700 E Pratt St. Suite 500
F. City: Baltimore State: MD Zip: 21202

ENVIRONMENTAL CONSULTANT:

A. Name: Justin Reel B. Daytime Telephone: (703) 338-4139
C. Company: RK&K D. Email Address: jreel@rkk.com
E. Address: 700 E Pratt St. Suite 500
F. City: Baltimore State: MD Zip: 21202

CONTRACTOR (If known):

A. Name: TBD B. Daytime Telephone:
C. Company: D. Email Address:
E. Address:
F. City: State: Zip:

PRINCIPAL CONTACT:

A. Name: Justin Reel B. Daytime Telephone: (703) 338-4139
C. Company: RK&K D. Email Address: jreel@rkk.com
E. Address: 700 E Pratt St. Suite 500
F. City: Baltimore State: MD Zip: 21202

2. PROJECT DESCRIPTION
a. GIVE WRITTEN DESCRIPTION OF PROJECT:

See Attachment A - Additional Information

Has any portion of the project been completed? _____Yes x_____No If Yes, explain:

Is this a residential subdivision or commercial development? _____Yes X___No
If yes, total number of acres on property _____ acres
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 x___ No____
If yes, total estimated acres of tree clearing for the overall project site: 7.5 acres

Does the application propose temporary fill impacting wetlands or waterways that will remain in place for more than one year? _____Yes X_____No

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

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

Area for item(s) checked: Wetland 565,491 (sq. ft.) Buffer (Nontidal Wetland Only) 46,601 (sq. ft.)
Expanded Buffer (Nontidal Wetland Only) 0 (sq. ft.)
Area of stream impact 845 (sq. ft.)
Length of stream affected 272 (linear feet) See Attachment C for more detailed summary of impacts

c. TYPE OF PROJECTS: Project Dimensions

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.	_____	Bulkhead							
B.	_____	Revetment							
C.	_____	Vegetative Stabilization							
D.	_____	Gabions							
E.	_____	Groins							
F.	_____	Jetties							
G.	_____	Boat Ramp							
H.	_____	Pier							
I.	_____	Breakwater							
J.	_____	Repair & Maintenance							
K.	_____	Road Crossing							
L.	_____	Utility Line							
M.	_____	Outfall Construction							
N.	_____	Small Pond							
O.	_____	Dam							
P.	_____	Lot Fill							
Q.	_____	Building Structures							
R.	_____	Culvert							
S.	x	Bridge							
T.	_____	Stream Channelization							
U.	_____	Parking Area							
V.	_____	Dredging							

1. X New 2. _____ Maintenance 3. _____ Hydraulic 4. _____ Mechanical

W. x Other (explain) See Attachment A - Additional Information

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

See Attachment A - Additional Information

3. PROJECT LOCATION:

a. LOCATION INFORMATION:

A. County: BA, BC, AA B. City: Baltimore C. Name of waterway or closest waterway Patapsco River
D. State stream use class designation: Use Class I
E. Site Address or Location:
I-695 from southwest of Broening Hwy to northeast of B&O Railroad crossing
F. Directions from nearest intersection of two state roads:
I-695 from southwest of Broening Hwy to northeast of B&O Railroad crossing

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

X Yes _____ No

H. County Book Map Coordinates (Alexandria Drafting Co.); Excluding Garrett and Somerset Counties:
Map: 44 Letter: E Number: 13 (to the nearest tenth)
I. FEMA Floodplain Map Panel Number (if known): 2400870036G & 2400100535G
J. 1. 39.216833 latitude 2. -76.528667 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. X 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. _____ 100-year floodplain (outside stream channel)
I. _____ 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. x Wooded 3. _____ Marsh/Swamp 4. x Developed

5. x Other: MDTA ROW

B. Present Zoning Is: 1. ____ Residential 2. x Commercial/Industrial 3. _____ Agriculture 4. _____ Marina 5. _____ 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. _____ Reduced the area of disturbance
B. _____ Reduced size/scope of project
C. _____ Relocated structures
D. _____ Redesigned project

E. x Other Reduced fill in nontidal wetlands & wetland buffers to the maximum extent practicable

F. Explanation

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

G. ____ Cost
H. ____ Extensive wetlands on site
I. x Engineering/design constraints
J. ____ Other natural features
K. ____ Parcel size
L. ____ Other regulatory requirement
M. x Failure to accomplish project purpose
N. x Safety/public welfare issue
O. ____ Inadequate zoning
P. ____ Other

Q. Description

Impacts to tidal waters could not be avoided. The bridge must be rebuilt to current standards and supplemental pier protections are required to prevent future disasters. See Attachment A for more information.

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. x No significant plant or wildlife value and wetland impact
1. x Less than 5,000 square feet
2. ____ In an isolated nontidal wetland less than 1 acre in size
B. ____ Repair existing structure/fill
C. ____ Mitigation Project
D. ____ Utility Line
1. ____ Overhead
2. ____ Underground
E. Other (explain)

F. ____ 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. ____ 1 site
B. ____ 2 - 4 sites
C. ____ 5 or more sites

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

D. ____ Cost
E. ____ Lack of availability
F. ____ Failure to meet project purpose
G. ____ Located outside general/market area
H. ____ Greater wetlands impact
I. ____ Water dependency
J. ____ Inadequate zoning
K. ____ Engineering/design constraints
L. ____ Other
M. Explanation:

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. ____ Economic
B. ____ Safety
C. ____ Health/welfare
D. ____ Does not provide public benefits
E. ____ Other ____

F. Description

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.)**

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

Mitigation for unavoidable nontidal wetland impacts will be satisfied through the purchase of available credits from the IRT-approved PEIGE Wetland Mitigation Bank. See Attachment G

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

Mitigation for tidal impacts will be developed as design progresses.

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

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

9. HAVE ADJACENT PROPERTY OWNERS BEEN NOTIFIED? A. _____ Yes B. _____ 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. b. c.

10. OTHER APPROVALS NEEDED/GRANTED:

A. a. Agency	b. Date Sought	c. Decision 1. Granted	2. Denied	d. Decision Date	e. Other Status
MDNR-WHS		X		6/3/2024	
MDNR-ERP		X		6/3/2024	
USFWS Review		X		5/9/2024	
NOAA NMFS	ongoing				
MDE SSPRD	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.)?

X Yes _____ 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)? X Yes _____ No

If yes, please provide the date your request was submitted to the Corps district: 7/17/2024

C. EXISTING CORPS, MDE, OR ENVIRONMENTAL PROTECTION AGENCY SITE PROTECTION INSTRUMENTS: Is the proposed work located in an area encumbered by an existing site protection instrument such as a conservation easement, deed restriction, or declaration of restrictive covenants required as a condition of a prior U.S. Army Corps of Engineers', Maryland Department of the Environment, or Environmental Protection Agency authorization? _____ Yes X No

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. x 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:

See Attachment D - Section 106 Consultation and Programmatic Agreement

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

A. _____ Soil borings
B. _____ Wetland data sheets
C. _____ Photographs
D. _____ Field surveys
E. _____ Alternate site analysis
F. _____ Market analysis
G. _____ Site plan
H. _____ Avoidance and minimization analysis

I. x Other (explain)

Attachment A - Additional Information
Attachment B - Project Location Map
Attachment C - Impact Plates & Summary of Impacts
Attachment D - Section 106 Consultation and Programmatic Agreement
Attachment E - Rare Threatened and Endangered Species Coordination
Attachment F - Public Notice Billing Approval Form
Attachment G - NAB Statement of Credit Availability Form
Attachment H - Natural Resources Inventory / Forest Stand Delineation (NRI/FSD)

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: Julie McCarthy DATE: 7/17/2024

PRINTED NAME OF LANDOWNER Julie McCarthy

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 and Time of Year Restriction applicable to work in tidal waters and wetlands as required by the MDSPGP (see Section VII, General Conditions #14-15).

☐ **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.**

WHERE TO MAIL APPLICATION

Maryland Department of the Environment
Water and Science Administration
Regulatory Services Coordination Office
1800 Washington Boulevard, Suite 430
Baltimore, Maryland 21230
Telephone: (410) 537-3752
1-800-633-6101

BEFORE YOU MAIL… DON'T FORGET…

- **SIGN AND DATE THE APPLICATION. THE LANDOWNER MUST SIGN.**
- **SEVEN (7) COPIES OF ALL DOCUMENTS (APPLICATION, PLANS, MAPS, REPORTS, ETC.) MUST BE RECEIVED TO BEGIN OUR REVIEW.**
- **INCLUDE SEVEN (7) COPIES OF A VICINITY MAP (LOCATION MAP) WITH THE PROJECT SITE PINPOINTED.**
- **PAYMENTS: SEND AN APPLICATION FEE OF $750 ALONG WITH A COPY OF THE FIRST PAGE OF THE APPLICATION TO:**

  MARYLAND DEPARTMENT OF THE ENVIRONMENT
  P.O. BOX 2057, BALTIMORE, MD 21203-2057
  PCA: 13910 OBJ: 4142
- **PLEASE REFER TO OUR WEBSITE *http://www.mde.maryland.gov* FOR FURTHER INSTRUCTIONS.**

SUPPLEMENTAL INFORMATION TO BE INCLUDED ON PLANS, DRAWINGS, OR VICINITY MAPS

In addition to the information indicated on the previous pages, you should include the following on the 8 1/2 x 11 site plans and any blueprints you have submitted:

1. Delineation of any wetland buffers or expanded buffers, clearly marked and differentiated.

2. Location of mitigation area, if proposed on the same site as the project.

Note: If you are proposing a complex project you may wish to submit engineering blueprints of your project with the application form to expedite review.

Mitigation Location Map: If you are proposing that nontidal wetland mitigation be done at a different location than the proposed project, you should submit a map showing the location of the mitigation site in relation to the proposed nontidal wetland losses.

DELINEATION OF WETLANDS, OTHER SPECIAL AQUATIC SITES, AND OTHER WATERS

Applications must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and streams on the project site. Wetland delineations must be prepared in accordance with the current wetland delineation manual and appropriate regional supplement published by the Corps. Wetlands must be shown on all plans submitted with the application. All wetlands on site must be delineated and shown on the overall site plan. 8½ x 11 inch plans with topography showing relation of the wetlands and project impacts must be submitted. Copies of the wetland reports and data sheets used in making the determination must be included with your application submittal.

ATTACHMENT A: ADDITIONAL INFORMATION

Attachment A: Additional Information in Support of the JPA Form

Purpose and Need

The Project's purpose is to replace the Francis Scott Key Bridge (Key Bridge) over the Patapsco River that was in operation prior to the March 26, 2024 collapse. The new replacement bridge will meet current roadway and bridge design and safety standards, and navigational clearance requirements.

The needs for the Project are to:

- Expedite restoring local connectivity between Curtis Bay and Dundalk.
- Expedite restoring regional mobility and the interstate transportation network.

The Key Bridge was a critical link in the regional and interstate transportation network and was the primary interstate route for hazardous material loads traveling through Baltimore. The collapse has negatively impacted community mobility and connectivity by creating a major gap in the Baltimore transportation network for both local and regional traffic.

In 2022, the Key Bridge had an average annual daily traffic (AADT) volume of approximately 33,200 vehicles per day (vpd)[1]. Following the bridge collapse, this daily traffic volume has needed to find and use alternate routes, increasing vehicle miles traveled (VMT) and contributing to higher levels of congestion on the available interstate transportation network including on I-95 through Baltimore (the Fort McHenry Tunnel), I-895 (the Baltimore Harbor Tunnel), and I-695. Arterial routes such as MD 2, MD 710, MD 173, MD 150, MD 151, and other local roadways have also experienced increased detour traffic, including an increase in truck traffic. I-95 and I-895 were already operating over capacity during the peak hours prior to the collapse of the Key Bridge. The diverted traffic from the Key Bridge collapse has exacerbated congestion and delay issues along these parallel routes as well the remainder of I-695 around Baltimore.

A comparison of weekday speed and travel time data[2] from April 2024 (post-collapse) versus April 2023 (pre-collapse) shows that motorists on I-95 experience more than 30 minutes of additional delay during the morning peak period (7:00am-8:00am) and more than 20 minutes of additional delay in the afternoon peak period (4:00pm-6:00pm). This equates to more than 14,000 collective vehicle-hours of additional delay each weekday for traffic on I-95. Similarly, motorists on I-895 experience approximately 20 minutes of additional delay during the morning peak period and approximately 15 minutes of additional delay in the afternoon peak period. This equates to approximately 7,000 collective vehicle-hours of additional delay to each weekday for traffic on I-895. Combining the impacts to both of these major freeways, the traffic diversions to I-95 and I-895 resulting from the collapse of the Key Bridge have resulted in approximately 21,000 collective hours of additional delay each day of the work week.

[1] https://maps.roads.maryland.gov/itms_public/AADT_AAWDT_Detail.aspx?station_id=T0006

[2] INRIX data from the RITIS platform (www.ritis.org) Tuesday through Thursday April 18-20, 2023, and Tuesday through Thursday April 9-11, 2024. Data from I-895 for the entire length of the facility. Data from I-95 from the I-95/I-895 interchange south of Baltimore to the I-95/I-695 interchange north of Baltimore.

In addition, the Key Bridge was the only route for over-height and hazardous material loads traveling through the port area, southern Baltimore metro region, and the I-95 corridor as these vehicles and loads are prohibited from using the I-95 and I-895 tunnels.[3] Over-height vehicles and vehicles transporting hazardous loads previously relied on the Key Bridge but are now required to use less efficient alternate surface routes, such as the western section of I-695 around Baltimore, which adds approximately 25 miles of additional VMT

The Key Bridge also provided a critical alternative route for traffic across the Patapsco River and Baltimore Harbor, serving as a detour for traffic incidents on I-95 and I-895 through Baltimore, especially during nighttime closures of the I-95 and I-895 tunnels for maintenance and repair. As these tunnels are 39 and 57 years old, respectively, nighttime closures of the tunnels for maintenance are a regular occurrence.

Regionally, the Key Bridge played a critical role in the transportation network, including the transport of goods to and from the Port of Baltimore and nearby distribution centers such as Tradepoint Atlantic at Sparrows Point. A recent study indicated that the economic cost of the bridge collapse to the Port of Baltimore is estimated at $15 million per day.[4] The same study determined that the Key Bridge collapse has impacted jobs, income, and industries locally and throughout the state. The impacts caused by the loss of this key infrastructure element present significant challenges to residents, businesses, and industries with long-term implications. Therefore, rebuilding the bridge is an urgent and essential project to restore and maintain the local, regional, and national economy.

The Key Bridge was opened in 1977 and consisted of two 12-foot-wide travel lanes in each direction and two-foot-wide outside shoulders. According to the Maryland Department of Transportation (MDOT) *Policy for Bridge Width* and the American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets* (7th Edition published in 2018), travel lanes should be a minimum of 12 feet wide, and lane and shoulder widths on bridges should match the approach roadway. For bridges longer than 200 feet, shoulder widths can be narrowed but a minimum width of four feet is still required. Thus, the Key Bridge did not meet current design standards for lane and shoulder width. The replacement bridge will meet current design standards while remaining within the current MDTA ROW.

The height of the Key Bridge at 185 feet of vertical clearance had the potential to limit larger ships traveling into the Port of Baltimore.[5] This clearance restricted certain current classifications of cargo vessels, as did other crossings, such as the Bay Bridge, along the marine route into the Port of Baltimore. Currently the largest class of cargo vessel able to call at the Port of Baltimore is the Post Panamax (PPX) Generation III Max. There is a trend toward even larger vessels, and cargo ships are expected to increase in size due to the cost savings of utilizing larger ships to transport larger quantities of goods. Accommodating future ship navigation and traffic

[3] https://roads.maryland.gov/OOTS/FORBIDDEN_HAZARDOUS_MATERIALS.pdf
[4] https://www.mdchamber.org/2024/03/28/understanding-key-bridge-collapse-impact/
[5] Navigational Vertical Clearance according to the National Bridge Inventory (https://infobridge.fhwa.dot.gov/Data/BridgeDetail/24651806)

on the Patapsco River is important to maintaining the vitality of the Port of Baltimore and commerce in Maryland and the Mid-Atlantic region.

Project Description

The Project is a replacement of the collapsed Key Bridge. The project location will be the same as the original bridge, following the existing centerline across the Patapsco River and the approaches along I-695. The new bridge will remain within MDTA's existing ROW. The Key Bridge was a tolled bridge, and the replacement bridge will also be a tolled bridge.

The Project will account for the vertical clearance required by current and future vessels and will comply with anticipated bridge permits from the U.S. Coast Guard (USCG) under the General Bridge Act of 1946 and Section 9 of the Rivers and Harbors Act of 1899. These permits are required to preserve the public right of navigation and to prevent interference with interstate and foreign commerce along navigable waters. The USCG issued a Preliminary Navigation Clearance Determination (PNCD) for the new bridge on June 6, 2024, setting the minimum vertical clearance at 230 feet above mean high water and the minimum horizontal clearance at 1,100 feet through the main navigation span of the bridge. Anticipated permits will also identify required protective systems, clearance gauges, navigational lighting, and temporary construction measures that will be incorporated into the Project.

The Project includes several changes to engineering parameters from the original Key Bridge to meet current roadway standards. The replacement bridge will have a minimum vertical clearance of 230 feet over the 800-foot-wide authorized Fort McHenry Navigation Channel, per coordination with the USCG and as documented in the PNCD.[6] The vertical clearance will be a minimum of 45 feet higher than the original Key Bridge to provide clearance for large vessels traveling underneath. The Fort McHenry Navigation Channel is Congressionally Authorized to be 800-foot-wide.

Similar to the original Key Bridge, the replacement bridge will have a 4 percent grade on both sides of the navigation channel. Due to the increased vertical clearance over the navigation channel, the limits of the bridge and the elevation change will extend beyond the limits of the original bridge but still within the existing MDTA ROW. The total length of the bridge will be approximately 2.4 miles, which is approximately 0.7 miles longer than the original Key Bridge. A portion of this 2.4-mile length will include retaining walls and grading where the bridge profile approaches the existing ground. The limits of bridge structure versus retaining walls and grading will be determined in final design.

The main bridge span over the navigation channel is anticipated to be approximately 1,400 feet long between the main bridge piers, which will accommodate the placement of the new piers outside the existing piers. In compliance with the USCG PNCD, the horizontal clearance between the pier protection islands that will surround the new piers will be no less than 1,100 feet.[4] The remaining bridge spans will include piers both in the Patapsco River and on both the

[6] The USCG issued a PNCD on June 6, 2024, stating that the replacement bridge is required to have a minimum vertical clearance of 230 feet above mean high water and a minimum horizontal clearance of 1,100 feet through the main navigation span.

approaches over land. In addition to the main piers, there will be pier protections around all piers as required by current design standards.

The new typical section for the bridge and approaches will meet the design guidelines outlined in the AASHTO *A Policy on Geometric Design of Highways and Streets* (7th Edition published in 2018) for lane and shoulder widths and will include two 12-foot-wide lanes in each direction with 10-foot-wide outside shoulders and 4-foot-wide inside shoulders. This preliminary design increases the width of the bridge from approximately 62-66 feet wide to approximately 82 feet wide. Note that the final design of the bridge is pending, and the bridge width could change.

The Project will consider a different bridge type than the original Key Bridge to support the increased main span length. The final structure type will be determined by the design-builder in coordination with MDTA and FHWA during final design. Refer to **Table 1** below for a comparison between the Key Bridge and the replacement bridge engineering assumptions.

Table 1: Structural Comparison between the Key Bridge and Replacement Bridge

	Approx Structure Height (feet)	Vertical Clearance (feet)	Main Span Length (feet)	Total Bridge Length (miles)	Number of Travel Lanes	Lane Width (feet)	Outside Shoulder Width (feet)	Inside Shoulder Width (feet)	Profile/ Grade on Both Sides of the Main Channel
Key Bridge	358	185	1,200	1.7	4	12	2	0	4%
Replacement Bridge* (Approximate)	500-550	230	1,400	2.4**	4	12	10	4	4%
Total Change	142-192	45	200	0.7	0	0	8	4	0

**For the purposes of this JPA, engineering assumptions for the replacement bridge were based on a cable-stayed bridge type. The bridge type and dimensions will be determined during final design.*
***The total bridge length will be determined during final design. For the purposes of this JPA, the length includes the full limits where the profile elevation will change.*

ATTACHMENT B: PROJECT LOCATION MAP

Figure 1 – Project Location Map

ATTACHMENT C: IMPACT PLATES & SUMMARY OF IMPACTS

Note: No Impacts On This Sheet

- Potential Limits of Disturbance
- Potential Temporary Pile Area
- Proposed Bridge Area
- Navigation Channel Boundaries
- MHW Line
- Property Parcels
- Streams
- Wetlands
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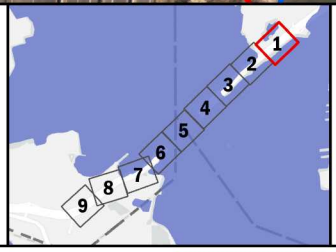

MDTA Maryland Transportation Authority

U.S. Department of Transportation Federal Highway Administration

MDOT Maryland Department of Transportation State Highway Administration

Francis Scott Key Bridge Rebuild Project

Impact Plates

July 2024

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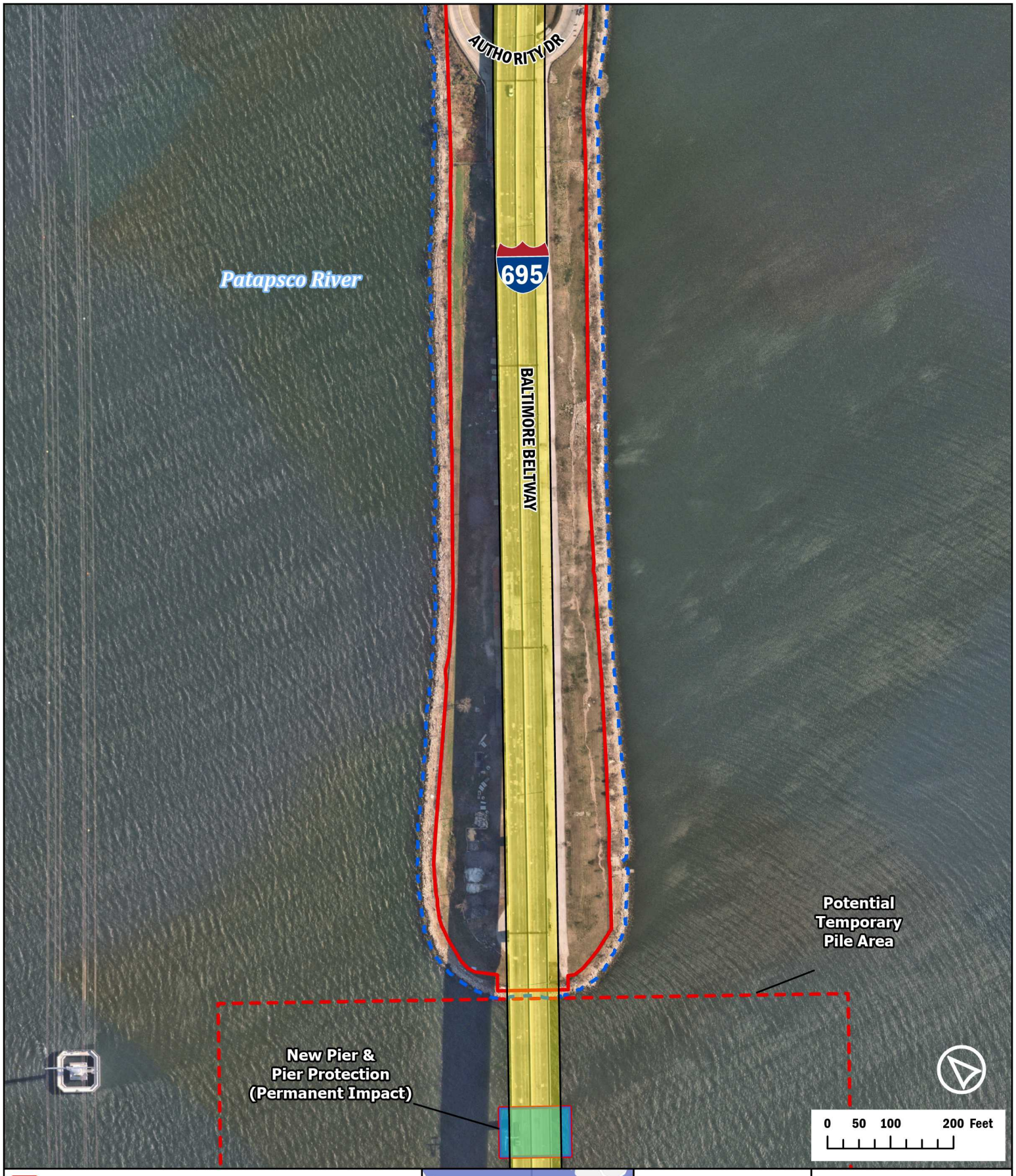
MDTA Maryland Transportation Authority

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Francis Scott Key Bridge Rebuild Project

Impact Plates

July 2024



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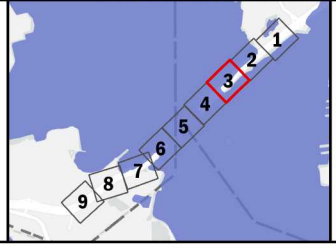


MDTA Maryland Transportation Authority

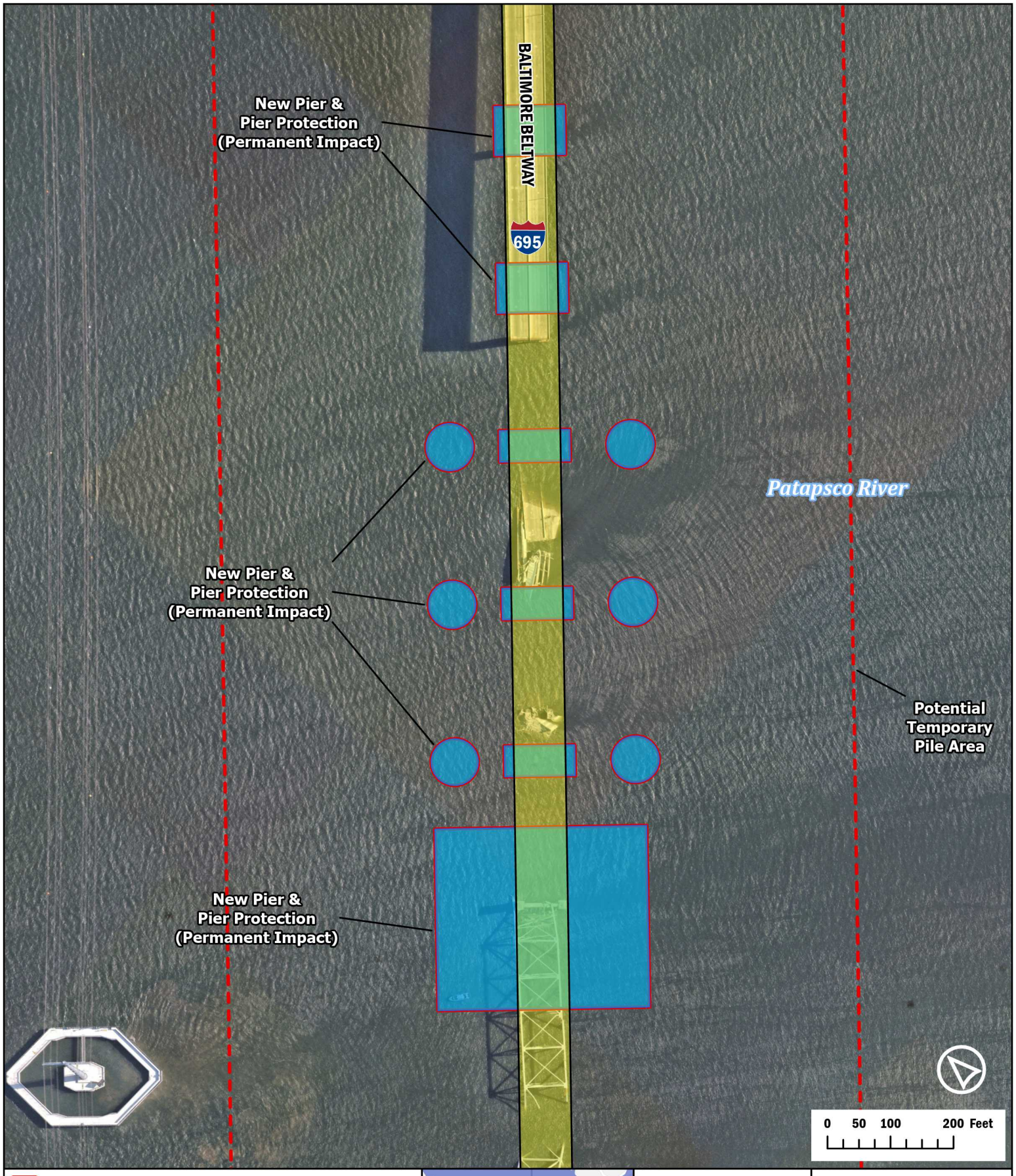
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

Francis Scott Key Bridge Rebuild Project

Impact Plates

July 2024



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MDTA Maryland Transportation Authority

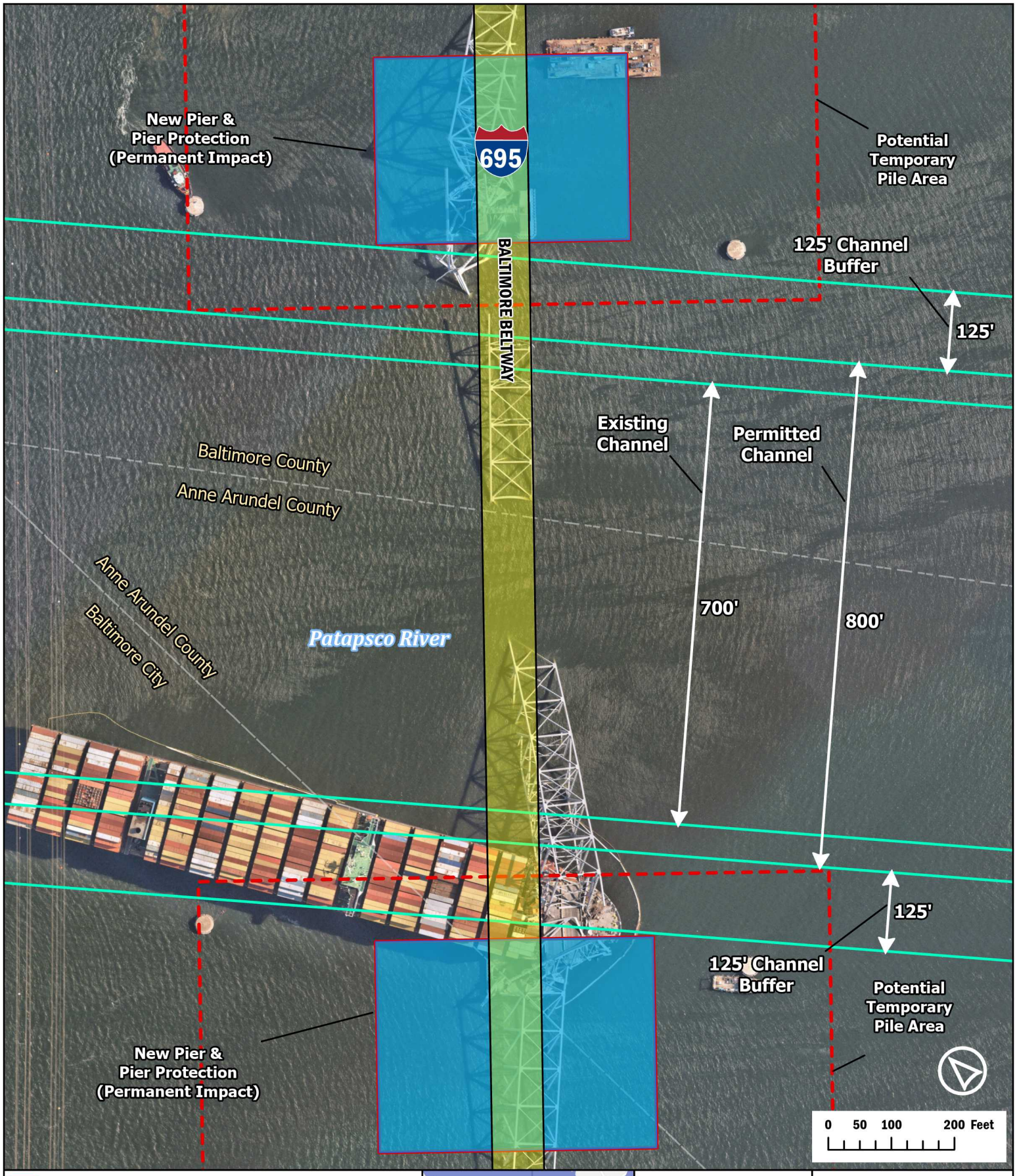
U.S. Department of Transportation Federal Highway Administration

MDOT Maryland Department of Transportation State Highway Administration

Francis Scott Key Bridge Rebuild Project

Impact Plates

July 2024



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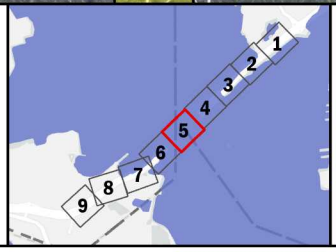

MDTA Maryland Transportation Authority

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MDOT Maryland Department of Transportation State Highway Administration

Francis Scott Key Bridge Rebuild Project

Impact Plates

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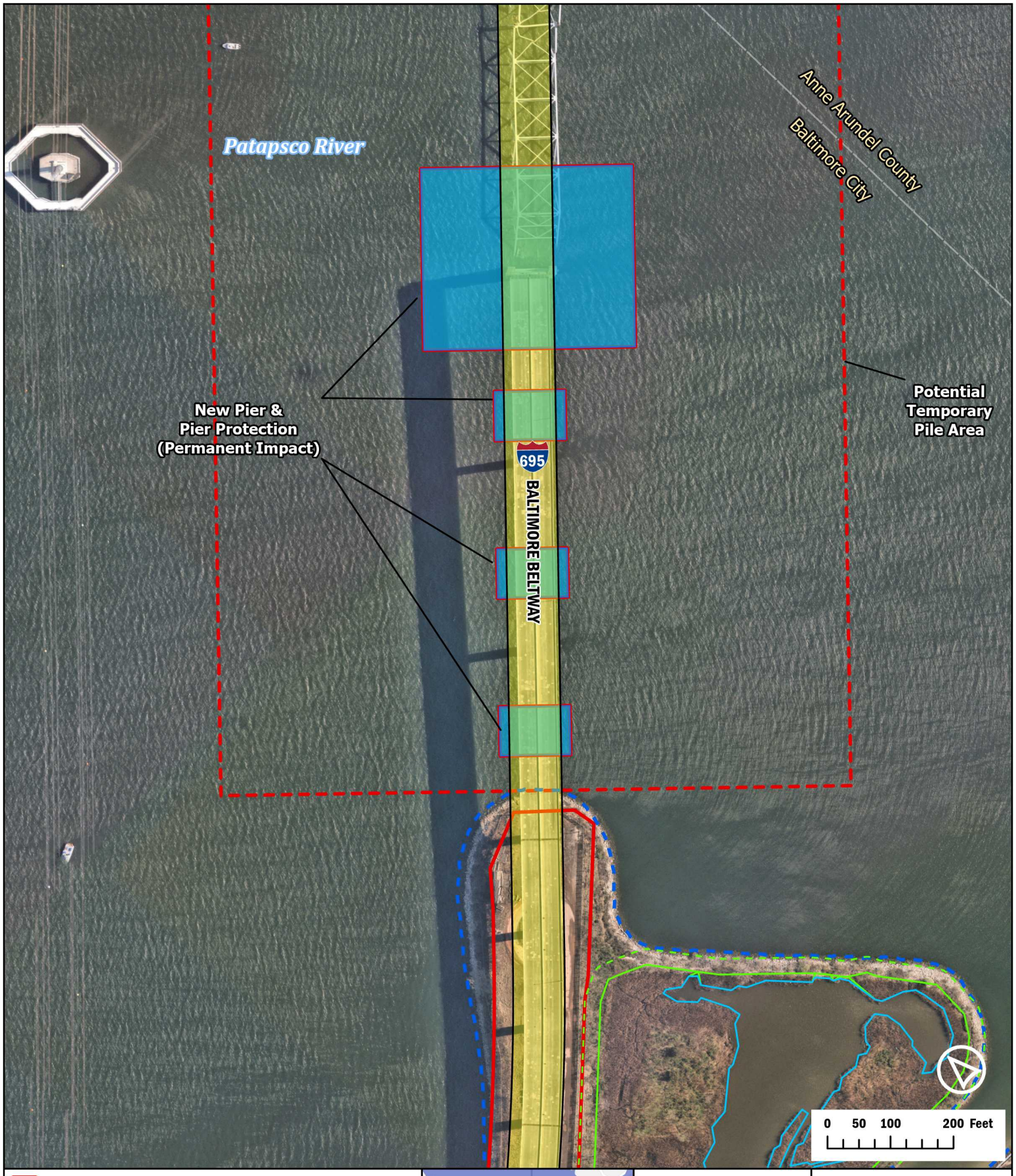

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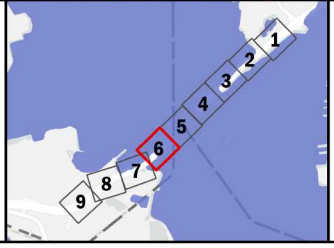

MDTA Maryland Transportation Authority

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MDOT Maryland Department of Transportation State Highway Administration

Francis Scott Key Bridge Rebuild Project

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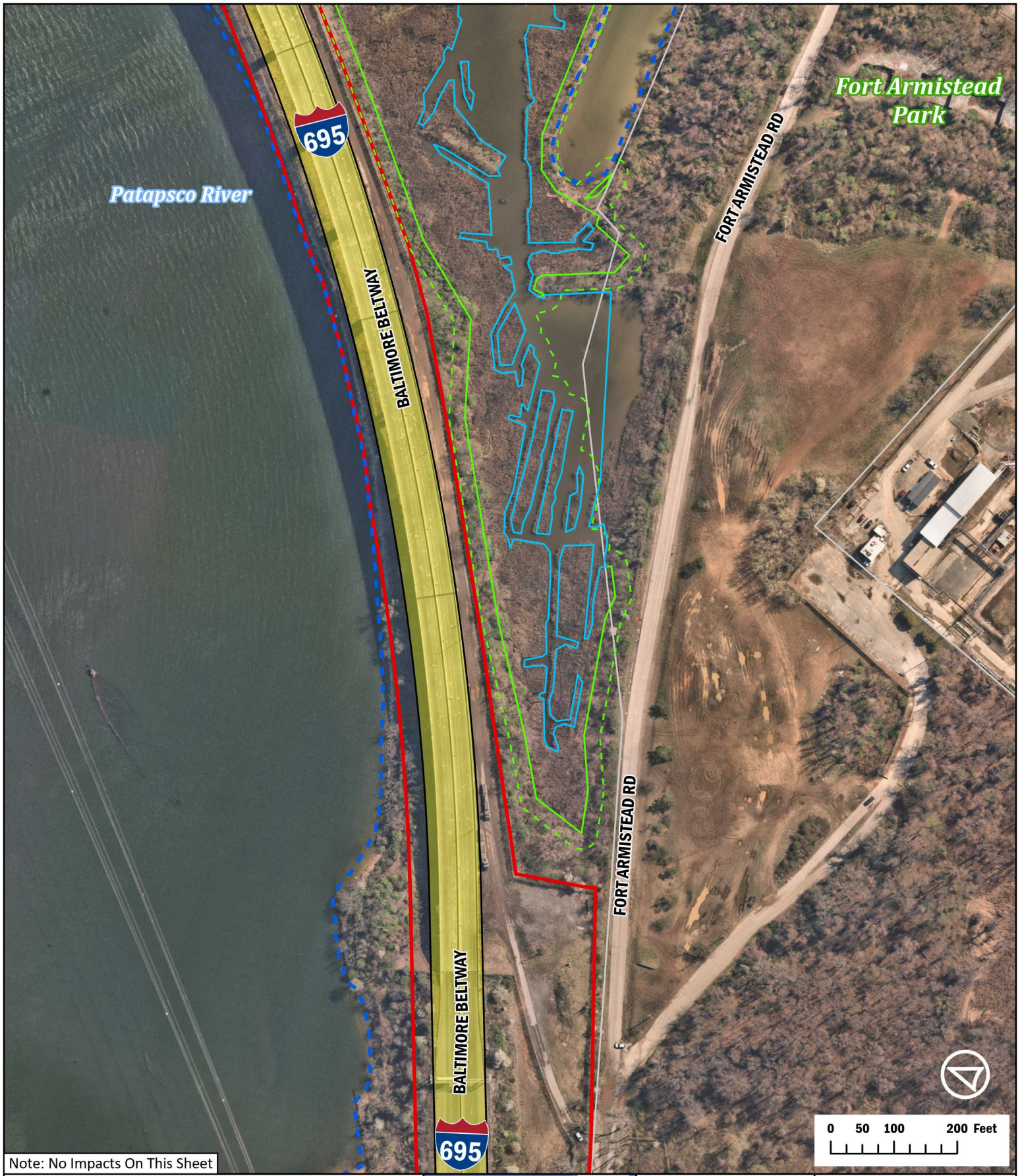

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MDTA Maryland Transportation Authority

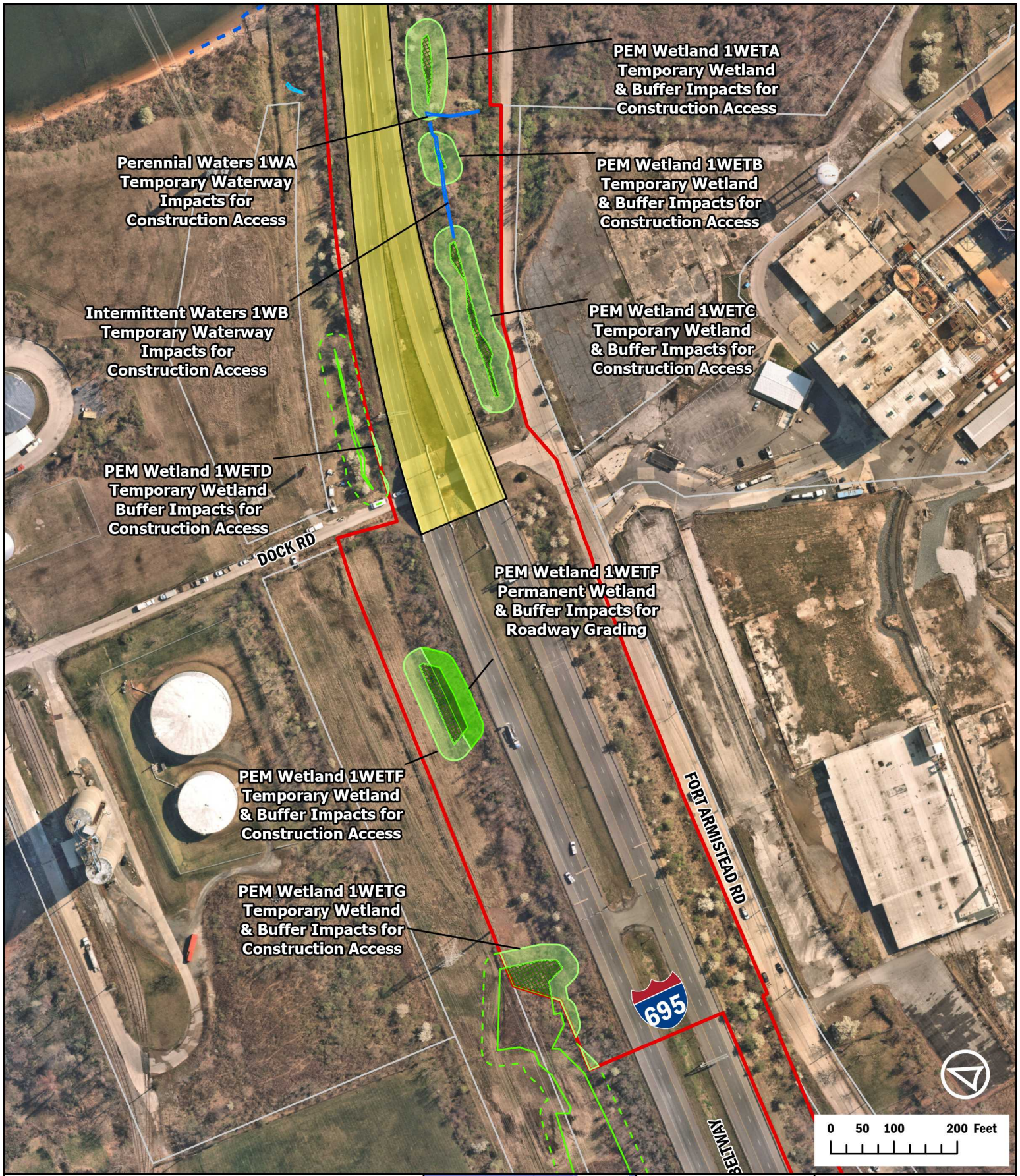
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

Francis Scott Key Bridge Rebuild Project

Impact Plates

July 2024



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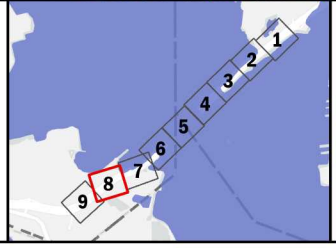

MDTA Maryland Transportation Authority

U.S. Department of Transportation Federal Highway Administration

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Francis Scott Key Bridge Rebuild Project

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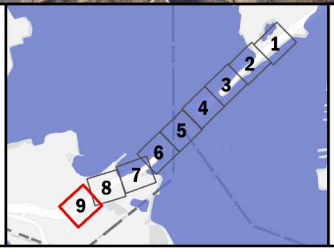


MDTA Maryland Transportation Authority

U.S. Department of Transportation Federal Highway Administration

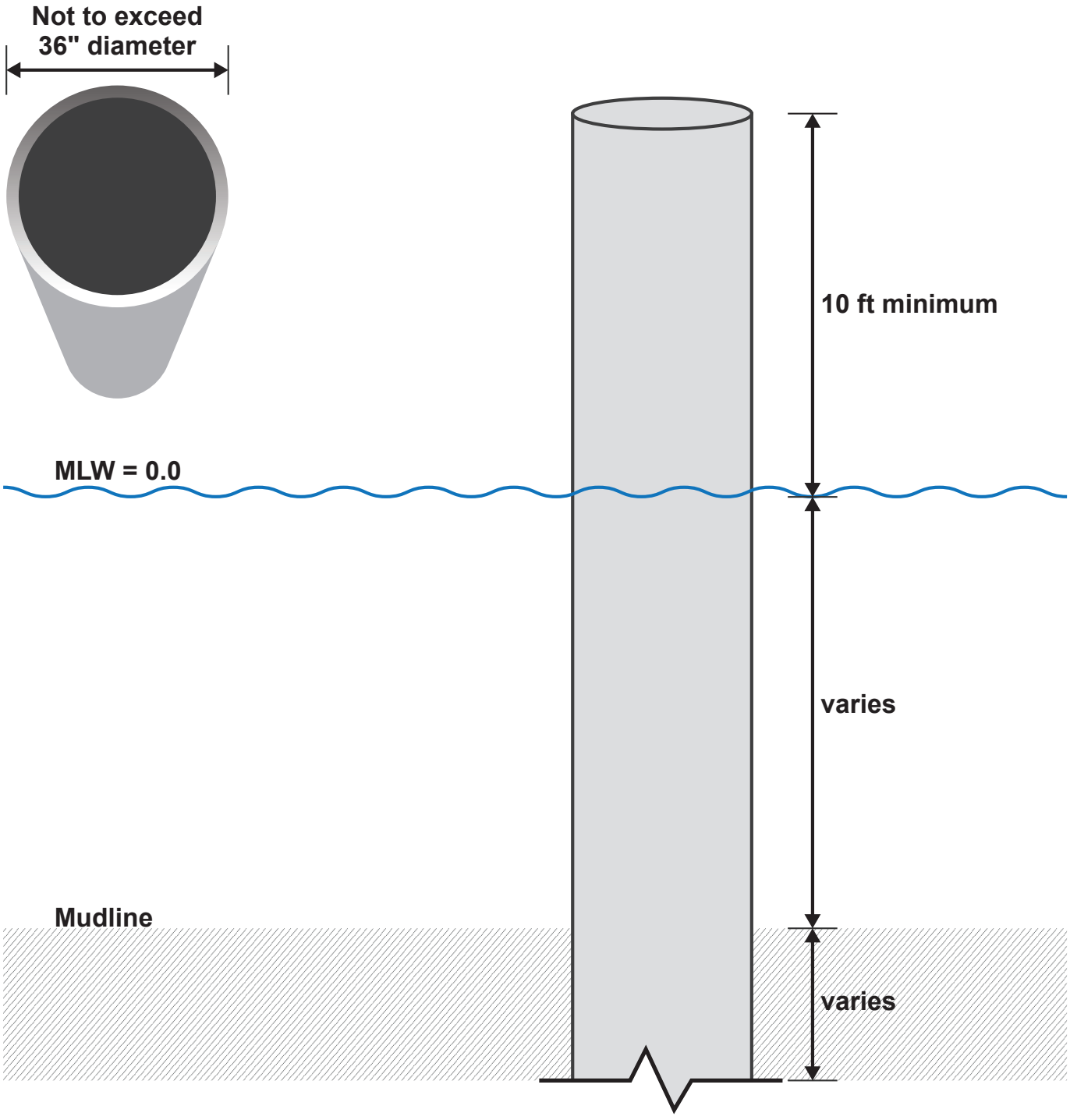
MDOT Maryland Department of Transportation State Highway Administration

Francis Scott Key Bridge Rebuild Project

Impact Plates

July 2024

Temporary Pile Typical Section



Maryland Transportation Authority
MDTA

Francis Scott Key Bridge Rebuild Project

Impact Plates

July 2024

Not to scale

Francis Scott Key Bridge Rebuild Project - Total Impacts - July 2024		
Resource Type	**Impacted Area (SF)**	**Impacted Length (LF)**
Temporary Perennial Nontidal Waterway Impacts	246	85
Temporary Intermittent Nontidal Waterway Impacts	599	187
Temporary Tidal Waterway Impacts	707*	-
Permanent Tidal Waterway Impacts	553,820	-
Temporary Emergent Nontidal Wetland Impacts	8,932	-
Permanent Emergent Nontidal Wetland Impacts	2,032	-
Temporary 25ft Wetland Buffer Impacts	37,492	-
Permanent 25ft Wetland Buffer Impacts	9,109	-

**These impacts are for setting 100 temporary piles. The locations are not determined and are not shaded on the impact plates.*

Francis Scott Key Bridge Rebuild Project - Impacts by Resource - July 2024						
Resource ID	**Resource Classification**	**Permanent Impact (SF)**	**Temporary Impact (SF)**	**Permanent Impact (LF)**	**Temporary Impact (LF)**	**Plate Number**
2WETD	PEM	674	-	-	-	2
2WETD Buffer	25ft Wetland Buffer	4,777	-	-	-	2
Patapsco River	Tidal Waters	553,820	707*	-	-	3-6
1WETA	PEM	-	1,006	-	-	8
1WETA Buffer	25ft Wetland Buffer	-	7,465	-	-	8
1WA	Perennial Waters	-	246	-	85	8
1WB	Intermittent Waters	-	599	-	187	8
1WETB	PEM	-	166	-	-	8
1WETB Buffer	25ft Wetland Buffer	-	3,872	-	-	8
1WETC	PEM	-	2,249	-	-	8
1WETC Buffer	25ft Wetland Buffer	-	15,061	-	-	8
1WETD Buffer	25ft Wetland Buffer	-	179	-	-	8
1WETF	PEM	1,358	2,304	-	-	8
1WETF Buffer	25ft Wetland Buffer	4,332	5,306	-	-	8
1WETG	PEM	-	3,207	-	-	8
1WETG Buffer	25ft Wetland Buffer	-	5,609	-	-	8

**These impacts are for setting 100 temporary piles. The locations are not determined and are not shaded on the impact plates.*

ATTACHMENT D: SECTION 106 CONSULTATION AND PROGRAMMATIC AGREEMENT

PROGRAMMATIC AGREEMENT
Among the
FEDERAL HIGHWAY ADMINISTRATION,
MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION,
MARYLAND TRANSPORTATION AUTHORITY,
AND
MARYLAND STATE HISTORIC PRESERVATION OFFICER

Implementing Section 106 of the National Historic Preservation Act for the I-695 Over the Patapsco River Francis Scott Key Bridge Replacement Project Anne Arundel and Baltimore Counties, and Baltimore City, Maryland

WHEREAS, the U.S. Department of Transportation, Federal Highway Administration (FHWA) plans to approve the I-695 Over the Patapsco River Francis Scott Key Bridge Replacement (The Project), administered by the Maryland Department of Transportation State Highway Administration (SHA) and the Maryland Transportation Authority (MDTA); and

WHEREAS, on March 26, 2024 the MDTA Francis Scott Key Bridge, which carries I-695 over the Patapsco River, was struck by a cargo ship leaving the Port of Baltimore, resulting in the collapse of the bridge, impairing essential traffic. Following the incident, Executive Order 01.01.2024.09 was released by the State of Maryland, declaring a State of Emergency as a result of the Key Bridge collapse.

WHEREAS, The Project consists of construction of a replacement bridge in the same location, following the existing centerline, and within existing right-of-way, while incorporating design upgrades that meet current standards and conditions, as described in detail in Attachment 4; and.

WHEREAS, FHWA has determined that the Project is an undertaking, as defined in 36 C.F.R. §800.16(y), and thus is subject to review under Section 106 of the National Historic Preservation Act (NHPA), 54 U.S.C. § 306108, and its implementing regulations, 36 C.F.R. Part 800 as amended; and

WHEREAS, SHA and MDTA intend to deliver the Project using a progressive design-build delivery method; and

WHEREAS, the Project may be implemented in construction phases, yet to be fully defined, and although this Programmatic Agreement (PA) reflects evaluation of the entire defined Project, certain commitments may require phased implementation; and

WHEREAS, pursuant to Section 9 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401 and 403) and the General Bridge Act of 1946, a Coast Guard Bridge Permit will likely be required from the United States Coast Guard (USCG) for this Project, and pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401 and 403) and Section 404 of the Clean Water Act of 1973 (33 U.S.C. 1344), a Department of the Army permit will likely be required from the United States Army Corps of Engineers (USACE) for this Project; and

WHEREAS, the USACE and USCG have agreed FHWA is the lead federal agency for purposes of ensuring that the Project complies with Section 106 of the NHPA, as amended, and codified in its implementing regulations, 36 C.F.R. Part 800, as amended (August 5, 2004) and have agreed to participate in this PA as consulting parties; and

WHEREAS, federal agencies which, at FHWA's invitation, designate FHWA as the lead federal agency for the Project may use this PA to fulfill their obligations under Section 106 of the NHPA according to 36 C.F.R. 800.2(a)(2), without the need for amendment of this PA, provided that FHWA follows the requirements of this PA; and

WHEREAS, SHA, on behalf of FHWA, has established the Area of Potential Effects (APE) for the project in consultation with the Maryland State Historic Preservation Office (MD SHPO), encompassing the corridor project limits as described above, including areas of direct limits of disturbance, inclusive of all project elements with the potential to affect historic properties, and a sufficient buffer for visual effects where they may be likely to occur; the detailed map of the APE is provided in Attachment 4; and

WHEREAS, FHWA, in consultation with MD SHPO, identified ten (10) historic properties that are listed in, or eligible for inclusion in the National Register of Historic Places (NRHP): Fort McHenry National Monument & Historic Shrine (Maryland Inventory of Historic Places [MIHP] B-8); Baltimore Harbor Tunnel (MIHP B-5333); Canton Grain Elevator (MIHP B-985); Baltimore Municipal Airport, Harbor Field (MIHP B-3603); Baltimore Municipal Airport Air Station (MIHP B-2094); Turner's Station African American Survey District (MIHP BA-3056); Sparrow's Point Shipyard District (MIHP BA-3208); Day Village Historic District (MIHP No. BA-3340); Fort Carroll (MIHP BA-451); and Fort Smallwood Park (MIHP AA-898);
and

WHEREAS, FHWA has identified six (6) architectural resources requiring NRHP evaluation, as shown in Attachment 4: 6001 Dock Road; 3901 Fort Armistead Road; 3925 Fort Armistead Road; Fort Armistead Park; BG&E Parcels (Tax Map 110, Parcels 3, 26, 27, and 58); and MDTA's Francis Scott Key Bridge Administration Building; and

WHEREAS, FHWA has elected to phase the identification, evaluation, and effects assessment of certain portions of the APE and historic properties where timing, unavailability of access or design information precluded such identification, evaluation and assessment, as provided in 36 C.F.R. 800.4(b)(2), and 36 C.F.R. 800.5(a)(3); and

WHEREAS, FHWA will ensure additional identification, evaluation, and assessment is completed in a timely manner prior to final design and construction, to allow for meaningful consultation and practical opportunities to avoid, minimize, or mitigate for any potential adverse effects to historic properties; and

WHEREAS, FHWA has initiated consultation pursuant to 36 C.F.R. 800.3(c) with the MD SHPO by letter on May 16, 2024; SHA on behalf of FHWA will continue to consult with MD SHPO and consulting parties under the terms of this PA in order to identify historic properties, assess the

effects of the Project on historic properties, and, if necessary, resolve adverse effects to historic properties; and

WHEREAS, FHWA, pursuant to 36 C.F.R. 800.6(a)(1)(i)(C), on May 16, 2024, initiated Section 106 consultation with the Advisory Council on Historic Preservation (ACHP), and the ACHP has chosen not to participate in the consultation pursuant to 36 C.F.R. 800.6(a)(1)(iii); and

WHEREAS, FHWA, ACHP, SHA, MDTA and the MD SHPO, under the *Amended Programmatic Agreement Among the Federal Highway Administration, the Maryland Department of Transportation State Highway Administration, the Advisory Council on Historic Preservation, the Maryland State Historic Preservation Officer, Implementing Section 106 of the National Historic Preservation Act for the Federal-aid Highway Program in Maryland* ("Statewide PA"), linked in Attachment 2, have agreed to delegate certain authorities relating to Section 106 of the NHPA to SHA and MDTA for Federal-aid Highway Projects in Maryland; and

WHEREAS, SHA, pursuant to the Statewide PA, employs professionals meeting the Secretary of the Interior's Professional Qualifications Standards (48 Fed. Reg. 44738-39, September 29, 1983) with experience and background in the fields of archaeology, architectural history and/or history who will oversee implementation of stipulations in this PA; and

WHEREAS, SHA and MDTA, on behalf of FHWA, pursuant to 36 C.F.R. 800.4(a)(1), has established the APE for the Project in consultation with the MD SHPO, and, per 36 C.F.R 800.4(b) in consultation with MD SHPO proposed a scope of effort to identify historic properties within the APE, and offered Federally-recognized Native American Tribal Nations (Tribes) an opportunity to provide input on this scope of effort; and

WHEREAS, SHA, MDTA and FHWA, pursuant to 36 C.F.R 800.2(d) have sought and considered the views of the public regarding the Project's effects on historic properties by providing notice to the public via the project website, and in stakeholder public meetings on June 11, 2024; and

WHEREAS, SHA and MDTA, during the course of consultation, have invited the parties listed in Attachment 4 to participate in consultation on the Project; and

WHEREAS, SHA, MDTA and FHWA, have initiated consultation with Tribes listed in Attachment 4 and provided the Tribes with information about the Project. SHA, on behalf of FHWA, has invited the same Tribes to be consulting parties, as shown in Attachment 4; and

WHEREAS, FHWA, SHA and MDTA have determined archaeological properties are unlikely to be affected by the Project based on information available at the time of execution of the PA; and

WHEREAS, no historic properties exist within the expected limits of disturbance of the project, and no physical effects to historic properties are likely to occur based on information available at the time of execution of this PA; and

WHEREAS, FHWA has invited SHA and MDTA to be invited Signatories to this PA, based on their responsibilities for implementation of its terms, and all Signatories, required and invited, are

referred to as "Signatories" to this document; and.

WHEREAS, FHWA intends to use this PA to comply with 36 C.F.R. Part 800, 54 U.S.C. § 100902, 36 C.F.R. Part 14 and to govern the implementation of the Project and the identification and resolution of any adverse effects.

NOW, THEREFORE, FHWA, SHA, MDTA and MD SHPO, (hereinafter "Signatories") agree that the Project will be implemented in accordance with the following Stipulations in order to take into account the effect of the Project on historic properties and that these Stipulations will govern compliance of the Project with Section 106 of the NHPA until this PA expires or is terminated.

Stipulations

I. Roles and Responsibilities

A. FHWA is the lead federal agency and is responsible for ensuring the terms of this PA are carried out.

B. SHA and MDTA are delegated authority by FHWA under this PA and the Statewide PA to continue defined aspects of consultation, project compliance review, and implementation of this PA's terms. SHA and MDTA will jointly be responsible for implementation of this PA excepting where otherwise specified. Additionally:

1. MDTA and/or SHA, using FHWA funding in whole or in part, will enter into an agreement or agreements with a design-build contractor to design and build the Project, using a progressive design-build model. MDTA, in its administrative role with the contractor, will coordinate with and provide SHA all information necessary, and exercise oversight of the contractor to ensure compliance with this PA and its implementation. MDTA and SHA will work informally to resolve any disagreement, but will follow Stipulation X of the PA if resolution is not reached informally. SHA and MDTA may not delegate consultation obligations or other responsibilities related to Section 106 consultation specified in this PA to the design-builder.
2. SHA, on behalf of MDTA and FHWA, will consult with MD SHPO for actions under this PA and 36 C.F.R. 800.

C. SHPO: The MD SHPO has jurisdiction as established in the NHPA for historic properties in Maryland. MD SHPO will:

1. Respond to requests from SHA for concurrence on eligibility determinations, effect determinations, and technical documents within a 30-day review period unless otherwise specified in this PA, or SHA specifically provides for an extended review period at the time of submittal. SHA and FHWA may assume concurrence or no objection to determinations and submittals if no response is received within 30 days, if no extended timeline is specifically

established in the review request or if no timeline is specified in 36 C.F.R. 800. All durations referenced in this PA refer to calendar days.

2. Provide written comments, share general technical assistance/guidance, and make available survey records or other documents necessary to fulfill the requirements of this PA to SHA or its designates.

D. Consulting Parties/Public

1. SHA has consulted with or provided the opportunity to consult to the parties listed in Attachment 4 prior to finalizing this PA.

2. SHA will provide consulting parties who have elected to participate in consultation, regardless of concurring status, with opportunities to consult on Project changes or new elements with the potential to affect historic properties. Consulting parties may sign this PA as concurring parties at any time after execution of the PA with the invitation of SHA or FHWA. Additional consulting parties may be identified at a later time without the need to amend this PA.

3. Concurrence with the PA by a party does not necessarily indicate that the party supports the Project or endorses all stipulations of this PA, but rather indicates the desire of such parties to acknowledge consultation and/or remain involved in implementation of specific terms of this PA.

4. SHA and MDTA will provide for notification of the public for substantial changes to the Project that would result in an expanded APE or new effects to historic properties consistent with 36 CFR 800.8(c)(1)(iv) and procedures under NEPA to ensure ongoing opportunities for public input. As appropriate, this process may identify new consulting parties who may wish to consult at a later time in response to Project refinement.

II. Professional Standards

A. Guidelines, standards and regulations relevant to this PA and its purposes are listed below, and links to these documents are found in Attachment 2. Additionally, it is the intention of the Signatories to interpret this PA to incorporate any subsequent standards, revisions of standards, or applicable guidance issued by the Secretary of the Interior, ACHP, or MD SHPO as then in force during this PA.

1. 36 C.F.R. Part 800: Protection of Historic Properties, as amended (2004);

2. *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (1983);

3. Secretary of the Interior's Professional Qualifications Standards (48 Fed. Reg. 44738-39, September 29, 1983)

4. *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994), including *Technical Update No. 1 of the Standards and*

Guidelines for Archaeological Investigations in Maryland: Collections and Conservation Standards (2018);

5. *Standards and Guidelines for Architectural and Historical Investigations in Maryland* (Maryland Historical Trust, 2023);

6. Program Comment for Actions Affecting Post-1945 Concrete Steel Bridges (77 FR 68790);

7. *Exemption Regarding Historic Preservation Review Process for Effects to the Interstate Highway System* (ACHP Program Comment, 2005)

8. *Section 106 Archaeology Guidance* (ACHP, 2009)

9. National Register of Historic Places Bulletin 15, *How to Apply the National Register Criteria for Evaluation* (National Park Service revised 1997), National Register of Historic Places Bulletin 16A, *How to Complete the National Register Registration Form* (National Park Service revised 1997), and other National Register Bulletins as applicable

10. Secretary of the Interior's Standards for the Treatment of Historic Properties (1995, Revised 2017); and accompanying guidelines for Treatment of Historic Properties (1995, Revised 2017) and Cultural Landscapes (1996)

III. Historic Properties Identification and Effects Assessment

A. *Historic Properties Identification*. SHA and MDTA commit to evaluating the following properties within the APE for eligibility for the NRHP, in accordance with 36 C.F.R. 800.4(c), including providing eligibility determinations to consulting parties and seeking concurrence from MD SHPO:

- 6001 Dock Road
- 3901 Fort Armistead Road
- 3925 Fort Armistead Road
- Fort Armistead Park
- BG&E parcels (Tax Map 110, Parcels 3, 26, 27, and 58)
- Francis Scott Key Bridge Administrative Building

B. *Effect Determination*. Following the evaluation of the properties specified in Stipulation III.A., and at such time as the following information is available: the limits of approach work, bridge type, bridge height, anchorage locations, and locations of any proposed ancillary staging areas, SHA, on behalf of FHWA, will make a finding of effect in accordance with 36 C.F.R. 800.4(d), and 36 C.F.R. 800.5.

1. Finding of No Properties Affected or No Adverse Effect to Historic Properties. Should SHA, on behalf of FHWA, find that no historic properties are affected by the Project or No Adverse Effect to historic properties will result from the Project, and MD SHPO concurs with the finding, in consideration of the views of any consulting parties, SHA and FHWA will proceed with the project, and follow Stipulations IV-XI.

2. Finding of Adverse Effect. If potential adverse effects to historic properties are identified, SHA, MDTA and FHWA will seek to avoid or minimize adverse effects. If adverse effects cannot be completely avoided, and SHA determines there is an adverse effect to historic properties, SHA, MDTA, and FHWA will develop a mitigation plan in consultation with MD SHPO and appropriate consulting parties, identifying mitigation that is reasonable, feasible, and commensurate with the effects to historic properties. SHA will seek concurrence from MD SHPO on the mitigation plan, and, upon MD SHPO concurrence, will implement the provisions of the plan. FHWA, SHA, and MDTA will amend this PA to incorporate its provisions.

3. If SHPO does not concur with the mitigation plan, FHWA, SHA, and MDTA will consult with MD SHPO and appropriate consulting parties to revise the mitigation plan. If the Signatories cannot reach concurrence on the plan, the parties will follow Stipulation X regarding dispute resolution.

IV. Consultation Regarding Project Development

A. As project design advances or ancillary activities not currently known are identified, SHA will initiate consultation with MD SHPO and other consulting parties, and the public per Stipulation I.E. using the following process:

1. On an ongoing basis, SHA cultural resources staff will review proposed changes that affect project location, design, or limits of disturbance, for potential new effects to historic properties.

2. If SHA determines there is potential for new or changed effects, SHA will notify FHWA and consult as described in Stipulation IV.B below.

B. SHA, on behalf of FHWA, consistent with the principles described in 36 C.F.R. §§ 800.3 – 6, will consult with MD SHPO and other Signatories to this PA, and consulting parties identified for this undertaking as appropriate on:

1. Amendments to the APE, consistent with 36 C.F.R. § 800.16(d), including identification and documentation of any new historic properties within the amended APE consistent with 36 C.F.R § 800.4(a) and (b).

2. Changes to the LOD within the existing APE where any additional archaeological investigation would be recommended, including newly identified staging or stockpile areas outside MDTA right-of-way within the APE.

3. New or revised determinations of eligibility for historic properties within the APE as described above, consistent with 36 C.F.R § 800.4(c).

4. New or revised assessment of effects to historic properties within the APE as described above, consistent with 36 C.F.R § 800.5.

C. SHA will provide consultation materials in written or electronic form, and follow timelines for comment opportunity as specified in Stipulation I.C.1.

V. Monitoring of Performance

A. Specific points for continued consultation are defined in Stipulations III and IV.

B. Should Adverse Effects be identified, and a mitigation plan be developed in accordance with Stipulation III.B.2, the mitigation plan will include a schedule for periodic regular reporting and/or meetings until the commitments of any mitigation plan are completed, or another point in time identified in the plan.

C. SHA and MDTA will convene consulting party meetings as necessitated by project advancement described in Stipulation IV or when requested by any Signatory.

VI. Post-Review Discovery of Human Remains

SHA will follow the attached Inadvertent Discovery Plan (Attachment 1) should human remains be identified in any areas of the project**.**

VII. Other Post-Review Discoveries

SHA will follow the procedures in Attachment 1 of this PA for any inadvertent archaeological discoveries or inadvertent effects to historic properties during construction.

VIII. Confidentiality

The Signatories agree to provide by the provisions of Section 304 of the NHPA, and other applicable requirements, to withhold information concerning the location, character, or ownership of resources where release of such information may endanger the integrity of the resource.

IX. Amendment

Any Signatory to this PA may request that it be amended, whereupon the Signatories will consult in accordance with 36 C.F.R. § 800.14 to consider such an amendment. Amendments will be effective upon the date of the last signature from the Signatories.

X. Dispute Resolution

A. Should any Signatory or consulting party object at any time to the manner in which the terms of this PA are implemented, within 30 days of information being provided relating to the issue forming the basis of the objection, or within 30 days where the objector can otherwise be reasonably assumed to be aware of the issue forming the basis of objection, FHWA shall consult with such party to resolve the objection. If FHWA determines that such objection cannot be resolved, FHWA will take the following steps:

1. Forward all documentation relevant to the dispute, including FHWA's proposed resolution, to ACHP. FHWA will request ACHP provide comment on the resolution of the objection within 30 days of receiving adequate documentation. Prior to reaching a final decision on the dispute, FHWA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from ACHP, Signatories and consulting parties and provide them with a copy of this written response. FHWA will then proceed according to its final decision.
2. If ACHP does not provide its advice regarding the dispute within the 30-day period, FHWA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, FHWA shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories and consulting parties to the PA and provide them with a copy of such written response.
3. In the case of objections related to NRHP eligibility, any Signatory may object in writing within 30 days to an SHA or FHWA determination of eligibility. If SHA and FHWA are unwilling to revise the determination in response to the objection or other relevant information, FHWA (or SHA on its behalf) will submit the determination to the Keeper of the National Register of Historic Places for a determination pursuant to 36 C.F.R. Part 63.

B. Objections from the Public: Should a member of the public object to an action taken under this PA, or compliance with the PA, within 30 days of information being provided relating to the issue forming the basis of the objection, or within 30 days where the objector can otherwise be reasonably assumed to be aware of the issue forming the basis of objection, FHWA will ensure that SHA consults with the objecting party to respond to the objection in coordination with FHWA where relevant, provided the

objection is made in writing to FHWA or SHA contacts identified in Attachment 3 or any subsequent updates to Attachment 3. SHA and FHWA will inform other Signatories of the objection and proposed resolution. Should a Signatory disagree with the proposed resolution, the Signatories will follow Stipulation X.

C. FHWA's responsibility to carry out all other actions subject to the terms of this PA that are not the subject of the dispute remain unchanged.

XI. Termination

A. Any Signatory to this PA may terminate it by providing 30 days' notice in writing to the other Signatories, provided that the Signatories will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination.

B. If any Signatory to this PA determines that a term will not or cannot be carried out, that party shall immediately consult with the other Signatories to attempt to develop an amendment per Stipulation IX, above. If within 30 days (or another time period agreed to by all Signatories) an amendment cannot be reached, any signatory may terminate the PA upon written notification to the other Signatories.

C. In the event of termination, FHWA will comply with 36 C.F.R. § 800 for all remaining actions, or until a new agreement is reached fulfilling such requirements.

This PA will continue in full force and effect until 10 years from the date of execution of the PA, or such time of final acceptance of the Project and when all terms of this PA have been met, should the terms be met prior to the 10-year expiration. The PA will be invalid if the Project is terminated or authorization for the Project is rescinded. At any time in the six-month period prior to its expiration, the Signatories will consult to consider an extension or amendment of the PA. At such time, the Signatories may consider an amendment to extend the PA unmodified for an additional specified duration or consult to amend the PA in accordance with Stipulation IX. No extension or amendment will be effective until all Signatories have signed the amendment or amendment to extend.

SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
Among the
FEDERAL HIGHWAY ADMINISTRATION,
MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION,
MARYLAND TRANSPORTATION AUTHORITY,
AND
MARYLAND STATE HISTORIC PRESERVATION OFFICER

Implementing Section 106 of the National Historic Preservation Act for the I-695 Over the Patapsco River Francis Scott Key Bridge Replacement Project Anne Arundel and Baltimore Counties, and Baltimore City, Maryland

FEDERAL HIGHWAY ADMINISTRATION

By: VALERIYA REMEZOVA Digitally signed by VALERIYA REMEZOVA Date: 2024.07.01 13:37:33 -04'00' **Date: 7/1/2024**

Valeriya Remezova, Division Administrator

SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
Among the
FEDERAL HIGHWAY ADMINISTRATION,
MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION,
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MARYLAND STATE HISTORIC PRESERVATION OFFICER

Implementing Section 106 of the National Historic Preservation Act for the I-695 Over the Patapsco River Francis Scott Key Bridge Replacement Project Anne Arundel and Baltimore Counties, and Baltimore City, Maryland

MARYLAND STATE PRESERVATION OFFICER

By: _____ **Date:** 6-13-2024

Elizabeth Hughes, State Historic Preservation Officer

SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
Among the
FEDERAL HIGHWAY ADMINISTRATION,
MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION,
MARYLAND TRANSPORTATION AUTHORITY,
AND
MARYLAND STATE HISTORIC PRESERVATION OFFICER

Implementing Section 106 of the National Historic Preservation Act for the I-695 Over the Patapsco River Francis Scott Key Bridge Replacement Project Anne Arundel and Baltimore Counties, and Baltimore City, Maryland

MARYLAND TRANSPORTATION AUTHORITY

By: _____ **Date:** 6/26/2024
Bruce Gartner, Executive Director

SIGNATORY PAGE

PROGRAMMATIC AGREEMENT
Among the
FEDERAL HIGHWAY ADMINISTRATION,
MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION,
MARYLAND TRANSPORTATION AUTHORITY,
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MARYLAND STATE HISTORIC PRESERVATION OFFICER

Implementing Section 106 of the National Historic Preservation Act for the I-695 Over the Patapsco River Francis Scott Key Bridge Replacement Project Anne Arundel and Baltimore Counties, and Baltimore City, Maryland

MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

By: _____ **Date:** 6/18/2024

William Pines, P.E., Administrator

CONCURRING PARTY PAGE

PROGRAMMATIC AGREEMENT
Among the
FEDERAL HIGHWAY ADMINISTRATION,
MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION,
MARYLAND TRANSPORTATION AUTHORITY,
AND
MARYLAND STATE HISTORIC PRESERVATION OFFICER

Implementing Section 106 of the National Historic Preservation Act for the I-695 Over the Patapsco River Francis Scott Key Bridge Replacement Project Anne Arundel and Baltimore Counties, and Baltimore City, Maryland

By: _____ **Date:** _____
Print Name:_____

Organization: _____

Attachments

1. Inadvertent Discovery Plan
2. Links to Documentation Referenced
3. Contact Information for FHWA, MDTA and SHA staff (to be updated as necessary)
4. Section 106 Initiation Letter

Attachment 1
Inadvertent Discovery Plan

A. Unanticipated Impacts to Architectural Historic Properties: if the Project causes unanticipated impacts to any National Register of Historic Places (NRHP) eligible, listed, or contributing buildings, sites, structures, or objects of the built environment, the contractor must notify the engineer and immediately cease any activity causing ongoing damage until consultation occurs. SHA shall, in consultation MD SHPO, determine if adverse effects have occurred to the property/properties and develop a plan for the protection of the historic property, and minimization or mitigation of impacts. If mitigation is identified, FHWA, SHA, MD SHPO, and other Signatories as necessary will execute a Memorandum of Agreement or amend this PA to record the identified mitigation. SHA or MDTA may hold the contractor(s) liable for any or all costs resulting from this process following appropriate processes identified in its contract instruments.

B. Unanticipated Damage to Known Archaeological Resources: if unauthorized excavation occurs outside the approved limits of disturbance (LOD) or other approved boundaries designed to protect archaeological resources or cemeteries and thereby causes impacts to known, NRHP-eligible properties, SHA and/or MDTA will ensure any activity causing ongoing damage is stopped until consultation occurs. SHA will conduct a damage assessment consistent with the model used for such assessments under the Archaeological Resources Protection Act (https://www.nps.gov/archeology/pubs/techbr/tchBrf20.pdf). SHA will use the results of the assessment in consultation with the MD SHPO to determine if the resource has been adversely affected and determine appropriate mitigation. If the resource is of known or suspected Native American affiliation, FHWA, with assistance from SHA shall consult with federally recognized Indian Tribes as appropriate. If the resource is affiliated with other known descendant groups or consulting parties, SHA will consult with such parties as well. If mitigation is identified, FHWA, SHA, MD SHPO, and other Signatories as necessary will execute a Memorandum of Agreement or amend this PA to record the identified mitigation. SHA or MDTA may hold the contractor(s) liable for any or all costs resulting from this process following appropriate processes identified in its contract instruments.

C. Unanticipated Discovery of Human Remains: Should any burials, interments, or human remains (hereafter, "remains") be encountered during construction, SHA and/or MDTA will ensure all applicable construction work in the vicinity of the remains is immediately stopped to prevent damage to the remains, or to any additional remains that might be present in the vicinity. A minimum 100-foot buffer around identified remains will be established by SHA and/or MDTA free of disturbance, to be adjusted as appropriate for the site conditions. Construction may occur outside the buffer unless evidence of additional remains is found. If remains are suspected to be human but not confirmed, SHA will ensure that such confirmation is made by a qualified professional. Human remains will at all times be treated respectfully and access and visibility limited to the site of discovery to authorized personnel only. Within Maryland, pursuant to State of Maryland Criminal Code § 10-402, the State's Attorney must authorize movement or removal of any remains until determined to be archaeological. If the remains are determined to be archaeological, SHA and the MD SHPO will consult to determine treatment of the remains and any other necessary treatment such as work needed to define extent of remains in the most expeditious manner feasible.

If the remains are determined archaeological and suspected to be of Native American origin, SHA, in coordination with FHWA, shall provide notification to tribal governments in accordance with any expressed tribal consultation preferences within 24 hours or as soon as practicable. SHA and/or FHWA will consult with affected federally recognized Indian Tribes, the Maryland Commission on Indian Affairs and appropriate Maryland Indian groups as appropriate regarding treatment of the remains. SHA and/or MDTA will accommodate tribal cultural preferences to the extent practicable during such an event. If remains can be associated with other known descendant communities or organizations, such parties shall also be consulted.

In consultation with the MD SHPO, Federally Recognized Indian Tribes, and FHWA as appropriate, and other identified descendant/affiliated consulting parties, the SHA shall develop a plan for the treatment or disposition of the remains or follow provisions of an existing Treatment Plan developed per this PA. SHA and/or MDTA shall implement the provisions of the agreed Treatment Plan.

Should the remains be associated with, or constitute an intact archaeological resource, provision **D** below is also applicable.

D. Unanticipated Discovery of Archaeological Resources: If previously unidentified archaeological features, artifacts, or other materials (hereafter, "resource") are discovered during construction, all ground-disturbing work in the vicinity of the resource shall be temporarily suspended or modified to prevent further damage to the resource, and SHA will provide a reasonable buffer where ground disturbance is prohibited to cover the extent of the resource that may not be exposed.

The SHA archaeologist shall perform a preliminary inspection to identify the resource and evaluate its likelihood of NRHP eligibility. Following this inspection, construction may resume in the vicinity of but outside the boundary of the archaeological resource as defined by the SHA archaeologist. If the resource is potentially eligible for the NRHP, SHA will consult with the MD SHPO on an eligibility determination and, if determined eligible for the NRHP, every effort shall be made to minimize impacts through redesign or modification of construction methods. If the resource is of known or suspected Native American affiliation, FHWA, with assistance from SHA shall consult

with federally recognized Indian Tribes as appropriate. If the resource can be reasonably identified with other descendant or affiliated communities, SHA shall also attempt to consult with such parties.

In consultation with the MD SHPO, SHA shall develop a plan for the treatment of any resource determined eligible. SHA shall describe actions proposed to avoid, minimize, or mitigate adverse effects, and request MD SHPO, tribal, and any other consulting party comments within 5 working days, unless there is a life or safety hazard requiring immediate interim action. SHA will disclose any interim action affecting the eligible resource taken in the event of a life or safety hazard. SHA, at its discretion, may establish a longer comment period if practicable in consideration of potential safety, cost, public travel disruption, and other factors.

SHA shall then implement the provisions of the agreed-upon plan and/or amend this PA to document the resolution, should the resource be determined eligible and should the Project adversely affect the resource.

Attachment 2
Links to Documentation Referenced In the I-695 Over the Patapsco River PA

Federal Codes and Regulations

36 C.F.R. Part 14 and 54 U.S.C. § 100902
Rights-of-Way
https://www.ecfr.gov/current/title-36/chapter-I/part-14
https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title54-section100902&num=0&edition=prelim

36 C.F.R. Part 63
Dispute Resolution of Determinations of Eligibility for Inclusion in the NRHP
https://www.ecfr.gov/current/title-36/chapter-I/part-63

36 C.F.R. Part 79
Curation of Federally Owned and Administered Archaeological Collections
https://www.ecfr.gov/current/title-36/chapter-I/part-79

36 C.F.R. Part 800
Implementing Regulations of Section 106 of the National Historic Preservation Act
https://www.ecfr.gov/current/title-36/chapter-VIII/part-800?toc=1

40 C.F.R. 1506.6(a)
Public involvement – National Environmental Policy Act
https://www.ecfr.gov/current/title-40/chapter-V/subchapter-A/part-1506#1506.6

54 U.S.C.

- National Historic Preservation Act
  - § 306108 Effect of Undertaking on Historic Property
    - https://uscode.house.gov/view.xhtml?req=(title:54%20section:306108%20edition:prelim)
  - § 307103 Access to Information (Section 304)
    - https://www.achp.gov/digital-library-section-106-landing/frequently-asked-questions-protecting-sensitive-information

State Codes and Regulations

Maryland Criminal Code § 0-402
Courts and Judicial Proceedings
https://law.justia.com/codes/maryland/2013/article-gcr/section-10-402

Guidelines and Standards

Advisory Council on Historic Preservation

- *Exemption Regarding Historic Preservation Review Process for Effects to the Interstate Highway System* (ACHP Program Comment, 2005)
  https://www.achp.gov/sites/default/files/exemptions/2017-01/final_interstate_exemption_notice.pdf

- *Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects* (ACHP March 2023)
  https://www.achp.gov/sites/default/files/policies/2023-07/PolicyStatementonBurialSitesHumanRemainsandFuneraryObjects30June2023.pdf

- *Program Comment Issued for Streamlining Section 106 Review for Actions Affecting Post-1945 Concrete and Steel Bridges* (77 FR 68790)
  https://www.federalregister.gov/documents/2012/11/16/2012-27866/program-comment-issued-for-streamlining-section-106-review-for-actions-affecting-post-1945-concrete

- *Section 106 Archaeology Guidance* (ACHP, 2009)
  https://www.achp.gov/sites/default/files/guidance/2017-02/ACHP%20ARCHAEOLOGY%20GUIDANCE.pdf

The Maryland Historical Trust

- Standards and Guidelines for Archaeological Investigations in Maryland (Shaffer and Cole 1994)
  https://mht.maryland.gov/documents/PDF/archeology/Archeology_standards_investigations.pdf

- *Technical Update No. 1 of the Standards and Guidelines for Archaeological Investigations in Maryland: Collections and Conservation Standards* (2018)
  https://mht.maryland.gov/documents/PDF/archeology/Archeology_standards_curation.pdf

- Standards and Guidelines for Architectural and Historical Investigations in Maryland (Maryland Historical Trust, Revised 2019)
  https://mht.maryland.gov/documents/PDF/research/Survey_standards_architecture_web.pdf

- NRHP Bulletin 15 – How to Apply the National Register Criteria for Evaluation (National Park Service revised 1997)
  https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf

- Other NRHP Bulletins

https://www.nps.gov/subjects/nationalregister/publications.htm#:~:text=national%20register%20of%20historic%20places%20bulletins

- The Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes (1996) https://www.nps.gov/tps/standards/four-treatments/landscape-guidelines/index.htm

- The Secretary of the Interior's Guidelines for the Treatment of Historic Properties (1995, Revised 2017) https://www.nps.gov/tps/standards/treatment-guidelines-2017.pdf

- The Secretary of the Interior's Professional Qualifications Standards https://www.nps.gov/articles/sec-standards-prof-quals.htm **OR** see 48 FR 44738 https://www.nps.gov/subjects/historicpreservation/upload/standards-guidelines-archeology-historic-preservation.pdf

- The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (1983) https://www.nps.gov/subjects/historicpreservation/upload/standards-guidelines-archeology-historic-preservation.pdf

- The Secretary of the Interior's Standards for the Treatment of Historic Properties (1995, Revised 2017) https://www.nps.gov/tps/standards/four-treatments.htm OR https://www.ecfr.gov/current/title-36/chapter-I/part-68

Other Referenced Information

- SHA and MDTA Statewide PA: https://www.roads.maryland.gov/OPPEN/2021_PA_Amendment.pdf

Attachment 3
FHWA, SHA and MDTA Staff Contact Information:

For FHWA:

Mr. Alexander Bienko
Environmental Specialist
FHWA - Maryland Division
George H. Fallon Federal Building
31 Hopkins Plaza, Suite 1520
Baltimore, MD 21201
phone (410) 779-7148

For SHA:

Mr. Steve Archer
Assistant Division Chief
Maryland Department of Transportation State Highway Administration
707 N. Calvert Street
Baltimore, MD 21202
phone (410) 545-8508

For MDTA:

Ms. Melissa Williams
Director
Maryland Transportation Authority
Planning & Program Development
2310 Broening Highway
Baltimore, MD 21224
phone (410) 802-9684 (direct)

Attachment 4
Section 106 Consultation Initiation Letter

May 16, 2024

Ms. Elizabeth Hughes
State Historic Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville MD 21032-2023

Dear Ms. Hughes:

Introduction and Project Description

On behalf of the Federal Highway Administration (FHWA) and in accordance with the Programmatic Agreement (PA) Implementing Section 106 of the National Historic Preservation Act for FHWA Undertakings in Maryland (Section 106 PA), this letter serves to inform the Maryland Historical Trust (MHT) of the Maryland Department of Transportation State Highway Administration's (SHA) proposed Project to rebuild the Maryland Transportation Authority's Francis Scott Key Bridge carrying I-695 over the Patapsco River. SHA seeks to establish the Area of Potential Effects (APE) and to provide information about historic properties identification within the APE.

On March 26, 2024, the MDTA Francis Scott Key Bridge (Key Bridge), which carries I-695 over the Patapsco River, was struck by a cargo ship leaving the Port of Baltimore, resulting in the collapse of the bridge. The collapse prompted the immediate closure of I-695 between MD 173 (exit 1) and MD 157/Peninsula Expressway (exit 43) and halted vehicle traffic across the Patapsco River as well as marine shipping to and from the Port of Baltimore. Following the incident, Executive Order 01.01.2024.09 was released by the State of Maryland, declaring a State of Emergency as a result of the Key Bridge collapse. Immediate recovery and debris removal actions were conducted.

MDTA and SHA are now proposing to replace the collapsed Francis Scott Key Bridge in the same location as the original structure. The Project is in portions of Baltimore City, Baltimore County, and Anne Arundel County, Maryland. The project limits extend along I-695 from Quarantine Road in Curtis Bay to Broening Highway in Dundalk and is entirely within MDTA's existing right-of-way (ROW). The remaining portions of the old structure will be removed to clear the on-alignment location of the new structure. This would likely involve fully removing the on-land piers and removing the remaining in-water piers to near or below the river bottom (mud line).

The Project includes construction of a replacement bridge that would restore transportation connectivity; incorporate design upgrades that meet current standards and conditions that have changed since construction of the original bridge in 1977; and accommodate existing and future ship navigation on the Patapsco River and into the Port of Baltimore. As the proposed Project is a replacement of the collapsed bridge, the location of the Project would be the same as the old structure and remain within the existing ROW, following the existing centerline across the Patapsco River and the approaches along I-695. The new bridge would have four travel lanes, maintaining the capacity of the former bridge.

The Project proposes several design changes to be incorporated into the replacement bridge to account for advancements in design standards and changes in existing conditions since the original bridge was constructed. A bridge type will be developed that could support a longer main span and higher air draft clearance; and this will likely involve support towers which could be taller than the old bridge to as much as 500-550 feet above the water. The replacement bridge would have a 230-foot minimum air draft and a clear span of 1,200 feet at full air draft along the main span to provide additional overhead clearance for large vessels traveling under the bridge. Considering a change in air draft and clear span, the Project also proposes an increased length to 1,400 feet along the main span with additional piers, increasing the bridge to 2.4 miles in total length with a 4% profile to match the existing alignment and approaches. The new typical section for the Project would meet the design specifications for lanes and shoulders outlined in the American Association of Highway and Transportation Officials (AASHTO) *A Policy on Design Standards – Interstate System* (May 2016) and would include two 12-foot-wide lanes and 10-foot/4-foot-wide shoulders.

The project includes obtaining federal permits from United States Coast Guard (USCG) US Army Corps of Engineers (USACE). On May 2, 2024, FHWA sent an email to the USCG and the USACE, proposing to assume the role of Lead Federal Agency, in accordance with 36 CFR 800.2(a)(2), to fulfill collective federal agency responsibilities under Section 106. USCG and USACE responded on May 13 and 14, 2024, respectively, concurring with FHWA taking this role.

A location map is included as Attachment 1.

Funding

Federal funds are anticipated for this project.

Area of Potential Effects

In determining the Area of Potential Effects (APE) for this project, SHA considered possible visual, audible, atmospheric and/or physical impacts to historic properties, both archaeological sites and architectural resources, which would diminish the integrity of any characteristics that would qualify a property for the National Register of Historic Places (NRHP). The area along the Patapsco River is characterized as an industrial shipping port. The previous steel arch continuous through truss bridge was visually prominent along the Patapsco River to the north and south of the bridge. While the bridge was also visible farther inland, it was less prominent amidst other dominant commercial and industrial buildings and structures comprising the Baltimore skyline. The proposed new bridge will be taller and likely a different bridge type, but will not substantially alter the viewshed along the Patapsco River and does not have the potential to affect historic properties beyond the Patapsco River shoreline. The APE, therefore, is confined to parcels along the Patapsco River shoreline, west to Fort McHenry and east to Fort Smallwood Park, as well parcels directly adjacent to MDTA ROW along I-695 (Attachment 2a-d). The archaeological survey area is defined as the limits of construction disturbance within MDTA ROW from its intersection with Broening Highway to the north and the Quarantine Road intersection to the south.

Proposed Identification Methods and Results

Architecture: There are eight architectural historic properties in the APE.

Resource Name	MIHP No.	NRHP Status
Fort McHenry National Monument & Historic Shrine	B-8	Listed, October 15, 1966
Baltimore Harbor Tunnel	B-5333	Eligible, 2021
Canton Grain Elevator	B-985	Eligible, 2019
Baltimore Municipal Airport, Harbor Field	B-3603	Eligible, 1992
Baltimore Municipal Airport Air Station	B-2094	Eligible, 1994
Turner's Station African American Survey District	BA-3056	Eligible, 2019
Sparrow's Point Shipyard District	BA-3208	Eligible, 2006
Fort Carroll	BA-451	Eligible, 2006
Fort Smallwood Park	AA-898	Eligible, 2013

Additional MIHP resources are associated with these historic properties as contributing/non-contributing resources. A-897 and A-897A, as well as A-898A through A-898I, are associated with Fort Smallwood Park. Likewise, BA-3208-1 through BA-328-5 are associated with Sparrow's Point Shipyard District.

Center Street, 114 (DOE-BA-0042); Avondale Road, 202 (DOE-BA-0015); Carver Road, 105 (DOE-BA-0040); and Fleming Community Center (DOE-BA-0083) were individually evaluated and determined not eligible for the NRHP in the 1990s, before Turner's Station African American Historic District was determined NRHP eligible. All resources except 114 Center Street are contributing resources in the district.

As outlined above, notable effects would be confined to those properties immediately adjacent to the work and/or within limits of disturbance for construction of the new bridge. SHA has determined there is limited potential for other types of effects, in consideration of the prior modern bridge structure. The new structure will be on the same alignment as the prior bridge, but is anticipated to be of increased height, and will likely be a different bridge type than the prior bridge. The prior bridge was visible in whole or in part from a great number of locations in dense, urban Baltimore City and surrounding areas. The replacement bridge will have slightly increased visibility. However, historic properties effects resulting from these changes would be limited to those properties where the differences between the prior bridge and the replacement bridge would be integral to the character, experience or integrity of the historic property.

Given this narrow potential for effects, SHA proposes architectural inventory and evaluation efforts under 36 CFR 800.4(a) consisting of NHRP evaluation of: 1) parcels immediately adjacent to MDTA ROW and project limits and 2) MIHP resources within the APE. Since all MIHP resources within the APE have an NRHP evaluation, resources requiring evaluation include the following:

Unrecorded Architectural Resources
6001 Dock Road
3901 Fort Armistead Road
3925 Fort Armistead Road
Fort Armistead Park
BG&E parcels (Tax Map 110, Parcels 3, 26, 27, and 58)
Francis Scott Key Bridge Administrative Building

The APE also includes four metal girder bridges along I-695: BCZ496061 (1975); BCZ496051 (1975); BCZ492061 (1972); and BCZ492051 (1979). Metal girder bridges are not eligible for the NRHP under the Advisory Council on Historic Preservation Program Comment Issued for Streamlining Section 106 Review for Actions Affecting Post-1945 Concrete and Steel Bridges (Federal Register Vol. 77, No. 222) and do not require NRHP evaluation.

Archaeology: There are no recorded archaeological historic properties within the archaeology survey area.

There is minimal potential for terrestrial archaeological historic properties within the archaeological survey area. The terrestrial portion of the archaeological survey area has not been subjected to Phase I archaeological survey. A review of soil data, historic topographic maps, and twentieth-century aerial photographs demonstrates that the entirety of the terrestrial archaeological survey area is located on made land and fill with minimal potential to contain archaeological historic properties (USDA-NRCS 2024; USGS 1894, 1946, 1975; HistoricAerials.com 2024). No further terrestrial archaeological work is recommended.

There is also minimal potential for underwater archaeological historic properties. Several prior underwater archaeological surveys have occurred in the archaeological survey area (Koski-Karell, 1979; U.S. Army Corps of Engineers 1992; Pelletier, Williams, and Randolph 2005). There is one archaeological quad file within the archaeology survey area, CURTIS-QF10, the approximate location of a pier at the mouth of Bear Creek, that was recorded based on historical mapping as part of a Phase IA underwater archaeological project ca. 1990. Subsequent underwater archaeological survey in the vicinity of CURTIS-QF10 by Pelletier, William, and Randolph (2005) did not identify evidence of the pier. Additionally, the presence of a dredged channel under the collapsed truss span of the Francis Scott Key Bridge, where recovery efforts are currently focused, suggests no intact, unrecorded resources are likely to be present or affected by the undertaking. No further underwater archaeological work is recommended.

Review Request

FHWA has requested a PA for this project, the scope of which would be commitments to this identification effort, an effects determination following completion of historic properties identification and evaluation, and a process for managing change under the progressive design build project. We request any comments you may have by May 27, 2024 on the APE, that no further archaeological work is necessary, and the scope of identification efforts. Based on the project schedule, SHA will need to execute the PA by July 8, 2024; pending any comments you may have to provide on the content of this letter, we will work with FHWA to provide a draft PA.

We invite, by copy of this letter, the organizations listed in Attachment 3 to provide comments and participate in the Section 106 process. Pursuant to the requirements of the implementing regulations found at 36 CFR Part 800, SHA seeks their assistance in identifying historic preservation issues as they relate to this specific project (see 36 CFR §800.2(c)(3) and (5), and §800.3(f) for information regarding the identification and participation of consulting parties, and §800.4, and §800.5 regarding the identification of historic properties and assessment of effects). For additional information regarding the Section 106 regulations, see the Advisory Council on Historic Preservation's website,

www.achp.gov, or contact SHA or MHT. If no response is received by May 27, 2024, we will assume that these offices decline to participate. Please call Sarah Groesbeck at 410-545-0038 (or email sgroesbeck@mdot.maryland.gov) or myself with questions regarding this project.

Sincerely,

Digitally signed by
Steve Archer
Adobe Acrobat
version:
2024.002.20687

Steve Archer
Assistant Division Chief
Environmental Planning Division

Attachments

cc: Mr. Alex Bienko, Environmental Specialist, MD Division, FHWA
Mr. David Clarke, Federal Preservation Officer, FHWA
Ms. Donna Buscemi, Deputy Director, OPPE, SHA
Ms. Sarah Groesbeck, Architectural Historian, OPPE-EPLD, SHA
Ms. Heather Lowe, Planning and Community Relations Manager, MDTA
Mr. Ray Moravec, Director, OPPE, SHA
Ms. Sushmita Sarkar, Environmental Manager, OPPE-EPLD, SHA
Ms. Melissa Williams, Director, Planning & Program Development, MDTA

Project Limits

MDTA Maryland Transportation Authority

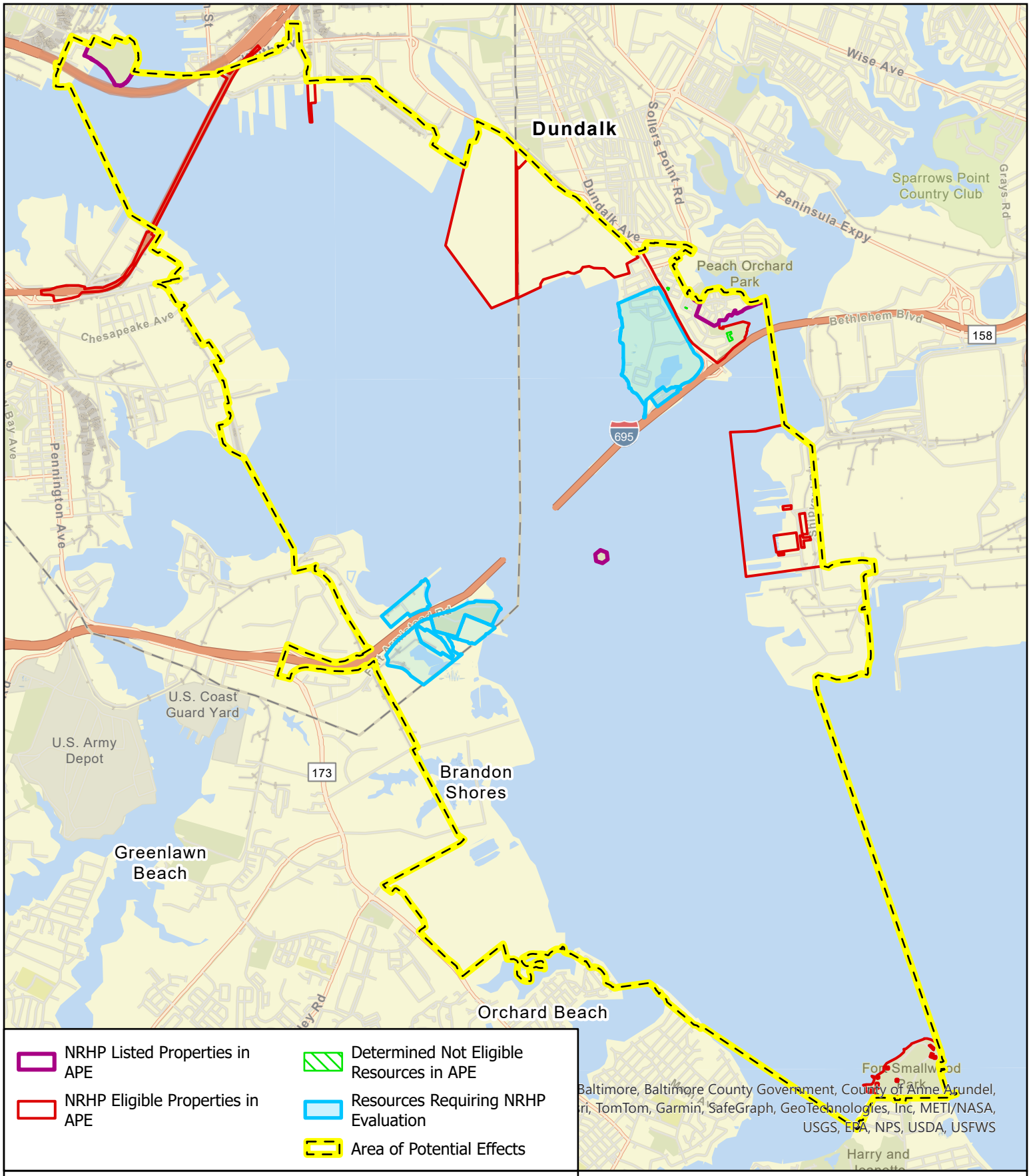
U.S. Department of Transportation Federal Highway Administration

0 1,000 2,000 4,000 Feet

Francis Scott Key Bridge Rebuild Project

Project Location

Attachment 2a: Area of Potential Effects Map



NRHP Listed Properties in APE

NRHP Eligible Properties in APE

Determined Not Eligible Resources in APE

Resources Requiring NRHP Evaluation

Area of Potential Effects

I-695 over Patapsco River
Rebuilding the Francis Scott Key Bridge

Baltimore City, Baltimore County, Anne Arundel County

0 0.5 1 2 Miles

Scale: 1:55,000

May 15, 2024

N

Attachment 2b: Area of Potential Effects Map

I-695 over Patapsco River
Rebuilding the Francis Scott Key Bridge

Baltimore City, Baltimore County, Anne Arundel County

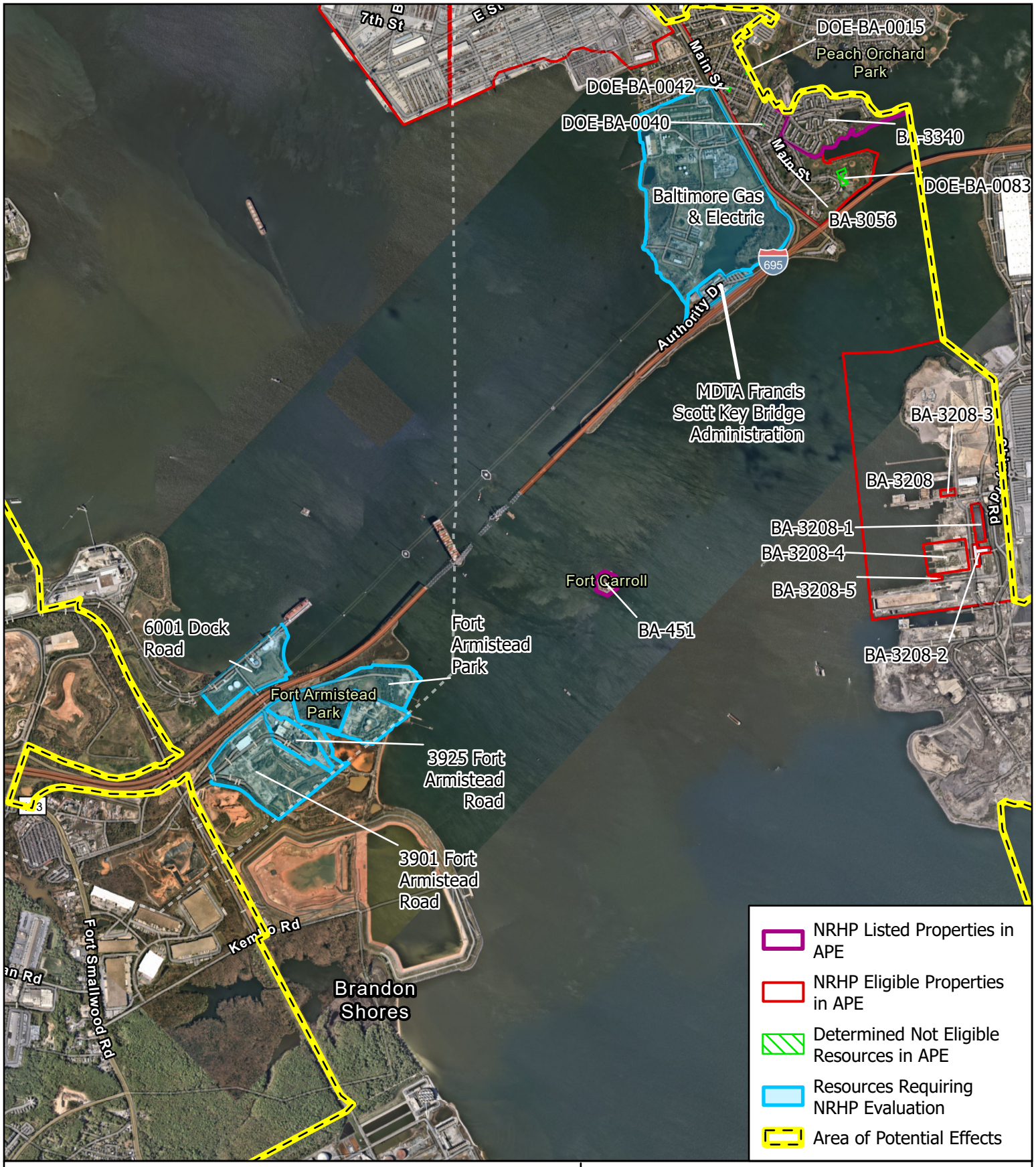
0 0.25 0.5 1 Miles

Scale: 1:30,000 May 15, 2024

N

Imagery Credits: City of Baltimore, Baltimore County Government, County of Anne Arundel, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Attachment 2c: Area of Potential Effects Map



I-695 over Patapsco River
Rebuilding the Francis Scott Key Bridge

Baltimore City, Baltimore County, Anne Arundel County

0 0.25 0.5 1 Miles

Scale: 1:30,000 May 15, 2024

N

Imagery Credits: Baltimore County Government, County of Anne Arundel, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Attachment 2d: Area of Potential Effects Map

I-695 over Patapsco River
Rebuilding the Francis Scott Key Bridge

Baltimore City, Baltimore County, Anne Arundel County

0 0.25 0.5 1 Miles

Scale: 1:30,000 May 15, 2024

N

Imagery Credits: County of Anne Arundel, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Attachment 3

Francis Scott Key Bridge Rebuild

Consulting Parties

Organization	Contact Person	Email
Advisory Council on Historic Preservation	Mandy Ranslow	mranslow@achp.gov
Anne Arundel County Department of Recreation and Parks	Erica Matthews	rpjack50@aacounty.org
Anne Arundel Co. Office of Environmental & Cultural Resources	Darian Beverungen	PZBeve19@aacounty.org
Anne Arundel County Office of Transportation	Samuel Snead	trsnea19@aacounty.org
Anne Arundel County Trust for Preservation	Patricia Melville	actforpreservation@gmail.com
Baltimore City Commission for Historical and Architectural Preservation	Eric Holcomb	eric.holcomb@baltimorecity.gov
Baltimore City Department of Planning	Chris Ryer	Chris.Ryer@baltimorecity.gov
Baltimore City Department of Transportation	Corren Johnson	Corren.Johnson@baltimorecity.gov;
Baltimore Heritage	Johns Hopkins	hopkins@baltimoreheritage.org
Baltimore National Heritage Area	Shauntee Daniels	sdaniels@baltimoreheritagearea.org
Baltimore County Landmarks Preservation Commission	Caitlin Merritt	cmerritt@baltimorecountymd.gov
Baltimore County Traffic Engineering and Transportation Planning	Angelica Daniel	adaniel@baltimorecountymd.gov
Fort McHenry National Monument and Historic Shrine	Robert Stewart	robert_stewart@nps.gov
Friends of Fort McHenry	Melanie Santiago-Mosier	info@friendsoffortmchenry.org
Maryland Commission on Indian Affairs	Keith Colston	keith.colston@maryland.gov
Maryland Port Authority	Amanda Pañafiel	apenafiel@marylandports.com
National Park Service Northeast Region	Mark Eberle	mark_eberle@nps.gov
Preservation Alliance of Baltimore County, Inc.	Anne Gryczon	Director@PreservationABC.org
Preservation Maryland	Nicholas Redding	nredding@presmd.org
Turner Station Conservation Team	Gloria Nelson	glorianelson8@verizon.net
United States Army Corps of Engineers	Joseph DaVia	joseph.davia@usace.army.mil
United States Coast Guard	Hal R. Pitts	hal.r.pitts@uscg.mil

Attachment 3

MD State Recognized Tribes

Cedarville Band of Piscataway	Natalie Standing-on-the-Rock Proctor	piscatawayindians@gmail.com

Federally Recognized Tribes

Absentee-Shawnee Tribe of Oklahoma	Devon Frazier	dfrazier@astribe.com
Delaware Nation	Katelyn Lucas	klucas@delawarenation-nsn.gov
Delaware Tribe of Indians	Susan Bachor	sbachor@delawaretribe.org
Eastern Shawnee	Lora Nuckolls	thpo@estoo.net
Oneida Indian Nation	Jesse Bergevin	jbergevin@oneida-nation.org
Onondaga Nation	Anthony Gonyea	ononcomm@gmail.com
Pamunkey Indian Tribe	Shaleigh Howells	Shaleigh.howells@pamunkey.org
St. Regis Mohawk	Darren Bonaparte	darren.bonaparte@srmt-nsn.gov
Seneca-Cayuga	William Tarrant	wtarrant@sctribe.com
Shawnee Tribe	Tonya Tipton	tonya@shawnee-tribe.com
Tuscarora Nation	Bryan Printup	bprintup@hetf.org

May 16, 2024

Steve Archer
Assistant Division Chief, Environmental Planning Division
Maryland Department of Transportation State Highway Administration
707 N. Calvert Street
Baltimore, MD 21202

Re: MDTA Francis Scott Key Bridge
I-695 over the Patapsco River
Initiation of Section 106 Review
Baltimore City, Anne Arundel County and Baltimore County, Maryland

Dear Mr. Archer,

Thank you contacting the Maryland Historical Trust (MHT), a division of the Maryland Department of Planning, on behalf of the Federal Highway Administration (FHWA) to initiate the Section 106 review process for the above-referenced project. We look forward to working with your agency and other involved parties to successfully complete the preservation requirements for the proposed undertaking.

Based on our review of your letter and the information presented at recent Interagency Review Meetings, we understand that Maryland Department of Transportation State Highway Administration (SHA) proposes to replace the Maryland Transportation Authority's (MDTA) Francis Scott Key Bridge in the same location as the original structure. The project limits extend along I-695 from Quarantine Road in Curtis Bay to Broening Highway in Dundalk and is entirely within MDTA's existing right-of-way (ROW). The remaining portions of the collapsed structure will be removed to clear the on-alignment location of the new structure.

Your letter seeks to initiate the Section 106 process for this undertaking, establish an Area of Potential Effects (APE) for the project, and determine the scope of cultural resources identification efforts. MHT concurs with MDTA/SHA's defined APE for cultural resources, as illustrated in Attachment 2 of your submittal. We recognize that MDTA/SHA may make further refinements to its APE as planning proceeds - based on the addition of ancillary actions or other design modifications.

As you are aware, considerable information already exists regarding identified historic and archaeological resources within this large study area. The table provided with your letter includes most of the known historic properties within the APE, however, we request that you add the National Register-listed Day Village Historic District (MIHP No. BA-3340) to your inventory of existing cultural resources. MHT agrees with MDTA/SHA's historic property investigation methodology for unrecorded architectural resources that consists of the National Register evaluation of parcels immediately adjacent to MDTA ROW and project limits. These resources include: 6001 Dock Road, 3901 Fort Armistead Road, 3925 Fort Armistead Road, Fort Armistead Park, BG&E property (Tax Map 110, Parcels 3, 26, 27, and 58), and the Francis Scott Key Bridge Administrative Building.

Previous studies and current recovery efforts suggest that there is minimal potential for terrestrial and underwater archaeological historic properties within the archaeological study area. Therefore, MHT agrees with MDTA/SHA's recommendation for no further archaeological work at this stage in project planning. Once MDTA/SHA has developed more detailed design and construction plans, it will need to reassess whether further cultural resources investigations are warranted, in consultation with MHT, particularly for any staging areas, anchorages, and other related ancillary actions.

We agree with the list of potential consulting parties for this undertaking, presented in Attachment 3 of your letter. As the Section 106 coordination and public outreach efforts progress, additional relevant parties may be identified and invited to participate in the consultation.

Finally, MHT acknowledges the need to execute a Programmatic Agreement (PA) for this undertaking that will memorialize MDTA/SHA's commitments to 1) complete the identification of historic properties, 2) make an effects determination following the evaluation of historic properties within the APE, and 3) create a process for ongoing consultation and managing changes under this progressive design build project. MHT is committed to working with MDTA/SHA, FHWA, and other involved parties to successfully execute and implement the PA to meet the project's schedule deadlines.

Thank you for initiating consultation with MHT early in project planning for this undertaking. If you have questions or require any assistance, please contact Beth Cole (for archaeology) at beth.cole@maryland.gov or Tim Tamburrino (for the historic built environment) at tim.tamburrino@maryland.gov.

Sincerely,

Elizabeth Hughes
Director/State Historic Preservation Officer

EH/BC/TJT/202402473

From:	Schiszik, Lauren (DOP)
To:	Sarah Groesbeck (Consultant)
Cc:	Ryer, Chris (DOP); Holcomb, Eric (DOP)
Subject:	RE: Section 106 Consultation: Francis Scott Key Bridge Rebuild in Baltimore City, Baltimore County, and Anne Arundel County Maryland
Date:	Thursday, May 16, 2024 10:12:23 AM

Good morning Sarah,

Thank you for inviting CHAP to serve as a consulting party for this Section 106 process. I am accepting this invitation on Eric's behalf while he is out of the office.

Best,
Lauren
Lauren Schiszik (she, her)
Historic Preservation Planner Supervisor and Acting Executive Director, CHAP
City of Baltimore | Department of Planning
417 E. Fayette St., 8th Floor ¦Baltimore, MD 21202
410-396-5796
http://chap.baltimorecity.gov

OUR MISSION: To build Baltimore as a diverse, sustainable and thriving city of neighborhoods and as the economic and cultural driver for the region.
OUR EQUITY STATEMENT: An equitable Baltimore addresses the needs and aspirations of its diverse population and meaningfully engages residents through inclusive and collaborative processes to expand access to power and resources.

From: Sarah Groesbeck (Consultant) <SGroesbeck.consultant@mdot.maryland.gov>
Sent: Thursday, May 16, 2024 9:57 AM
To: Schiszik, Lauren (DOP) <Lauren.Schiszik@baltimorecity.gov>
Subject: FW: Section 106 Consultation: Francis Scott Key Bridge Rebuild in Baltimore City, Baltimore County, and Anne Arundel County Maryland

Hi Lauren,

This originally went to Eric Holcomb but I got his out of office message. I'm forwarding this to you because of the abbreviated comment period.

Thanks,
Sarah

From: Sarah Groesbeck (Consultant)
Sent: Thursday, May 16, 2024 9:44 AM
To: Sarah Groesbeck (Consultant) <SGroesbeck.consultant@mdot.maryland.gov>
Cc: Steve Archer <SArcher@mdot.maryland.gov>
Subject: Section 106 Consultation: Francis Scott Key Bridge Rebuild in Baltimore City, Baltimore County, and Anne Arundel County Maryland

Environmental Planning Division

Good Afternoon,

On behalf of the Federal Highway Administration, the Maryland Department of Transportation State Highway Administration (SHA) is transmitting the attached Section 106 consultation initiation letter for Project No. AB490M83, Francis Scott Key Bridge Rebuild in Baltimore City, Baltimore County, and Anne Arundel County. We request any comments to SHA Cultural Resources by May 27, 2024. No hard copies will follow.

If you have questions or comments, please contact me or Steve Archer.

Thank you,
Sarah

Sarah Groesbeck
Consultant Architectural Historian
Cultural Resources Section
Environmental Planning Division (EPLD)

410.545.0038 **office**
sgroesbeck@mdot.maryland.gov
Maryland State Highway Administration
707 North Calvert Street, Baltimore, MD 21202-3601

ANNE ARUNDEL COUNTY
MARYLAND
Office of Planning and Zoning

2664 Riva Road, P.O. Box 6675
Annapolis, MD 21401
410-222-7450

Jenny B. Dempsey
Planning and Zoning Officer

May 17, 2024

Sarah Groesbeck
Environmental Planning Division
Maryland State Highway Administration
707 N. Calvert Street
Baltimore, MD 21202

Re: **Section 106 Consultation: Francis Scott Key Bridge Rebuild – Project No. AB490M83**

Dear Ms. Groesbeck,

Thank you for providing Anne Arundel County's Cultural Resources Section in the Office of Planning & Zoning the opportunity to comment on the above referenced project as part of the Section 106 consultation process. Based on the information provided, it is our understanding that the Francis Scott Key Bridge is to be replaced by a new bridge in the same original location as the Key Bridge. The only historic resource within the APE that is located in Anne Arundel County is Ft. Smallwood Park (AA-898) and associated contributing and non-contributing buildings within the park. As noted in the information your office provided, Ft. Smallwood Park is eligible for listing in the National Register of Historic Places; and therefore, would need an evaluation of effects.

In addition, our office concurs on the Maryland Historical Trust's recommendation of no adverse effect for archaeological resources at this stage, but that further archaeological review may be warranted as the planning continues.

Our office looks forward to continuing to participate in the consultation process as this project moves forward.

Sincerely,

Darian Beverungen

Ms. Darian Beverungen
Senior Planner, Cultural Resources Section
Office of Planning & Zoning

ATTACHMENT E: RARE THREATENED AND ENDANGERED SPECIES (RTE) COORDINATION

United States Department of the Interior

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

In Reply Refer To: 05/01/2024 16:21:08 UTC
Project Code: 2024-0079302
Project Name: Francis Scott Key Bridge Rebuild

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

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

Attachment(s):

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

OFFICIAL SPECIES LIST

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

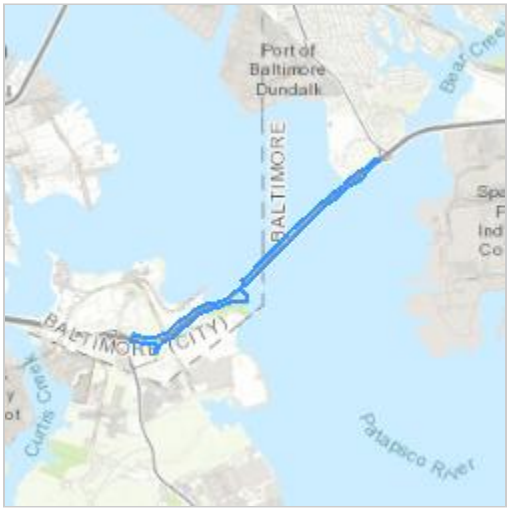
This species list is provided by:

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

PROJECT SUMMARY

Project Code: 2024-0079302
Project Name: Francis Scott Key Bridge Rebuild
Project Type: Bridge - Replacement
Project Description: Reconstruction of the Francis Scott Key Bridge following the collapse. The bridge will be reconstructed on alignment and the approach roadways adjusted as needed to accommodate the new bridge structure.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.2174299,-76.5278891271044,14z



Counties: Anne Arundel , Baltimore , and Baltimore counties, Maryland

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

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

WETLANDS

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

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

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER POND

- PUBHx

FRESHWATER EMERGENT WETLAND

- PEM1Cd
- PEM1C

ESTUARINE AND MARINE DEEPWATER

- E1UBL

ESTUARINE AND MARINE WETLAND

- E2USP

IPAC USER CONTACT INFORMATION

Agency: Maryland State Highway Administration
Name: Justin Reel
Address: 700 East Pratt Street, Suite 500
City: Baltimore
State: MD
Zip: 21202
Email jreel@rkk.com
Phone: 7033384139

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

United States Department of the Interior

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

In Reply Refer To: 05/09/2024 14:28:59 UTC
Project code: 2024-0079302
Project Name: Francis Scott Key Bridge Rebuild

Federal Nexus: yes
Federal Action Agency (if applicable): Federal Highway Administration

Subject: Federal agency coordination under the Endangered Species Act, Section 7 for 'Francis Scott Key Bridge Rebuild'

Dear Sushmita Sarkar:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on May 09, 2024, for 'Francis Scott Key Bridge Rebuild' (here forward, Project). This project has been assigned Project Code 2024-0079302 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements may not be complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (DKey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis completed by the Service, your project has reached the determination of "May Affect, Not Likely to Adversely Affect" the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your

IPaC-assisted determination was incorrect, this letter verifies that consultation on the Action is complete and no further action is necessary unless either of the following occurs:

- new information reveals effects of the action that may affect the northern long-eared bat in a manner or to an extent not previously considered; or,
- the identified action is subsequently modified in a manner that causes an effect to the northern long-eared bat that was not considered when completing the determination key.

15-Day Review Period

As indicated above, the Service will notify you within 15 calendar days if we determine that this proposed Action does not meet the criteria for a “may affect, not likely to adversely affect” (NLAA) determination for the northern long-eared bat. If we do not notify you within that timeframe, you may proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the identified Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that we did not anticipate when developing the key. In such cases, the identified Ecological Services Field Office may request additional information to verify the effects determination reached through the Northern Long-eared Bat DKey.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may affect the species and/or critical habitat listed above. Note that reinitiation of consultation would be necessary if a new species is listed or critical habitat designated that may be affected by the identified action before it is complete.

If you have any questions regarding this letter or need further assistance, please contact the Chesapeake Bay Ecological Services Field Office and reference Project Code 2024-0079302 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

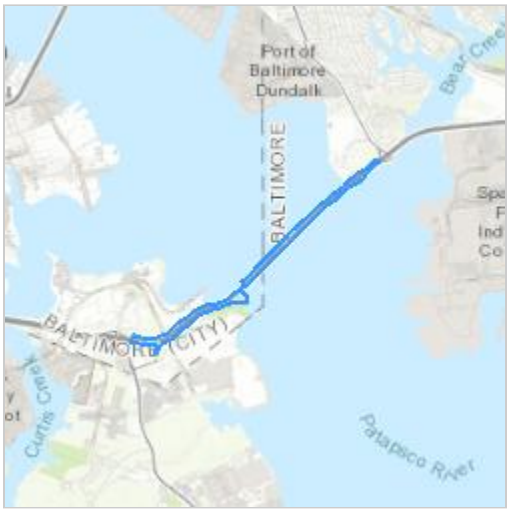
Francis Scott Key Bridge Rebuild

2. Description

The following description was provided for the project 'Francis Scott Key Bridge Rebuild':

> Reconstruction of the Francis Scott Key Bridge following the collapse. The bridge will be reconstructed on alignment and the approach roadways adjusted as needed to accommodate the new bridge structure.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.2174299,-76.5278891271044,14z



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect, but not likely to adversely affect” for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Yes

5. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   Yes

6. FHWA, FRA, and FTA have completed a range-wide programmatic consultation for transportation- related actions within the range of the Indiana bat and northern long-eared bat.

   Does your proposed action fall within the scope of this programmatic consultation?

   Note:If you have **previously consulted** on your proposed action with the Service under the NLEB 4dRule, answer 'no' to this question and proceed with using this key. If you have **not yet consulted** with the Service on your proposed action and are unsure whether your proposed action falls within the scope of the FHWA, FRA, FTA range-wide programmatic consultation, please select "Yes" and use the FHWA, FRA, FTA Assisted Determination Key in IPaC to determine if the programmatic consultation is applicable to your action. Return to this key and answer ‘no’ to this question if it is not.

   No

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   Yes

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

9. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   No

10. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the effects of any activities that would not occur but for the proposed action.

    If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer “No” below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project’s action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a “no effect” determination for the northern long-eared bat.

    Note: Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer “No” and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of Effects of the Action can be found here: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    No

11. [Semantic] Is the action area located within 0.5 miles of a known northern long-eared bat hibernaculum?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

12. Does the action area contain any caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating northern long-eared bats?

    No

13. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?
    (If unsure, answer "Yes.")

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats (i.e., live trees and/or snags ≥3 inches (12.7 centimeter) dbh), answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    Yes

14. Will the action cause effects to a bridge?

    Yes

15. Has a site-specific bridge assessment following USFWS guidelines been completed?

    Note: For information on conducting a bridge/structure assessment, see Appendix D of the User's Guide for the Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat and the associated Bridge/Structure Bat Assessment Form. Additional resources can be found at: https://www.fws.gov/media/bats-and-transportation-structures-references-and-additional-resources and a training video is located at: https://www.youtube.com/watch?v=iuFwkT7q8Ws.

    No

16. Will the proposed action result in the cutting or other means of knocking down, bringing down, or trimming of any trees suitable for northern long-eared bat roosting?

    Note: Suitable northern long-eared bat roost trees are live trees and/or snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities.

    Yes

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

19.8

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the inactive (hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

0

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the active (non-hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

19.8

Will all potential northern long-eared bat (NLEB) roost trees (trees ≥3 inches diameter at breast height, dbh) be cut, knocked, or brought down from any portion of the action area greater than or equal to 0.1 acre? If all NLEB roost trees will be removed from multiple areas, select 'Yes' if the cumulative extent of those areas meets or exceeds 0.1 acre.

Yes

Enter the extent of the action area (in acres) from which all potential NLEB roost trees will be removed. If all NLEB roost trees will be removed from multiple areas, entire the total extent of those areas. Round up to the nearest tenth of an acre.

19.8

For the area from which all potential northern long-eared bat (NLEB) roost trees will be removed, on how many acres (round to the nearest tenth of an acre) will trees be allowed to regrow? Enter '0' if the entire area from which all potential NLEB roost trees are removed will be developed or otherwise converted to non-forest for the foreseeable future.

0

Will any snags (standing dead trees) ≥3 inches dbh be left standing in the area(s) in which all northern long-eared bat roost trees will be cut, knocked down, or otherwise brought down?

No

Will all project activities by completed by April 1, 2024?

No

IPAC USER CONTACT INFORMATION

Agency: Maryland Department of Transportation
Name: Sushmita Sarkar
Address: 707 North Calvert Street
City: Baltimore
State: MD
Zip: 21202
Email ssarkar@mdot.maryland.gov
Phone: 4105450392

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

Coordination Sheet for MD DNR Environmental Review Related to Project Locations

June 3, 2024

Jeff Gring
Team Manager/Senior Environmental Scientist
Coastal Resources, Inc.
25 Old Solomons Island Road,
Annapolis, MD 21401

Re: Environmental Review Request: Rare, Threatened, and/or Endangered Species - Key Bridge Rebuild Project, Baltimore City, Baltimore County, and Anne Arundel County, Maryland

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The Maryland Department of Natural Resources (MDNR) completed the environmental review request from Coastal Resources, Inc on behalf of the Maryland Transportation Authority (MDTA) for the Francis Scott Key Bridge Rebuild Project in Baltimore City, Baltimore County, and Anne Arundel County Maryland.

To ensure that impacts to natural and living resources on the project site and vicinity are first avoided and then if unavoidable, minimized to the maximum extent possible, the Department requests that the following concerns and recommendations be fully incorporated into the review of the proposed activities:

Waterways
The prominent waterway in the project area is the tidal portion of the Patapsco River (Use Class II) which flows directly into the Chesapeake Bay. Adjacent to the project site, the Patapsco River forms confluences with Bear Creek (Use II) and Curtis Creek (Use II) and tributaries.

Avifauna
Historic Waterfowl Concentration Areas protected under Critical Area Law are present along the shorelines and in the open water of the Patapsco River around the Francis Scott Key Bridge. Generally, to minimize disturbance to wintering and staging waterfowl, no water dependent work should be conducted from November 15 through March 1 of any year. However, this time of year restriction may be waived when time of year restrictions related to other resource concerns are present and if threats to human health and safety exist.

There is potential presence of a multitude of migratory birds in the project area. The Patapsco River harbors various colonial nesting waterbirds including herons, cormorants, and gulls. These species can be seen nesting on the piers and other structures of the bridge.

Submerged Aquatic Vegetation (SAV)

In 2022, 176.8 acres of SAV were mapped in the Patapsco River (VIMS annual aerial SAV survey). This represents 45% of the 389-acre SAV restoration target for the Patapsco River. SAV in the Patapsco has been trending upward in acreage in the past decade, as seen in Fig. 1 below. SAV is located primarily in Old Road Bay and Bear, Swan, Cox, Stony, Nabbs, Rock, Back, Main, Bodkin, and Wharf Creeks and Boyd Pond (Fig. 2). SAV species composition is composed of several freshwater to mesohaline species, including *Zannichellia palustris* (Horned pondweed), *Elodea canadensis* (Common waterweed), *Ceratophylum demersum* (Coontail), *Vallisneria americana* (Wild celery), *Potamogeton perfoliatus* (Redhead grass), *Ruppia maritima* (Widgeongrass), *Potamogeton crispus* (Curly pondweed), *Myriophyllum spicatum* (Eurasian watermilfoil), *and Hydrilla verticillata* (Hydrilla) (https://www.vims.edu/research/units/programs/sav/access/maps/).

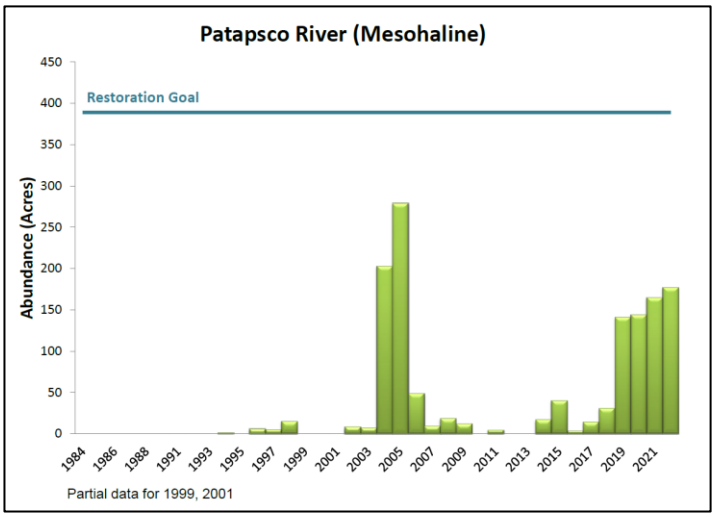

Figure 1. SAV Acres over

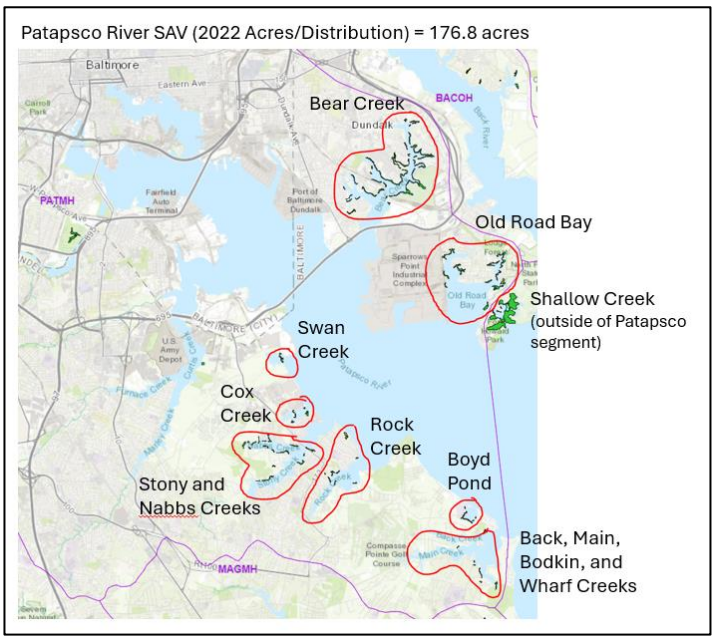

Figure 2. SAV Distribution

Key Bridge demolition, removal, and reconstruction has the potential to resuspend the thick layer of sediment on the bottom of the Patapsco River. This resuspension of sediments will create turbidity that reduces the light and conditions necessary for SAV survival, recruitment, and expansion and will limit our ability to progress toward the segment SAV restoration target of 389 acres.

To avoid impacts to SAV, all reasonable efforts should be made to reduce the resuspension of sediments during reconstruction and block the inevitable turbidity plumes from entering the creeks and bays where SAV is abundant. Time of year restrictions to ensure the majority of construction occurs outside of the SAV growing period from April 15 through October 15 will reduce impacts. Recognizing that this is an emergency situation where impacts to SAV will be inevitable, we recommend pro-actively planning to directly restore SAV (at a 3:1 ratio for acreage) when bridge reconstruction is complete in areas where distribution, density, or diversity is lost. The recommended species for restoration at this location would be *Vallisneria americana* (Wild celery).

Rare, Threated, and Endangered Species
Two Sensitive Species Project Review Areas (SSPRAs) have been documented in the project vicinity. At Fort Carroll there's a nesting colony of the State Rare (S3B) Black-crowned Night Herons (*Nycticorax nycticorax*). Additionally, there are nest records of the American Peregrine Falcon (*Falco peregrinus anatum*), a species with In Need of Conservation status in Maryland, documented on this site. The DNR Wildlife and Heritage Service will provide additional information on these RT&E species under separate cover.

Diadromous Fish
Anadromous fish species, including yellow perch, herring species, and white perch have been documented near this project site. The Patapsco River supports various resident warmwater species typical of the region as well. Where presence of yellow perch has been documented in the vicinity of an instream project area, generally no instream work is permitted in Use I and certain Use II waters during the period of February 15 through June 15, inclusive, during any year.

Important fisheries resources in this area include American Eel presence. American Eels migrate upstream through this region to smaller streams where they grow to adult stages. Some eels may reside within the project study area long term. Their spawning runs then take them back through this area as they migrate downstream as adults to a specific region of the Atlantic Ocean to spawn. Special attention has been given to American Eel management in recent years, due to their ecological and economic importance, and their declining numbers.

The project should be designed to maintain or enhance fish passage through the project area, particularly during low flow periods. Agencies will likely request a zone of safe passage for anadromous fish species be maintained for the project duration to ensure fish may travel to their preferred spawning areas further upstream in the Patapsco River and adjacent tributaries.

Recreational and Commercial Fisheries
DNR anticipates potential impacts to recreational and commercial fisheries and boating. Please coordinate with DNR Recreational and Commercial Fisheries to minimize any potential impacts from the removal and reconstruction of the Francis Scott Key Bridge.

The Patapsco River in recent years has harbored large schools of striped bass. It may be assumed most fishing activity is going to avoid the work area and will by default establish enough of a buffer for the bridge work. Lack of access to the Patapsco River near the project site for recreational fishing of striped bass and other recreationally important fish species could potentially impact the recreational sector**.**

DNR anticipates there could be impacts to the various organizations based on the Patapsco River that either fish from their property or take individuals out fishing. There are reef balls placed around Fort Carroll and it is common for companies to take trips out to fish in these areas. There are three designated license free fishing areas in Baltimore City located at Canton Recreation Pier, Broening Park, and Canton Waterfront Park. Retailers (i.e. Tochterman's) and fishing clubs are also present in this area. It is possible these groups could be impacted by this project.

Recreational crabbers use trotlines and traps around the Francis Scott Key Bridge, particularly on the north side near Sollers Point where there is an oyster bar. There are also concerns regarding the timing of boat passage for crabbers transiting in and out of the harbor.
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Oysters
A designated oyster sanctuary surrounds Fort Carroll. This oyster bar was utilized to provide stability for Fort Carroll when it was first built and is the most upstream bar in the Patapsco River. The viable bottom in this oyster sanctuary is focused on the northwestern side of Fort Carroll facing the bridge. This area contains shell habitat and a minimal amount of natural oyster from spatset that only occurs during extreme droughts when salinity offers the possibility of reproduction. This bar has been planted with hatchery spat for many years by local participants in the Marylanders Grow Oysters Program and others. Additionally, the oysters are sampled by environmental education groups during their field trips.

Additional Comments on BMPs:
The project area may be within or adjacent to mapped wetland areas, impacts from the use of heavy equipment, disposal of excavated material, or other construction activities should be avoided to the extent possible. When there is no reasonable alternative to the adverse effects on wetlands or other aquatic or terrestrial habitat, the applicant shall be required to provide measures to mitigate, replace, or minimize the loss of habitat.

This project is located in the Chesapeake Bay Critical Area and will need to conform to Critical Area laws and policies.

Best Management Practices should be stringently managed and maintained during bridge construction and demolition to prevent runoff and debris from entering surface waters and protect stream resources, given the presence of numerous sensitive species in the watershed.

The fisheries resources in the above area should be adequately protected by the instream work restrictions referenced above, stringent sediment and erosion control methods, and other Best Management Practices typically used for protection of stream resources.

Thank you for the opportunity to review and comment on this project. Please continue to coordinate with MDNR as this project progresses. If you have any questions concerning these comments, please feel free to contact Ms. Gwen Gibson of my staff at gwendolyn.gibson@maryland.gov.

Sincerely,

Tony Redman, Director
Environmental Review Program
Department of Natural Resources
Tawes State Office Building, B-3
Annapolis, MD 21401

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Wes Moore, Governor
Aruna Miller, Lt. Governor
Josh Kurtz, Secretary
David Goshorn, Deputy Secretary

June 3, 2024

Mr. Jeff Gring
Coastal Resources, Inc.
25 Old Solomons Island Road
Annapolis, MD 21401

RE: Environmental Review for Key Bridge Rebuild Project, Maryland Transportation Authority, I-695 over Patapsco River, Baltimore County, Anne Arundel County and Baltimore City, Maryland.

Dear Mr. Gring:

The Wildlife and Heritage Service has the following areas of potential concern for impacts to rare, threatened or endangered species and protected habitats in regard to this project:

The former Key Bridge supported a nesting structure used by a pair of American Peregrine Falcons (*Falco peregrinus anatum*), a species with In Need of Conservation status in Maryland. It is possible that individuals of this species could return to nest on structures here in the future. We generally recommend protecting any active nest sites for the American Peregrine Falcon by limiting work with a ¼-mile buffer around the nest site during the breeding season which is generally considered to be March 1 through June 30 of any given year.

The open waters of the Patapsco River shoreline that are adjacent to or part of the site are known historic waterfowl concentration and staging areas. Waterfowl concentration and staging areas are recognized areas of open water and wetlands adjacent to land that are utilized by significant numbers of ducks, geese, and swans for feeding and resting during the winter months. These areas in close proximity to the shore are vital, as they provide submerged aquatic vegetation (SAV), clams and other invertebrates that serve as primary food sources for many of these birds. A variety of waterfowl species can be found in such areas, building energy reserves for their upcoming migrations. If there is to be any construction of water-dependent facilities please contact Josh Homyack of the Wildlife and Heritage Service at (410) 827-8612 x100 or josh.homyack@maryland.gov for further technical assistance regarding waterfowl.

While it does not appear to fall within the study area as shown on your map, Fort Carroll Island is in close proximity to the proposed site and is known to support a colony of waterbirds of mixed species. Waterbird colonies are a rare resource that should be protected. Conservation of waterbird colonies that are located in the Chesapeake Bay Critical Area is required by state law. Significant mortality of chicks or eggs resulting from disturbance of the colony during the breeding season is a violation of the U.S. Migratory Bird Treaty Act. Disturbance includes actions such as cutting nest trees, cutting nearby trees or nearby construction that causes abandonment of chicks by the adults. Whenever possible, waterbird colony sites should be conserved as part of responsible land stewardship.

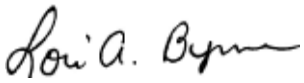
To protect waterbird colonies we use the following guidelines:

1. Establish a protection area of ¼ mile radius from the colony's outer boundary, and within that establish a 300’ foot boundary (Zone 1).
2. During the breeding season, all human entry into the colony and Zone 1 should be restricted to only that essential for protection of the colony. Human disturbance of colony sites that results in significant mortality of eggs and/or chicks is considered a prohibited taking under various state and federal regulations.
3. No land use changes, including development or tree removal, should occur in Zone 1.
4. Construction activities, including clearing, grading, building, etc., should not occur within Zone 1.
5. No construction or similar disturbance should occur within the ¼ mile protection area during the breeding season. The breeding season varies for each different waterbird species, but for the species known to nest at Fort Carroll Island, it is cumulatively from February 15 through 15 August of any given year.

The Wildlife and Heritage Service provides assistance to those interested in protecting these resources. The above guidelines are usually suitable for protection in most cases. Specific protection measures depend upon many factors. We look forward to continued coordination with you as this project moves forward.

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

Sincerely,



Lori A. Byrne,
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER# 2024.0810.ba/aa/bc
Cc: D. Brinker, DNR
J. Homyack, DNR
K. Harvey, DNR
G. Gibson, MES/SHA
L. Sestak, DNR
C. Jones, CAC

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

Greater Atlantic Regional Office
Atlantic Highly Migratory Species Management Division

*** W A R N I N G ***

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

EFH

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Atlantic Butterfish	Adult, Eggs, Larvae	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
		Atlantic Herring	Adult, Juvenile	New England	Amendment 3 to the Atlantic Herring FMP
		Black Sea Bass	Adult, Juvenile	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
		Bluefish	Adult, Juvenile	Mid-Atlantic	Bluefish
		Clearnose Skate	Adult, Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Red Hake	Adult, Eggs/Larvae/Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
		Scup	Adult, Juvenile	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
		Summer Flounder	Adult, Juvenile, Larvae	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
		Windowpane Flounder	Adult, Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP

Pacific Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

Atlantic Salmon

No Atlantic Salmon were identified at the report location.

HAPCs

Link	Data Caveats	HAPC Name	Management Council
		Summer Flounder SAV	Mid-Atlantic Fishery Management Council

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

All EFH species have been mapped for the Greater Atlantic region,
Atlantic Highly Migratory Species EFH,
Bigeye Sand Tiger Shark,
Bigeye Sixgill Shark,
Caribbean Sharpnose Shark,
Galapagos Shark,
Narrowtooth Shark,
Sevengill Shark,
Sixgill Shark,
Smooth Hammerhead Shark,
Smalltail Shark

ATTACHMENT F: PUBLIC NOTICE BILLING APPROVAL FORM

Department of the Environment
Water and Science Administration
Tidal Wetlands Division
1800 Washington Boulevard
Baltimore, Maryland 21230
(410) 537-3837

Protecting Maryland wetlands and waterways from loss and degradation

PUBLIC NOTICE BILLING APPROVAL FORM

I agree to pay all expenses associated with the publishing of a public notice for the wetland application of

MDTA **which is dated** 7/17/2024

(Riparian Property Applicant's Name)

Julie McCarthy

Riparian Property Applicant's Signature

Julie McCarthy

Printed Name of Riparian Property Owner

Applicant will be invoiced by MDE for the publication fee. As a convenience, MDE now accepts electronic invoice payments. The invoice will include instructions for online payment.

Riparian Property Owner's Billing Address:

Maryland Transportation Authority - Julie McCarthy

300 Authority Drive, Baltimore MD 21222

Telephone No.: (410) 537-7861

Please provide the names and mailing addresses of the adjacent riparian property owners. If my property is part of and/or subject to an HOA (Homeowners Association), please provide the HOA representative and mailing address in addition to the adjacent riparian property owners:

A list of adjacent property owners will be provided separately.

ATTACHMENT G: NAB STATEMENT OF CREDIT AVAILABILITY FORM

NAB STATEMENT OF CREDIT AVAILABILITY

APPLICATION INFORMATION	CREDITS NEEDED
Permit Type: IP	**Number of Wetland Credits: 2,032 SF**
USACE Permit #: NAB- TBD	**Wetland Credit Type: Impact PEM, Credit PFO**
State Permit #:TBD	
Project Name: MDTA Francis Scott Key Bridge Rebuild	**Number of Stream Credits: N/A**
Applicant: MDTA	**Stream Credit Type: N/A**
Latitude/Longitude of Impact (centroid): 39.2286/-76.5117	
County: Baltimore and Anne Arundel	
Watershed of Impact (HUC8): 02060003	

MITIGATION BANK/IN-LIEU FEE (ILF) PROGRAM NAMED
Bank/ILF Name: Peige Wetland Mitigation Bank
Bank/ILF Permit Number: NAB-2016-01568
Number of Wetland Credits Reserved:2,032 SF
Wetland Credit Type Reserved: PFO
Number of Stream Credits Reserved: N/A
Stream Credit Type Reserved: N/A
Project within Primary Geographic Service Area (Yes or No)? Yes
Project within Secondary Geographic Service Area (Yes or No)? No

The Sponsor hereby authorizes the Applicant to name the mitigation bank/ILF program listed above as a source of compensatory mitigation in its U.S. Army Corps of Engineers (USACE) and/or State permit application for the above-referenced project. The credits listed from the mitigation bank/ILF program are currently available for purchase and have been reserved by the Sponsor for use by the Applicant.

Mitigation Sponsor Name: ECOTONE, LLC

Name of Sponsor's Authorized Representative: James M. Eisenhardt

_____ _____

Signature of Sponsor's Authorized Representative Date

As the Applicant, I understand that failure to purchase mitigation credits as required by the USACE and/or State permit(s) may result in a suspension or revocation of the permit and/or civil or criminal enforcement actions. I will ensure that the USACE and/or State Project Manager(s) are in receipt of a signed copy of this statement of credit availability for review and approval.

Applicant Name: MDTA

Name of Applicant's Authorized Representative: Julie McCarthy

_____ _____

Signature of Applicant's Authorized Representative Date

Note: If the above agreement cannot be finalized by either party (Sponsor or Applicant), coordination with the Corps and State is required to ensure that an alternative compensatory mitigation plan is proposed to offset project impacts.

Note: If credits are being reserved from multiple mitigation banks/ILF programs, then a Statement of Credit Availability is required from each mitigation bank/ILF program.

ATTACHMENT H: NATURAL RESOURCES INVENTORY / FOREST STAND DELINEATION (NRI/FSD)

NATURAL RESOURCES INVENTORY REPORT

FRANCIS SCOTT KEY BRIDGE REBUILD PROJECT

BALTIMORE CITY AND BALTIMORE COUNTY, MARYLAND

JUNE 2024

U.S. Department of Transportation
Federal Highway Administration

MDTA
Maryland Transportation Authority

MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION

Table of Contents

List of Appendices

1.0 Introduction, Study Area, and Project Description

On March 26, 2024, the Maryland Transportation Authority (MDTA) Francis Scott Key Bridge (Key Bridge), which carries I-695 over the Patapsco River, was struck by a cargo ship leaving the Port of Baltimore, resulting in the collapse of the bridge. The collapse prompted the immediate closure of I-695 between MD 173 (exit 1) and MD 157/Peninsula Expressway (exit 43) and halted vehicle traffic across the Patapsco River as well as marine shipping to and from the Port of Baltimore. Following the incident, Executive Order 01.01.2024.09 was released by the State of Maryland, declaring a State of Emergency as a result of the Key Bridge collapse. Immediate recovery and debris removal actions were conducted.

MDTA and Maryland State Highway Administration (SHA) are proposing to replace the collapsed Francis Scott Key Bridge in the same location as the original structure, which will help alleviate the high traffic demands and restore the connectivity of the transportation network between Curtis Bay and Dundalk. As a result, Rummel, Klepper, & Kahl (RK&K) and Coastal Resources, Inc. (CRI), under contract by the MDTA, has completed a natural resources inventory, in support of the Francis Scott Key Bridge Rebuild Project (FSK Rebuild) located in Baltimore City and Baltimore County, Maryland. RK&K and CRI completed a water of the U.S. (WOTUS), including wetlands, delineation, forest stand delineation, and tree survey within the project study area (see **Appendix A**). The study area is approximately 117 acres within the Patapsco River MDE 8-digit watershed (02130903). Land use classifications within and adjacent to the study area include forest and industrial. The project area is in the Northern Coastal Plain physiographic province. The project limits extend along I-695 from Quarantine Road in Curtis Bay to Broening Highway in Dundalk and are entirely within MDTA's existing right-of-way (ROW). CRI completed the natural resources inventory in the segment between Quarantine Road and the Patapsco River. RK&K completed the natural resources inventory between the Patapsco River and Broening Highway. A wetland delineation was conducted for a separate MDTA project in February 2024 and field verified as part of the FSK Rebuild project in May of 2024.

2.0 Methodology

Prior to the field investigation, the RK&K and CRI field teams reviewed existing potential forest and wetland data within the project area, including but not limited to the United States Fish & Wildlife Service (USFWS) National Wetland Inventory, the Maryland Department of Natural Resources (MDNR) Wetlands, the Natural Resource Conservation Service (NRCS) Soil Survey Data and National Hydrography Dataset (NHD) Streams.

During the field investigation, wetlands were assessed in accordance with the *Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2.0* (USACE 2010). This methodology requires interpretation of a three-parameter approach representing hydrology, vegetation, and soils, which are known indicators of a wetland. Soils were sampled using three-inch diameter Dutch augers and Munsell Color charts were used to identify color (Munsell 1975). The wetland indicator status of the observed vegetation was identified using the National Wetland Plant List (NWPL) (USACE 2020). Wetland data were collected on Wetland Determination Data Forms (USACE 2010, 2012). A Wetland Functions and Value Evaluation form was completed for all delineated wetlands greater than 0.5 acres (USACE 1999). Matching upland test plots were also established adjacent to the wetland boundary in conjunction with wetland plots. Delineated WOTUS were flagged and surveyed using a Global Navigation Satellite System (GNSS) unit. Nontidal WOTUS, other than wetlands, were set at the ordinary

high-water mark (OHW) which was determined in the field using physical characteristics established by the fluctuations of water. Tidal WOTUS were defined by mean high water (MHW) elevation from the nearest tidal gauge and by in-situ water observations. Stream characteristics were recorded for each identified watercourse on a WOTUS datasheet. Identified WOTUS, including wetlands, were classified according to a *Classification of Wetland and Deep-Water Habitats in the United States* (USFWS 1979). Each wetland and watercourse were photographed, and a photo log was compiled.

Forest stands, hedgerows, and woody vegetation clusters were delineated and characterized with the study area in accordance with the State Forest Conservation Technical Manual and MDNR Critical Area requirements. A walk-through forest stand analysis was conducted to obtain a general overview of the species present, successional stage, and stand condition. Forest stand and hedgerow boundaries were delineated on project mapping and all forest stand characteristics were recorded on stand datasheets. Stand-alone trees (1.5" DBH or greater) and specimen trees (> 30' DBH) were measured using a diameter at breast height (DBH) tape at 4.5 feet above the ground. The species, size, and condition of stand-alone and specimen trees were recorded, and their locations were surveyed using a GNSS unit. Within the Chesapeake Bay Critical Area (CBCA), woody vegetation clusters were mapped and characterized. Additionally, stand-alone trees and shrubs of any size were identified and GPS-located.

3.0 Results

3.1 Waters of the U.S., including Wetlands

During the field investigations, ten non-tidal wetlands, four tidal wetlands, and three watercourses were identified within the study area. Wetland classifications included ten palustrine emergent wetlands (PEM), two estuarine intertidal emergent wetlands (E2EM), and two estuarine intertidal scrub shrub wetlands (E2SS). Data were collected at a total of ten representative wetland test plots that characterize the identified wetland types and Cowardin classifications. Test plots 1WETA, 1WETB, 1WETC, 1WETD, 1WETE, 1WETF, 1WETG, 1WETH, 1WETI and 2WETD characterize the PEM portion of these systems. Test plots 1WETJ and 2WETB characterize the E2EM portion of these systems. Test plot 2WETA and 2WETC characterize the E2SS portions of these systems. Delineated watercourses include one perennial, two intermittent systems, as well as the Patapsco River.

The locations of these resources and test plot locations are shown on the detailed maps provided in **Appendix B**. Details regarding wetland cover type and delineated size can be found in the WOTUS Summary Table located in **Appendix C.** Detailed wetland characteristics including cover type, indicators of hydrology, dominant vegetation, and soils are included on the datasheets provided in **Appendix D**. Characteristics of each watercourse can also be found in **Appendix C** and **Appendix D**. Photographs of all delineated resources are included in **Appendix E**.

3.2 Forest Stand Characterization

A total of thirteen forest stands, 15 hedgerows, and 24 woody vegetation clusters were identified within the study area. The locations of the forest stands, hedgerows, and woody vegetation clusters are displayed on the Natural Resources Inventory Map in **Appendix B**. The identified forest stands are described below, and a hedgerow summary table is included in **Appendix F**.

Stand 1FS1 (NRI Map Sheets 2 and 3)

Stand 1FS1 is a disturbed early successional black locust forest. Canopy closure is approximately 30 percent. The canopy is dominated by Callery pear (*Pyrus calleryana)*, Siberian elm (*Ulmus pumila*), and black locust (*Robinia pseudoacacia*). Dominant size class is 2 to 6" DBH with a few 6 to11" DBH trees scattered throughout this layer and ash-leaf maple (*Acer negundo*) is present at the bottom of the slope. Dominant species in the understory include groundseltree (*Baccharis halimifolia),* amur honeysuckle (*Lonicera maackii)*, and smooth sumac (*Rhus glabra*). Dominant species in the herbaceous layer include a broomsedge (*Andropogon* sp.), Japanese honeysuckle (*Lonicera japonica),* common reed (*Phragmites australis*), and wand panic grass (*Panicum virgatum).* Overall, the forest stand is in poor condition with high invasive species cover and moderate vine cover.

Stand 1FS2 (NRI Map Sheets 1 and 2)

Stand 1FS2 is a disturbed early successional black locust forest. Canopy closure is approximately 40 percent with dominant size class between 6 and 20" DBH. The canopy is dominated by black locust, white mulberry (*Morus alba),* tree-of-heaven (*Ailanthus altissima)*, and Siberian elm. Dominant species in the understory include groundseltree*,* amur honeysuckle, tree-of-heaven (*Ailanthus altissima*), eastern poison ivy (*Toxicodendron radicans*), black locust, Asian bittersweet (*Celastrus orbiculatus),* and Japanese honeysuckle*.* Dominant species in the herbaceous layer include Japanese honeysuckle*,* English ivy (*Hedera helix)*, grape species (*Vitis* sp.) and great mullein (*Verbascum thapsus).* The understory and herbaceous layers are sparse in some areas with little herbaceous growth. Overall, the forest stand is in poor condition with high invasive species cover, moderate downed woody debris and high vine cover.

Stand 1FS3 (NRI Map Sheets 2 and 3)

Stand 1FS3 is a disturbed early successional black locust forest. Canopy closure is approximately 40 percent with a dominant size class of 2-6" DBH. The canopy is dominated by Callery pear and black locust. There is also one 18" DBH pin oak (*Quercus palustris*) within the stand. Dominant species in the understory include amur honeysuckle and rambler rose (*Rosa multiflora*)*.* Smooth sumac is also present on the edge of the forest stand. Dominant species in the herbaceous layer include Japanese honeysuckle and common reed. Overall, the forest stand is in poor condition with high invasive species cover, low downed woody debris, and moderate vine cover.

Stand 1FS4 (NRI Map Sheets 3 and 4)

Stand 1FS4 is an early successional black locust and tree-of-heaven forest. Canopy closure is approximately 75 percent with a dominant size class of 6-11" DBH. The canopy is dominated by black locust, tree-of-heaven, white mulberry, and sweetgum (*Liquidambar styraciflua) with* climbing vines present in this layer. Dominant species in the understory include amur honeysuckle, blackberry species (*Rubus* sp.), Japanese honeysuckle*,* eastern poison ivy, Asian bittersweet*,* and English ivy. Herbaceous species are lacking due to vines being dominant as ground cover. Overall, the forest stand is in fair condition with high invasive species cover, moderate downed woody debris, and high vine cover.

Stand 1FS5 (NRI Map Sheet 2)

Stand 1FS5 is an early successional sweetgum and common persimmon forest. Canopy closure is approximately 25 percent with a dominant size class of 2-6" DBH. The canopy is dominated by sweetgum,

common persimmon (*Diospyros virginiana),* black locust, and Callery pear with inclusion of white mulberry. Dominant species in the understory include groundseltree, amur honeysuckle, Callery pear, white mulberry, Asian bittersweet, eastern poison ivy, and common persimmon. Autumn olive (*Elaeagnus umbellata),* grape species, blackberry species, and Virginia creeper (*Parthenocissus quinquefolia)* are also common in this layer. Dominant species in the herbaceous layer include Japanese honeysuckle, Callery pear, Asian bittersweet, and eastern poison ivy. Common reed and Virginia creeper are also present throughout this layer. Overall, the forest stand is in poor condition with high invasive species cover, moderate downed woody debris, and heavy vine coverage.

Stand 1FS6 (NRI Map Sheet 2)

Stand 1FS6 is an early successional black locust and sweetgum forest. Canopy closure is approximately 25 percent with dominant size class of 6-11" DBH. The canopy is dominated by sweetgum and black locust. Common persimmon, Callery pear, and tree-of-heaven are also common in this layer. Dominant species in the understory include Callery pear, black locust, amur honeysuckle, groundseltree, grape species, Asian bittersweet, and amur peppervine (*Ampelopsis brevipedunculata)*. Dominant species in the herbaceous layer include Asian bittersweet, Japanese honeysuckle, an unknown blackberry, Virginia creeper, and amur peppervine. Common reed, rambler rose*,* and common wormwood (*Artemisia vulgaris)* are also scattered throughout. Vines are dominant as ground cover in this layer. Invasive species cover is high throughout this stand. Overall, this forest stand is in poor condition as invasive species are dominant throughout and trees are stressed and damaged from heavy vine coverage.

Stand 1FS7 (NRI Map Sheets 1 and 2)

Stand 1FS7 is a mid-successional black locust and sweetgum forest. Canopy closure is approximately 60 percent with a dominant size class of 6-11" DBH. The canopy is dominated by black locust, sweetgum, and willow oak (*Quercus phellos)*. Callery pear and common hackberry (*Celtis occidentalis)* are also common in this layer. A few larger trees are scattered throughout the stand. Dominant species in the understory include Callery pear, black locust, Japanese honeysuckle, rambler rose, grape species, Asian bittersweet, and Virginia creeper. Dominant species in the herbaceous layer include common reed, rambler rose, grape species, Japanese honeysuckle, Asian bittersweet, and amur peppervine. Common wormwood is present along the stand edges and vines are dominant as ground cover in this layer. Invasive species cover is high throughout this stand. Overall, this stand is in poor condition as invasive species are dominant throughout and trees are stressed and damaged from heavy vine coverage.

Stand 1FS8 (NRI Map Sheet 1)

Stand 1FS8 is a mid-successional sweet gum and white pine forest. Canopy closure is approximately 50 percent with a dominant size class of 6-11" DBH. The canopy is dominated by black locust, sweetgum, eastern white pine (*Pinus strobus),* Callery pear, and common persimmon. White mulberry and a few larger eastern white pine are present in this layer. Dominant species in the understory include amur peppervine, groundseltree, amur honeysuckle, Japanese honeysuckle, grape species, Asian bittersweet, eastern poison ivy, blackberry species, and rambler rose. Autumn olive, staghorn sumac (*Rhus typhina),* and tree-of-heaven are also present in this stand. Dominant species in the herbaceous layer include common reed, eastern poison ivy, Japanese honeysuckle, Virginia creeper, grape species, and amur peppervine. Vines are dominant as ground cover in this layer. Overall, this stand is in poor condition with high invasive species cover and trees are stressed/damaged from heavy vine coverage.

Stand 1FS9 (NRI Map Sheet 1)

Stand 1FS9 is a mid-successional black cherry and black locust forest. Canopy closure is approximately 75 percent with a dominant size class of 6-11" DBH. The canopy is dominated by black cherry (*Prunus serotina)*, black locust, and Callery pear. Northern white oak (*Quercus alba)* and mockernut hickory (*Carya tomentosa*) are also common in this layer. Tree-of-heaven and princesstree *(Paulownia tomentosa)* are scattered along the forest stand edges. Dominant species in the understory include amur peppervine, Callery pear, black cherry, grape species, American holly (*Ilex opaca),* eastern poison ivy, rambler rose, Japanese honeysuckle, Asian bittersweet, Virginia creeper, and groundseltree. Dominant species in the herbaceous layer include Asian bittersweet, eastern poison ivy, Japanese honeysuckle, Virginia creeper, and rambler rose. Common reed is scattered along the stand edges. Vines are dominant as ground cover in this layer. Invasive species cover is high throughout this stand. The eastern portion of the stand has slightly younger but similar species and condition. Overall, this stand is in fair condition as invasive species are dominant throughout and trees have climbing vines, but moderate species diversity is present.

Stand 1FS10 (NRI Map Sheet 1)

Stand 1FS10 is a mid-successional tuliptree and tree-of-heaven forest. Canopy closure is approximately 80 percent with a dominant size class of 12-20" DBH. The canopy is dominated by tuliptree (*Liriodendron tulipifera*), tree-of-heaven, sweetgum, and black cherry. princesstree (*Paulownia tomentosa*), common persimmon, white mulberry, and eastern red cedar (*Juniperus virginiana*) are also common in this layer. Dominant species in the understory include white mulberry, amur honeysuckle, Japanese honeysuckle, autumn olive, eastern poison ivy, Asian bittersweet, trumpet-creeper (*Campsis radicans)*, rambler rose, an unknown blackberry, English ivy, and tree-of-heaven. Dominant species in the herbaceous layer include Asian bittersweet, eastern poison ivy, Japanese honeysuckle, garlic-mustard (*Alliaria petiolata)*, and English ivy. Vines are dominant as ground cover in this layer. Invasive species cover is high throughout this stand. Overall, this stand is in poor condition as invasive species are dominant throughout and trees are stressed and damaged from heavy vine coverage.

Stand 1FS11 (NRI Map Sheets 1 and 2)

Stand 1FS11 is a mid-successional black locust and Callery pear forest. Canopy closure is approximately 50 percent with a dominant size class of 2-6" DBH. The canopy is dominated by black locust, Callery pear, sweetgum, and common persimmon. Tree-of-heaven, princesstree, and eastern red cedar are also common, and willow oak is scattered throughout the stand. Dominant species in the understory include groundseltree, amur honeysuckle, Callery pear, grape species, sweetgum, amur peppervine, and eastern poison ivy. Autumn olive is also common in this layer. Dominant species in the herbaceous layer include Asian bittersweet, eastern poison ivy, Japanese honeysuckle, rambler rose, blackberry species, and common wormwood. Common reed is scattered throughout and along the forest stand edge. Vines are dominant as ground cover in this layer. Invasive species cover is high throughout this stand. Overall, this stand is in poor condition as invasive species are dominant throughout and trees are stressed and damaged from heavy vine coverage.

Stand 1FS12 (NRI Map Sheet 2)

Stand 1FS12 is a mid-successional willow oak and black locust forest. Canopy closure is approximately 75 percent with a dominant size class of 20-30" DBH. The canopy is dominated by willow oak, black locust,

and sweetgum. Southern red oak (*Quercus falcata*), black cherry, Callery pear, northern red oak (*Quercus rubra)*, white mulberry, and red maple (*Acer rubrum)* are also common in this layer. Dominant species in the understory include eastern poison ivy, Japanese honeysuckle, rambler rose, groundseltree, horsebrier (*Smilax rotundifolia)*, American holly, Virginia creeper, Asian bittersweet, and blackberry species. Dominant species in the herbaceous layer include Japanese honeysuckle, English ivy, eastern poison ivy, Asian bittersweet, and goldenrod species (*Solidago* sp.). Common reed is scattered and along the forest stand edge. Vines are dominant as ground cover in this layer. Invasive species cover is high throughout this stand. Overall, this stand is in fair condition. Canopy trees are in good health, however, invasives species are prevalent throughout the stand with some climbing vines.

Stand 1FS13 (NRI Map Sheet 2)

Stand 1FS13 is a mid-successional willow oak and southern red oak forest. Canopy closure is approximately 90 percent and a dominant size class of 12-20" DBH. The canopy is dominated by willow oak, southern red oak, northern white oak, and sweetgum. Red maple and black cherry are also common in this layer. Dominant species in the understory include horsebrier, Virginia creeper, eastern poison ivy, trumpet-creeper, rambler rose, blackberry species, and highbush blueberry (*Vaccinium corymbosum*). The forest interior has a more open understory. Dominant species in the herbaceous layer include eastern poison ivy, Japanese honeysuckle, and Virginia creeper. Common reed is dominant along the forest stand edge. Invasive species cover is medium throughout this stand. Overall, this stand is in fair condition as the forest interior is diverse with an open understory, but the forest stand edge is more disturbed with heavier vine and invasive cover.

Tree Survey

A total of 120 trees were identified within the study area. This includes 112 stand-alone trees and 8 specimen trees located within forest stands. An additional 16 trees or shrubs with a DBH of less than 1.5" were identified within the CBCA. The locations of these trees are included on the maps in **Appendix B**. Information regarding the species, size, and condition of each identified tree is included on the table in **Appendix G**.

4.0 Conclusions

A total of 10 WOTUS features were identified within the study area. Impacts to these resources may require authorization from the United States Army Corps of Engineers (USACE) and/or the Maryland Department of the Environment (MDE). Thirteen forest stands, 15 hedgerows, 24 woody vegetation clusters, 112 stand-alone trees, 8 specimen trees, and 16 small trees or shrubs were identified within the study area. Impacts to trees and/or forest may require authorization from Maryland Department of Natural Resources (DNR).

5.0 Literature Cited

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APPENDIX A: VICINITY MAP

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MDTA Maryland Transportation Authority

Francis Scott Key Bridge Rebuild Project

Vicinity Map

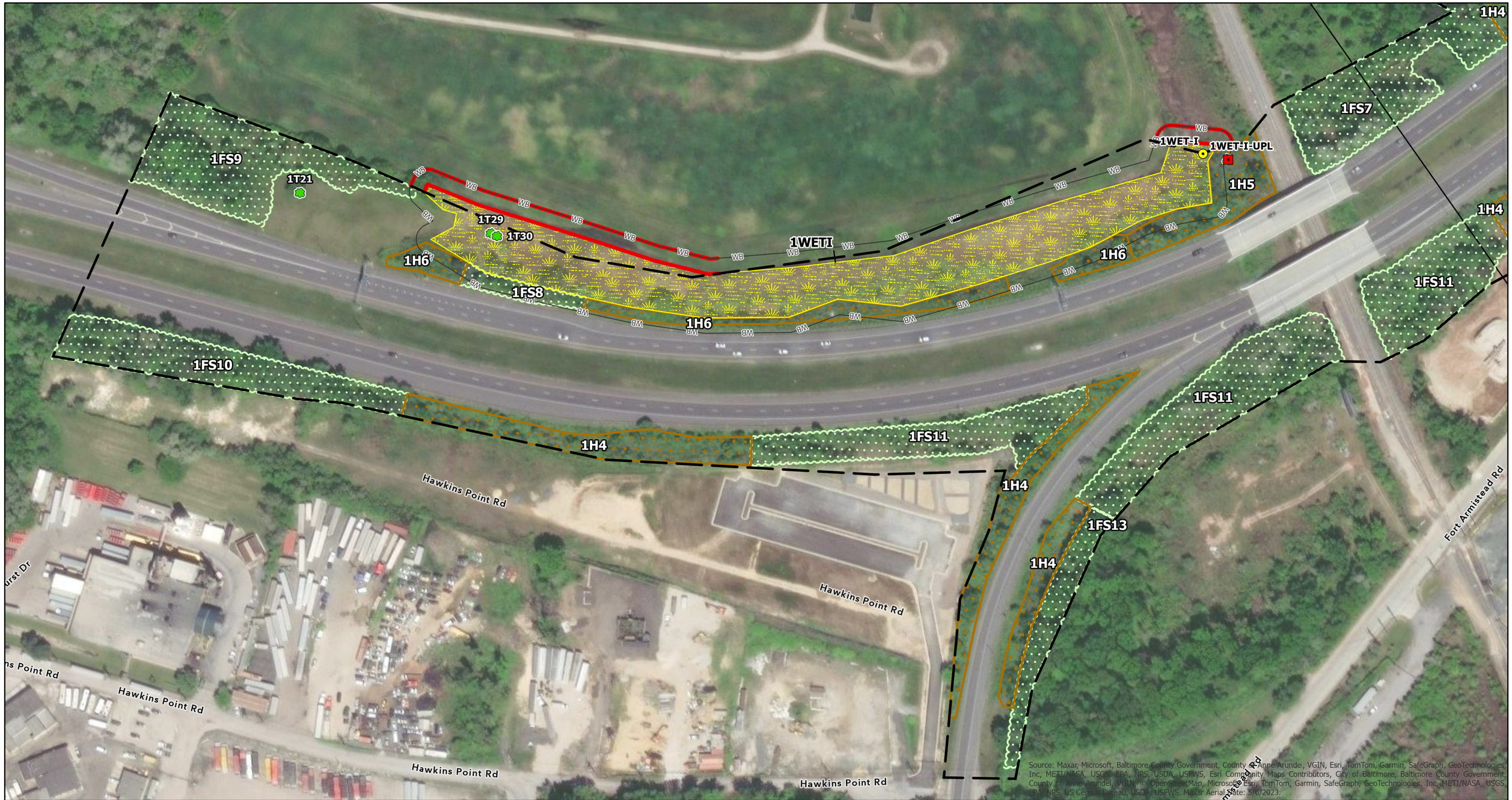
Baltimore City and Baltimore County, Maryland
June 2024

N
W E
S

Study Area
County Boundaries

0 1,000 2,000
Feet

APPENDIX B: NATURAL RESOUCES INVENTORY MAP



Source: Maxar, Microsoft, Baltimore County Government, County of Anne Arunde, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, Esri Community Maps Contributors, City of Baltimore, Baltimore County Government, County of Anne Arundel, VGIN, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS. Maxar Aerial date: 5/6/2023.

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MDTA Maryland Transportation Authority

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 1 of 7

Baltimore City and Baltimore County, Maryland
June 2024

- Upland Test Plot
- Wetland Test Plot
- Specimen Tree
- Individual Tree
- Individual Shrub
- Feature Continues Beyond Study Area
- Map Sheet
- County Boundaries
- Study Area
- Mean High Water (MHW) - 0.528ft - NAVD88
- Mean Higher High Water (MHHW) - 0.827ft - NAVD88
- Chesapeake Bay Critical Area Boundary
- CRZ
- Forest Stand
- Hedgerow
- Woody Vegetation
- Field Idenified MDTA Planting Area

Delineated Streams
- Intermittent
- Perennial
- Estuarine Sub-Tidal

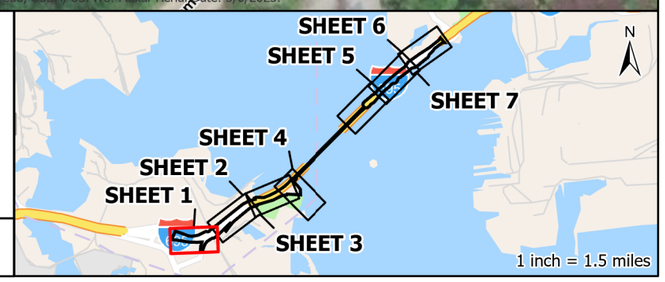
Delineated Wetlands
- Estuarine Emergent
- Estuarine Scrub-shrub
- Palustrine Emergent
- Palustrine Open Water
- Non Tidal Wetland Buffer (25ft)

*Feature exists below bridge approach span, or portion of feature extends below bridge approach span.

N W E S

0 75 150
feet
1 inch = 150 feet

Map Center, NAD83
39.2038°, -76.5524°



Source: Baltimore County Government, County of Anne Arundel, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, Maxar, Esri Community Maps Contributors, City of Baltimore, Baltimore County Government, County of Anne Arundel, VGIN, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS. Maxar Aerial Date: 5/6/2023.

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MDTA Maryland Transportation Authority

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 2 of 7

Baltimore City and Baltimore County, Maryland
June 2024

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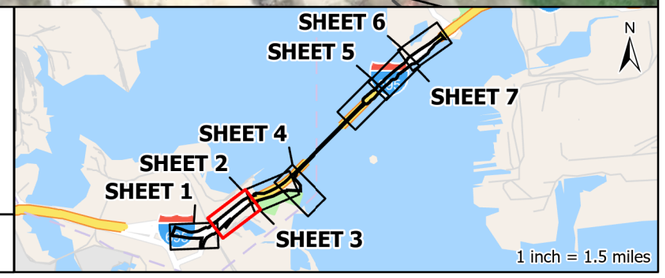
- Estuarine Sub-Tidal

Delineated Wetlands
- Estuarine Emergent
- Estuarine Scrub-shrub
- Palustrine Emergent
- Palustrine Open Water
- WB — Non Tidal Wetland Buffer (25ft)

*Feature exists below bridge approach span, or portion of feature extends below bridge approach span.

0 75 150
feet
1 inch = 150 feet

Map Center, NAD83
39.207°, -76.545°



Project Area Within Chesapeake Bay Critical Area.

Source: Baltimore County Government, County of Anne Arundel, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, Maxar, Esri Community Maps Contributors, City of Baltimore, Baltimore County Government, County of Anne Arundel, VGIN, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS. Maxar Aerial Date: 5/6/2023

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STATE HIGHWAY ADMINISTRATION

MDTA Maryland Transportation Authority

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 3 of 7

Baltimore City and Baltimore County, Maryland
June 2024

- Upland Test Plot
- Wetland Test Plot
- Specimen Tree
- Individual Tree
- Individual Shrub
- Feature Continues Beyond Study Area
- Map Sheet
- County Boundaries
- Study Area
- Mean High Water (MHW) - 0.528ft - NAVD88
- Mean Higher High Water (MHHW) - 0.827ft - NAVD88
- Chesapeake Bay Critical Area Boundary
- CRZ
- Forest Stand
- Hedgerow
- Woody Vegetation
- Field Idenified MDTA Planting Area

Delineated Streams
- Intermittent
- Perennial
- Estuarine Sub-Tidal

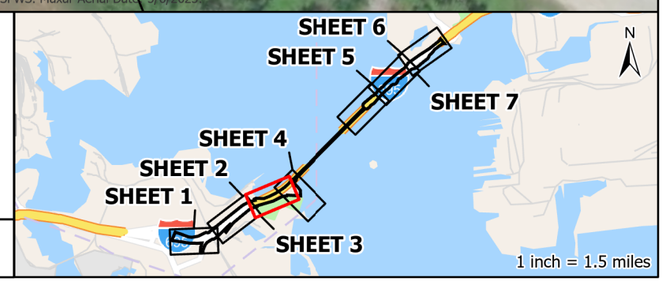
Delineated Wetlands
- Estuarine Emergent
- Estuarine Scrub-shrub
- Palustrine Emergent
- Palustrine Open Water
- Non Tidal Wetland Buffer (25ft)

*Feature exists below bridge approach span, or portion of feature extends below bridge approach span.

N W E S

0 75 150
feet
1 inch = 150 feet

Map Center, NAD83
39.2101°, -76.538°



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Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 4 of 7

Baltimore City and Baltimore County, Maryland
June 2024

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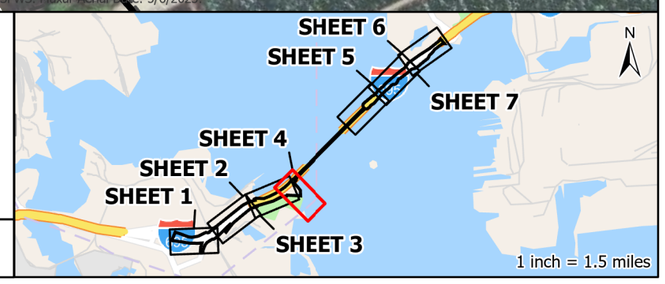
*Feature exists below bridge approach span, or portion of feature extends below bridge approach span.

0 75 150
feet
1 inch = 150 feet

Map Center, NAD83
39.2103°, -76.5328°



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Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 5 of 7

Baltimore City and Baltimore County, Maryland
June 2024

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- Individual Tree
- Individual Shrub
- Feature Continues Beyond Study Area
- Map Sheet
- County Boundaries
- Study Area
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- CRZ
- Forest Stand
- Hedgerow
- Woody Vegetation
- Field Idenified MDTA Planting Area

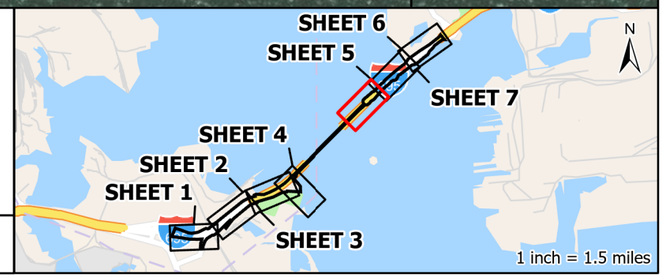
Delineated Streams
- Intermittent
- Perennial
- Estuarine Sub-Tidal

Delineated Wetlands
- Estuarine Emergent
- Estuarine Scrub-shrub
- Palustrine Emergent
- Palustrine Open Water
- Non Tidal Wetland Buffer (25ft)

*Feature exists below bridge approach span, or portion of feature extends below bridge approach span.

0 75 150
feet
1 inch = 150 feet

Map Center, NAD83
39.2227°, -76.521°



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Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 6 of 7

Baltimore City and Baltimore County, Maryland
June 2024

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- Individual Shrub
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- Map Sheet
- County Boundaries
- Study Area
- Mean High Water (MHW) - 0.528ft - NAVD88
- Mean Higher High Water (MHHW) - 0.827ft - NAVD88
- CBCA — Chesapeake Bay Critical Area Boundary
- CRZ — CRZ
- Forest Stand
- Hedgerow
- Woody Vegetation
- Field Idenified MDTA Planting Area

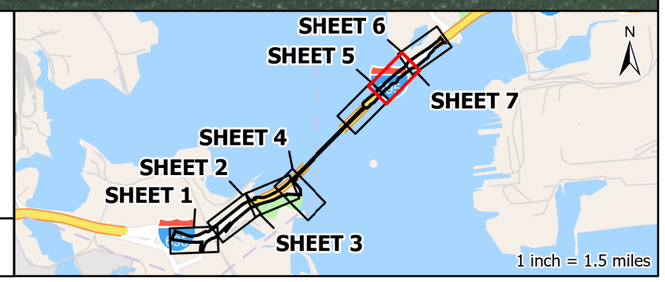
Delineated Streams
- Intermittent
- Perennial
- Estuarine Sub-Tidal

Delineated Wetlands
- Estuarine Emergent
- Estuarine Scrub-shrub
- Palustrine Emergent
- Palustrine Open Water
- NTB — Non Tidal Wetland Buffer (25ft)

*Feature exists below bridge approach span, or portion of feature extends below bridge approach span.

0 75 150
feet
1 inch = 150 feet

Map Center, NAD83
39.2269°, -76.5153°



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Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 7 of 7

Baltimore City and Baltimore County, Maryland
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Delineated Streams
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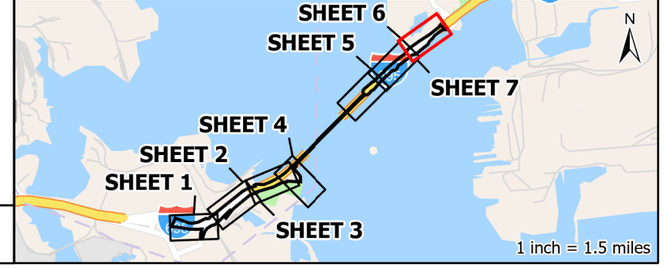
- Perennial
- Estuarine Sub-Tidal

Delineated Wetlands
- Estuarine Emergent
- Estuarine Scrub-shrub
- Palustrine Emergent
- Palustrine Open Water
- WB Non Tidal Wetland Buffer (25ft)

*Feature exists below bridge approach span, or portion of feature extends below bridge approach span.

0 75 150
feet
1 inch = 150 feet

Map Center, NAD83
39.2309°, -76.5096°



APPENDIX C: WOTUS SUMMARY TABLE

Appendix C: Francis Scott Key Bridge Rebuild Project
Wetland Summary Table

Wetland Number	Delineated Area (AC)	Cowardin Classification/Wetland Type	Hydrology	Dominant Vegetation			Soils
				Scientific Name	Common Name	Indicator Status	
1WETA (NRI Map Sheet 3)	0.02	PEM1C (Depression/Toe-of-Slope)	Surface Water, High Water Table, Saturation, Drainage Patterns, Geomorphic Position, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, loamy, very deep, 0 to 8% slopes Depleted Below Dark Surface (A11) and Depleted Matrix (F3) 0-3 inches of 7.5YR3/2, clay, and 3-12 inches of 7.5YR 4/1, with 7.5YR5/8 redox concentrations, clay
1WETB (NRI Map Sheet 3)	0.003	PEM1C (Toe-of-Slope)	Surface Water, High Water Table, Saturation, Sediment Deposits, Geomorphic Position, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, loamy, very deep, 0 to 8% slopes Depleted Below Dark Surface (A11), Depleted Matrix (F3), and Redox Dark Surface (F6) 0-6 inches of 2.5YR3/2 with 2.5YR4/8 redox concentrations, clay, and 6-12 inches of 2.5YR4/1 with 2.5YR4/8 redox concentrations, clay loam
1WETC (NRI Map Sheet 2 and 3)	0.05	PEM1C (Toe-of-Slope)	Surface Water, High Water Table, Saturation, Drainage Patterns, Geomorphic Position, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, loamy, very deep, 0 to 8% slopes Redox Dark Surface (F6) 0-9 inches of 10Y 3/2 with 10Y 5/8 redox concentrations, clay loam
1WETD (NRI Map Sheet 2)	0.02	PEM1C (Toe-of-slope/Ditch)	Surface Water, High Water Table, Saturation, Sediment Deposits, Algal Mat or Crust, Geomorphic Position, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Urban Land, 0 to 15% slopes Depleted Matrix (F3) 0-6 inches of 10YR 4/2 with 2.5 YR5/6 redox concentrations, clay
1WETE (NRI Map Sheets 3, 4 and 5)	6.21	PEM1F (Impoundment)	Surface Water, Water Marks, Inundation Visible on Aerial Imagery, Aquatic Fauna, Geomorphic Position, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, smoothed, 0-35% slopes. Sandy Mucky Mineral (S1) 0-12 inches of 10YR3/2, loamy sand with organics
1WETF (NRI Map Sheet 2)	0.08	PEM1A/B (Depression)	High Water Table, Saturation, Saturation Visible on Aerial Imagery, Geomorphic Position, FAC-Neutral Test	*Diospyros virginiana* *Baccharis halimifolia* *Phragmites australis*	Common Persimmon Groundseltree Common Reed	FAC FAC FACW	Udorthents, clayey, very deep, 0-15% slopes. Redox Dark Surface (F6) 0-8 inches of 10YR 3/2 with 5YR 4/4 redox concentrations, fine sandy loam
1WETG (NRI Map Sheet 2)	0.70	PEM1A/B (Depression)	Surface Water, High Water Table, Saturation, Saturation Visible on Aerial Imagery, Geomorphic Position	*Baccharis halimifolia* *Phragmites australis* *Holcus lanatus* *Toxicodendron radicans* *Smilax rotundifolia*	Groundseltree Common Reed Common Velvet Grass Eastern Poison Ivy Horsebrier	FAC FACW FACU FAC FAC	Udorthents, clayey, very deep, 0-15% slopes Redox Dark Surface (F6) 0-4 inches of 10YR 3/2 with 5YR4/6 redox concentrations, silt loam
1WETH (NRI Map Sheet 2)	0.13	PEM1A/B (Depression)	Surface Water, High Water Table, Saturation, Saturation Visible on Aerial Imagery, FAC-Neutral Test	*Baccharis halimifolia* *Liquidambar styraciflua* *Phragmites australis*	Groundseltree Sweet-Gum Common Reed	FAC FAC FACW	Udorthents, clayey, very deep, 0-15% slopes Depleted Matrix (F3) 0-8 inches of 7.5YR4/2 with 5YR4/6 redox concentrations, sandy clay loam

Wetland Number	Delineated Area (AC)	Cowardin Classification/Wetland Type	Hydrology	Dominant Vegetation			Soils
				Scientific Name	Common Name	Indicator Status	
1WETI (NRI Map Sheet 1)	2.55	PEM1A/B (Depression/Swale)	High Water Table, Saturation, Water-Stained Leaves, Saturation Visible on Aerial Imagery	*Populus alba* *Baccharis halimifolia* *Phragmites australis*	White poplar Groudseltree Common Reed	N/A FAC FACW	Udorthents, clayey, very deep, 0-15% slopes Redox Dark Surface (F6) 0-4 inches of 10YR2/2 with 7.5YR4/4 redox concentrations, sandy clay loam
1WETJ (NRI Map Sheets 3 and 4)	0.01	E2EM1 (Intertidal)	Surface Water, High Water Table, Saturation, Water Marks, Sediment Deposits, Drift Deposits, Geomorphic Position, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, smoothed, 0-35% slopes Histosol (A1) 0-18+ inches of 10YR2/1, silt loam with organics, tidal muck
2WETA (NRI Map Sheet 6)	0.05	E2SS1 (Depression)	Surface Water, High Water Table, Saturation, Water Marks, Sediment Deposits, Drift Deposits, Algal Mat or Crust	*Baccharis halimifolia* *Phragmites australis*	Groundseltree Common Reed	FAC FACW	Udorthents, highway, 0 to 65% slopes Sandy Redox (S5) 3-16 inches of 2.5Y6/2 with 7.5YR4/6 redox concentrations, loamy sand
2WETB (NRI Map Sheet 6)	0.12	E2EM5 (Depression)	Surface Water, High Water Table, Saturation, Drift Deposits, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, highway, 0 to 65% slopes Sandy Redox (S5) 3-12 inches of 10YR5/2 with 5YR4/6 redox concentrations, loamy sand
2WETC (NRI Map Sheet 6)	0.14	E2SS1 (Shoreline)	Surface Water, High Water Table, Saturation, Water Marks, Sediment Deposits, Drift Deposits, Algal Mat or Crust, FAC-Neutral	*Baccharis halimifolia* *Spartina alternifolia*	Groundseltree Saltwater cord grass	FAC OBL	Udorthents, highway, 0 to 65% slopes Sandy Redox (S5) 0-4 inches of 2.5Y7/2 with 7.5YR4/6 redox concentrations, loamy sand
2WETD (NRI Map Sheet 7)	0.05	PEM5 (Toe-of-slope)	Oxidized Rhizospheres along Living Roots, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, highway, 0 to 65% slopes Depleted Matrix (F3) 0-6 inches of 10YR4/1 with 2.5YR3/4 redox concentrations,

Francis Scott Key Bridge Rebuild Project
Watercourse Summary Table

Watercourse Number	Delineated Size (LF/AC)	Cowardin Classification	Nearest Downstream Named Stream	Use Class	Channel Characteristics		Comments
					Average Channel Width	Average Channel Depth	
1WA (NRI Map Sheet 3)	112 LF	R4UB1	Patapsco River	I	3’	1” – 8”	Intermittent stream that flows from a culvert to 1WC and abuts 1WETA and 1WB.
1WB (NRI Map Sheets 2 and 3)	187 LF	R4UB1	Patapsco River	I	1’ – 4’	1’ – 4’	Intermittent stream that flows from 1WETC to 1WA and abuts 1WETB
1WC (NRI Map Sheets 3 – 7)	1.66 AC	E1UB	Chesapeake Bay	I	5,500’	50’	Patapsco River, begins and ends outside the study area.

APPENDIX D: DATASHEETS

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MDTA Inner Loop Rills City/County: Balt City Sampling Date: 2/20/24
Applicant/Owner: MDTA State: MD Sampling Point: 1WETA
Investigator(s): SLY/EH Section, Township, Range: —
Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR or MLRA): 149A Lat: 39.209177 Long: -76.54069 Datum: NAD1983
Soil Map Unit Name: 40B Udorthents, loamy, very deep, 0 to 8 percent slopes NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ✓, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Wetland collecting sheet flow from east and toe of slope. Runs west to WB Photos 8087-88

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 2"	
Water Table Present?	Yes ✓	No ____	Depth (inches): 4"	
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 4"	**Wetland Hydrology Present?** Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 1WET-A

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: N/A)			
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5X1.0')			
1. Phragmites australis	65	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65 = Total Cover		

50% of total cover: 32.5 20% of total cover: 13

Woody Vine Stratum (Plot size: NA)			
1. NA			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 1WETA

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR3/2	100					clay	fine roots in upper inch
3-12	7.5YR4/1	90	7.5YR5/8	10	C	M	clay	gravel present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MDTA City/County: Baltimore City Sampling Date: 2/20/24

Applicant/Owner: MDTA State: MD Sampling Point: 1WETB

Investigator(s): SLY ECH Section, Township, Range: —

Landform (hillslope, terrace, etc.): bottom of hillslopes Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): 149A Lat: 39.208999 Long: -76.541285 Datum: NAD 1983

Soil Map Unit Name: 40B Udorthents, loamy, very deep, 0 to 8 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

photos - 8100 - 8101

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ☐ Water Marks (B1)
- ✓ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 2
Water Table Present?	Yes ✓	No ____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 3

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 1WETB

Tree Stratum (Plot size: NA)	Absolute % Cover	Dominant Species?	Indicator Status
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum (Plot size: NA)			
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover: ____ 20% of total cover: ____			
Herb Stratum (Plot size: 5' x 10')			
1. Phragmites australis	70	Y	FACW
2. Lonicera japonica	10	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80 = Total Cover		
50% of total cover: 40 20% of total cover: 16			
Woody Vine Stratum (Plot size: NA)			
1. NA			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover: ____ 20% of total cover: ____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 1WETB

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5YR3/2	80	2.5YR4/8	20	C	M	clay loam	
6-12	2.5YR4/1	75	2.5YR4/8	25	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MDTA City/County: Baltimore City Sampling Date: 2/20/24

Applicant/Owner: MDTA State: MD Sampling Point: 1WETC

Investigator(s): SLY, ECH Section, Township, Range: —

Landform (hillslope, terrace, etc.): bottom of hillslope Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR or MLRA): 149A Lat: 39.208546 Long: -76.542296 Datum: NAD1983

Soil Map Unit Name: 40B Udorthents, loamy, very deep, 0 to 8 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

phragmites ditch at toe of slope,

photos – 8103-8104

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 1
Water Table Present?	Yes ✓	No ____	Depth (inches): 7
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 5

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: 1WETC

Tree Stratum (Plot size: NA)	Absolute % Cover	Dominant Species?	Indicator Status
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: NA)			
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5' x 10')			
1. Phragmites australis	85	Y	FACW
2. Lonicera japonica	10	N	FACU
3. Baccharis halimifolia	5	N	FAC
4. Rubus phoenicolasius	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105 = Total Cover		

50% of total cover: 52.5 20% of total cover: 21

Woody Vine Stratum (Plot size: NA)			
1. NA			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL Sampling Point: 1WETC

Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR3/2	90	10YR5/8	10	C	M	clay loam	
9-13	10YR3/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks:

wetland has hydric soils but areas w/ fill soils are disturbed

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MDTA Inner Loop Bills City/County: Baltimore Sampling Date: 3/20/24

Applicant/Owner: MDTA ! State: MD Sampling Point: 1WETD

Investigator(s): SLY, LAP Section, Township, Range:

Landform (hillslope, terrace, etc.): fill of slope / ditch Local relief (concave, convex, none): concave Slope (%): 2%

Subregion (LRR or MLRA): MLRA 149A Lat: 39.209070 Long: -76.542730 Datum: NAD1983

Soil Map Unit Name: Urban land, 0 to 15 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Photos : 6560 - 6561

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [X] Surface Water (A1)
- [X] High Water Table (A2)
- [X] Saturation (A3)
- [ ] Water Marks (B1)
- [X] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [X] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [X] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [✓] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): 1"
Water Table Present?	Yes ✓	No _____	Depth (inches): 3"
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: • Standing water west end of wetland
• collects water from slope & road runoff

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 1WETD

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5'x10')			
1. Phragmites australis	90%	Y	FACW
2. Lonicera japonica	5%	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95% = Total Cover		

50% of total cover: 47.5% 20% of total cover: 19%

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 4WETD

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 4/2	90%	2.5YR5/6	10%	C	M	clay	
6-14"	10YR 6/8	70%	5YR 5/8	30%	C	M	clay	fill soils

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☑ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

- evidence of fill material
- fill soils

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore City Sampling Date: 5/3/24

Applicant/Owner: MdTA State: MD Sampling Point: 1WETE-1

Investigator(s): D. Smith, K. Mathews Section, Township, Range:

Landform (hillslope, terrace, etc.): Impoundment Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): MLRA 149A Lat: 39.211814 Long: -76.53388 Datum: NAD83

Soil Map Unit Name: Udorthents, smoothed, 0-35% slopes NWI classification: PEMICd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

Photo 1WETE-1 Upl. plot is same as for 1WETC

PEMIF

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✓ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✓ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 6-12+
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appears to be palustrine impoundment, with seasonal tidal influence

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WETE-1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 15 ft)			
1. Phragmites Australis	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WETF-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					LS	w/ organics

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ✓ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Permanent inundation likely. Very little soil extracted in auger. Soil w/ considerable muck.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Bridge City/County: Baltimore City Sampling Date: 5/6/24
Applicant/Owner: MDTA State: MD Sampling Point: WETF
Investigator(s): EB, GS Section, Township, Range:
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRR or MLRA): MLRA 149A Lat: 39.208284 Long: -76.544114 Datum: NAD83
Soil Map Unit Name: Udorthents, clayey, very deep, 0-15% slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ✓, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:
Soils disturbed from 695 + B&E ROW PEM1A/B

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): 0"
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Rain in past 24 hrs.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WETF

Tree Stratum (Plot size: 20×50)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 20×50)			
1. Diospyros virginiana	5	✓	FAC
2. Baccharis halimifolia	5	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 10×25)			
1. Phragmites australis	90	✓	FACW
2. Lonicera japonica	3		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	93 = Total Cover		
50% of total cover: 46.5	20% of total cover: 18.6		
Woody Vine Stratum (Plot size: 20×50)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WETF

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	95	5YR 4/4	5	C	M	Fine Sal	
2-8	10YR 3/2	80	5YR 4/4	20	C	M	Fine Sal	
8-12+	10YR 7/2	95	2.5YR 5/6	5	C	M	Sal	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Bridge City/County: AA Co Sampling Date: 5/6/2024

Applicant/Owner: MDTA State: MD Sampling Point: WETF-UPL

Investigator(s): EB, GS Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): MLRA 149A Lat: 39.208476 Long: -76.543899 Datum: NAD83

Soil Map Unit Name: Udorthents, clayey, very deep 0-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✓, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Upslope of wetland within depression that runs along the toe-of-slope of 695 embankment. Receives significant stormwater run off from highway. Soils disturbed from 695 + BGE ROW

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes ✓	No _____	Depth (inches): 4"
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Rain within past 24 hrs

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WETF-UPL

Tree Stratum (Plot size: 20×50)	Absolute % Cover	Dominant Species?	Indicator Status
1. Robinia pseudoacacia	5	✓	UPL
2. Liquidambar styraciflua	2	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	7	= Total Cover	
50% of total cover: 3.5	20% of total cover: 1.4		

Sapling/Shrub Stratum (Plot size: 20×50)			
1. Baccharis haminifolia	15	✓	FAC
2. Liquidambar styraciflua	2		FAC
3. Rubus argutus	1		FAC
4.			
5.			
6.			
7.			
8.			
	18	= Total Cover	
50% of total cover: 9	20% of total cover: 3.6		

Herb Stratum (Plot size: 10×25)			
1. Phragmites australis	65	✓	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
50% of total cover: 32.5	20% of total cover: 13		

Woody Vine Stratum (Plot size: 20×50)			
1. Lonicera japonica	30	✓	FACU
2. Parthenocissus quinquefolia	20	✓	FACU
3.			
4.			
5.			
	50	= Total Cover	
50% of total cover: 25	20% of total cover: 10		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☐ No ✓

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 1 NETF-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 3/3	98	7.5YR 4/4	2	C	M	Fine SaCl	
1-4	10YR 3/3	93	7.5YR 4/4	7	C	M	Fine SaCl	
4-12+	5YR 5/4	99	2.5YR 5/6	1	C	M	SaL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore City Sampling Date: 5/8/24
Applicant/Owner: MDTA State: MD Sampling Point: WETG
Investigator(s): EB, TT Section, Township, Range:
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRR or MLRA): MLRA 149A Lat: 39.207451 Long: -76.545866 Datum: NAD83
Soil Map Unit Name: Udorthents, clayey, very deep, 0-15% slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ✓, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Soils disturbed from 695 + BGE ROW PEMIA/B

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 0.5"
Water Table Present?	Yes ✓	No ____	Depth (inches): 10"
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WETG

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30')			
1. Baccharis halimifolia	10	✓	FAC
2. Sambucus nigra	2		FACW
3.			
4.			
5.			
6.			
7.			
8.			
	12 = Total Cover		
50% of total cover: 6	20% of total cover: 2.4		
Herb Stratum (Plot size: 15')			
1. Phragmites australis	40	✓	FACW
2. Holcus lanatus	30	✓	FACU
3. Toxicodendron radicans	10		FAC
4. Juncus effusus	5		OBL
5. Dichanthelium clandestinum	2		FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	87 = Total Cover		
50% of total cover: 43.5	20% of total cover: 17.4		
Woody Vine Stratum (Plot size: 30')			
1. Smilax rotundifolia	5	✓	FAC
2. Toxicodendron radicans	5	✓	FAC
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 1WETG

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	95	5YR 4/6	5	C	M/PL	SiL	
4-8	10YR 5/3	80	7.5YR 5/6	20	C	M	C	
8-12+	2.5YR 4/6	95	7.5YR 5/8	5			SaCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: AA Co Sampling Date: 5/8/24

Applicant/Owner: MDTA State: MD Sampling Point: WETA

Investigator(s): EB, TT Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): MLRA 149A Lat: 39.206596 Long: -76.547079 Datum: NAD83

Soil Map Unit Name: Udorthents, clayey, very deep, 0-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ✓, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:
Soils disturbed from L695 + B6E

PEMIA/B

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 1"
Water Table Present?	Yes ✓	No ____	Depth (inches): 0"
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: IWETH

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 30)			
1. Baccharis haminifolia	8	✓	FAC
2. Liquidambar styraciflua	5	✓	FAC
3. Sambucus nigra	2		FACW
4.			
5.			
6.			
7.			
8.			
	15 = Total Cover		

50% of total cover: 7.5 20% of total cover: 3

Herb Stratum (Plot size: 15)			
1. Phragmites australis	80	✓	FACW
2. Onoclea sensibilis	10		FACW
3. Toxicodendron radicans	5		FAC
4. Lonicera japonica	5		FACU
5. Smilax rotundifolia	3		FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	103 = Total Cover		

50% of total cover: 51.5 20% of total cover: 20.6

Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 1-WETH

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 4/2	98	5YR 4/6	2	C	M	SCL	
8-12+	5YR 4/4	95	2.5YR 4/6	5	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore City Sampling Date: 5/8/24

Applicant/Owner: MDTA State: MD Sampling Point: WETH-UPL

Investigator(s): EB, TT Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR or MLRA): MLRA 149A Lat: 39.206297 Long: -76.547577 Datum: NAD83

Soil Map Unit Name: Udorthents, clayey, very deep, 0-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✓, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Soils disturbed from 695 + BGE ROW

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): 0.25"*
Water Table Present?	Yes ✓	No _____	Depth (inches): 2"
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0-6"

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Even though there is a HWT, surface hydrology is perched over dense clay.

* Surface water in ~5% of plot

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

Sampling Point: WETA-UPL

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 15)			
1. Phragmites australis	50	✓	FACW
2. Holcus lanatus	5		FACU
3. Juncus effusus	8		OBL
4. Toxicodendron radicans	20	✓	FAC
5. Parthenocissus quinquefolia	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	88 = Total Cover		
50% of total cover: 44	20% of total cover: 17.6		
Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WETH-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	5YR 4/4	100					SaL	
7-12	2.5YR 4/6	93					C	
12-20+	7.5YR 5/8	7					C	
	WHITE PASTE N 8.5 (10)						C	
	2.5YR 2.5/1	40					C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: AA Co Sampling Date: 5/8/24

Applicant/Owner: MDTA State: MD Sampling Point: WETI

Investigator(s): EB, TT Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression / Swale Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR or MLRA): MLRA 149A Lat: 39.205025 Long: -76.549892 Datum: NAD83

Soil Map Unit Name: Udorthents, clayey, very deep, 0-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks: PEM1A/B

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): _____
Water Table Present?	Yes ✓	No _____	Depth (inches): 11
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: INET I

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 30)			
1. Populus alba	5	✓	–
2. Baccharis hamimifolia	10	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	15 = Total Cover		

50% of total cover: 7.5 20% of total cover: 3

Herb Stratum (Plot size: 15)			
1. Phragmites australis	90	✓	FACW
2. Toxicodendron radicans	15		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105 = Total Cover		

50% of total cover: 54.5 20% of total cover: 21

Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

Populus alba does not have an indicator status but prefers more upland conditions. Plot meets dominance test at 67.7% if Populus alba assumed UPL.

SOIL

Sampling Point: WETI

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	95	7.5YR 4/4	5	C	M	SaCL	
4-10	7.5YR 5/3	95	5YR 5/4	5	C	M	SaCL	
10-16	CLAY FILL							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: AA Co Sampling Date: 5/8/24

Applicant/Owner: MDTA State: MD Sampling Point: WETI-UPL

Investigator(s): EB, TT Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): MLRA 149A Lat: _____ Long: _____ Datum: NAD83

Soil Map Unit Name: Udorthents, clayey, very deep, 0-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ✓	Depth (inches): _____
Water Table Present?	Yes ✓	No _____	Depth (inches): 14"
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WETI-UPL

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus alba	10	✓	–
2. Populus deltoides	5	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Sapling/Shrub Stratum (Plot size: 30)			
1. Populus alba.	50	✓	–
2. Baccharis haminifolia	20	✓	FAC
3. Diospyros virginiana	5		FAC
4.	0		
5.			
6.			
7.			
8.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		

Herb Stratum (Plot size: 15)			
1. Populus alba	10		–
2. Toxicodendron radicans	25	✓	FAC
3. Ampelopsis brevipedunculata	15		UPL
4. Phragmites australis	5		FACW
5. Lonicera japonica	20		FACU
6. Panicum virgatum	2		FAC
7. Solidago sp.	3		–
8. Poaceae sp.	40	✓	–
9.			
10.			
11.			
12.			
	120 = Total Cover		
50% of total cover: 60	20% of total cover: 24		

Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☐ No ☑

Remarks: (If observed, list morphological adaptations below).

Populus alba has no status, assumed UPL; unable to ID Poaceae sp., likely FACU or UPL species due to location and lack of wetland hydrology + hydric soils.

SOIL

Sampling Point: WETI-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 4/3	98	5YR 4/4	2	C	M	SaCL	
4-12	5YR 4/4	95	2.5YR 5/6	5	C	M	SaC	
12-16+	10YR 4/2	95	7.5YR 5/6	5	C	M	SaC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore City Sampling Date: 5/3/24
Applicant/Owner: MdTA State: MD Sampling Point: 1WETJ-1
Investigator(s): D. Smith, K. Mathews Section, Township, Range:
Landform (hillslope, terrace, etc.): Intertidal Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRR or MLRA): MLRA 149A Lat: 39.210446 Long: -76.535154 Datum: NAD83
Soil Map Unit Name: Udorthents, smoothed, 0-35% slopes NWI classification: E1UBL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Photo 1WETJ-1. Wetland is small patch of Phragmites between rocky shore areas. E2EM1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ✓ Water Marks (B1)
- ✓ Sediment Deposits (B2)
- ✓ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 3*
Water Table Present?	Yes ✓	No ____	Depth (inches): 5
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
*40% of plot on incoming tide. No recent rain, but wetland is hydrologically influenced by twice daily tidal flooding.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WETJ

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 15')			
1. Phragmites australis	100	✓	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	_____	x 2 =	_____
FAC species	_____	x 3 =	_____
FACU species	_____	x 4 =	_____
UPL species	_____	x 5 =	_____
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL Sampling Point: WETLAND 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 2/1	100					silty clay	Tidal muck

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Tidal muck.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore City Sampling Date: 5/3/24
Applicant/Owner: MDTA State: MD Sampling Point: WETJ-UPL
Investigator(s): D. Smith, K. Mathews Section, Township, Range:
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 3
Subregion (LRR or MLRA): MLRA 149A Lat: 39.21043 Long: -76.535253 Datum: NAD83
Soil Map Unit Name: Udorthents, smoothed, 0-35% slopes NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:
Upland plot for 1-WET-J + 1-WET
Photo 1WETJ-UPL-1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Above MHW line but w/in storm surge zone.

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

Sampling Point: WETJ-UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus americana	65	Y	FAC
2. Koelreuteria paniculata	10		
3. Robinia pseudoacacia	18		UPL
4. Morus alba	5		FACU
5. Prunus serotina	5		FACU
6.			
7.			
8.			
	103	= Total Cover	
50% of total cover: 30.6	20% of total cover: 51.5		

Sapling/Shrub Stratum (Plot size: 30')			
1. Baccharis halimifolia	5	Y	FAC
2. Lonicera maackii	3		FACU
3. Robinia pseudoacacia	5	Y	UPL
4. Acer negundo	3		FAC
5.			
6.			
7.			
8.			
	16	= Total Cover	
50% of total cover: 8	20% of total cover: 3.2		

Herb Stratum (Plot size: 15')			
1. Phragmites australis	15	Y	FACW
2. Clematis terniflora	12	Y	FACU
3. Phalaris arundinacea	7		FACW
4. Toxicodendron radicans	12	Y	FAC
5. Robinia pseudoacacia	5		UPL
6. Parthenocissus quinquefolia	3		FACU
7. Lonicera japonica	2		FACU
8.			
9.			
10.			
11.			
12.			
	56	= Total Cover	
50% of total cover: 11.2	20% of total cover: 28		

Woody Vine Stratum (Plot size:)			
1. Toxicodendron radicans	10	Y	FAC
2. Parthenocissus quinquefolia	5		FACU
3. Clematis terniflora	15	Y	FACU
4. Lonicera japonica	15	Y	FACU
5. Vitis sp.	5		
	50	= Total Cover	
50% of total cover: 10	20% of total cover: 25		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 55.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (If observed, list morphological adaptations below).

SOIL Sampling Point: WETS-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5 yr 2.5/2	100					FSL	
5-12+	10R 5/6	100					C	Rejected by garbage

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Considerable trash in boring

Tidal

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: ESK Rebuild City/County: Baltimore Sampling Date: 5/7/24

Applicant/Owner: MDTA State: MD Sampling Point: 2WETA

Investigator(s): LAP, ET Section, Township, Range: _____

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 1%

Subregion (LRR or MLRA): LRRS, MLRA 149A Lat: 39.2266665°N Long: -76.5148400°W Datum: NAD 83

Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: E2SS1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Wetland visited at mid-tide, used visual indicators of tidal boundary in lieu of tidal elevation data
- indicators include: physical markings, wrack line

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ✓ Water Marks (B1)
- ✓ Sediment Deposits (B2)
- ✓ Drift Deposits (B3)
- ✓ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): varies	
Water Table Present?	Yes ✓	No _____	Depth (inches): 0"	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"	**Wetland Hydrology Present?** Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

tidal scrub-shrub wetland, abutting emergent tidal wetland to west and Patapsco River to east

- Tide nearly one foot above normal elevation on this day

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

Sampling Point: 2WETA

Tree Stratum (Plot size: 10X20')	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 10X20')			
1. Baccharis halimifolia	80%	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	80% = Total Cover		

50% of total cover: 40% 20% of total cover: 16%

Herb Stratum (Plot size: 10X20')			
1. Phragmites australis	40%	Y	FACW
2. Baccharis halimifolia	10%	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50% = Total Cover		

50% of total cover: 25% 20% of total cover: 10%

Woody Vine Stratum (Plot size: 10X20')			
1. N/A			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 3/3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2WETA

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3"	10YR 2/2	80%					sandy loam	
	10YR 4/3	20%						
3-16"	2.5Y 6/2	95%	7.5YR 4/6	5%	C	M	loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore Sampling Date: 5/7/24

Applicant/Owner: MDTA State: MD Sampling Point: 2WETB

Investigator(s): LP, ET Section, Township, Range:

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR or MLRA): LRRS, MLRA 149A Lat: 39.2264587°N Long: -76.515097° W Datum: NAD83

Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: E2EM5

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: photos 9346-47
•emergent tidal wetland at mid-tide; use visual indicators of tidal boundary in lieu of tidal elevation data; indicators include physical markings, wrack line; precise limit of tide difficult to determine due to heavy litter & driftwood deposition & dense phrag rhizomes

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ✓ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes ✓ No ____ Depth (inches): varies (tidal)

Water Table Present? Yes ✓ No ____ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
* tide nearly one foot above normal elevation on this day

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

Sampling Point: 2WETB

Tree Stratum (Plot size: 20' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 20' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 20' radius)			
1. Phragmites australis	100%	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 20' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2WETB

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3"	7.5YR 3/2	100%					muck	
3-12"	10YR 5/2	95%	5YR 4/6	5%	C	M	loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

root masses

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore Sampling Date: 5/3/24
Applicant/Owner: MDTA State: MD Sampling Point: 2-UPLA
Investigator(s): ET, LP Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): concave Slope (%): 1%
Subregion (LRR or MLRA): LRR S, MLRA 149A Lat: 39.2325554 °N Long: -76.5065712 Datum: NAD83
Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes X	No	

Remarks: photos - 9329, 9330

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☒ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes No X Depth (inches):
Water Table Present? Yes No X Depth (inches):
Saturation Present? (Includes capillary fringe) Yes No X Depth (inches):

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Roadside ditch constructed in dense fill material allowing water to pond.
No hydric soils observed.

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

Sampling Point: 2 UPLA

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5x5)			
1. Ranunculus sceleratus	80%	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80% = Total Cover		

50% of total cover: 40% 20% of total cover: 16%

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2-10 PLA

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10"	10YR 5/3	75%					Silty clay loam	gravel refusal at 10"
	7.5YR 4/6	25%						fill material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: gravel

Depth (inches): 10"

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore Sampling Date: 5/7/24

Applicant/Owner: MDTA State: MD Sampling Point: 2WETA/B-UPL

Investigator(s): LP, ET Section, Township, Range: _____

Landform (hillslope, terrace, etc.): berm Local relief (concave, convex, none): convex Slope (%): 0%

Subregion (LRR or MLRA): LRR9, MLRA149A Lat: 39.2263219 °N Long: -76.5151510 °W Datum: NAD83

Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: photos: 9348-50
berm between 2WETA + 2WETB + Patapsco River

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: 2WETLAND-UPL

Tree Stratum (Plot size: 10 x 20')	Absolute % Cover	Dominant Species?	Indicator Status
1. Morus alba	20%	Y	FACU
2. Ulmus parvifolia	30%	Y	FACU
3. Robinia pseudoacacia	30%	Y	UPL
4.			
5.			
6.			
7.			
8.			
	80% = Total Cover		
50% of total cover: 40%	20% of total cover: 16%		

Sapling/Shrub Stratum (Plot size: 10 x 20')			
1. Amorpha fruticosa	5%	N	FACU
2. Rosa multiflora	15%	Y	FACU
3. Ligustrum sinense	15%	Y	FAC
4.			
5.			
6.			
7.			
8.			
	35% = Total Cover		
50% of total cover: 17.5%	20% of total cover: 7%		

Herb Stratum (Plot size: 10 x 20')			
1. Toxicodendron radicans	10%	N	FAC
2. Rumex crispus	10%	N	FAC
3. Cinna arundinacea	80%	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100% = Total Cover		
50% of total cover: 150%	20% of total cover: 20%		

Woody Vine Stratum (Plot size: 10 x 20')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 2/4 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2WETA/B-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 3/3	100%					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore Sampling Date: 5/7/24

Applicant/Owner: MDTA State: MD Sampling Point: 2WETC

Investigator(s): LP, ET Section, Township, Range: _____

Landform (hillslope, terrace, etc.): shoreline Local relief (concave, convex, none): none Slope (%): 2%

Subregion (LRR or MLRA): LRRS, MLRA 149A Lat: 39.2278169 °N Long: -76.5139756 °W Datum: NAD83

Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: E2SS1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: photos: 9353-56
*wetland visited at low tide.
-areas surrounding wetlands include rock shoreline with no vegetation or soils; no upland point was collected

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [✓] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [✓] Water Marks (B1)
- [✓] Sediment Deposits (B2)
- [✓] Drift Deposits (B3)
- [✓] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [✓] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): varies (tidal)	
Water Table Present?	Yes ✓	No _____	Depth (inches): 0"	
Saturation Present? (Includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"	**Wetland Hydrology Present?** Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

* Tide nearly one foot above normal elevation on this day

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

Sampling Point: 2WETC

Tree Stratum (Plot size: 10x20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 10x20')			
1. Baccharis hamlimifolia	50%	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	50% = Total Cover		
50% of total cover: 25%	20% of total cover: 10%		
Herb Stratum (Plot size: 10x20')			
1. Spartina alterniflora	60%	Y	OBL
2. Baccharis hamifolia	10%	N	FAC
3. Phragmites australis	10%	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80% = Total Cover		
50% of total cover: 40%	20% of total cover: 16%		
Woody Vine Stratum (Plot size: 10x20')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 2/2 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2WETC

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	2.5Y 7/2	80	7.5YR 4/6	20%	C	M	loamy sand	stone refusal

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☒ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: stone

Depth (inches): 4"

Hydric Soil Present? Yes ✓ No ____

Remarks:

deposited sediment atop of rocky shoreline

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore Sampling Date: 5/7/24

Applicant/Owner: MDTA State: MD Sampling Point: 2WETD

Investigator(s): LP, ET Section, Township, Range:

Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR or MLRA): LRRS, MLRA 149A Lat: 39.2286799°N Long: -76.5117316°W Datum: NAD 83

Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: PEMS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Photos: 9358-59
toe of slope wetland at storm drain outfall - likely provides primary hydrology; perched above clay fill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: 2WETD

Tree Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 5' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5' radius)			
1. Phragmites australis	85%	Y	FACW
2. Taxicodendron radicans	20%	N	FAC
3. Leersia oryzoides	20%	N	OBL
4. Lonicera japonica	5%	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	125 = Total Cover		

50% of total cover: 62.5% 20% of total cover: 25%

Woody Vine Stratum (Plot size: 5' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2WETD

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 4/1	95%	2.5YR 3/4	5%	D	PL/M	sandy clay loam	
6-12"	2.5Y 6/4	90%	10YR 5/8	10%	C	M	loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore Sampling Date: 5/7/24

Applicant/Owner: MDTA State: MD Sampling Point: 2WETD-UPL

Investigator(s): LP, ET Section, Township, Range: _____

Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): concave Slope (%): 17

Subregion (LRR or MLRA): LRRS, MLRA 149A Lat: 39.228829 Long: -76.511785° W Datum: NAD83

Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: photo 9360

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: 2WETD-UPL

Tree Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 5' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5' radius)			
1. Phragmites australis	75%	Y	FACW
2. Toxicodendron radicans	5%	N	FAC
3. Parthenocissus quinquefolia	2%	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	82% = Total Cover		

50% of total cover: 41% 20% of total cover: 16.4%

Woody Vine Stratum (Plot size: 5' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2WETD-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 5/6	100%					sandy loam	
6-12"	5Y 8/1	80%	10YR 5/8	20%			silty clay	fill material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

* Matrix color assumed to be a result of clay fill material rather than reducing conditions

Waters of the U.S. Data Sheet

Project: MDTA Inner Loop Rills	**Feature ID:** 1WC Patapsco River		**Cowardin Class:** E1UB
Date: 3/20/24	**State:** MD	**Last Flag Number:** N/A	**Stream Order:** N/A
Crew: SW/LAP	**County:** Balt City	**Photos:** 6568-69	**Use Class:** 1

Feature Hydrologic Class and Jurisdiction:

Hydrologic Class	USACE Jurisdiction	Jurisdictional Rationale			
		TNW	*Impoundment of:*	*Tributary*	*Other Waters*
✓ Tidal	TNW	Tidal	TNW	Relatively Permanent	Relatively Permanent
Perennial	Impoundment	Interstate	Tributary	Relatively Permanent Notes:	
Intermittent	✓ Tributary	✓ Navigable			
Ephemeral	Other Waters				
Other					

Hydrologic Connectivity	Upstream: outside SA	Downstream: outside SA	Adjacent/Abutting:

Feature Description: ***(check all that apply)***

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
✓ Natural Channel Shape	Width: 50 ft.	✓ Silts	✓ Sands	Muck	RB: Scrub/shrub
Artificial (man-made)	Depth: 0-50 ft.	✓ Cobbles	✓ Gravel	Other:	
Manipulated (man-altered)	Bank Erosion/stability: stable	Bedrock	Concrete		LB: Scrub/shrub
Other:		Side slope: ☐ ≥1:1 ☐ 2:1 ☐ 3:1 ☑ ≤4:1			
Notes:					

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	weather station Tanyard Springs - KMDGLENB25 Monthly Drought Condition NCDC Divisional PDSI State: MD Division: Upper Southern https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/mapping Month: Jan Year: 2024														
✓ No rain	✓ 0-0.5						✓									
Light rain	0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6		
Heavy Rain	>1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet				

Non-tidal tributary has: ***(check all that apply)***

Bed and Banks	Ordinary High Water Mark		
Yes	Clear, natural line impressed on the bank	Sediment deposition	Sediment sorting
No	Changes in the character of soil	Water staining	Scour
	Shelving	Presence of flood litter/debris	Observed/predicted flow events
	Vegetation matted down, bent, or absent	Destruction of terrestrial veg.	Abrupt change in plant community
	Leaf litter disturbed	Presence of wrack line	Other:

Tidal tributary has: ***(check all that apply)***

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
Oil or scum line along shore objects	✓ Survey to available datum	✓ Water is clear
✓ Fine shell or debris deposits (foreshore)	Physical markings	Water is discolored
Physical markings/characteristics	Vegetation lines/changes in types	Oily film
✓ Tidal gauges		Other:
Notes:		

WB-4, WB-103A/B

Waters of the U.S. Data Sheet

Project: MDTA Inner Loop Rills		**Feature ID:** 1WA	**Stream Order:** R4UB1
Date: 3/20/24	**State:** MD	**Last Flag Number:**	**Use Class:** I
Crew: SW/EH	**County:** Balt city	**Photos:** 8092-93; on 3/20/24 6566-67	

Feature Hydrologic Class and Jurisdiction:

Hydrologic Class	Jurisdiction	Reason			
	Tidal		TNW (a)(1)	*TNW*	*Impoundment of:*	✓ *Tributary*	*Other Waters*
✓	Perennial		Impoundment (a)(2)		Tidal		TNW (a)(1)	✓ Relatively Permanent		Relatively Permanent
	Intermittent	✓	Tributary (a)(3)		Interstate		Impoundment (a)(2)		Significant Nexus		Significant Nexus
	Ephemeral		Other Waters (a)(5)		Navigable		Tributary (a)(3)	Similarly Situated Waters:		Similarly Situated Waters:
	Other						Adj. Wetland (a)(4)			

Hydrologic Connectivity	Upstream: culvert	Downstream: 1WC	Adjacent/Abutting: 1WETA, 1WB

Feature Description: ***(check all that apply)***

Shape (with respect to OHW)			Substrate			Vegetation Cover Type (MBSS)
	Natural Channel Shape	Width: 3'	✓ Silts	✓ Sands	Muck	RB: Old field/disturbed
	Artificial (man-made)	Depth: 1-8"	✓ Cobbles	✓ Gravel	Other:	
✓	Manipulated (man-altered)	Bank Erosion/stability: Mod. unstable	Bedrock	Concrete		LB: Hedgerow
	Other:		Side slope: ☐ ≥1:1 ☑ 2:1 ☑ 3:1 ☐ ≤4:1			

Notes: Gaiam on either side of culvert going under I695, slow flow from culvert under road

Weather/Precipitation Conditions:

During Field Visit		Inches of Rain Within Last Week		Monthly Drought Condition NCDC Divisional PDSI https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/mapping	State: MD Division: Upper Southern Month: Jan Year: 2024											
✓	No rain		0-0.5					✓								
	Light rain		0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
	Heavy Rain	✓	>1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

Bed and Banks		Ordinary High Water Mark					
✓	Yes		Clear, natural line impressed on the bank		Sediment deposition		Sediment sorting
	No		Changes in the character of soil	✓	Water staining		Scour
			Shelving	✓	Presence of flood litter/debris	✓	Observed/predicted flow events
		✓	Vegetation matted down, bent, or absent		Destruction of terrestrial veg.		Abrupt change in plant community
			Leaf litter disturbed		Presence of wrack line		Other:

Tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

High Tide Line		Mean High Water Mark indicated by:		Chemical Characteristics	
	Oil or scum line along shore objects		Survey to available datum		Water is clear
	Fine shell or debris deposits (foreshore)		Physical markings		Water is discolored
	Physical markings/characteristics		Vegetation lines/changes in types		Oily film
	Tidal gauges				Other:

Notes:

HABITAT ASSESSMENT FIELD DATA SHEET—LOW GRADIENT STREAMS (FRONT)

STREAM NAME IWA	LOCATION east of Dock Rd @ 1695
STATION # _____ RIVERMILE _____	STREAM CLASS 1
LAT 39.20900 LONG -76.541035	RIVER BASIN Patapsco / Baltimore Harbor
STORET #	AGENCY
INVESTIGATORS HT, TT	
FORM COMPLETED BY HT	DATE 5/16/24 TIME 1 AM (PM)	REASON FOR SURVEY FSK Rebuild

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
1. Epifaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking. Substrate clay/sand w/ fine sediment, lacking cover
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 (2) 1 0
2. Pool Substrate Characterization	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation. some herb veg in channel	Hard-pan clay or bedrock; no root mat or vegetation.
SCORE 7	20 19 18 17 16	15 14 13 12 11	10 9 8 (7) 6	5 4 3 2 1 0
3. Pool Variability	Even mix of large-shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large-deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent. Small pool at culvert
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 (2) 1 0
4. Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 (2) 1 0
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
SCORE 12	20 19 18 17 16	15 14 13 (12) 11	10 9 8 7 6	5 4 3 2 1 0

HABITAT ASSESSMENT FIELD DATA SHEET—LOW GRADIENT STREAMS (BACK)

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely. flows through culvert - rip rap stabilized.
SCORE 4	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 (4) 3 2 1 0
7. Channel Sinuosity	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note - channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas.)	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 (2) 1 0
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods. stabilized w/ large gravel.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
SCORE 5 (LB)	Left Bank 10 9	8 7 6	(5) 4 3	2 1 0
SCORE 5 (RB)	Right Bank 10 9	8 7 6	(5) 4 3	2 1 0
9. Vegetative Protection (score each bank) Note: determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining. mostly invasive species	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
SCORE 3 (LB)	Left Bank 10 9	8 7 6	5 4 (3)	2 1 0
SCORE 3 (RB)	Right Bank 10 9	8 7 6	5 4 (3)	2 1 0
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities. disturbed by recent construction activities
SCORE 2 (LB)	Left Bank 10 9	8 7 6	5 4 3	(2) 1 0
SCORE 2 (RB)	Right Bank 10 9	8 7 6	5 4 3	(2) 1 0

Total Score 51

Waters of the U.S. Data Sheet

Project: MDTA Inner Loop Rills		**Feature ID:** 1WB	**Stream Order:** R4UB1
Date: 8/20/24	**State:** MD	**Last Flag Number:** WC-8	**Use Class:** 1
Crew: SW/EH	**County:** Balt City	**Photos:** 8090-99	

Feature Hydrologic Class and Jurisdiction:

Hydrologic Class	Jurisdiction	Reason: *TNW*	Reason: *Impoundment of:*	Reason: *Tributary*	Reason: *Other Waters*
☐ Tidal	☐ TNW (a)(1)	☐ Tidal	☐ TNW (a)(1)	☑ Relatively Permanent	☐ Relatively Permanent
☐ Perennial	☐ Impoundment (a)(2)	☐ Interstate	☐ Impoundment (a)(2)	☐ Significant Nexus	☐ Significant Nexus
☑ Intermittent	☑ Tributary (a)(3)	☐ Navigable	☐ Tributary (a)(3)	Similarly Situated Waters:	Similarly Situated Waters:
☐ Ephemeral	☐ Other Waters (a)(5)		☐ Adj. Wetland (a)(4)		
☐ Other					

Hydrologic Connectivity	Upstream: 1WETC	Downstream: 1WA	Adjacent/Abutting: 1WETB

Feature Description: ***(check all that apply)***

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
☑ Natural Channel Shape	Width: 1-4'	☑ Silts	☑ Sands	☐ Muck	RB: Hedgerow
☐ Artificial (man-made)	Depth: 1-4'	☐ Cobbles	☑ Gravel	☐ Other:	
☐ Manipulated (man-altered)	Bank Erosion/stability:	☐ Bedrock	☐ Concrete		LB: Hedgerow
☐ Other:	stable	Side slope: ☐ ≥1:1 ☐ 2:1 ☐ 3:1 ☑ ≤4:1			

Notes: 1WB flows toward 1WA, but stopped by debris jam @ gabion wall

Weather/Precipitation Conditions: adj. to WB. Red clay substrate

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition — NCDC Divisional PDSI — https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/mapping — State: MD, Division: Upper Southern, Month: Jan, Year: 2024												
☑ No rain	☐ 0-0.5					✓								
☐ Light rain	☐ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
☐ Heavy Rain	☑ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

Bed and Banks	Ordinary High Water Mark		
☑ Yes	☐ Clear, natural line impressed on the bank	☐ Sediment deposition	☐ Sediment sorting
☐ No	☐ Changes in the character of soil	☐ Water staining	☐ Scour
	☐ Shelving	☐ Presence of flood litter/debris	☐ Observed/predicted flow events
	☐ Vegetation matted down, bent, or absent	☐ Destruction of terrestrial veg.	☐ Abrupt change in plant community
	☐ Leaf litter disturbed	☐ Presence of wrack line	☐ Other:

Tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
☐ Oil or scum line along shore objects	☐ Survey to available datum	☐ Water is clear
☐ Fine shell or debris deposits (foreshore)	☐ Physical markings	☐ Water is discolored
☐ Physical markings/characteristics	☐ Vegetation lines/changes in types	☐ Oily film
☐ Tidal gauges		☐ Other:

Notes:

Modified Environmental Protection Agency Rapid Bioassessment Protocol (EPA RBP) Habitat Assessment Field Data Sheet (Low Gradient Ephemeral/Intermittent Streams)

RAPID HABITAT ASSESSMENT: LOW GRADIENT Ephemeral/Intermittent >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

Station ID/ Stream Name	1WB			**LAT (DD)**	39.208974
Reach Length (m)	57	Date	5/16/24	**LONG (DD)**	-76.541337

HABITAT PARAMETER	CATEGORY			
	Optimal	**Sub-optimal**	**Marginal**	**Poor**
1. SUBSTRATE/ DIVERSITY **AVAILBLE COVER FOR AMPHIBIANS CRAYFISH** **SCORE:** 3	*Greater than 50% of substrate consisting of mix of snags, tree roots or other stable habitat providing cover for amphibians and aquatic or terrestrial invertebrates. LWD in moderate to advanced stage of decay and within- active channel; Substrate roughness capable of trapping lots of organic matter. If moss covered, rate high.*	*30 to 50% cover and mix of diverse stable habitat; well suited for full cover potential; adequate habitat for maintenance of populations; presence of additional LWD in the form of new fall. Substrate roughness still capable of trapping organic matter.*	*10 to 30% mix of stable cover; habitat availability less than desirable; substrate frequently disturbed or removed. LWD low in density and/or may be new fall or in early decay stage. Some areas suitable for trapping organic matter. If lg. wood is absent, score low.*	*Less than 10% stable cover; lack of habitat is obvious; substrate unstable or lacking. Few areas suitable for trapping organic matter.* clay/sand w/ fine [illegible]
	Rate in Channel and Toe of Banks			
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 (3) 2 1 0
2. POOL SUBSTRATE CHARACTER-IZATION **In dry channels, pool areas should still be observable**	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged (or remnant) aquatic vegetation are common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged (or remnant) vegetation are present.	All mud or clay or sand bottom; little or no root mat; no submerged (or remnant) vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.
SCORE: 6	20 19 18 17 16	15 14 13 12 11	10 9 8 7 (6)	5 4 3 2 1 0
3. CHANNEL ALTERATION **SCORE:** 11	Channelization or dredging absent of minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging (>than past 20 years) may be present, but no evidence of recent channelization.	Channelization may be extensive; embankments or shoring structures present on both banks; 40 to 80% of the stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.
	20 19 18 17 16	15 14 13 12 (11)	10 9 8 7 6	5 4 3 2 1 0
4. SEDIMENT DEPOSITION **SCORE:** 6	Little or no enlargement of "islands" or point bars and less than 20% of the bottom affected by fine sediment deposition. Leaf packs and woody debris with minimal silt covering.	Some new increase in bar formation, mostly from sand, or fine sediment; 20 to 50% of the bottom is affected; slight deposition in pools. Leaf packs with moderate silt covering.	Moderate deposition of new sand, or fine sediment on old and new bars; 50 to 80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent. Leaf packs with heavier silt covering.	Heavy deposits of fine material, increased bar development; more than 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 (6)	5 4 3 2 1 0
5. CHANNEL SINUOSITY **SCORE:** 3	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line.	The bends in the stream increase the stream length 2 to 3 times longer than if it was in a straight line.	the bends in the stream increase the stream length up to 2 times longer than if it was in a straight line.	Channel is straight; waterway has been channelized for a long distance.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 (3) 2 1 0

Appendix 1: Modified Environmental Protection Agency Rapid Bioassessment Protocol (EPA RBP)
Habitat Assessment Field Data Sheet (Low Gradient Ephemeral/Intermittent Streams)

***RAPID HABITAT ASSESSMENT*: LOW GRADIENT >>>>>>>>>>>>>>>>>>>>>>>>>>>>**	**Reviewers Initials**	HT, JT

	Optimal	**Sub-optimal**	**Marginal**	**Poor**
6. BANK STABILITY (score each bank) *determine left/ right by facing downstream	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems (<5% of bank affected).	Moderately stable; infrequent, small areas of erosion mostly healed over; 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
LEFT: 6	10 9	8 7 (6)	5 4 3	2 1 0
RIGHT: 6	10 9	8 7 (6)	5 4 3	2 1 0
7. BANK VEGETATIVE PROTECTION **SCORE:** 14	More than 90% of the streambank surfaces and immediate riparian zones covered by vegetation including trees, understory shrubs, and non-woody plants (herbs, grasses, ferns, mosses); vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces are covered by vegetation, but one class of plants is not well represented; disruption evident, but not affecting plant growth potential to extent; more than one-half of the potential plant stubble height remaining. invasives dominant	50-70% of the streambank surfaces are covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less that one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces are covered by vegetation; disruption of streambank vegetation very high; vegetation has been removed to 2 inches or less in average stubble height.
	If assessed in winter or early spring look for remnants of herbs, and saplings.			
LEFT:	10 9	8 (7) 6	5 4 3	2 1 0
RIGHT:	10 9	8 (7) 6	5 4 3	2 1 0
8. WIDTH OF UNDISTURBED VEG. ZONE (undisturbed veg. Is trees, shrubs, and non-woody macro-phytes)	Width of undisturbed vegetative zone is >18 meters; human activities (parking lots, roadbeds, clearcuts, lawns, or crops) have not impacted this zone.	Zone width is between 12 and 18 meters; human activities have only minimally impacted this zone.	Zone width is between 6 and 12 meters; human activities have impacted the zone a great deal.	Width of zone is less than 6 meters; little or no undisturbed vegetation due to man-induced activities.
LEFT: 3	10 9	8 7 6	5 4 (3)	2 1 0
RIGHT: 3	10 9	8 7 6	5 4 (3)	2 1 0

TOTAL: (max=160)	**Max Pool Depth (if water is present; otherwise "NA")** 15 **cm**	**Total from front** 29 **+ Total from back** 32 **=** 61
	Average Channel Width (Toe of Banks) 1.5 **m**	**Score Percentage= Total Score /160 X 100** 38 **%**

Average Width Intact Rip Vegetative Zone (m)	**Left** m	**Right** m

→ What is the dominant vegetation type in the reach? ☒ **Deciduous** ☐ **Coniferous (pine/cypress)** ☐ **Mixed (>10%)**	**Estimated age of forest:** ___ *>50 yrs* ___ *25-50 yrs* X *5-25 yrs* ___ *<5 yrs* **Number of strata** *(e.g, canopy, subcanopy, shrub, herb (4 max))* 3

Stream Surface Shading (%) (average of lower, middle, upper reach)	**Indicate % based on cloudless day in summer at noon. Fill in square that applies.**		
☐ **Fully exposed (0-25%)**	☐ **Partly shaded (25-50%)**	☒ **Partly exposed (50-75%)**	☐ **Fully shaded (75-100%)**
-or- % Canopy (Densiometer)	**Compass Bearing (facing downstream) (0-360°)**		

Wetland Function-Value Evaluation Form

Total area of wetland 6.2 ac Human made? Y Is wetland part of a wildlife corridor? N or a "habitat island"? N

Adjacent land use Industrial Distance to nearest roadway or other development 50'

Dominant wetland systems present PEMIF Contiguous undeveloped buffer zone present N

Is the wetland a separate hydraulic system? Y If not, where does the wetland lie in the drainage basin? —

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WetE

Latitude 39.211816 Longitude -76.53388

Prepared by: DRS, KM Date 5/3/21

Wetland Impact:
Type — Area —

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration		✓			
Fish and Shellfish Habitat	✓		2, 3, 4, 5, 6		Impoundment adjacent, but unable to determine if connected to Patapsco River
Sediment/Toxicant Retention	✓		1, 2, 3, 4, 5, 7, 8, 9	✓	See note above about water course connection Recives runoff from access roads + holds water year round
Nutrient Removal		✓			
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		3, 7, 9, 10, 11, 12, 13, 17, 18, 19, 20, 21,	✓	Large phrag marsh surrounded by forest + shrubs, Direct connection to Patapsco River
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.69ac Human made? Yes Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Utility ROW, Transportation Distance to nearest roadway or other development 50'

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present 50'

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 1WET-G

Latitude 39.20745 Longitude -76.545864

Prepared by: EB Date 5/8/24

Wetland Impact:
Type — Area —

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration		✓			
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1,2,4,5,7,9		
Nutrient Removal		✓			
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat		✓			
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.56ac Human made? Yes Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Transportation, Railroad, Industrial Distance to nearest roadway or other development 50'

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present 50'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? High

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 1 WET-I

Latitude 39.205025 Longitude -76.549892

Prepared by: EB Date 5/8/24

Wetland Impact:
Type — Area —

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration		✓			
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1,2,4,5,7,9		
Nutrient Removal		✓			
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat		✓			
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1FS1		**Project:** MDTA Inner Loop Rills	
Owner/Applicant: MDTA		**State:** MD	**County:** Balt. City
Date: 2/20/24	**Prepared by:** SKY/EH	**Photos:** F081-84	

Type of Community:	**Forest Stand Area:**
Stand Successional Stage: ☑ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 30%

Existing Vegetation

Dominant Species in Canopy:	**Size Class:**	**Notes:**
Bradford pear Siberian elm Black locust	☑ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	Few scattered 6-11" trees inclusion of box elder @ bottom of slope near WC
Dominant Species in Understory:		**Notes:**
Bacchanis Amur honeysuckle smooth sumac		
Dominant Species in Herbaceous Layer:		**Notes:**
Broom grass Japanese honeysuckle Phragmites Switchgrass		

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☐ Medium ☑ Low	☑ High ☐ Medium ☐ Low	

General Stand Conditions:

Disturbed roadside hedgerow on slope to I-695.

Overall Condition: POOR **Vines:** Moderate

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1FS2		**Project:** MDTA Inner Loop Rills	
Owner/Applicant: MDTA		**State:** MD	**County:** Balt City
Date: 8/20/24	**Prepared by:** SLY/EH	**Photos:** 8094-95, 8105-06	

Type of Community:	**Forest Stand Area:**
Stand Successional Stage: ☑ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 40%

Existing Vegetation

Dominant Species in Canopy:	**Size Class:**	**Notes:**
Black locust Tree-of-heaven White mulberry Siberian elm	☐ 2-6" ☑ 6-11" ☑ 12-20" ☐ 20-30" ☐ >30"	

Dominant Species in Understory: Amur honeysuckle, oriental bittersweet, Tree-of-heaven, Poisonivy, Baccharis, Black locust, Japanese honeysuckle	**Notes:**
Dominant Species in Herbaceous Layer: English ivy, common mullein, Japanese honeysuckle, grape sp.	**Notes:** Very sparse understory in some areas, little herbaceous growth

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☑ Medium ☐ Low	☑ High ☐ Medium ☐ Low	

General Stand Conditions:

Disturbed forest on south side of WC. High level of invasive species

poor condition forest between fence + WC

Overall Condition: Poor **Vines:** High

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1FS3		**Project:** MDTA Inner Loop Rills Project	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 3/20/24	**Prepared by:** [redacted], SLY, LP	**Photos:** 6554-55	

Type of Community:	**Forest Stand Area:**
Stand Successional Stage: ☑ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 40%

Existing Vegetation

Dominant Species in Canopy:	**Size Class:**	**Notes:**
Bradford pear Black locust	☑ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	inclusion of 1 18" pin oak.

Dominant Species in Understorey:	**Notes:**
Amur honeysuckle Multiflora rose	sumac on edge

Dominant Species in Herbaceous Layer:	**Notes:**
Phragmites Japanese honeysuckle	

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☐ Medium ☑ Low	☑ High ☐ Medium ☐ Low	

General Stand Conditions:

Disturbed hedgerow north of 695 + south of powerlines.

High invasive species cover.

Poor condition

Vines = moderate

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: IFS4		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/6/24	**Prepared by:** EB, GS	**Photos:** East	

Type of Community: forest BLACK LOCUST / TREE OF HEAVEN	**Forest Stand Area:** 70731.39
Stand Successional Stage: ☑ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 75 %

Existing Vegetation

Dominant Species in Canopy: Robinia pseudoacacia, Ailanthus altissima, Morus alba, Liquidambar styraciflua	**Size Class:** ☐ 2-6" ☑ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:** Some vines climbing trees,
Dominant Species in Understory: Lonicera maackii, Rubus sp. Lonicera japonica, Toxicodendron radicans, Celastrus orbiculatus, Hedera helix Amorpha fruticosa		**Notes:**
Dominant Species in Herbaceous Layer: Vines acting as groundcover		**Notes:**

Downed Woody Debris: ☐ High ☑ Medium ☐ Low	**Invasive Species Cover:** ☑ High ☐ Medium ☐ Low	**Invasive Species Present:** AIAL, MOAL, LOMA, LOJA, CEOR HEHE

General Stand Conditions:

Many invasives in the understory, trees in fair health, low diversity.

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: IFS5		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/10/24	**Prepared by:** HT, HH	**Photos:** Northwest	

Type of Community: forest SWEET GUM/COMMON PERSIMMON	**Forest Stand Area:** 32372.61 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 25%

Existing Vegetation

Dominant Species in Canopy: Liquidambar styraciflua* Diospyrus virginiana Robinia psuedoacacia* Pyrus calleryana.	**Size Class:** ☒ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:** Robinia psuedoacacia & morus alba also common throughout Pyrus calleryana.
Dominant Species in Understory: Baccharis halimifolia, Lonicera maackii Pyrus calleryana, morus alba Celastros orbiculatis, Toxicodendron radicans Diospyrus virginiana.		**Notes:** Elaeagnus umbellata, Vits sp, Rubus sp, Parthenocissus quinquefolia — also common
Dominant Species in Herbaceous Layer: Lonicera japonica, Pyrus calleryana, Celastros orbicolatis, Toxicodendron radicans vines dominant as groundcover		**Notes:** Phragmites australis scattered throughout Parthenocissus quenquefolia also common.

Downed Woody Debris: ☐ High ☒ Medium ☐ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** PYCA, MOAL, BAHA, LOMA, CEOR, ELUM, LOJA, PHAU

General Stand Conditions:

Poor - invasive species dominant throughout, heavy vine coverage, trees stressed/damaged by vines

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: FS6		**Project:** FSK Reboild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/10/24	**Prepared by:** HT, HH	**Photos:**	

Type of Community: forest BLACK LOCUST / SWEET-GUM	**Forest Stand Area:** 54610.22 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 25%

Existing Vegetation

Dominant Species in Canopy: Robinia pseudoacacia, Liquidambar styraciflua	**Size Class:** ☐ 2-6" ☒ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:** Diospyros virginiana, Pyrus calleryana, Ailathus altissima – also common
Dominant Species in Understory: Pyrus calleryana, Robinia pseudoacacia, Lonicera maackii, Baccharis halimifolia, Vitis sp, Celastrus orbiculatis, Ampelopsis brevipedunculata		**Notes:**
Dominant Species in Herbaceous Layer: Celastrus orbiculatis, Lonicera japonica, Rubus sp., Parthenocissus quinquefolia, Ampelopsis brevipedunculata		**Notes:** - Scattered Phragmites australis & Rosa multiflora, Artemisia vulgare - vines dominate groundcover

Downed Woody Debris: ☐ High ☒ Medium ☐ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** PYCA, AIAL, LOMA, BAHA, CEOR, LOJA, ROMU, PHAU

General Stand Conditions:

Poor - invasive species dominant throughout, heavy vine coverage, trees stressed/damaged by vines

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: IFS7		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/10/24	**Prepared by:** HT, HH	**Photos:** Northwest	

Type of Community: forest Black Locust/Sweet-gum	**Forest Stand Area:** 44252.41 ft²
Stand Successional Stage: ☐ Early ☒ Mid ☐ Mature	**Percent Canopy Closure:** 60%

Existing Vegetation

Dominant Species in Canopy: Robinia pseudoacacia Liquidambar styraciflua Quercus phellos Pyrus calleryana	**Size Class:** ☐ 2-6" ☒ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:** Celtis occidentalis Pyrus calleryana. few larger trees scattered throughout
Dominant Species in Understory: Pyrus calleryana, Robinia pseudoacacia, Lonicera japonica, Lonicera maackii, Rosa multiflora, Vitis sp, Celastrus orbiculata Parthenocissus quinquefolia.		**Notes:**
Dominant Species in Herbaceous Layer: Phragmites australis, Rosa multiflora vitis sp, Lonicera japonica, Celastrus orbiculatis, Ampelopsis brevipedonculata		**Notes:** - Artemisia vulgaris - common along stand edges. - vines dominate ground cover

Downed Woody Debris: ☐ High ☒ Medium ☐ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** PYCA, LOJA, ROMU, PHAU, CEOR, ARVU, AMBR, LOMI

General Stand Conditions:

Poor - invasive species dominant throughout understory + herb layer.

Vines climbing trees + shrubs

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: FS 8		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/10/24	**Prepared by:**	**Photos:** West, South	

Type of Community: forest SWEETGUM/WHITE PINE	**Forest Stand Area:** 23292.82 ft²
Stand Successional Stage: ☐ Early ☒ Mid ☐ Mature	**Percent Canopy Closure:** 50%

Existing Vegetation

Dominant Species in Canopy: Liquidambar styraciflua *, Pinus strobus*, Diospyros virginiana, Robinia pseudoacacia, Pyrus calleryaana	**Size Class:** ☐ 2-6" ☒ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:** few larger white pines scattered throughout, morus albus
Dominant Species in Understory: ~~Ampelopsis brevipedunculata~~ Baccharis halimifolia, Lonicera maackii, Lonicera japonica, Vitis sp., Celastrus orbiculatis, Toxicodendron radicans, Rubus sp., Rosa multiflora		**Notes:** Eleagnus umbellata, Rhus typhina, Ailanthus altissima
Dominant Species in Herbaceous Layer: Phragmites australis, Toxicodendron radicans, Lonicera japonica, Parthenocissus quinquefolia, Vitis sp., Ampelopsis brevipedunculata		**Notes:** -Phragmites australis -vines dominant as ground cover

Downed Woody Debris: ☐ High ☐ Medium ☒ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** PYCA, MOAL, BAHA, LOJA, AMBR, LOMA, CEOR, RORU, PHAU

General Stand Conditions:

Poor - invasives dominant throughout, heavy vine coverage

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: IFS9		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/10/24	**Prepared by:** HT, HH	**Photos:** N	

Type of Community: forest BLACK CHERRY/BLACK LOCUST	**Forest Stand Area:** 42097.70
Stand Successional Stage: ☐ Early ☒ Mid ☐ Mature	**Percent Canopy Closure:** 75%

Existing Vegetation

Dominant Species in Canopy: Prunus serotina Robinia pseudoacacia Pyrus calleryana	**Size Class:** ☐ 2-6" ☒ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:** Quercus abla & Carya tomentosa also common; Ailanthus altissima scattered along stand edges Paulownia tomentosa scattered
Dominant Species in Understory: Ampelopsis brevipedunculata Pyrus calleryana, Prunus serotina, Vitis sp., Ilex opaca, Toxicodendron radicans, Rosa multiflora, Lonicera japonica, Celastrus orbiculatis, Parthenocissus quinquefolia		**Notes:** Quercus halimifolia
Dominant Species in Herbaceous Layer: Lonicera japonica, Rosa multiflora, Toxicodendron radicans, Parthenocissus quinquefolia, Celastrus orbiculatis		**Notes:** scattered Phragmites australis along stand edges.

Downed Woody Debris: ☐ High ☒ Medium ☐ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** PYCA, PATO, AMBR, BAHA, PAMU, LOJA, CEOR, PHAU Spotted lantern fly

General Stand Conditions:

Fair - invasive species dominant, vines climbing trees, moderate species diversity

eastern portion of stand slightly younger but similar species & condition.

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1FS1D		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/10/24	**Prepared by:** HT, HH	**Photos:** East	

Type of Community: forest - TULIPTREE / TREE OF HEAVEN	**Forest Stand Area:** 34196.53 ft²
Stand Successional Stage: ☐ Early ☒ Mid ☐ Mature	**Percent Canopy Closure:** 80%

Existing Vegetation

Dominant Species in Canopy: Liriodendron tulipifera, Ailanthus altissima, Liquidambar styraciflua, Prunus serotina	**Size Class:** ☐ 2-6" ☐ 6-11" ☒ 12-20" ☐ 20-30" ☐ >30"	**Notes:** Paulownia tomentosa, Diospyros virginiana, Juniperus virginiana, Morus alba
Dominant Species in Understory: ~~Hedra helix~~ Morus alba, Lonicera maackii, Lonicera japonica, Eleagnus umbellata, Toxicodendron radicans, Celastrus orbiculatus, Campsis radicans, Rosa multiflora, Rubus sp, Ailanthus altissima		**Notes:**
Dominant Species in Herbaceous Layer: Lonicera japonica, Toxicodendron radicans, Celastrus orbiculatus, Alliaria petiolata, Hedra helix		**Notes:** vines dominant ground cover

Downed Woody Debris: ☐ High ☐ Medium ☒ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** AIAL, MOAL, PATO, HEHE, LOMA, LIJA, ELUM, CEOR, ROMU, ALPE spotted lantern fly

General Stand Conditions: ~~fair~~ - poor

Stand dominated by invasive species, vines growing over most trees causing stress/damage

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: FS11		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/10/24	**Prepared by:** HT, HH	**Photos:** East	

Type of Community: Forest - Black Locust / Callery Pear	**Forest Stand Area:** 101908.71 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 30%

Existing Vegetation

Dominant Species in Canopy: Robinia pseudoacacia Pyrus calleryana Liquidambar styraciflua Diospyrus virginiana	**Size Class:** ☒ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:** Ailanthus altissima & Paulonia tomentosa; Juniperus virginiana Quercus phellos - scattered
Dominant Species in Understory: Baccharis halimifolia, Lonicera maackii, Pyrus calleryana, Vitis sp. Liquidambar styraciflua, Ampelopsis brevipedunculata, Toxicodendron radicans		**Notes:** Eleagnus umbellata
Dominant Species in Herbaceous Layer: Celastrus orbiculatis, Lonicera japonica, Rosa multiflora, Toxicodendron radicans, Rubus sp., Artemisia volgare		**Notes:** Phragmites australis - scattered & along stand edge vines dominant as ground cover

Downed Woody Debris: ☐ High ☐ Medium ☒ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** PYCA, AIAL, PATO, BAHA, ELUM, LOMA, AMBR, CEOR, LOJA, ROMU, ARVU

General Stand Conditions:

Poor - invasive species dominant throughout, vines climbing & stressing / damaging trees

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: FS12		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/10/24	**Prepared by:** HT, HH	**Photos:** South west	

Type of Community: Forest Willow oak/ Black locust	**Forest Stand Area:** 57918.32 ft2
Stand Successional Stage: ☐ Early ☒ Mid ☐ Mature	**Percent Canopy Closure:** 75%

Existing Vegetation

Dominant Species in Canopy: Quercus phellos, Robinia pseudoacacia, Liquidambar styraciflua	**Size Class:** ☐ 2-6" ☐ 6-11" ☐ 12-20" ☒ 20-30" ☐ >30"	**Notes:** Quercus falcata, Prunus serotina, Pyrus Calleryana, Quercus rubra, Morus alba, Acer rubrum also common - few specimen trees
Dominant Species in Understory: Toxicodendron radicans, Lonicera japonica, Rosa multiflora, Baccharis halimifolia, Smilax rotundifolia, Ilex opaca, Parthenocissus quinquefolia, Celastrus orbiculatis, Rubus sp		**Notes:**
Dominant Species in Herbaceous Layer: Lonicera japonica, Hedra helix, Toxicodendron radicans, Celastrus orbiculatis, solidago sp.		**Notes:** Phragmites australis - scattered along stand edge

Downed Woody Debris: ☐ High ☒ Medium ☐ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** PYCA, MOAL, LOJA, ROMO, BAHA, CEOR, LOJA, HEHE PHAU

General Stand Conditions:

Fair - mod species diversity, canopy trees generally in good health, invasive species are prevelant throughout, vines climbing some trees.

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1F513		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/16/24	**Prepared by:** HT, TT	**Photos:** SW	

Type of Community: forest WILLOW OAK/SOUTHERN RED OAK		**Forest Stand Area:** 15412.85 ft²	
Stand Successional Stage: ☐ Early ☒ Mid ☐ Mature		**Percent Canopy Closure:** 90	

Existing Vegetation

Dominant Species in Canopy: Quercus phellos Quercus falcata Quercus alba Liquidambar styraciflua	**Size Class:** ☐ 2-6" ☐ 6-11" ☒ 12-20" ☐ 20-30" ☐ >30"	**Notes:** Acer rubrum also common Prunus serotina, some larger trees throughout
Dominant Species in Understory: Smilax rotundifolia, Parthenocissus quinquefolia, Toxicodendron radicans, Campsis radicans, Rosa multiflora, Rubus sp., Vaccinium corymbosum		**Notes:** open understory in the interior forest.
Dominant Species in Herbaceous Layer: Lonicera japonica, Parthenocissus quinquefolia, Toxicodendron radicans		**Notes:** Phragmites australis dominant along stand edge

Downed Woody Debris: ☐ High ☒ Medium ☐ Low	**Invasive Species Cover:** ☐ High ☒ Medium ☐ Low	**Invasive Species Present:** ROMU, LOJA, PHAU

General Stand Conditions: Fair

interior forest is diverse with an open understory

Stand edge is more disturbed with heavier vine/ invasive cover

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1H1		**Project:** MDTA Inner Loop Rills	
Owner/Applicant: MDTA		**State:** MD	**County:** Balt City
Date: 2/20/24	**Prepared by:** SWS/EH	**Photos:** 8102	

Type of Community:	**Forest Stand Area:**
Stand Successional Stage: ☑ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 25%

Existing Vegetation

Dominant Species in Canopy:	**Size Class:**	**Notes:**
Bradford pear	☑ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	

Dominant Species in Understorey:	**Notes:**
Baccharis	

Dominant Species in Herbaceous Layer:	**Notes:**
Japanese honeysuckle Phragmites on edge	

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☐ Medium ☑ Low	☑ High ☐ Medium ☐ Low	

General Stand Conditions:

small hedgerow on highway slope

Overall Condition: Poor **Vines:** Moderate

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1H2		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/6/24	**Prepared by:** EB, GS	**Photos:** West	

Type of Community: Hedgerow	**Forest Stand Area:** 206,766.28 ft²
Stand Successional Stage: ☑ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 20%

Existing Vegetation

Dominant Species in Canopy: Robinia pseudoacacia, Morus alba, Acer negundo, Ailanthus altissima, Pyrus calleryana, Ulmus americana, Quercus phellos, Quercus palustris	**Size Class:** ☑ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:** Scattered trees throughout, does not meet definition of a forest. Trees are in fair health, some are being overtaken by vines
Dominant Species in Understory: Amorpha fruticosa, Rosa multiflora, Koelreuteria paniculata, Lonicera maackii, Baccharis halimifolia, Viburnum sp., Toxicodendron radicans, Lonicera japonica, Hedera helix, Parthenocissus quinquefolia, Celastrus orbiculatus		**Notes:**
Dominant Species in Herbaceous Layer: None, vines acting as groundcover		**Notes:**

Downed Woody Debris: ☐ High ☑ Medium ☐ Low	**Invasive Species Cover:** ☑ High ☐ Medium ☐ Low	**Invasive Species Present:** MOAL, AIAL, PYCA, ROMU, LOMA, LOJA, HEHE, CEOR

General Stand Conditions:

Many invasive species in canopy + understory. Trees in fair health with many climbing vines.

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1H3		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/10/24	**Prepared by:** HT, HH	**Photos:** North	

Type of Community: hedgerow	**Forest Stand Area:** 10755.92 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 15%

Existing Vegetation

Dominant Species in Canopy: Pyrus calleryana, Robinia pseudoacacia, Liquidambar styraciflua, Ailanthus altissima	**Size Class:** ☒ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:** Ailanthus altissima & morus alba also common throughout. Rhus typhena - clusters
Dominant Species in Understory: Baccharis halimifolia, Lonicera maackii, Ailanthus altissima, Lonicera japonica, Celastrus orbiculatis, Toxicodendron radicans		**Notes:** Toxicodendron radicans & Rubus sp. also common + Vitis sp.
Dominant Species in Herbaceous Layer: Lonicera japonica, Celastrus orbiculatis, Toxicodendron radicans, Parthenocissus quinquefolia		**Notes:** Phragmites australis scattered along edges & throughout. vines are dominant ground cover

Downed Woody Debris: ☐ High ☐ Medium ☒ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** PYCA, AIAL, MOAL, BAHA, LOMA, LOJA, CEOR, PHAU

General Stand Conditions:

Poor — heavy invasive cover; vines covering most woody veg + stressing/damaging native tree species

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1H4		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/16/24	**Prepared by:** HT, HH	**Photos:** North west	

Type of Community: hedgerow	**Forest Stand Area:** 109097.44 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 15%

Existing Vegetation

Dominant Species in Canopy: Robinia pseudoacacia Liquidambar Styraciflua Pyrus calleryana	**Size Class:** ☒ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:** trees are scattered in some areas Pinus Strobus, Paulonia tomentosa morus alba
Dominant Species in Understory: Amelopsis brevipedunculata Baccharis halimifolia, Liquidambar Styraciflua, Pyrus calleryana, Lonicera maackii, Celastrus orbiculatis, Toxicodendron radicans, Parthenocissus quinquefolia		**Notes:** Elaeagnus umbellata, Vitis sp, Rubus sp - also common
Dominant Species in Herbaceous Layer: Celastrus orbiculatis, Toxicodendron radicans, Parthenocissus quinquefolia, Baccharis halimifolia, Lonicera japonica		**Notes:** Phragmites australis along stand edges & scattered throughout

Downed Woody Debris: ☐ High ☐ Medium ☒ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** PYCA, BAHA, LOMA, CEOR, ELUM, LOJA

General Stand Conditions:

Poor - invasives species dominant, heavy vine coverage stressing/damaging trees

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1H5		**Project:** FSK Reboild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/10/24	**Prepared by:** HT, HH	**Photos:** Southeast	

Type of Community: Hedgerow	**Forest Stand Area:** 17775.93 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 25%

Existing Vegetation

Dominant Species in Canopy:	**Size Class:**	**Notes:**
Pyrus calleryana Populus alba Robinia pseudoacacia Liquidambar styraciflua	☒ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	Diospyrus virginian Prunus serotina
Dominant Species in Understorey: Rosa multiflora Baccharis halimifolia, Lonicera maackii, Toxicodendron radicans, Lonicera japonica, Parthenocissus quinquefolia, Eleagnus umbellata, Ampelopsis brevipedunculata		**Notes:** Celastrus orbiculatis
Dominant Species in Herbaceous Layer: Phragmites australis, Ampelopsis brevipedunculata, Lonicera japonica, Toxicodendron radicans		**Notes:** vines dominant as ground cover

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☐ Medium ☒ Low	☒ High ☐ Medium ☐ Low	PYCA, BAHA, ROMO, LOMA, CEOR LOJA, ELUM, AMBR, PHAU

General Stand Conditions:

- lacking density of trees to classify as a forest, but borderline
- invasive species dominant, vines climbing

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1H6		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore City
Date: 5/10/24	**Prepared by:** HT, HH	**Photos:** northeast	

Type of Community: Hedgerow	**Forest Stand Area:** 23315.56
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 15%

Existing Vegetation

Dominant Species in Canopy:	**Size Class:**	**Notes:**
Pyrus calleryana, Liquidambar Styraciflua Diospyros virginiana Prunus serotina	☒ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	Juniperus virginiana, Acer rubrum, Quercus phellos scattered throughout.
Dominant Species in Understory:		**Notes:**
Baccharis halimifolia, Rosa multiflora, Lonicera japonica, Vitis sp. orbiculatis, Lonicera maackii, Rubus sp. Ampelopsis brevipedunculata.		Eleagnus umbellata. also common
Dominant Species in Herbaceous Layer:		**Notes:**
Vitis sp, Rosa multiflora, Lonicera japonica, Celastrus orbiculatis phragmites australis, Ampelopsis brevipedunculata		vines are dominant groundcover

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☐ Medium ☒ Low	☒ High ☐ Medium ☐ Low	PYCA, PATO, BAHA, LOMA, LOJA, ROMU, CEOR

General Stand Conditions:

Poor - invasive species dominant, vines covering most trees

trees scattered with tree saplings and shrubs dense throughout

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H1		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/8/24	**Prepared by:** LP, ET	**Photos:** 9335	

Type of Community: Hedgerow	**Forest Stand Area:** 3,119 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 30%

Existing Vegetation

Dominant Species in Canopy:	**Size Class:**	**Notes:**
• Tree of Heaven • white mulberry	☒ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	

Dominant Species in Understory:	**Notes:**
• poison ivy • tree of heaven • baccharis hamifolia • false indigo	

Dominant Species in Herbaceous Layer:	**Notes:**
• poison ivy • Japanese honeysuckle • fescue sp.	

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☐ Medium ☒ Low	☒ High ☐ Medium ☐ Low	• Tree of heaven • white mulberry • Japanese honeysuckle

General Stand Conditions: high invasive sp. cover, poor quality, narrow hedgerow between road + river

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H2		**Project:** FSK Rebuild	
Owner/Applicant:		**State:** MD	**County:** Baltimore
Date: 5/3/24	**Prepared by:** LP, ET	**Photos:** 9339	

Type of Community: Hedgerow	**Forest Stand Area:** 1,574 ft 2
Stand Successional Stage: [X] Early [ ] Mid [ ] Mature	**Percent Canopy Closure:** 40 %

Existing Vegetation

Dominant Species in Canopy: • tree of heaven	**Size Class:** [X] 2-6" [ ] 6-11" [ ] 12-20" [ ] 20-30" [ ] >30"	**Notes:**
Dominant Species in Understory: • tree of heaven • poison ivy		**Notes:**
Dominant Species in Herbaceous Layer: • poison ivy • virginia creeper • japanese honeysuckle		**Notes:**

Downed Woody Debris: [ ] High [ ] Medium [X] Low	**Invasive Species Cover:** [X] High [ ] Medium [ ] Low	**Invasive Species Present:** • tree of heaven • Japanese honeysuckle

General Stand Conditions: high invasive cover, poor quality

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H3		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/3/24	**Prepared by:** LP, ET	**Photos:** 9340	

Type of Community: Hedgerow	**Forest Stand Area:** 1,159ft2
Stand Successional Stage: [X] Early [ ] Mid [ ] Mature	**Percent Canopy Closure:** 50%

Existing Vegetation

Dominant Species in Canopy: • Golden raintree	**Size Class:** [X] 2-6" [ ] 6-11" [ ] 12-20" [ ] 20-30" [ ] >30"	**Notes:**
Dominant Species in Understory: • Golden Raintree • Black cherry		**Notes:**
Dominant Species in Herbaceous Layer: • Golden Raintree • fescue sp. • japanese honeysuckle		**Notes:**

Downed Woody Debris: [ ] High [ ] Medium [X] Low	**Invasive Species Cover:** [X] High [ ] Medium [ ] Low	**Invasive Species Present:** • Golden Raintree • japanese honeysuckle

General Stand Conditions: high invasive cover, poor quality

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H4		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/3/24	**Prepared by:** LP, ET	**Photos:** photo # 9369	

Type of Community: Hedgerow	**Forest Stand Area:** 10,600 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 50%

Existing Vegetation

Dominant Species in Canopy: • White mulberry	**Size Class:** ☒ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:**
Dominant Species in Understory: • poison ivy • baccharis halimifolia • White mulberry		**Notes:**
Dominant Species in Herbaceous Layer: • poison ivy • virginia creeper • fescue sp. • japanese honeysuckle		**Notes:**

Downed Woody Debris: ☐ High ☐ Medium ☒ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** • white mulberry • japanese honeysuckle

General Stand Conditions: high invasive cover, poor quality

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H5		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/3/24	**Prepared by:** LP, ET	**Photos:** photo – 9370	

Type of Community: Hedgerow	**Forest Stand Area:** 2,100ft2
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 40%

Existing Vegetation

Dominant Species in Canopy: • Siberian elm	**Size Class:** ☐ 2-6" ☒ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:**
Dominant Species in Understory: • baccharis hamiltonia • Siberian elm • poison ivy		**Notes:**
Dominant Species in Herbaceous Layer: • common mugwort • poison ivy • japanese honeysuckle • virginia creeper		**Notes:**

Downed Woody Debris: ☐ High ☐ Medium ☒ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** • Siberian elm • japanese honeysuckle • common mugwort

General Stand Conditions: high invasive cover, poor quality

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H6		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/7/24	**Prepared by:** LP, ET	**Photos:** 9351 - 52	

Type of Community: Hedgerow	**Forest Stand Area:** 5,037 ft2
Stand Successional Stage: [X] Early [ ] Mid [ ] Mature	**Percent Canopy Closure:** 40%

Existing Vegetation

Dominant Species in Canopy: white mulberry, chinese elm, black locust	**Size Class:** [ ] 2-6" [X] 6-11" [ ] 12-20" [ ] 20-30" [ ] >30"	**Notes:**
Dominant Species in Understory: chinese privet, multiflora rose, false indigo,		**Notes:**
Dominant Species in Herbaceous Layer: curly dock, wood reed, poison ivy		**Notes:**

Downed Woody Debris: [ ] High [ ] Medium [X] Low	**Invasive Species Cover:** [X] High [ ] Medium [ ] Low	**Invasive Species Present:** · chinese elm · white mulberry · chinese privet · multiflora rose

General Stand Conditions:
poor condition hedgerow on berm between river & wetland.

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: T2H7		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/7/24	**Prepared by:** UP, ET	**Photos:** 9357	

Type of Community: Hedgerow	**Forest Stand Area:** 3,894 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 40%

Existing Vegetation

Dominant Species in Canopy: black locust, tree of heaven, Chinese elm,	**Size Class:** ☒ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:**
Dominant Species in Understory: tree of heaven, black cherry, baccharis halimifolia Chinese privet		**Notes:**
Dominant Species in Herbaceous Layer: virginia creeper, poison ivy, japanese honeysuckle		**Notes:**

Downed Woody Debris: ☐ High ☐ Medium ☒ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** • Tree of heaven • Chinese elm • Chinese privet • Japanese honeysuckle

General Stand Conditions:
poor quality, high invasives

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H8		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/7/24	**Prepared by:** LP, ET	**Photos:** 9363-64	

Type of Community: Hedgerow	**Forest Stand Area:** 91,902 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 50%

Existing Vegetation

Dominant Species in Canopy: tree of heaven, white mulberry, bradford pear, sweet gum, black locust, cottonwood	**Size Class:** ☐ 2-6" ☒ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:**
Dominant Species in Understory: tree of heaven, false indigo, baccharis, hahmifolia, black locust, sweet gum		**Notes:**
Dominant Species in Herbaceous Layer: poison ivy, virginia creeper, japanese honeysuckle, phragmites australis, rice cut grass		**Notes:**

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☐ Medium ☒ Low	☒ High ☐ Medium ☐ Low	• Tree of heaven • white mulberry • bradford pear • Japanese honeysuckle • Phragmites australis

General Stand Conditions: poor quality, high invasive, some MDTA planting areas excluded from hedgerow

- Tree density does not meet definition of forest

APPENDIX E: PHOTOGRAPH LOG

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

WETLAND DELINEATION PHOTOGRAPHS

Photo 1 – Looking southwest at 1WETB

Photo 3 – Looking southwest at 1WETD

Photo 2 – Looking northeast at 1WETC

Photo 4 – Looking west at 1WETE

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 5 – Looking northeast at 1WETF

Photo 7 – Looking east at 1WETH

Photo 6 – Looking southwest at 1WETG

Photo 8 – Looking northwest at 1WETI

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 9 – Looking south at 1WETJ

Photo 11 – Looking southwest at 2WETB

Photo 10 – Looking southwest at 2WETA

Photo 12 – Looking northeast at Photo 2WETC

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 13 – Looking northeast at 2WETD

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

FOREST STAND PHOTOGRAPHS

Photo 1: Looking west at 1FS1

Photo 2: Looking southwest at 1FS2

Photo 3: Looking northeast at 1FS3

Photo 4: Looking east at 1FS4

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 5: Looking northwest at 1FS5

Photo 6: Looking northwest at 1FS6

Photo 7: Looking west at 1FS7

Photo 8: Looking south at 1FS8

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 9: Looking north at 1FS9

Photo 11: Looking east at 1FS11

Photo 10: Looking east at 1FS10

Photo 12: Looking southwest at 1FS12

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 13: Looking southwest 1FS13

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

HEDGEROW PHOTOGRAPHS

Photo 1: Looking north at 1H1

Photo 2: Looking west at 1H2

Photo 3: Looking north at 1H3

Photo 4: Looking northwest at 1H4

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 5: Looking southwest at 1H5

Photo 6: Looking west at 1H6

Photo 7: Looking at 2H1

Photo 8: Looking at 2H2

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 9: Looking at 2H3

Photo 11: Looking at 2H5

Photo 10: Looking at 2H4

Photo 12: Looking at 2H6

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 13: Looking at 2H7

Photo 15: Looking at 2H9

Photo 14: Looking at 2H8

APPENDIX F: HEDGEROW SUMMARY TABLE

Appendix F: Francis Scott Key Bridge Rebuild Project
Hedgerow Summary Table

Hedgerow ID	Dominant Species in Canopy	Size Class	Dominant Species in Understory	Dominant Species in Herbaceous Layer	Comments
1H1 (NRI Map Sheets 2 and 3)	*Pyrus calleryana*	2-6”	*Baccharis halimifolia*	*Lonicera japonica* *Phragmites australis*	Small hedgerow on highway slope.
1H2 (NRI Map Sheets 3 and 4)	*Robinia pseudoacacia* *Morus alba* *Acer negundo* *Ailanthus altissima* *Pyrus calleryana* *Ulmus americana* *Quercus phellos* *Quercus palustris*	2-6”	*Baccharis halimifolia* *Rosa multiflora* *Amorpha fruticosa* *Koelreuteria paniculata* *Lonicera maackii* *Viburnum* sp. *Toxicodendron radicans* *Lonicera japonica* *Hedera helix* *Parthenocissus quinquefolia* *Celastrus orbiculatus*	*Toxicodendron radicans* *Lonicera japonica* *Hedera helix* *Parthenocissus quinquefolia* *Celastrus orbiculatus*	High invasive species cover in canopy and understory. Trees in fair health with many climbing vines.
1H3 (NRI Map Sheet 2)	*Robinia pseudoacacia* *Liquidambar styraciflua*	2-6”	*Baccharis halimifolia* *Lonicera maackii* *Ailanthus altissima* *Lonicera japonica* *Celastrus orbiculatus* *Toxicodendron radicans*	*Lonicera japonica* *Celastrus orbiculatus* *Toxicodendron radicans* *Parthenocissus quinquefolia*	Poor condition with high invasive cover; vines covering most of the woody vegetation and damaging native tree species
1H4 (NRI Map Sheets 1 and 2)	*Robinia pseudoacacia* *Liquidambar styraciflua* *Pyrus calleryana*	2-6”	*Rosa multiflora* *Baccharis halimifolia* *Ampelopsis brevipedunculata* *Liquidambar styraciflua* *Pyrus calleryana* *Lonicera maackii* *Elaeagnus umbellata* *Celastrus orbiculatus* *Toxicodendron radicans* *Lonicera japonica* *Parthenocissus quinquefolia*	*Phragmites australis* *Ampelopsis brevipedunculata* *Toxicodendron radicans* *Lonicera japonica*	Poor condition with high invasive species and vine coverage which are causing damage to trees.
1H5 (NRI Map Sheet 1)	*Pyrus calleryana* *Populus alba* *Robinia pseudoacacia* *Liquidambar styraciflua*	2-6”	*Rosa multiflora* *Baccahris halimifolia* *Lonicera maackii* *Toxicodendron radicans* *Lonicera japonica* *Parthenocissus quinquefolia* *Eleagnus umbellata* *Ampelopsis brevipedunculata* *Celastrus orbiculatus*	*Phragmites australis* *Ampelopsis brevipedunculata* *Lonicera japonica* *Toxicodendron radicans*	Did not qualify as a forest due to tree density. High invasive species and heavy vine coverage.
1H6 (NRI Map Sheet 1)	*Pyrus calleryana* *Liquidambar styraciflua* *Diospyros virginiana* *Prunus serotina*	2-6”	*Baccharis halimifolia* *Rosa multiflora* *Lonicera japonica* *Lonicera maackii* *Ampelopsis brevipedunculata* *Vitis* sp. *Rubus* sp.	*Vitis* sp. *Rosa multiflora* *Lonicera japonica* *Celastrus orbiculatus* *Phragmites australis* *Ampelopsis brevipedunculata*	Poor condition with high invasive species and vines covering most trees. Trees are scattered with saplings and shrubs throughout.
2H1 (NRI Map Sheet 6)	*Ailanthus altissima* *Morus alba*	2-6”	*Toxicodendron radicans* *Ailanthus altissima* *Baccharis halimifolia* *Amorpha fruticosa*	*Toxicodendron radicans* *Lonicera japonica* *Festuca* sp.	High invasive cover, poor quality, narrow hedgerow between road and the river
2H2 (NRI Map Sheet 5)	*Ailanthus altissima*	2-6”	*Ailanthus altissima* *Toxicodendron radicans*	*Toxicodendron radicans* *Parthenocissus quinquefolia* *Lonicera japonica*	High invasive cover, poor quality

Hedgerow ID	Dominant Species in Canopy	Size Class	Dominant Species in Understory	Dominant Species in Herbaceous Layer	Comments
2H3 (NRI Map Sheet 5)	*Koelreuteria paniculata*	2-6”	*Koelreuteria paniculata* *Prunus serotina*	*Koelreuteria paniculata* *Festuca* sp. *Lonicera japonica*	High invasive cover, poor quality
2H4 (NRI Map Sheets 5 and 6)	*Morus alba*	2-6”	*Toxicodendron radicans* *Baccharis halimifolia* *Morus alba*	*Toxicodendron radicans* *Parthenocissus quinquefolia* *Festuca* sp. *Lonicera japonica*	High invasive cover, poor quality
2H5 (NRI Map Sheet 6)	*Ulmus pumila*	6-11”	*Baccharis halimifolia* *Ulmus pumila* *Toxicodendron radicans*	*Artemisia vulgaris* *Toxicodendron radicans* *Lonicera japonica* *Parthenocissus quinquefolia*	High invasive cover, poor quality
2H6 (NRI Map Sheet 6)	*Morus alba* *Robinia pseudoacacia* *Ulmus parvifolia*	6-11”	*Ligustrum sinense* *Rosa multiflora* *Amorpha fruticosa*	*Cinna arundinacea* *Toxicodendron radicans* *Rumex crispus*	Poor condition hedgerow on berm between Patapsco River and wetland
2H7 (NRI Map Sheet 6)	*Robinia pseudoacacia* *Ailanthus altissima* *Ulmus parvifolia*	2-6”	*Ailanthus altissima* *Prunus serotina* *Baccharis halimifolia* *Ligustrum sinense*	*Parthenocissus quinquefolia* *Toxicodendron radicans* *Lonicera japonica*	High invasive cover, poor quality
2H8 (NRI Map Sheets 6 and 7)	*Ailanthus altissima* *Morus alba* *Pyrus calleryana* *Liquidambar styraciflua* *Robinia pseudoacacia* *Populus deltoides*	6-11”	*Ailanthus altissima* *Amorpha fruticosa* *Baccharis halimifolia* *Liquidambar styraciflua* *Robinia pseudoacacia*	*Toxicodendron radicans* *Parthenocissus quinquefolia* *Lonicera japonica* *Phragmites australis* *Leersia oryzoides*	High invasive cover, poor quality. MDTA planting areas were excluded from hedgerow. Tree density does not meet definition of a forest
2H9 (NRI Map Sheet 7)	*Ailanthus altissima* *Robinia pseudoacacia* *Diospyros virginiana*	2-6”	*Koelreuteria paniculata* *Ailanthus altissima* *Rosa multiflora* *Amorpha fruticosa* *Baccharis halimifolia*	*Toxicodendron radicans* *Parthenocissus quinquefolia* *Lonicera japonica* *Galium aparine*	High invasive cover, poor quality

APPENDIX G: TREE TABLE

APPENDIX G: FRANCIS SCOTT KEY BRIDGE REBUILD PROJECT
TREE AND SHRUB TABLE

Tree ID*	Common Name	Scientific Name	DBH	Condition	Comment
1T1	**Eastern cottonwood**	***Populus deltoides***	**30**	**Fair**	**Broken branches, heavy vines, twin trunks 30" & 29"**
1T2	White mulberry	*Morus alba*	14	Poor	Significant lean, growing partially horizontal, heavy vine load, dead branches
1T3	Tree of heaven	*Ailanthus altissima*	4	Fair	Lean, vines on lower trunk
1T4	Black cherry	*Prunus serotina*	11	Fair/Poor	Vines in lower crown, broken branches
1T5	Black cherry	*Prunus serotina*	6	Fair/Poor	Minor trunk decay, vines on trunk
1T6	Black cherry	*Prunus serotina*	8	Fair/Poor	Minor trunk decay, vines on trunk
1T7	Bradford pear	*Pyrus calleryana*	10	Fair/Poor	overtopped by vines, exposed roots on slope, twin trunks 10" & 7"
1T8	Common hackberry	*Celtis occidentalis*	16	Fair/Poor	Heavy vines in lower canopy, slight lean, exposed roots on slope
1T9	Siberian elm	*Ulmus pumila*	28	Fair/Poor	High vine load in lower crown, some broken branches, exposed roots on slope
1T10	White mulberry	*Morus alba*	8	Fair	Healed trunk wounds, dead branches
1T11	Black locust	*Robinia pseudoacacia*	23	Poor	Heavy vines on trunk and crown, significant broken branches, exposed roots on slope, dead secondary leader
1T12	Black locust	*Robinia pseudoacacia*	8	Fair/Poor	Heavy vines on trunk, broken branches, some bark damage
1T13	Black locust	*Robinia pseudoacacia*	2	Fair	Lean overtopped by adjacent vegetation
1T14	Black locust	*Robinia pseudoacacia*	8	Poor	Heavy vine load into crown, main tree tipped over
1T15	Black locust	*Robinia pseudoacacia*	14	Poor	Extensive vines into crown of tree, dead secondary trunk
1T16	Bradford pear	*Pyrus calleryana*	6	Fair	Vines in lower canopy, broken branches, growing on slope
1T17	Eastern cottonwood	*Populus deltoides*	12	Fair	Minor dead branches, minor vines on trunk
1T18	Common persimmon	*Diospyros virginiana*	2	Fair	Irregular trunk
1T19	Black cherry	*Prunus serotina*	4	Fair	Lean, broken branches
1T20	Black cherry	*Prunus serotina*	5	Poor	Overtopped by vines, trunk dammage
1T21	Callery pear	*Pyrus calleryana*	9	Fair	With vines, secondary leaders 7.5" & 2"
1T22	**Willow oak**	***Quercus phellos***	**32**	**Good**	
1T23	**Willow oak**	***Quercus phellos***	**30**	**Good/Fair**	**Fused with a sweetgum**
1T24	**Willow oak**	***Quercus phellos***	**32**	**Good**	
1T25	**Willow oak**	***Quercus phellos***	**35**	**Good**	
1T26	**Willow oak**	***Quercus phellos***	**32**	**Good**	
1T27	**Willow oak**	***Quercus phellos***	**31**	**Fair**	**Reduced canopy**
1T28	**Willow oak**	***Quercus phellos***	**34**	**Good**	
1T29	American elm	*Ulmus americana*	5	Good	
1T30	Persimmon	*Diospyros virginiana*	2	Good	
1T31	Siberian elm	*Ulmus pumila*	1	Good	
1T32	Siberian elm	*Ulmus pumila*	1	Fair	
1T33	Siberian elm	*Ulmus pumila*	1	Poor	Trunk rot
1T34	Siberian elm	*Ulmus pumila*	6	Fair	Trunk rot
1T35	Siberian elm	*Ulmus pumila*	6	Good	
1T36	Staghorn sumac	*Rhus typhina*	1	Fair	
1T37	Staghorn sumac	*Rhus typhina*	1	Fair	
1T38	Staghorn sumac	*Rhus typhina*	1	Fair	
2T1	Hawthorn sp.	*Crataegus* sp.	3	Good/Fair	deadwood
2T2	Hawthorn sp.	*Crataegus* sp.	3	Poor	half dead
2T3	Hawthorn sp.	*Crataegus* sp.	3	Good/Fair	deadwood
2T4	Willow Oak	*Quercus phellos*	10	Good/Fair	deadwood
2T5	Black Willow	*Salix nigra*	7	Fair	deadwood, vines, 6" and 5" secondary leaders
2T6	White Mulberry	*Morus alba*	3	Good	
2T7	Eastern Red Cedar	*Juniperus virginiana*	9	Good	
2T8	White Mulberry	*Morus alba*	6	Good	
2T9	White Mulberry	*Morus alba*	3	Good	
2T10	Common Yew	*Taxus baccata*	4	Good	pruned
2T11	Common Yew	*Taxus baccata*	4	Good	pruned
2T12	Common Yew	*Taxus baccata*	4	Good	pruned
2T13	Common Yew	*Taxus baccata*	4	Good	pruned
2T14	Common Yew	*Taxus baccata*	4	Good	pruned
2T15	Common Yew	*Taxus baccata*	4	Good	pruned
2T16	Small-Leaved Lime	*Tilia cordata*	15	Good	
2T17	Smokebush	*Cotinus coggygria*	2	Fair	deadwood
2T18	Bradford Pear	*Pyrus calleryana*	11	Good	
2T19	Red Pine	*Pinus resinosa*	10	Good	
2T20	Red Pine	*Pinus resinosa*	10	Good	
2T21	Red Pine	*Pinus resinosa*	8	Good	
2T22	Red Pine	*Pinus resinosa*	8	Good	
2T23	Red Pine	*Pinus resinosa*	8	Good	
2T24	Red Pine	*Pinus resinosa*	10	Good	
2T25	Red Pine	*Pinus resinosa*	12	Good	
2T26	Red Pine	*Pinus resinosa*	10	Good	
2T27	Red Pine	*Pinus resinosa*	6	Good	
2T28	Red Pine	*Pinus resinosa*	7	Good	
2T29	Small-Leaf Lime	*Tilia cordata*	14	Good	
2T30	Japanese Pagoda	*Styphnolobium japonicum*	17	Fair/Poor	extensive deadwood
2T31	Japanese Pagoda	*Styphnolobium japonicum*	11	Fair	deadwood
2T32	Japanese Pagoda	*Styphnolobium japonicum*	15	Fair	deadwood
2T33	Red Pine	*Pinus resinosa*	11	Fair	heavy vines
2T34	Red Pine	*Pinus resinosa*	13	Fair	10" secondary leader, heavy vines

Tree ID*	Common Name	Scientific Name	DBH	Condition	Comment
2T35	Tree of Heaven	*Ailanthus altissima*	6	Fair	heavy vines
2T36	Common Persimmon	*Diospyros virginiana*	7	Good	
2T37	Hackberry	*Celtis occidentalis*	6	Poor	extensive deadwood
2T38	Tree of Heaven	*Ailanthus altissima*	8	Fair	broken leader
2T39	Tree of Heaven	*Ailanthus altissima*	6	Fair	vines
2T40	Common Persimmon	*Diospyros virginiana*	2	Good	
2T41	Hackberry	*Celtis occidentalis*	3	Fair	heavy vines
2T42	Common Persimmon	*Diospyros virginiana*	6	Good	
2T43	Common Persimmon	*Diospyros virginiana*	3	Good	
2T44	Common Persimmon	*Diospyros virginiana*	3	Good	
2T45	Siberian Elm	*Umus pumilla*	24	Fair	heavy vines
2T46	Tree of Heaven	*Ailanthus altissima*	12	Fair	deadwood
2T47	Tree of Heaven	*Ailanthus altissima*	5	Good	
2T48	Tree of Heaven	*Ailanthus altissima*	8	Good/Fair	deadwood
2T49	Tree of Heaven	*Ailanthus altissima*	4	Good/Fair	deadwood
2T50	Tree of Heaven	*Ailanthus altissima*	3	Good/Fair	deadwood
2T51	Tree of Heaven	*Ailanthus altissima*	14	Good/Fair	deadwood
2T52	Tree of Heaven	*Ailanthus altissima*	4	Good	
2T53	Tree of Heaven	*Ailanthus altissima*	2	Good	
2T54	Black Locust	*Robinia pseudoacacia*	14	Fair/Poor	extensive trunk damage
2T55	Tree of Heaven	*Ailanthus altissima*	6	Fair	deadwood
2T56	Tree of Heaven	*Ailanthus altissima*	5	Fair	deadwood
2T57	Tree of Heaven	*Ailanthus altissima*	5	Fair	deadwood
2T58	Tree of Heaven	*Ailanthus altissima*	8	Fair/Poor	extensive deadwood
2T59	Tree of Heaven	*Ailanthus altissima*	13	Poor	extensive deadwood, broken leader
2T60	**Willow Oak**	***Quercus phellos***	**2**	**Fair**	**deadwood, sprouting**
2T61	**Willow Oak**	***Quercus phellos***	**2**	**Poor**	**mostly dead**
2T62	**Willow Oak**	***Quercus phellos***	**2**	**Fair/Poor**	**deadwood, sprouting**
2T63	**Red Maple**	***Acer rubrum***	**2**	**Poor**	**mostly dead**
2T64	**Bradford Pear**	***Pyrus calleryana***	**2**	**Good**	
2T65	**Red Maple**	***Acer rubrum***	**2**	**Fair/Poor**	**extensive deadwood**
2T66	**Red Maple**	***Acer rubrum***	**2**	**Fair/Poor**	**extensive deadwood**
2T67	**Kentucky Yellowwood**	***Cladrastris kentukea***	**2**	**Good**	
2T68	**Kentucky Yellowwood**	***Cladrastris kentukea***	**2**	**Fair**	**deadwood, trunk damage**
2T69	**Kentucky Yellowwood**	***Cladrastris kentukea***	**2**	**Fair**	**deadwood, trunk damage**
2T70	**Kentucky Coffee Tree**	***Gymnocladus dioicus***	**2**	**Good**	
2T71	**Kentucky Coffee Tree**	***Gymnocladus dioicus***	**2**	**Good**	
2T72	**Kentucky Coffee Tree**	***Gymnocladus dioicus***	**2**	**Good**	
2T73	**Kentucky Coffee Tree**	***Gymnocladus dioicus***	**2**	**Fair/Poor**	**extensive deadwood**
2T74	**Kentucky Coffee Tree**	***Gymnocladus dioicus***	**2**	**Fair/Poor**	**extensive deadwood**
2T75	Siberian Elm	*Ulmus pumila*	7	Good	
2T76	Tree of Heaven	*Ailanthus altissima*	3	Good	
2T77	Tree of Heaven	*Ailanthus altissima*	3	Good	
2T78	Tree of Heaven	*Ailanthus altissima*	4	Good	
2T79	Tree of Heaven	*Ailanthus altissima*	8	Good/Fair	deadwood
2T80	American Elm	*Ulmus americana*	6	Good	
2T81	Tree of Heaven	*Ailanthus altissima*	3	Good	
2T82	Black Locust	*Robina pseudoacacia*	4	Fair/Poor	extensive deadwood
1S1	Grounseltree	*Baccharis halimifolia*	<1.5	Good	
1S2	Groundseltree	*Baccharis halimifolia*	<1.5	Good	
1S3	Groundseltree	*Baccharis halimifolia*	<1.5	Good	
1S4	Groundseltree	*Baccharis halimifolia*	<1.5	Good	
1S5	White Mulberry	*Morus alba*	<1.5	Good	
1S6	Unknown Boxwood	*Buxus* sp.	<1.5	Good	
1S7	Japanese Pagoda	*Styphnolobium japonicum*	<1.5	Good	
1S8	False Indigo	*Amorpha fruticosa*	<1.5	Good	
1S9	False Indigo	*Amorpha fruticosa*	<1.5	Good	
1S10	False Indigo	*Amorpha fruticosa*	<1.5	Good	
1S11	Tree of Heaven	*Ailanthus altissima*	<1.5	Good	
1S12	Tree of Heaven	*Ailanthus altissima*	<1.5	Good	
1S13	Eastern Redbud	*Cercis canadensis*	<1.5	Good	
1S14	Eastern Redbud	*Cercis canadensis*	<1.5	Good	
1S15	Eastern Redbud	*Cercis canadensis*	<1.5	Good	
1S16	Eastern Redbud	*Cercis canadensis*	<1.5	Good	

*Specimen trees shown in bold.