Virginia Department of Transportation

INTER-AGENCY COORDINATION MEETING

Joint Permit Application

DEQ **COE** **VMRC**

I. VDOT PROJECT INFORMATION

Route: 58 UPC#: 118375
VDOT Project Number: 0058-133-459, B616, C501, P101, R201 USGS Quadrangle: Bowers Hill, Chuckatuck
City/County: Suffolk VDOT City/County Code: 133
Contract Type: State Project Charge: 118375 Act 712
Planned Ad Date: 12/12/2023 Designer: Walsh, Claudia A
Project Number(Assoc)(UPC): 00460-133-25132686

II. TYPE OF SCOPING/COORDINATION: Permit Coordination

Permits Required: COE Individual; VDEQ Individual VWPP

III. VDOT CONTACTS

Permit Coordinator (VDOT District Contact)	District Environmental Manager (Authorized Agent)	VDOT (Applicant)
Name: Joshua Mace Address: 7511 Burbage Drive Suffolk, VA 23435 Phone #:	Name: Melissa R Wolford Address: 7511 Burbage Drive Suffolk, VA 23435 Phone #: (757) 956-3184	Name: John K Arms Address: 523 North Washington Highway Ashland, VA 23005 Phone #: (757) 995-5156

IV. PERMITTED ACTIVITY

This project is located in the City of Suffolk. The purpose is to construct a flyover ramp to accommodate the left turning Eastbound traffic entering the landfill. Additional right of way will be required for approximately 5 parcels. This project will have utility relocations. Currently, Route 460 is a 6 through lane facility, Lane widening will occur on both sides to accommodate the ramp. No additional through lanes are being added. The loop of the ramp is located on new location and will tie back into Bob Foeller Drive. US Route 13/58/460 has 3 general purpose lanes in each direction. The proposed design includes a right exit ramp on the eastbound lanes for the traffic entering the landfill from this direction. The flyover will be located approximately 3,000 feet from the existing intersection at Bob Foeller Drive/Welsh Parkway. The exiting traffic will maintain existing traffic patterns.

V. ENVIRONMENTAL ASSESSMENT *(Avoidance and Impacts are described in greater detail in section VI and VII.)*

	Present	*Impacts*		*Present*	*Impacts*
Federal Threatened/Endangered Species	Yes	*	Water of the U.S	Yes	Yes
State Threatened/Endangered Species	Yes	*	Wetlands	Yes	Yes
Anadromous fish	No	No	Riffle Pool Complexes	No	No
Trout	No	No	Other Special Aquatic Sites	No	No
Shellfish	No	No	100 Year Floodplain	Yes	No
Public Water Supply	No	No	Historic/Archeological Resources	Yes	No
Scenic Rivers	No	No	Air Quality Nonattainment Area	No	No
Navigable Waters	No	No	Tidal Waters/Wetlands:	No	No
Open Water > 1.0 Acre	No	No			

*Please refer to the T&E Report for T&E Species Impacts

VI. SUMMARY OF DETAILED ENVIRONMENTAL IMPACT INFORMATION
This project has one jurisdictional crossing.

General:

Latitude: 36°45'24" Longitude: 76°30'48"
Nearest Community: Suffolk
FEMA FIRM number: 5101560119E
Surrounding Land Use: Industrial/mfg., Forest, Wetlands - nontidal, Wildlife Management Area, ROW
Basin: James River Basin
Sub-basin: 2C. Lwr James River Sub-basin
Hydrologic Unit Code: 02080208

Engineering data for impacts to Waters of the US:

OHW elevation (feet): N/A
MLW elevation (feet): N/A

	Dredging/Excavation			**Filling (Permanent):**			**Filling (Temporary):**		
	Streams	Open Water	Wetlands	Streams	Open Water	Wetlands	Streams	Open Water	Wetlands
Area (feet^2)	0	0	0	0	45225	420786	0	53298	88225
Quantity (yd^3) below OHW	0	0	0	0	0	0	0	0	0
Quantity (yd^3) below MLW	0	0	0	0	0	0	0	0	0
Construction Method				MECHANICAL			MECHANICAL		

Stream Information: N/A

Stream Name(s):
Drainage Area (miles^2):
Pool/Riffle/Flat ratio:
Average Depth (feet):
Substrate:
Average Width (feet):
OHWM Indicator(s):
DWR Classification:
Cowardin Classification:
DEQ Classification:
Section #:
Special Standards:
Linear Feet of Permanent Stream Impacts:

Perennial- 0 Intermittent- 0 Ephemeral- 0 Riffle/Pool- 0

Conceptual Stream Mitigation: None Proposed

Wetland Information:

Species identified: Red maple, loblolly pine, sweet gum, giant cane, cattails, Carex sp., soft rush

Cowardin Classification(s): PSS, PEM, PFO, PUB

Amount Disturbed(area -feet^2)

	Emergent		**Scrub/Shrub**		**Forested**		**Totals**	
	Non-Tidal	Tidal	Non-Tidal	Tidal	Non-Tidal	Tidal	Non-Tidal	Tidal
Primary	6511	0	38623	0	375652	0	420786	0
Secondary	0	0	0	0	0	0	0	0
Temporary	3617	0	11156	0	73452	0	88225	0

Conceptual Wetland Mitigation:

Strategies Name	Site Name	Lat/Long	GSA	HUC	Debit	Payment
SPSA Flyover	Lewis Farm Bank - Credit Purchase	N/A/ N/A	02080208 and a portion of 02080206	02080208	627490.5	$0.00

Other Natural Resource Information:

Cowardin Classification(s): PUB

Amount of Impacts

	L.F		**S.F**	
	Non-Tidal	Tidal	Non-Tidal	Tidal
Permanent	2627	0	45225	0
Temporary	3581	0	53298	0

Conceptual Other Mitigation: None Proposed

VII. PROJECT NARRATIVE:

Project purpose, need, and description:

The purpose is to construct a flyover ramp to accommodate the left-turning eastbound traffic entering the landfill. Currently, traffic accessing the SPSA landfill from U.S. 58 EB utilizes a median crossover, crossing U.S. WB to access Bob Foeller Drive (landfill access road). The crossover has a history of high accident rates and the current level of is unacceptable during peak conditions. Based on the adopted regions travel demand forecast model, peak hour volumes will increase by approximately 36% by 2040 (1.6% growth rate annually). Furthermore, the SPSA landfill is undergoing a 127-acre expansion. The closure of the Portsmouth Wheelabrator facility, which burns approximately 85% of the region's trash to produce steam energy for the U.S. Navy. This closure would be expected to substantially increase truck traffic to the SPSA landfill. Therefore, the proposed flyover would eliminate the suboptimal median crossover by providing a safer alternative that would accommodate future landfill access needs and address immediate safety issues. Currently, U.S. 58 is a six (6) through lane facility, with three (3) general purpose lanes in each direction. Lane widening will occur... See Attachment A.

Proposed construction schedule:

The anticipated advertisement date for the project is December 5, 2023, with an award date of March 5, 2024 and project completion of May 29, 2026.

Project impacts (include a description of all impacts, permanent and temporary):

The proposed project would be anticipated to result in 2.98 acres (129,710 sf) of permanent forested wetland impacts, .16-acre (7,145 sf) of permanent scrub-shrub wetland impacts, 0.15-acre (6,511sf) of permanent emergent wetland impacts, and 1.04-acres (45,225 sf) of impacts to other waters of the U.S. (jurisdictional roadside ditches [PUBx]). Temporary impacts are anticipated to include 1.69-acre (73,452 sf) forested wetland, .26-acre (11,156 sf) scrub-shrub wetland, .08-acre (3,617 sf) emergent wetland, and 1.22-acre (53,298 sf) other waters of the U.S. (jurisdictional roadside ditches [PUBx]). The area inside the fly over loop will be considered a conversion impact to 5.64- acre (245,617 sf) of PFO and .71-acre (31,075- sf) of PSS. Shading impacts will occur at the northern abutment accounting for .007-acre (325 sf) to PFO and .009-acre (403 sf) to PSS.

T&E Species (See Attachment F for additional documentation):

Based upon review of federal databases including IPaC, federal T&E species have a potential to occur in the project area. Canebrake rattlesnake habitat is present within the project area. Impacts to Canebrake rattlesnake habitat will be mitigated by either purchase of credits from Great Dismal Swamp Restoration Bank or preservation on SPSA property.Potential impacts to NLEB and Eastern Big-eared bat will be mitigated through the use of a time of year restriction on tree clearing, April 1 to Nov. 14. Mabee's salamander- No suitable habitat.Data base search re-ran on Jan 20 2023- No new species identified.

Cultural Resources (See Attachment E for additional documentation):

VDOT Effect Determination: NO ADVERSE EFFECT. Final Effect Determination: NO ADVERSE EFFECT. DHR Concurrence Date: 10/22/2021.

VIII. PROJECT MITIGATION:

Project mitigation efforts including AVOIDANCE, MINIMIZATION, AND COMPENSATION:

Avoidance:

The proposed project would result in unavoidable impacts to wetland and other waters of the U.S. A detailed description of other alternatives which were analyzed are provided in the alternatives analysis.

Minimization:

To reduce wetland impacts, the project will incorporate 2:1 slopes for flyover reducing the overall footprint impacting wetlands. Additionally, the tightest radius for the curve is being utilized to reduce project foot print and the minimum lengths for weave and merge, acceleration and... See Attachment A.

Compensation (include functional assessment when applicable; see Attachment J for additional documentation):

The project will mitigate for unavoidable permanent impacts by withdrawing credits from the Lewis Farm Mitigation bank. Total mitigation for the project will be 14.41-acre (627,490.5 sf). This bank has sufficient credits to cover all project related impacts. Mitigation compensations will be as follows: tTotal PFO mitigation will be 13.29-acre (578,814) which includes 2:1 direct permanent impacts of 2.98-acre... See Attachment A.

IX. EROSION AND SEDIMENT CONTROLS:
An erosion and sediment control plan will be prepared and implemented in compliance with the Erosion and Sediment Control Law, the Erosion and Sediment Control Regulations, and the annual erosion and sediment control standards and specifications approved by the Department of Conservation and Recreation.

X. STORMWATER MANAGEMENT STATEMENT:
Design of this project will be in compliance with the Stormwater Management Act, the Stormwater Management Regulations, and the annual stormwater management standards, and specifications approved by the Department of Conservation and Recreation.

XI. MATERIALS ASSESSMENT:
All fill material shall be clean and free of contaminants in toxic concentrations or amounts in accordance with all applicable laws and regulations.

XII. FEMA STATEMENT:
The design of this project will be in compliance with all applicable FEMA-approved state or local floodplain management requirements.

XIII. DREDGE MATERIAL MANAGEMENT PLAN:
All dredge material will be removed to an approved, contained, upland location. The disposal area will be of sufficient size and capacity to properly contain the dredge material, to allow for adequate dewatering and settling out of sediment, and to prevent overtopping. The disposal area will be properly stabilized prior to placement of dredge material.

XIV. NEPA DOCUMENTATION: Not Required
Document type:
Date:

XV. CERTIFICATION (for SPGP/VWPP only):

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Applicant Signature: _____

Name of person signing above: _____
(print or type)

Title: _____ **Date:** _____

Authorized Agent Signature: _____

Name of person signing above: _____
(print or type)

Title: _____ **Date:** _____

XVI. ATTACHMENTS (Include all that apply):

[X] Narratives Continuation (See Attachment A)

[X] Project Maps [Vicinity, Topo, and FEMA Maps]

[X] Permit Sketches (Plan views, section views including temporary and permanent impacts)

[X] Hydraulic Commentary

[X] Cultural Resources Information

[X] Threatened and Endangered Species Information (including VDOT T&E Report)

[X] Early Coordination Final IACM Comments

[X] Alternatives Analysis

[X] Wetland Delineation Documents

[X] Compensatory Mitigation

[X] Photographs

[ ] Jurisdictional Determination Form

[ ] Signed Certification Statement

[ ] SPGP Check List

Attachment A

Narratives Continuation

Attachment A - CONTINUATION:

Project purpose, need, and description:
on both sides of the highway to accommodate the ramp/flyover. No additional through lanes/capacity improvements are being added. The loop of the ramp is a fill slope, located on new location that will tie into Bob Foeller Drive (landfill access road). The proposed design includes a right exit ramp on the eastbound lanes for the traffic entering the landfill from this direction. The flyover will be located approximately 3,000 feet from the existing intersection at Bob Foeller Drive. The exiting traffic will maintain existing traffic patterns. Proposed design would include ditch relocation adjacent to U.S. 58 EB to accommodate the exit to the flyover. A portion of roadside ditch adjacent to U.S. 58 EB would be relocated to accommodate the exit to the flyover. Existing drainage within the proposed loop (north of U.S. 58 WB) and fill slope would be maintained via installation of four (4) culverts

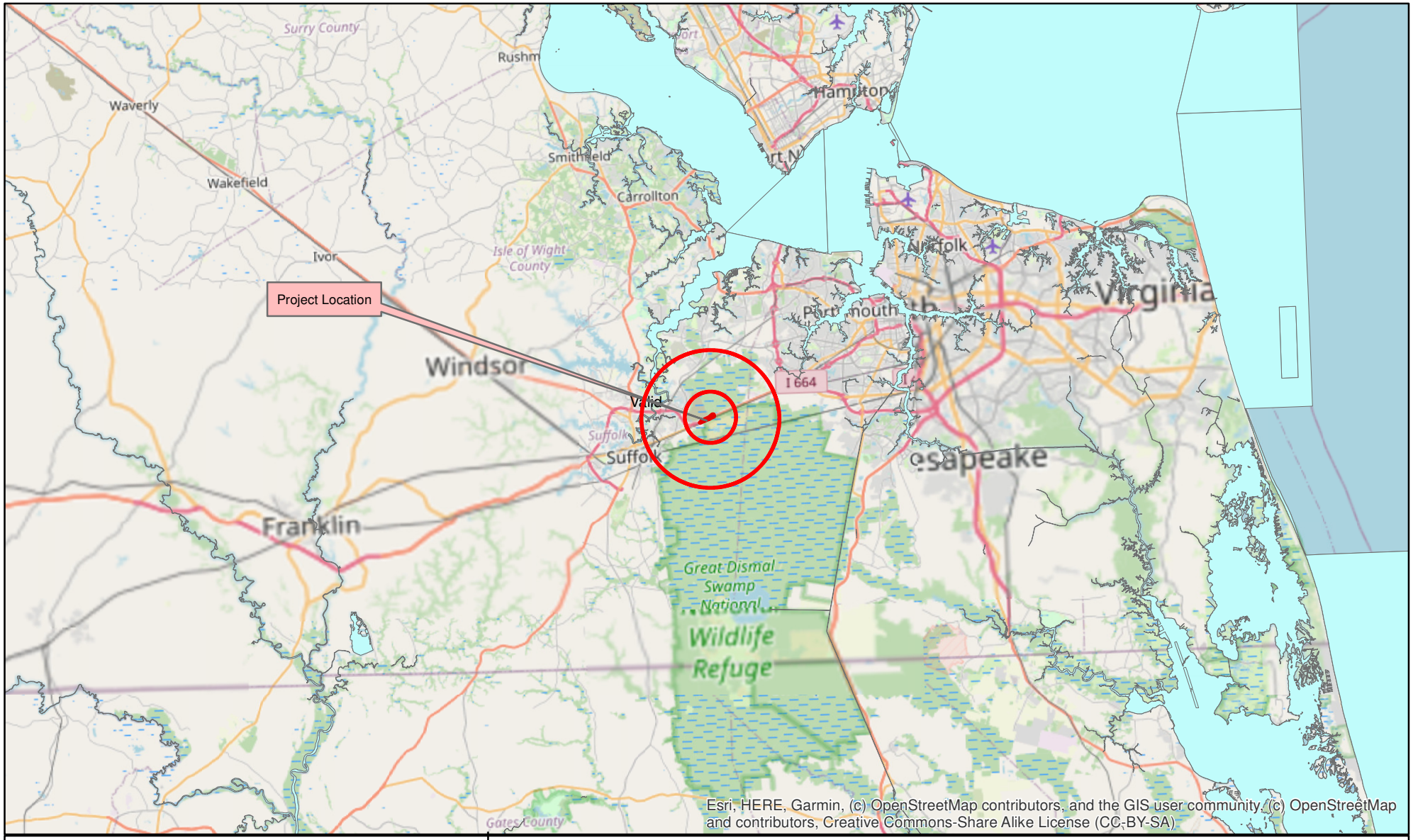
Minimization:
deceleration lanes are being utilized.

Compensation:
(129,710 sf), 1:1 temporary impacts of 1.69- acre (73,452 sf), 1:1 conversion impact of 5.64- acre (245,617 sf) and 1:1 shading impact of .007-acre (325 sf). Total PSS mitigation will be .97- acres (42,165.5 sf) which includes 1.5:1 direct permanent impacts of .16-acre (7,145 sf), 1:1 conversion impact of .71-acre (31,075 sf) and 1:1 .009-acre (403 sf) of shading impact.Total PEM mitigation will be .15-acre (6,511) of direct permanent impacts

Attachment B

Project Maps

Vicinity, Topo, and FEMA Maps



0 4 8 16
Miles

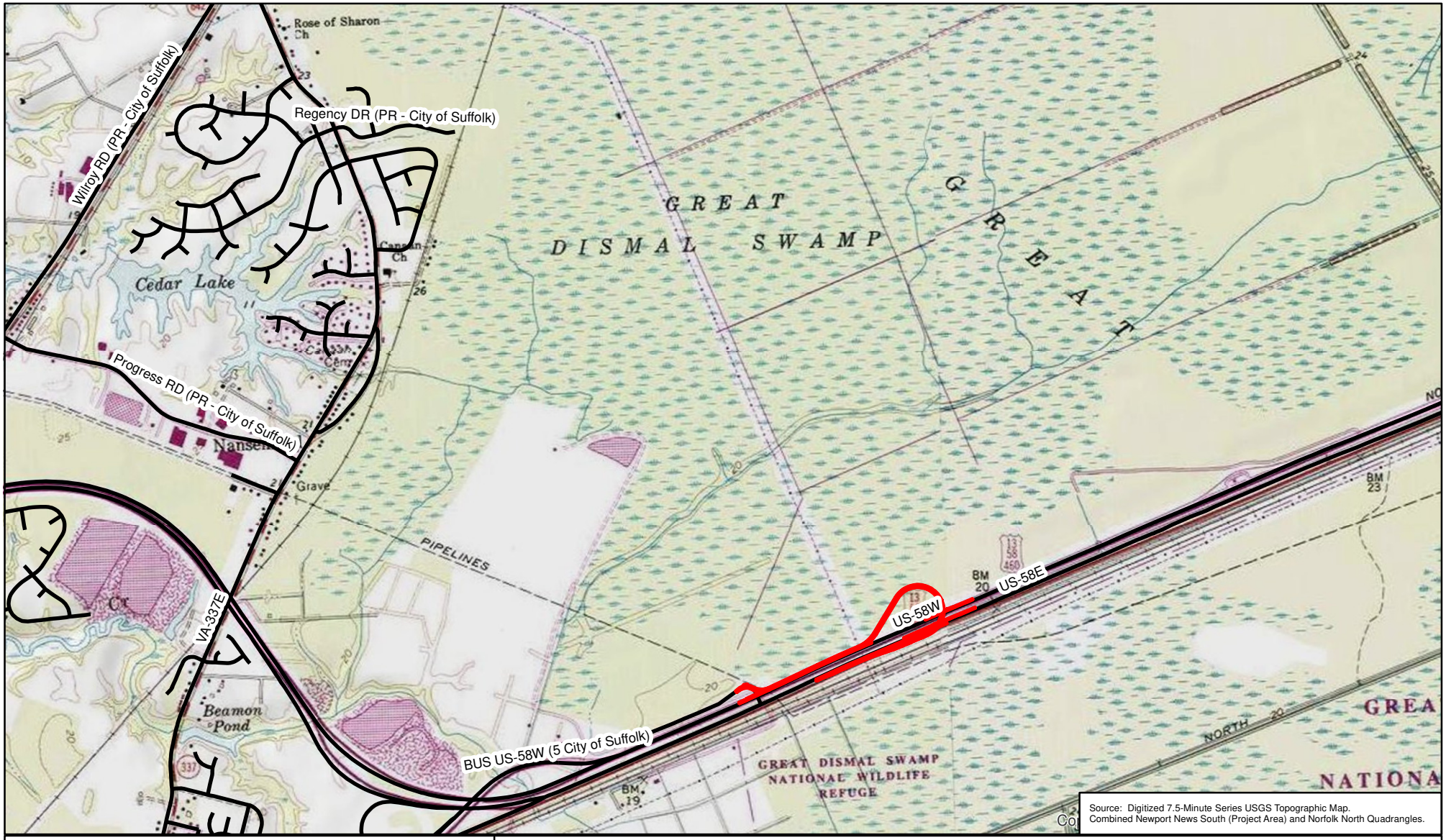
N
W E
S

1:500,000
1 inch = 7.891 mi.

Figure 1- Site Location Map
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022



0 1,000 2,000 4,000
Feet

N
W E
S

1:24,000
1 inch = 2,000 feet

Figure 2- USGS Topographic Map

SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

August 2022

National Flood Hazard Layer FIRMette

FEMA

76°30'38"W 36°45'44"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

76°30'W 36°45'16"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/16/2023 at 11:37 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette

FEMA

76°30'17"W 36°45'51"N

76°29'39"W 36°45'22"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

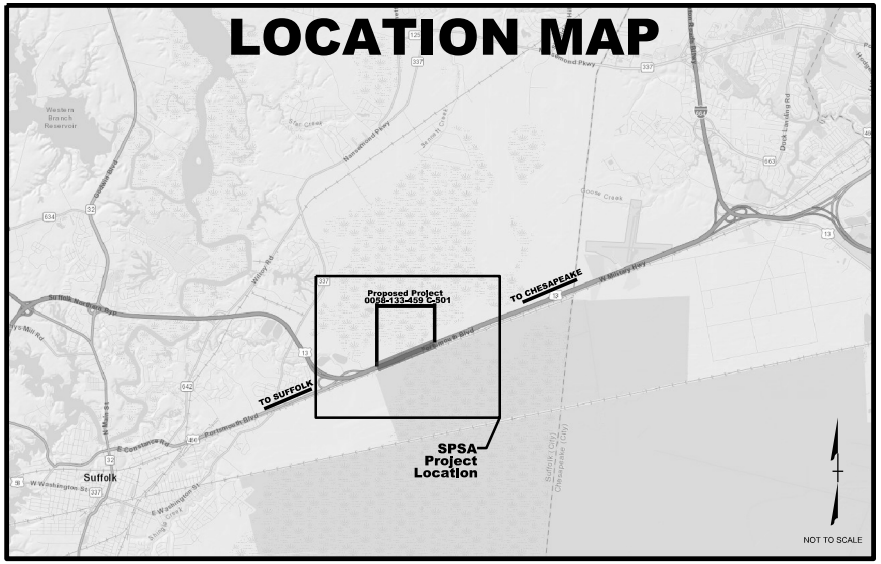
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/16/2023 at 11:39 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Attachment C

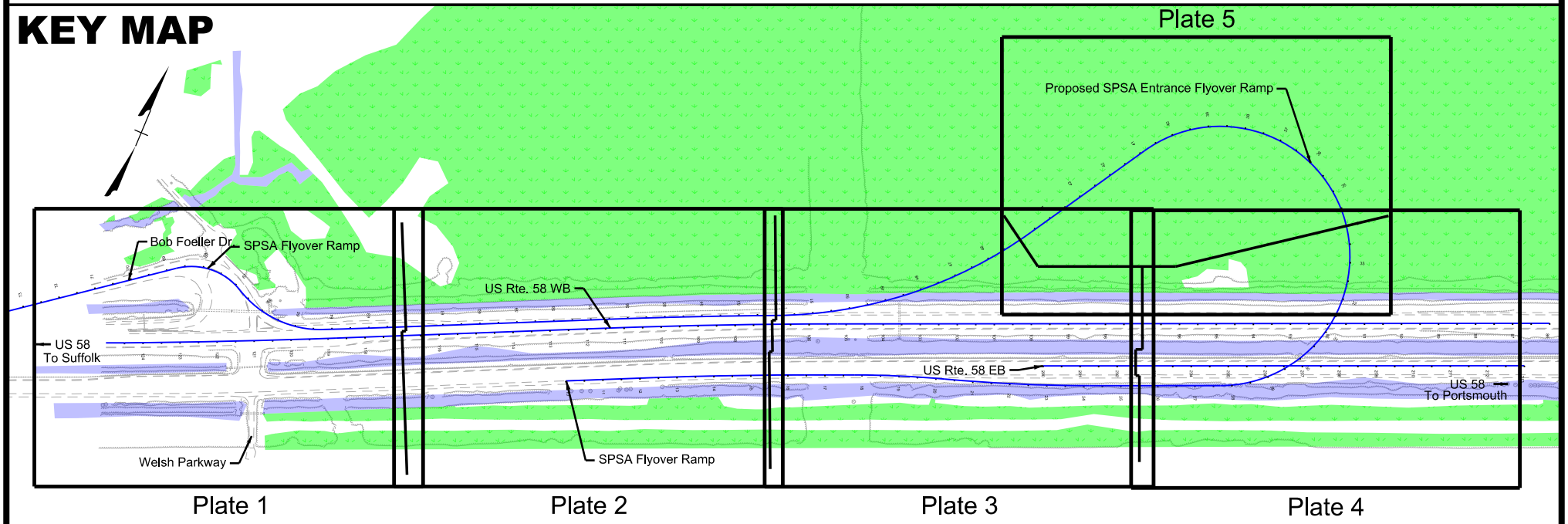
Permit Sketches

LOCATION MAP



	TOTAL IMPACTS				
	Permanent Impact	Temporary Impact	Conversion Impact	Shading Impact	Units
PEM	6,511	3,617	0	0	SF
PFO	129,710	73,452	245,617	325	SF
PSS	7,145	11,156	31,075	403	SF
PUBx	45,225	53,298	0	0	SF
PUBx	2,627	3,581	N/A	N/A	LF

KEY MAP



SCALE
0 200' 400'

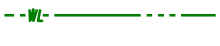
SPSA Interchange Improvement Project
US 13/58/460 City of Suffolk, Virginia

Date: March 2023

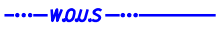
Application By:	ROUTE	FILE NO.	PLATE NO.
Virginia Department of Transportation	58	0058-133-459 R-201, C-501	Sheet 1 of 10

SPSA Interchange Improvement Project - Permit Application Plates

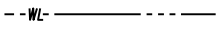
Legend



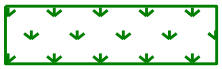
Surveyed Wetland



Surveyed Waters of the U.S. (WUS)

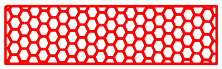


Wetland Type Separator

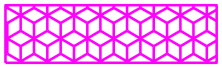


Non-Impacted Wetland

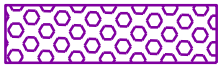
Non-Impacted WUS (PUBx)



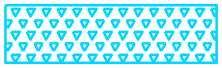
Permanent PFO Wetland Impact



Permanent PEM Wetland Impact

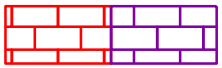


Permanent PSS Wetland Impact

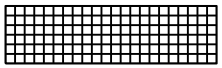


Permanent WUS (PUBx) Wetland Impact

Temporary Wetland Impact (Type by Color)



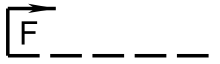
Conversion Wetland Impact (Type by Color)



Shading Wetland Impact

Limits of Disturbance

Limits of Construction (Cut)

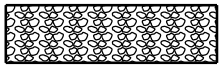


Limits of Construction (Fill)

Drainage Inlets

Closed Drainage System Pipes

Culvert Pipes



Pipe Protection

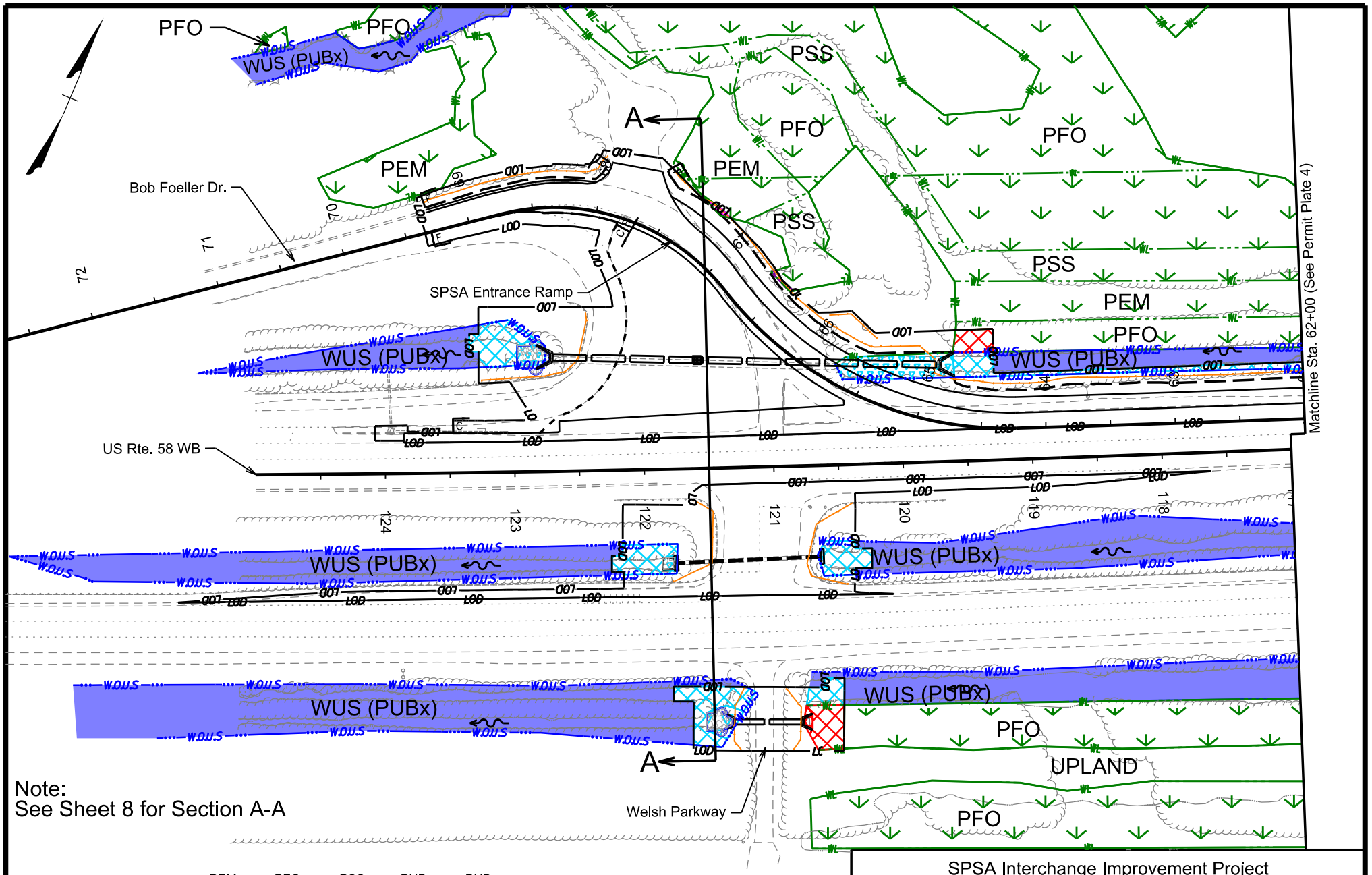
Drainage Ditch

Silt Fence

Temporary Diversion Pipes

Existing Pipes

SPSA Interchange Improvement Project US 13/58/460 City of Suffolk, Virginia			
		Date: March 2023	
Application By: Virginia Department of Transportation	ROUTE 58	FILE NO. 0058-133-459 R-201, C-501	PLATE NO. Sheet 2 of 10



Note:
See Sheet 8 for Section A-A

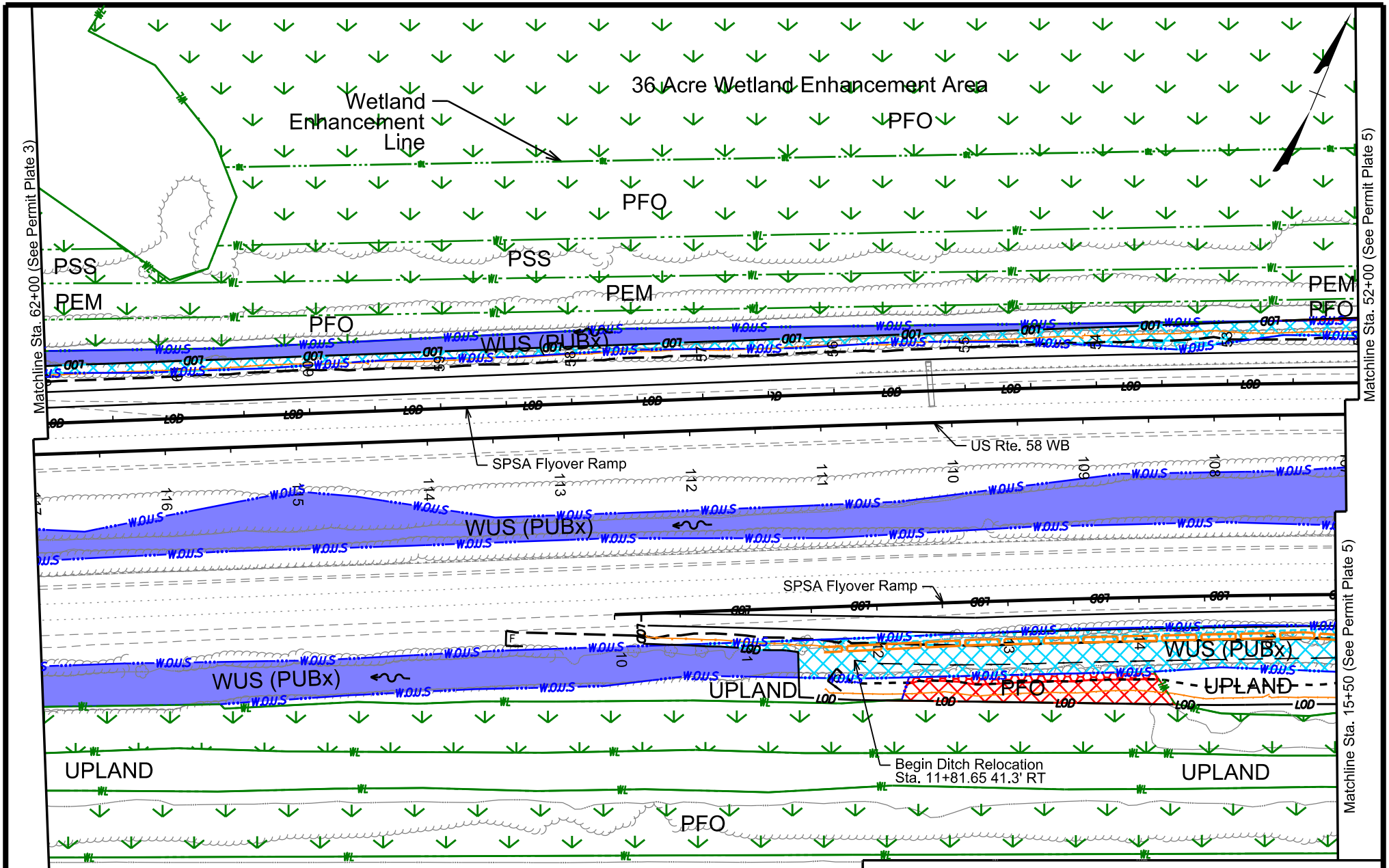
	PEM	PFO	PSS	PUBx	PUBx
Permanent Impact	0 SF	98 SF	0 SF	2,632 SF	153 LF
Temporary Impact	49 SF	1,367 SF	50 SF	6,295 SF	493 LF
Conversion Impact	0 SF	0 SF	0 SF	0 SF	N/A
Shading Impact	0 SF	0 SF	0 SF	0 SF	N/A

SCALE
0 50' 100'

SPSA Interchange Improvement Project
US 13/58/460 City of Suffolk, Virginia

Sta. 62+00 to Sta. 69+30 | Date: March 2023

Application By:	ROUTE	FILE NO.	PLATE NO.
Virginia Department of Transportation	58	0058-133-459 R-201, C-501	Sheet 3 of 10

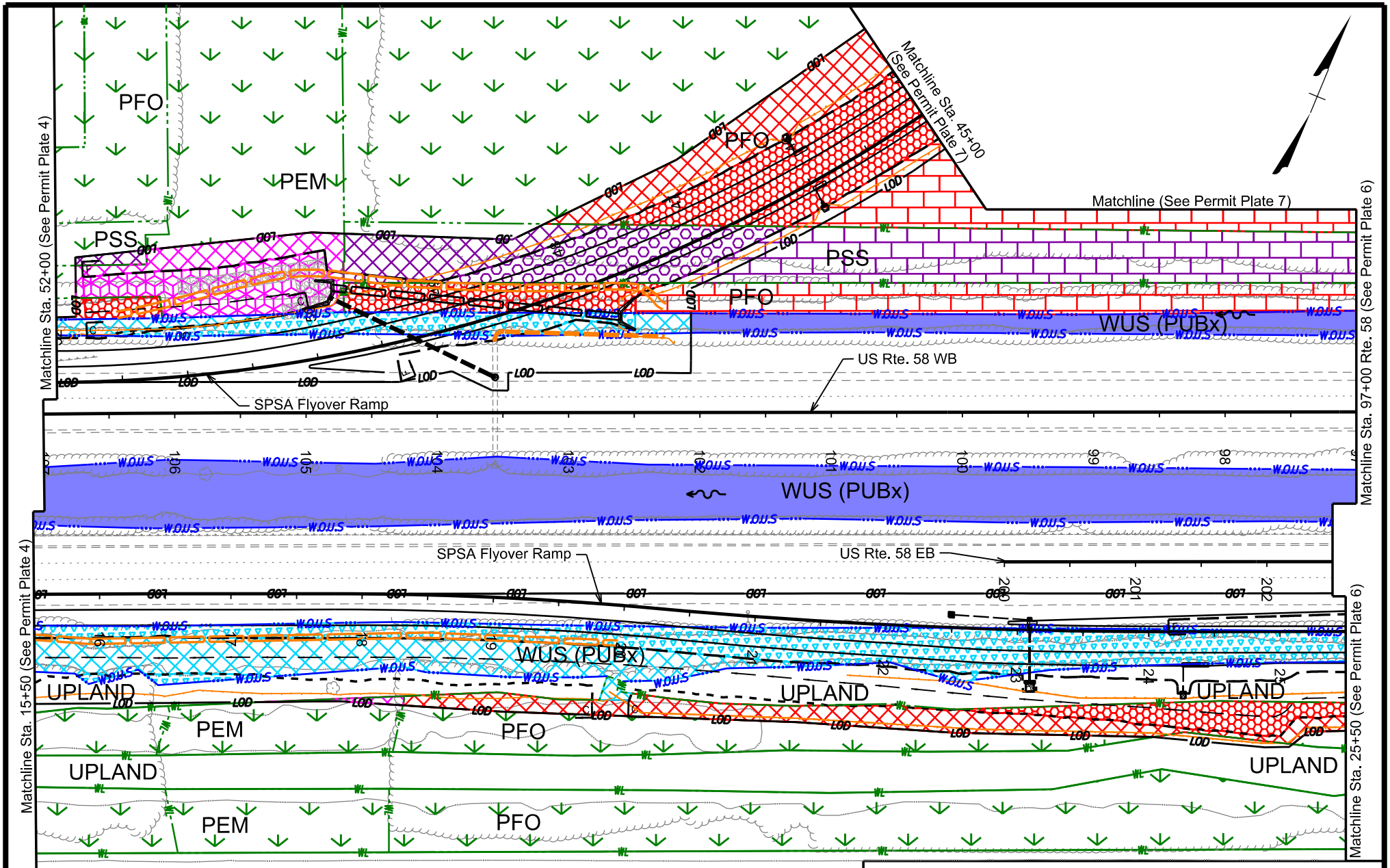


	PEM	PFO	PSS	PUBx	PUBx
Permanent Impact	0 SF	1,010 SF	0 SF	4,056 SF	541 LF
Temporary Impact	0 SF	3,282 SF	0 SF	17,918 SF	1,506 LF
Conversion Impact	0 SF	0 SF	0 SF	0 SF	N/A
Shading Impact	0 SF	0 SF	0 SF	0 SF	N/A

SPSA Interchange Improvement Project
US 13/58/460 City of Suffolk, Virginia

Sta. 10+00 to Sta. 15+50 | Sta. 52+00 to Sta. 62+00 | Date: March 2023

Application By:	ROUTE	FILE NO.	PLATE NO.
Virginia Department of Transportation	58	0058-133-459 R-201, C-501	Sheet 4 of 10



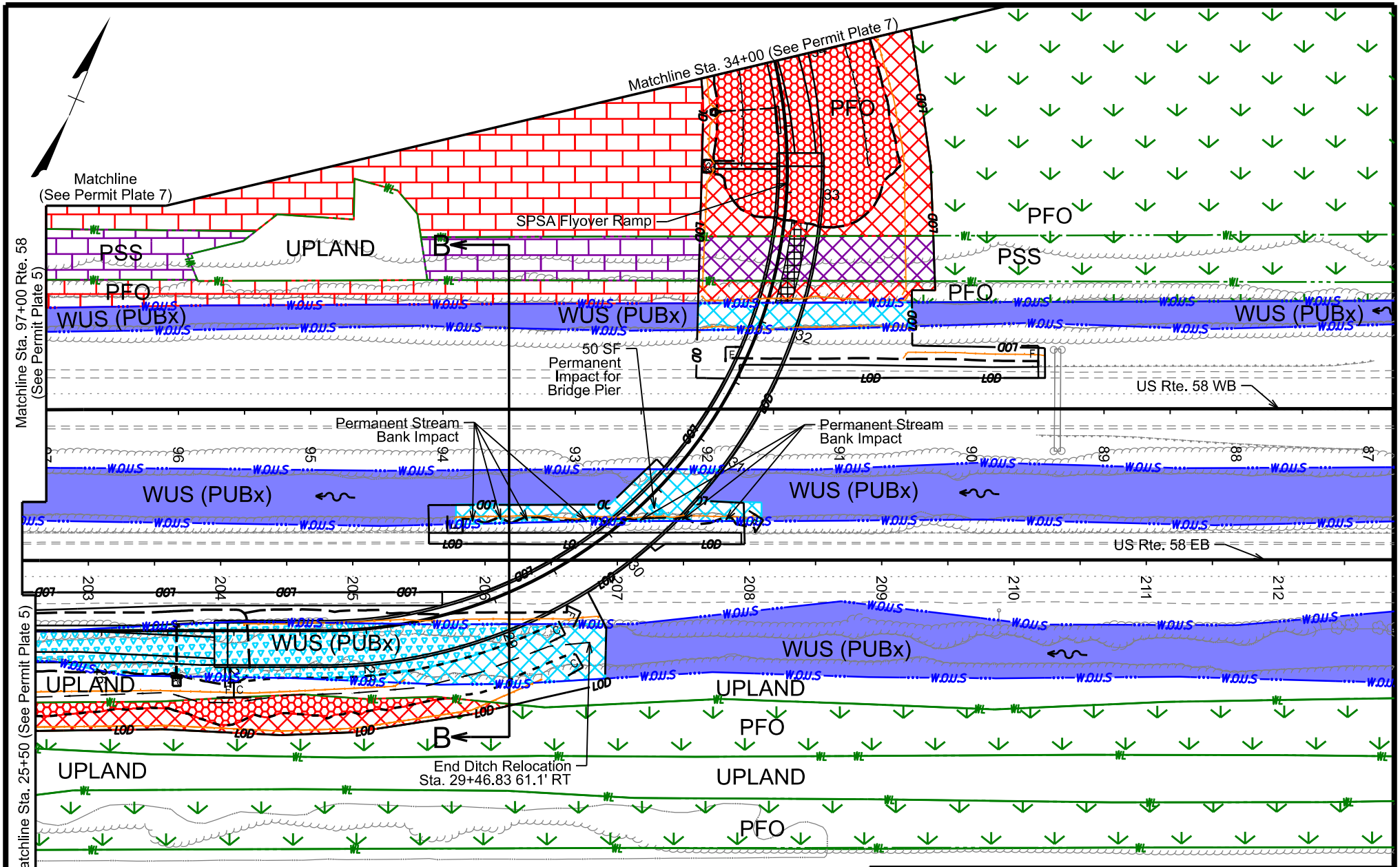
	PEM	PFO	PSS	PUBx	PUBx
Permanent Impact	6,511 SF	21,332 SF	7,145 SF	25,334 SF	1,403 LF
Temporary Impact	3,568 SF	16,952 SF	5,082 SF	16,898 SF	951 LF
Conversion Impact	0 SF	22,439 SF	19,515 SF	0 SF	N/A
Shading Impact	0 SF	0 SF	0 SF	0 SF	N/A

SCALE
0 50' 100'

SPSA Interchange Improvement Project
US 13/58/460 City of Suffolk, Virginia

Date: March 2023

Application By:	ROUTE	FILE NO.	PLATE NO.
Virginia Department of Transportation	58	0058-133-459 R-201, C-501	Sheet 5 of 10



	PEM	PFO	PSS	PUBx	PUBx
Permanent Impact	0 SF	18,904 SF	0 SF	13,203 SF	530 LF
Temporary Impact	0 SF	15,127 SF	6,024 SF	12,187 SF	631 LF
Conversion Impact	0 SF	36,763 SF	11,560 SF	0 SF	N/A
Shading Impact	0 SF	325 SF	403 SF	0 SF	N/A

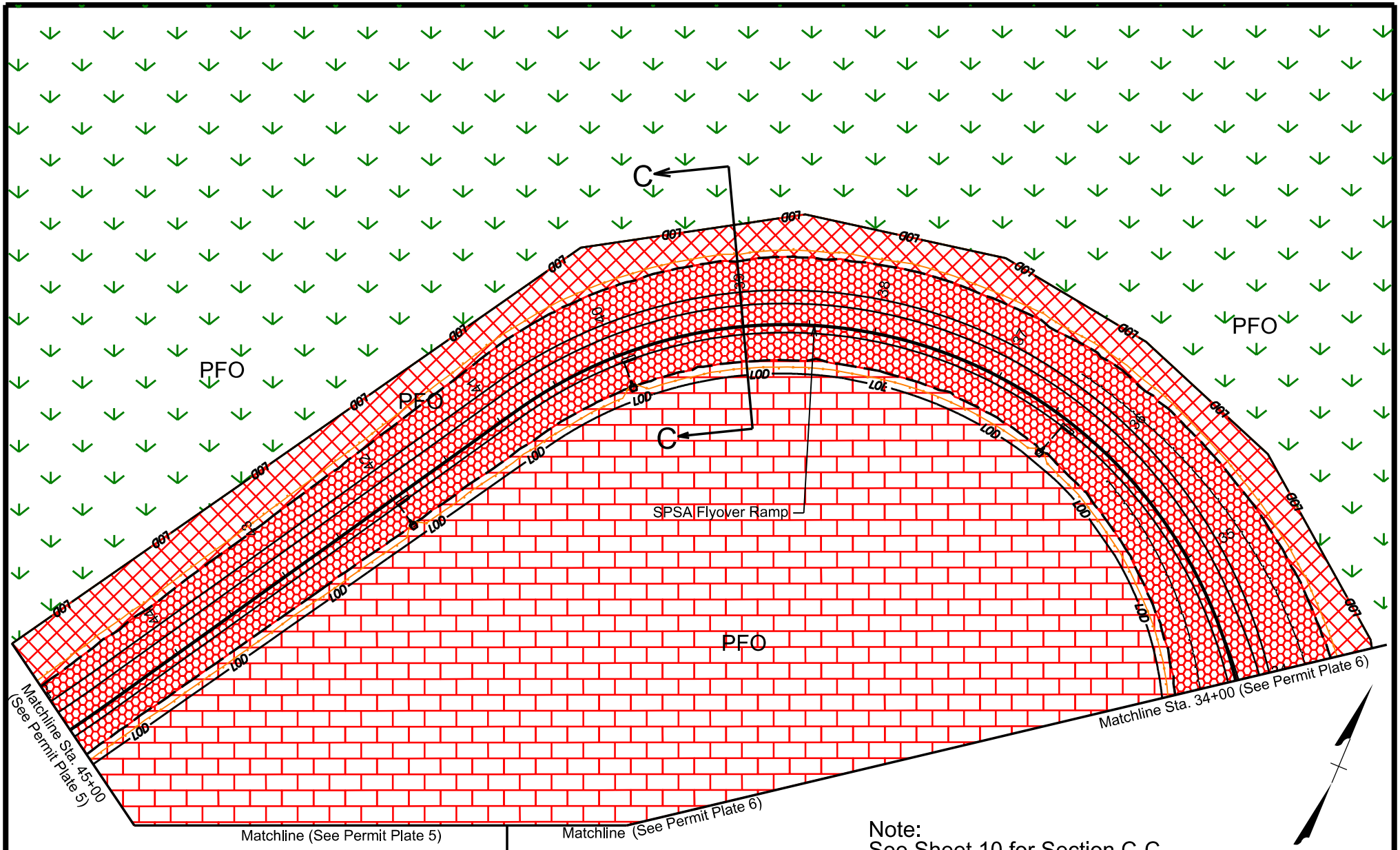
Note:
See Sheet 9 for Section B-B

SCALE
0 50' 100'

SPSA Interchange Improvement Project
US 13/58/460 City of Suffolk, Virginia

Sta. 25+50 to Sta. 34+00 | Date: March 2023

Application By:	ROUTE	FILE NO.	PLATE NO.
Virginia Department of Transportation	58	0058-133-459 R-201, C-501	Sheet 6 of 10



	PEM	PFO	PSS	PUBx	PUBx
Permanent Impact	0 SF	88,366 SF	0 SF	0 SF	0 LF
Temporary Impact	0 SF	36,724 SF	0 SF	0 SF	0 LF
Conversion Impact	0 SF	186,415 SF	0 SF	0 SF	N/A
Shading Impact	0 SF	0 SF	0 SF	0 SF	N/A

(Permit Plate 5)
(Permit Plate 6)

SCALE
0 50' 100'

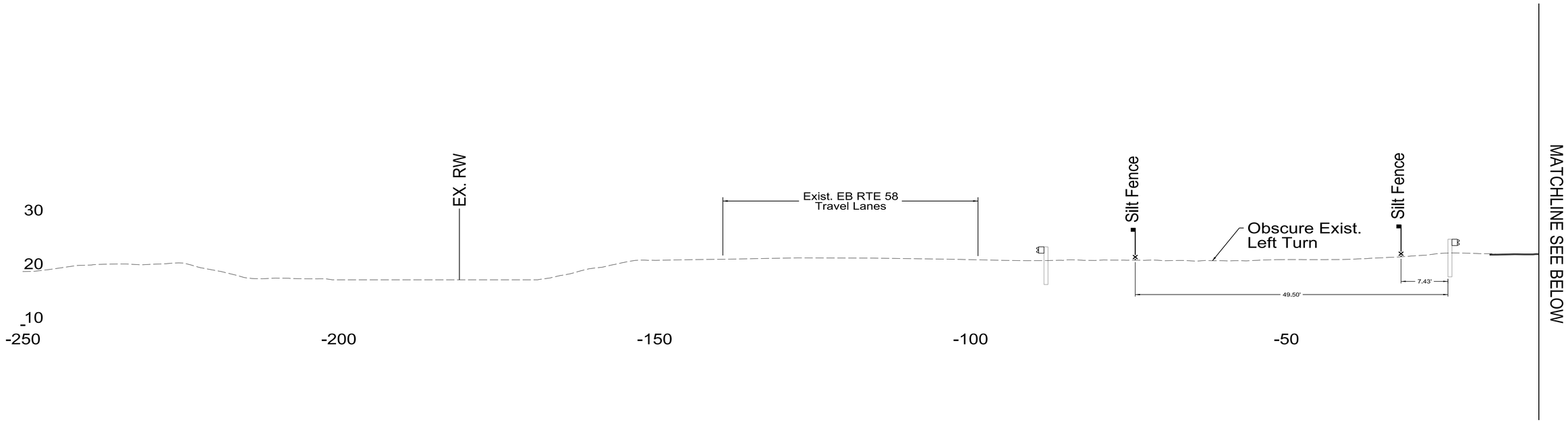
Note:
See Sheet 10 for Section C-C

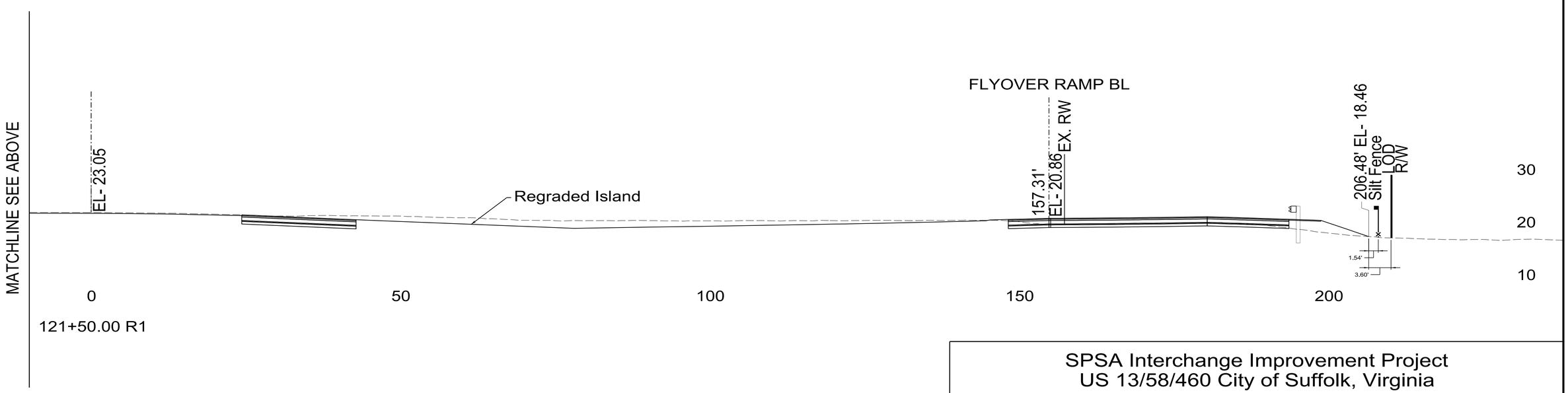
SPSA Interchange Improvement Project
US 13/58/460 City of Suffolk, Virginia

Sta. 34+00 to Sta. 45+00 | Date: March 2023

Application By:	ROUTE	FILE NO.	PLATE NO.
Virginia Department of Transportation	58	0058-133-459 R-201, C-501	Sheet 7 of 10

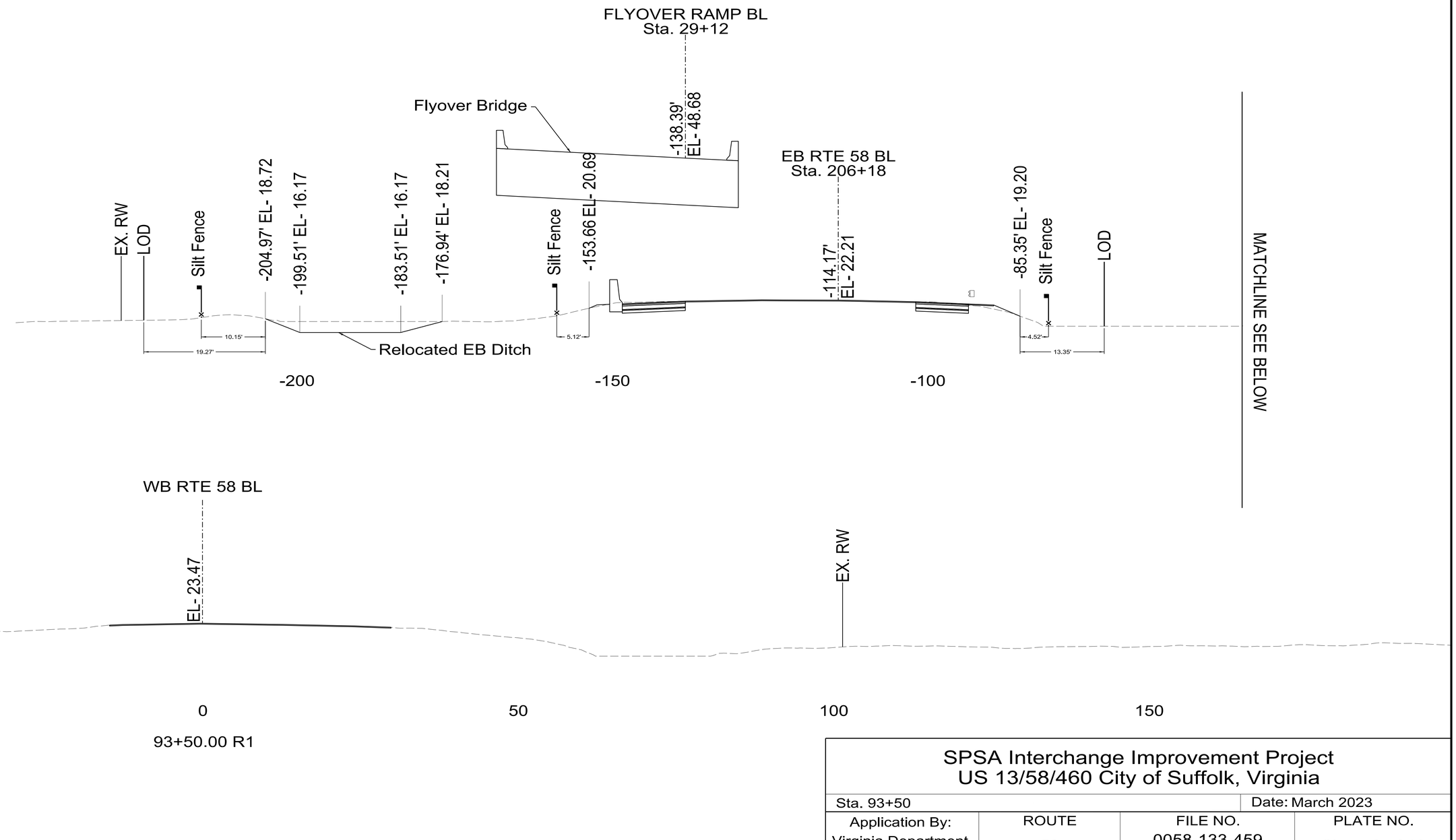
SECTION A-A





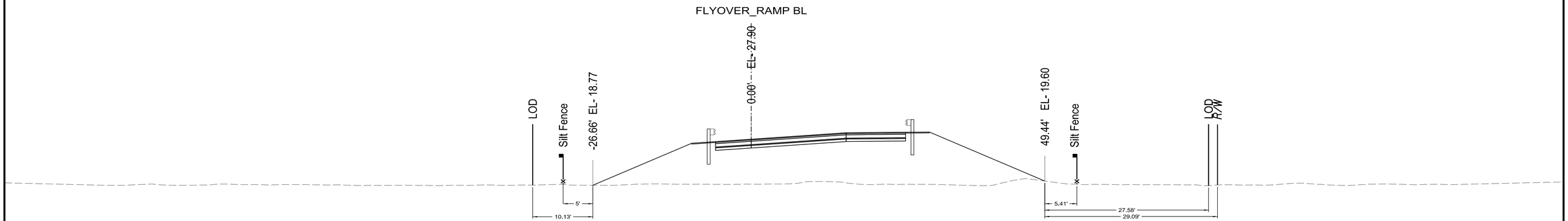
SPSA Interchange Improvement Project US 13/58/460 City of Suffolk, Virginia			
Sta. 121+50			Date: March 2023
Application By: Virginia Department of Transportation	ROUTE 58	FILE NO. 0058-133-459 R-201, C-501	PLATE NO. Sheet 8 of 10

SECTION B-B



SPSA Interchange Improvement Project US 13/58/460 City of Suffolk, Virginia			
Sta. 93+50			Date: March 2023
Application By: Virginia Department of Transportation	ROUTE 58	FILE NO. 0058-133-459 R-201, C-501	PLATE NO. Sheet 9 of 10

SECTION C-C



SPSA Interchange Improvement Project US 13/58/460 City of Suffolk, Virginia			
Sta. 39+00		Date: March 2023	
Application By: Virginia Department of Transportation	ROUTE 58	FILE NO. 0058-133-459 R-201, C-501	PLATE NO. Sheet 10 of 10

Attachment D

Hydraulic Commentary

VIRGINIA DEPARTMENT OF TRANSPORTATION
LOCATION AND DESIGN
LOCATION HYDRAULIC STUDY

Project Information			
UPC	118375	State Project Number	0058-133-459
City/County	Suffolk County	Route	13/58/460
Waterbody	Nansemond River-Cedar lake, JL48, 02080208		

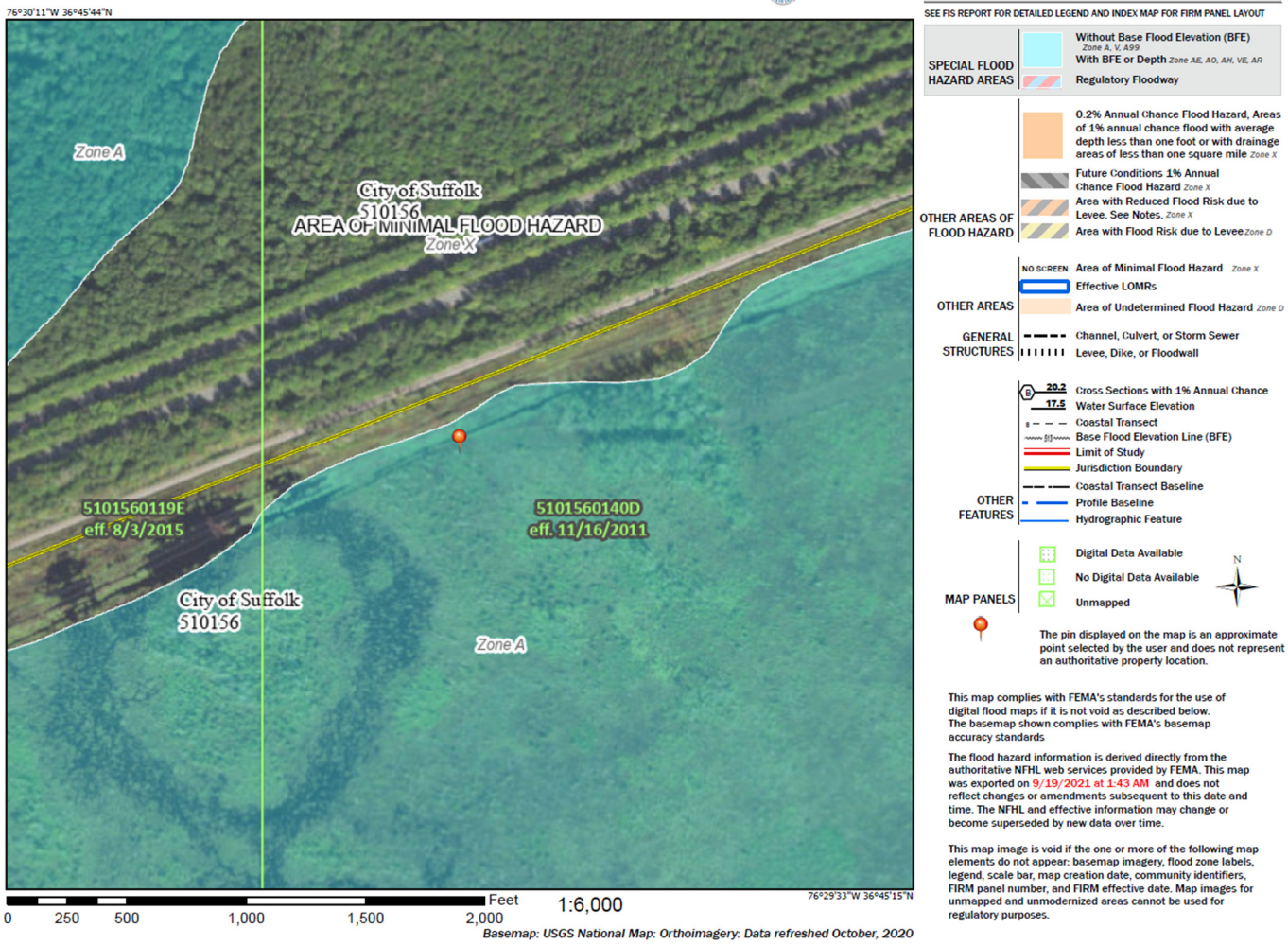
Study Information					
Project Type	New Construction				
Description of proposed actions within the Base Flood Plain	SPSA Interchange Improvements- Jurisdictional Roadside Ditch to Dismal Swamp in Suffolk County				
Drainage Area	5.17 sq. mi.				
Roadway Classification	Other Principal Arterial		Design Storm	25-year	
Panel Number	Zone*	BFE	Floodway Encroachment	Notation	
5101560140D	A	-	N/A		
* Only note if in a Zone A, AE, V, or VE area					
Engineers Assessment	No changes in flood plain elevation is expected from the preliminary hydraulic assessments utilizing general information of the existing and/proposed development. (FIRMette attached)				

Conclusion	
Further study required	None
To	

Personal Information			
Completed By	Mohammed A Alim, PE		Date: 10-21-21
With	VDOT, Hampton Roads, District River Mechanics Engineer		
Phone	757-956-3270	Email	Mohammed.alim@vdot.virginia.gov

UPC VA_UPC
State Project Number VA_PRJ_NUM

National Flood Hazard Layer FIRMette



Attachment F

Threatened & Endangered Species Information

IACM DATE: 02/14/2023
VDOT PROJECT #: 0058-133-459, B616, C501, P101, R201
PERMIT #: 23-4011 PRE-APP#:

T&E CLEARANCE

Project Name:	SPSA Flyover	Project Type:	Construction
Project Number:	0058-133-459, B616, C501, P101, R201	Charge Number:	118375 Act 712
UPC:	118375	Route Type:	Primary
Project Number(Assoc)(UPC):	00460-133-25132686		
Route Number:	58		
District:	City/County:	Residency:	
Hampton Roads	Suffolk	Norfolk	
From:	0.429 Miles East of US 13/58/460		
To:	2.536 Miles West of Suffolk City Limits		
Project Description:	SPSA Interchange Improvement		
Additional Project Description:	This project is located in the City of Suffolk. The purpose is to construct a flyover ramp to accommodate the left turning Eastbound traffic entering the landfill. Additional right of way will be required for approximately 5 parcels. This project will have utility relocations. Currently, Route 460 is a 6 through lane facility, Lane widening will occur on both sides to accommodate the ramp. No additional through lanes are being added. The loop of the ramp is located on new location and will tie back into Bob Foeller Drive. US Route 13/58/460 has 3 general purpose lanes in each direction. The proposed design includes a right exit ramp on the eastbound lanes for the traffic entering the landfill from this direction. The flyover will be located approximately 3,000 feet from the existing intersection at Bob Foeller Drive/Welsh Parkway. The exiting traffic will maintain existing traffic patterns.		
T&E Project Description:	SPSA Interchange Improvement		
Quadrangle:	BOWERS HILL, CHUCKATUCK	SERP Exempt?:	No
Latitude:	36°45'33"	Permit Required?:	Yes
Longitude:	-76°29'57"		
Last GIS species data load date:		Buffer Size:	

SUMMARY:

[ ] **No federal nexus, SERP or state water quality permits required**

[X] **Federal nexus, SERP or state water quality permits required**

[ ] The activity falls within a list of activities that have been determined to have No Effect on Fish, Plant and Wildlife Resources. No additional review required.

[X] The activity requires additional review, complete the appropriate level of review, as defined in Projects and Resources Requiring Review.

IACM DATE: 02/14/2023
VDOT PROJECT #: 0058-133-459, B616, C501, P101, R201
PERMIT #: 23-4011 PRE-APP#:

		DATE:	REVIEWER:
[X]	Based upon a review of the appropriate data sources, T&E Resources are known or suspected to be a concern for this project and additional review is required.	08/26/2021	M Mussomeli
[ ]	Based on a review of the appropriate data sources, No T&E resources are documented or are suspected to be a concern for this project.		
[X]	**PROJECT PHASE REVIEW COMPLETE**	01/30/2023	J Mace

SPECIES:

Species/Resource Name	Additional Information	Category	Federal Status	State Status	Data Source	Potential to Occur	Potential for Impacts	Effect Determination	Conclusion	TOYR Begin	TOYR End
Northern Long-Eared Bat (Myotis septentrionalis)		Mammals	FT	ST	IPaC OSL	Mature and immature forested uplands within and adjacent to project area.	Apply 4(d) rule for allowable incidental take.	May affect, Not Likely to adversely Effect	Review complete, comments received		
Anadromous Fish	Burnetts Mill (potential)	Resource			Integrator - Anadromous Fish	None.	No anadromous fish streams located in vicinity of project area.	No Effect	No coordination required. Project cleared using Risk Assessment		
Anadromous Fish	Nansemond river (potential)	Resource			Integrator - Anadromous Fish	None.	No anadromous fish streams located in vicinity of project area.	No Effect	No coordination required. Project cleared using Risk Assessment		
Canebrake Rattlesnake (Crotalus horridus)	10/30/12 8:00 PM;VDGIF Scientific Collections, TE, and Salvage permit data from application	Reptiles		SE	Integrator - T&E Species	Extensive forested wetlands within project area. Cane thickets present within portions of understory. Suitable habitat present.	Collections in vicinity. Coordination with DGIF pending.	Coordination pending	Review required, comments pending		
Tri-colored Bat (Perimyotis subflavus)	7/28/96 8:00 PM;VDGIF Scientific Collections, TE, and Salvage permit data	Mammals	FP	SE	Integrator - T&E Species	Foraging and summer roost habitat present. No winter hibernaculum in the area.	Coordination with DWR pending	Coordination pending	Review required, comments pending		
Canebrake Rattlesnake (Crotalus horridus)	7/17/09 8:00 PM;VDGIF Scientific Collections, TE, and Salvage permit data	Reptiles		SE	Integrator - T&E Species	Extensive forested wetlands within project area. Cane thickets present within portions of understory. Suitable habitat present.	Suitable habitat present; coordination with DGIF pending.	Coordination pending	Review required, comments pending		

Canebrake Rattlesnake (Crotalus horridus)	5/31/00 8:00 PM;VDGIF Scientific Collections, TE, and Salvage permit data	Reptiles		SE	Integrator - T&E Species	Extensive forested wetlands within project area. Cane thickets present within portions of understory. Suitable habitat present.	Suitable habitat present; coordination with DGIF pending.	Coordination pending	Review required, comments pending
Canebrake Rattlesnake (Crotalus horridus)	10/9/01 8:00 PM;VDGIF Scientific Collections, TE, and Salvage permit data	Reptiles		SE	Integrator - T&E Species	Extensive forested wetlands within project area. Cane thickets present within portions of understory. Suitable habitat present.	Suitable habitat present; coordination with DGIF pending.	Coordination pending	Review required, comments pending
Mabee's Salamander (Ambystoma mabeei)	Joe Mitchell's HERPS database	Amphibians		ST	Integrator - T&E Species	Low to moderate habitat north of US 58 within east-central portion of project area and within western fringe of the project area. These areas include a stream within which a berm was constructed, resulting in ephemeral forested wetland with water depths of up to 18" and seasonally-flooded forested wetland on mineral flat, inundated up to 12". No fish observed; crayfish, frogs, tadpoles, and snake skins observed.	Low to moderate habitat observed. Coordination with DGIF pending.	Coordination pending	Review required, comments pending
DNH Sites - 100 ft Buffer	GREAT DISMAL SWAMP - Conservation Site	Resource	FL		Integrator - Natural Heritage Sites			Coordination pending	Review required, comments pending
Red-cockaded Woodpecker (Picoides borealis)		Birds	FE	SE	IPaC OSL	Extensive forested wetlands and fringes of uplands. Mixed community with dominants including loblolly pine, sweet gum, and red maples; mostly early to mid-successional. Scattered mature pines present within western portion of project area (north of US 58).	Coordination with USFWS required. Anticipate a Not Likely to Adversely Affect designation.	May affect, Not Likely to adversely Effect	Review required, comments pending

PSHS - Canebrake Rattlesnake- Coastal Plain Population (Crotalus horridus)	PREDICTED SUITABLE HABITAT SUMMARY	SE	T&E Database Review	Extensive forested wetlands within project area. Cane thickets present within portions of understory. Suitable habitat present.	Suitable habitat present; Coordination pending coordination with DCR-NH pending.	Review required, comments pending

AGENCY COMMENT:

AGENCY	DATE	COMMENTS
DNH	04/02/2021	Strict E&S. The current activity will not affect any documented state listed plants or insects. Due to the potential for this site to support populations of the Eastern big-eared bat, DCR recommends an assessment of possible roost tree within the project area. If there are large tree with possible roosts that need to be removed during construction, DCR recommends looking for signs of bat usage (guano) around the entrance of the possible roost. Due to the legal status of the Eastern big-eared bat and Canebrake rattlesnake, DCR recommends coordination with Virginia's regulatory authority for the management and protection of these species, the VDWR, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570). If there are suitable roost trees in the project area or signs of bat use, DCR also recommends further coordination with this office.
DWR	09/22/2021	It appears, based on review of satellite imagery and/or pictures of the project site, that suitable Canebrake Rattlesnake habitat is located on site and will be adversely impacted by this project. To adequately compensate for these impacts, we recommend preservation of an equivalent amount of canebrake habitat (i.e., 1:1 ratio)in an area with a confirmed population of the species. However, we understand this can be difficult to achieve. If such habitat preservation is not possible, we recommend providing additional wetland compensation at a ratio of at least 1:1 to mitigate the loss of valuable canebrake rattlesnake habitat. This should be in addition to the standard compensatory mitigation ratio. All wetland mitigation credits should be obtained from a bank with a confirmed population of canebrake rattlesnakes. In addition, we recommend that, prior to the start of construction, all contractors are trained in the identification, basic natural history, and legal status of canebrake rattlesnakes (see letter for remainder of canebrake comments). It is difficult to tell, from the information provided, whether suitable habitat for Mabee's Salamanders is available at the project site. Therefore, we recommend that a habitat assessment for this species be performed throughout the project site. Based on the scope and location of the proposed work, we do not anticipate it to result in adverse impacts upon tri-colored bat or anadromous fishes. See attached letter for additional recommendations.
DNH	12/22/2022	Strict E&S. No impacts to state listed plants or insects

AGENCY COORDINATION RECORD:

AGENCY NAME	AGENCY TRACKING NUMBER	DATE SUBMITTED	DATE DUE	COORDINATION TYPE	DATE OF ACKNOWLEDGEMENT	NOTES

DWR	41533	08/17/2021	09/16/2021	Submitted for Review	Received comments.
DCR-NH	30409	03/02/2021	04/01/2021	Submitted for Review	Received comments.
USFWS	05E2VA00-2021-SLI-2381	11/04/2022	12/04/2022	Project Review Request	To submit review request to USFWS for 4(d) rule and NLAA for red cockaded woodpecker.
NOAA					

SURVEY(S) REQUESTED:

SCOPE	TYPE	REQUEST DATE	SPECIES	SURVEY STATUS	RECOMMENDATIONS
Habitat	Herptile	11/16/2022	Mabee's Salamander (Ambystoma mabeei)	CURRENT	

RISK ASSESSMENT:

CANEBRAKE RATTLESNAKE HABITAT ASSESSMENT

SPSA FLYOVER PROJECT

City of Suffolk, Virginia

December 2022

Prepared By:
Virginia Department of Transportation
Hampton Roads District

TABLE OF CONTENTS

LIST OF APPENDICES

I. INTRODUCTION

The Virginia Department of Transportation (VDOT) has conducted a Phase I-level habitat assessment for the State-endangered canebrake rattlesnake (*Crotalus horridus* [Coastal Plain population]) for the proposed Southeastern Public Service Authority (SPSA) Flyover Project in the City of Suffolk, Virginia. The purpose of this report is to analyze potential impacts to canebrake rattlesnake and identify suitable habitat within the project location and study area. The project area is located at and adjacent to U.S. 58, west of a truck weigh station, east of the U.S. 58 Business interchange, and east-southeast of the SPSA landfill (Appendix A – Figures 1 and 2).

II. PROJECT DESCRIPTION

The purpose is to construct a flyover ramp to accommodate the left-turning eastbound traffic entering the landfill. Currently, traffic accessing the SPSA landfill from U.S. 58 EB utilizes a median crossover, crossing U.S. 58 WB to access Bob Foeller Drive (landfill access road). The crossover has a history of high accident rates and the current level of is unacceptable during peak conditions. Based on the adopted regions travel demand forecast model, peak hour volumes will increase by approximately 36% by 2040 (1.6% growth rate annually). Furthermore, the SPSA landfill is undergoing a 127-acre expansion. The closure of the Portsmouth Wheelabrator facility, which burns approximately 85% of the region's trash to produce steam energy for the U.S. Navy, would be expected to substantially increase truck traffic to the SPSA landfill. Therefore, the proposed flyover would eliminate the suboptimal median crossover by providing a safer alternative that would accommodate future landfill access needs and address immediate safety issues.

Currently, U.S. 58 is a six (6) through lane facility, with three (3) general purpose lanes in each direction. Lane widening will occur on both sides of the highway to accommodate the ramp/flyover. No additional through lanes/capacity improvements are being added. The loop of the ramp is a fill slope, located on new location that will tie into Bob Foeller Drive (landfill access road). The proposed design includes a right exit ramp on the eastbound lanes for the traffic entering the landfill from this direction. The flyover will be located approximately 3,000 feet from the existing intersection at Bob Foeller Drive. The exiting traffic will maintain existing traffic patterns.

Proposed design would include ditch relocation adjacent to U.S. 58 EB to accommodate the exit to the flyover. A portion of roadside ditch adjacent to U.S. 58 EB would be relocated to accommodate the exit to the flyover. Existing drainage within the proposed loop (north of U.S. 58 WB) and fill slope would be maintained via installation of four (4) culverts.

The proposed project is phased. Phase I would include construction of the flyover, drainage improvements, lane widening and utility relocation. Phase II would improve

ingress/egress from the facility to and from U.S. 58 WB. Right-of-way acquisition is projected for five (5) parcels. The proposed project is projected to result in approximately 6.70 acres of tree clearing.

Figure 3 (Appendix A) shows and aerial view of Phase I of the proposed project.

III. CANEBRAKE RATTLESNAKE

Pursuant to Code of Virginia Chapter 5, Article 6, §29.1 et seq., the canebrake rattlesnake (Coastal Plain population) is protected as State-endangered (no Federal status) in the state. Its range in Virginia is limited to the lower York-James peninsula (York County, cities of Newport News and Hampton), Isle of Wight County, and the cities of Chesapeake, Suffolk, and Virginia Beach (Virginia Department of Game and Inland Fisheries, 2011). Though no longer considered a subspecies of timber rattlesnake, the State of Virginia does recognize the Coastal Plain population, which ranges from southeastern Virginia to northern Florida, as a distinct population segment based on ecological differences and phenotype and has experienced precipitous declines.

The canebrake rattlesnake is a large venomous pit viper, approximately 30 to 60 inches in length, reaching up to 74 inches (Conant and Collins, 1991; DGIF, 2011). Its background color is greyish to pink, with a dark reddish stripe running from the eye through the back of the jaw to the belly, with dark brown crossbands that may form chevrons across the dorsum. Juveniles are similar to adults but paler (Mitchell, 1974). The tail is black, with a series of loose, keratinized segments that form the rattle (DGIF, 2011). Males typically grow larger than females, with no other distinct sexual dimorphism (Mitchell and Schwab, 1991).

Canebrake rattlesnakes occupy hardwood and mixed hardwood-pine forests, cane fields, and ridges and glades of swampy areas (Mitchell and Schwab, 1991). Hardwood forests along riverine corridors often harbor canebrakes. Savitzky and Petersen (2004) found canebrakes were located most frequently in deciduous forest (77% of observations); only 13% of observations occurred in pine forests, and another 8% occurred in clearcuts. Snakes are known to enter wetlands often for extended periods, and they frequently cross at least small rivers. On occasion, individuals will occupy agricultural fields and other less optimal habitats (DGIF, 2011).

Canebrake rattlesnakes are generally active in Virginia from April-October. Grey squirrels (*Sciurus carolinensis*), other rodents, and rabbits are considered primary prey items (Fernand, 1999). During the fall and winter, the snakes hibernate in forested habitat and are known to utilize the base of hollow trees or stumps, and underground tunnels resulting from the decomposition of stumps and roots (Fernand, 1999; Mitchell and Schwab, 1991).

IV. STUDY METHODOLOGY

Background investigations utilized aerial photography, USGS 7.5-Minute Series USGS Topographic Maps (Appendix A – Figure 2), USFWS National Wetland Inventory mapping (Appendix A – Figure 4), and community vegetation mapping to identify project impact locations with the potential to contain canebrake rattlesnake habitat. Mapping and results from a previously performed wetland delineation (2021) and site investigations were also referenced to determine potential habitat. The DGIF Canebrake Rattlesnake Conservation Plan was also reviewed to determined documentation of observed canebrake rattlesnake and designated zones of protection. A study area was established based on the proposed project's limit of disturbance and existing habitat fragmentation. The study area extends approximately 1,500 feet to the west and up to 800 feet to the north (north of U.S. 58 WB) due to lower degree of habitat fragmentation and to account for potential project alternatives. The study area is limited to approximately 125 feet to 150 feet to the south of U.S. 58 EB due to high degree of habitat fragmentation including a periodically maintained historic railroad bed and active CSX railroad tracks.

To assess potential habitat within the study area, field investigations conducted on the following dates: 29 October 2021 by VDOT Senior Natural Resource Specialist Michael J. Mussomeli; 13 January 2022 by VDOT Senior Natural Resource Specialists Michael J. Mussomeli, Dean Devereaux, and James Hatcher; 6 April 2022 by Michael J. Mussomeli and Dean Devereaux; and 26 April 2022 by Michael J. Mussomeli. Field investigations assessed all community types within the study area and examined areas adjacent to the site (Appendix A – Figure 5 and Figure 6). VDOT Hampton Roads District adapted Pennsylvania Fish & Boat Commission Timber Rattlesnake Assessment Form for use for canebrake rattlesnake (Coastal Plain), which was completed for all community types and is included in Appendix C. The corresponding representative sampling locations for the assessment forms are shown in Appendix A – Figure 7.

V. SITE/HABITAT DESCRIPTION

Field investigations examined plant communities within the study area and identified roadside edge, emergent wetlands, wetland ditch, upland field/clearing vegetational communities. An intermittent stream, cross ditches, and roadside ditches were also identified and included in the community descriptions in which they occur below. Forested wetlands were divided based into separate areas based on habitat fragmentation and successional stage of each community.

<u>Forested Wetlands - Mixed Deciduous (Mature)</u>
An extensive, mature, mixed deciduous forested wetland community is located within the northwest quadrant of the project area, north of U.S. 58 WB and west of power line right-of-way. This community is located on a private parcel at the site of the proposed loop ramp. This forested wetland is contiguous outside of the study area with a large forested

system that extends approximately 2.50 miles to the north, 4.00 miles to the northeast, and 2.35 miles to the east.

Hydrology is supported by precipitation and groundwater. The eastern portion of this community contains extensive hummocks and exhibits a greater amount and duration of standing water. The western portion of the community is better drained, with portions not containing standing water for appreciable periods.

Vegetation within this community is largely homogenous with dominant vegetation consisting of red maple (*Acer rubrum*), sweet gum *(Liquidambar styraciflua*), and loblolly pine (*Pinus taeda*) in the overstory; American holly (*Ilex opaca*) in the understory; switchcane (*Arundinaria tecta*) and netted chain fern (*Woodwardia areolata*) as ground cover; and Japanese honeysuckle (*Lonicera japonica*) and greenbriars (*Smilax spp.*) in the vine layer. Switchcane density and cover ranges from high density to sparse in different portions of the community. Japanese stilt grass (*Microstegium vimineum*) is present at high densities intermittently within this community. Masting trees were observed infrequently. Numerous downed trees and hollowed out trees were observed that may be considered potential hibernacula. A list of vegetation observed within this community is listed in Appendix C – Table 1.

Due to community type, age class, and composition with connectivity to large forested tracts outside of the study area, forested wetlands on the 5 Pines Parcel represent suitable canebrake rattlesnake habitat. No canebrake rattlesnakes were observed during site investigations; however, two (2) black racers (*Coluber constrictor*) were observed at the edge of the treeline and the south-central and west-central portions of the community, respectively, during the 6 April 2022 field investigation.

Forested Wetlands - Mixed Deciduous (Immature)

Located within the northeast and northwest quadrants of the study area, this community type contains mixed deciduous vegetation that was recently timbered or disturbed. The habitat patch within the northeast quadrant is approximately 4.50 acres in size and has been timbered within the last ten (10) to fifteen (15 years). Similar to adjacent mature forested wetlands, hydrology is primarily groundwater driven with seasonal high water at the surface. Topography has little relief though hummocks are present throughout the system. Though this system contains immature forested wetlands, it is part of a larger, contiguous corridor dominated by mature mixed deciduous hardwoods; therefore, though marginal, should be considered potential canebrake habitat. Dominant vegetation includes red maple, sweet gum, netted chain fern, microstegium (*Microstegium vimineum*) and switchcane. A list of species observed during field investigations is included in Appendix C – Table 2.

The northwestern patch is located west of the power line right-of-way and is designated as a wetland preservation area associated with the SPSA as part of permitting and wetland compensatory mitigation requirements. Age class of tree/sapling layer is approximately fifteen (15) years, with diameter at breast height ranging from approximately three (3) to nine (9) inches. Standing water is present for extensive

periods during the growing season within portions of this system, with a number of historic ditches draining to a mapped unnamed tributary of Burnett's Mill. A berm and culverts partially block drainage of this tributary, contributing to seasonally flooded condition. Dominant vegetation includes sweet gum, loblolly pine, and red maple. Ground cover within areas of the western portion of the system contains dense Japanese stilt grass. Though this system contains immature forested wetlands, it is part of a larger, contiguous corridor dominated by mature mixed deciduous hardwoods; therefore, though marginal, may be considered potential canebrake habitat.

A fringe of forested wetlands occur with the southeast quadrant of the project area, south of U.S. 58 EB and adjacent to roadside ditch. The overstory is primarily immature, though unlike the aforementioned patches north of U.S. 58 WB, some mature trees occur intermittently. This patch is highly fragmented with U.S. 58 EB directly to the north; a private drive (Welsh Parkway) to the west; a maintained, historical railroad bed abutting the system to the south; an active CSX railroad also adjacent to the south, and a power line right-of-way bisecting the wetland. Due to the disturbance and high degree of fragmentation, this patch was not considered as suitable habitat.

Forested uplands

Small patches and fringes of forested uplands are located within the northeastern portion of the study area and along U.S. 58 EB, within the median, and adjacent to U.S. 58 WB. A patch of forested uplands is also located within aforementioned SPSA wetland preservation area within the northwest portion of the study area, north of U.S. 58 WB. Dominant vegetation includes loblolly pine, red maple, sweet gum, tulip tree (*Liriodendron tulipifera*), black cherry (*Prunus serotina*), American beech (*Fagus grandifolia*), and sweet pepperbush (*Clethra alnifolia*); American holly and privet (*Ligustrum sinense*) in the understory; Japanese honeysuckle, Virginia creeper (*Parthenocissus quinquefolia*), and various grasses (*Poaceae* spp.) in the herbaceous layer; and muscadine (*Vitis rotundifolia*), poison ivy (*Toxicodendron radicans*), Japanese honeysuckle, and Virginia creeper in the woody vine layer.

Due to high disturbance adjacent to U.S. 58, these communities locations are unsuitable habitat for canebrake rattlesnake. A list of observed species is included in A list of species observed during field investigations is included in Appendix C – Table 3.

Scrub-Shrub Wetlands

Linear communities of scrub-shrub wetlands are located within partially maintained access roads on the north-central portion of the study area, north of U.S. 58 WB. Dominant vegetation includes sweet gum, red maple, groundsel (*Baccharis halimifolia*), highbush/sawtooth blackberry (*Rubus argulus*), willow (*Salix* sp.), various grasses (*Poaceae* sp.), and Canada goldenrod. This area is periodically maintained, albeit less frequently than emergent wetlands present within access roads below. A list of species observed during field investigations is included in Appendix C – Table 4.

Emergent Wetlands – Emergent wetlands are located within an access road within the northwest-north-central portion of the study area and within the aforementioned power line right-of-way bisecting the project area. Dominant vegetation includes, broadleaf cattail (*Typha latifolia*), sugarcane plumegrass (*Erianthus giganteus*), Frank's sedge (*Carex frankii*), sallow sedge (*Carex lurida*), deer tongue (*Dichanthelium* sp.), sweet vernal grass (*Anthoxanthum odoratum*), water purslane (*Lythrum portula*), Stoudt's blue-eyed grass (*Sisyrinchium angustifolium*), Canada goldenrod (*Solidago canadensis*), spike grass (*Eleocharis* spp.). A list of observed species is included in Appendix C – Table 5.

Regular disturbance occurs within access road and periodic disturbance associated with maintenance activities is present within the power line right-of-way. These areas are also within the immediate vicinity of U.S. 58 WB (with small emergent fringe in southern portion of the project area). Coupled with lack of typical usage for this habitat type by canebrake rattlesnake, these areas would be considered unsuitable habitat.

Roadside Edge/Historic Railroad Bed- Roadside edge communities are located adjacent to U.S. 58 EB, US 58 WB, and within the median as well as upland infield/gore areas at the U.S. 58 WB exit to Bob Foeller Drive. Additionally, a maintained historic railroad bed is located between U.S. 58 EB and the active CSX railroad. These areas are subject to regular maintenance actions. Dominant vegetation observed included various grasses (*Poaceae* sp.), bulbous buttercup (*Ranunculus bulbosus*), Chinese bush clover (*Lespedeza cuneata*), goose grass (*Eleusine indica*), sweet vernal grass, and Japanese honeysuckle. Due to high levels of disturbance associated both with U.S. 58 and regular maintenance, these locations were not considered suitable habitat. A list of species observed during field investigations is included in Appendix C – Table 5.

Roadside Ditches- Three (3) roadside ditches are located adjacent to U.S. 58, within VDOT right-of-way within the median, north of U.S. 58 WB, and south of U.S. 58 EB, respectively. Ditches north of U.S. 58 WB and south of U.S. 58 EB range between ten (10) to approximately fifteen (15) feet in width. These ditches exhibit poor drainage, with standing water present for the majority of the year. The roadside ditch within the median is slightly narrower, exhibits positive drainage, and is dry for significant portions of the year. These ditches do not represent suitable habitat for canebrake rattlesnake.

Adjacent Land Use- SPSA landfill is located northwest of the study area. As noted above, the 5 Pines Parcel is located north and northwest of the study area, extending greater than two (2) miles beyond the study area. Periodic silviculture activities are conducted on the property; though no site visit was conducted, vegetation of various age class may be observed by review of historical aerial photographs. An active CSX railroad is located south of the project area, with a power line right-of-way and the Great Dismal Swamp National Wildlife Refuge further south. A residential area, agricultural area, and used automotive part lot are located southwest of the study area off Welsh Parkway. Field investigation of these locations were beyond the scope of this study; however, contiguous habitat corridors were considered in review.

VI. SURVEY RESULTS AND DISCUSSION

Background investigations indicated potential presence of suitable habitat within the project's study area. Review of DGIF 2011 Canebrake Rattlesnake Conservation Plan indicated the project's study area is located within Area 1C- Great Dismal Swamp and Swamplands North of U.S. Routes 460 and 58 Zone of Protection (DGIF 2011). Field assessment confirmed the presence of suitable habitat with the study area. Appendix A – Figure 6 shows presence of suitable, suboptimal, and unsuitable habitat within the project's study area, with the SPSA Flyover project's footprint shown in background.

As noted in Section V above, the 5 Pines Parcel was identified as suitable habitat for canebrake rattlesnake. A mature, mixed hardwood forested wetlands community, portions that contain dense switchcane undergrowth, was documented on this parcel. Potential hibernacula was also observed throughout this community. This forested parcel extends greater than two (2) miles to the north and northwest with communities of varying age classes due to periodic silviculture activities (as observed on aerial photography). The project's permanent impact on this parcel is approximately 2.59 acres. Areas within the loop ramp encompass approximately 6.04 acres and are located outside of the project's limit of disturbance. The inner loop would remain forested, with access and use by canebrake rattlesnakes maintained by four (4) culverts at the northern portions of the ramp and the bridged section at the eastern portion of the flyover.

Suboptimal habitat was also observed within immature mixed hardwood communities within the northwest and northeast portions of the study area. Though suboptimal, these areas were considered as potential presence of canebrake due to connection with contiguous forested wetlands to the northeast and north, respectively. The northwestern patch is part of a wetland preservation area and would not be impacted by the proposed project. The northeastern patch would also be located outside of the project's limit of disturbance and not be impacted.

Due to high level of disturbance, the following communities adjacent to U.S. 58 EB, within the median, and U.S. 58 WB were determined unsuitable: emergent wetlands within regularly maintained access roads and at a periodically maintained power line right-of-way, scrub-shrub wetlands within partially maintained access road, roadside edge and maintained railroad bed, roadside ditch, and forested uplands. Disturbance within these communities range from periodic to regular and located with close proximity to a high volume highway. Therefore, these communities were considered unsuitable habitat.

The proposed project would permanently impact 2.59 acres of currently suitable habitat on the 5 Pines Parcel. However, in coordination with the property owner through VDOT project management, it is anticipated that this portion of the parcel will be subject to silviculture in December 2022- January 2023, prior to VDOT purchase of right-of-way (estimated July-August 2023). These activities would be anticipated to convert both the 2.59-acre project footprint and approximately 6.04-acre area within the loop to palustrine emergent wetlands.

As per prior coordination with DWR, VDOT would either purchase canebrake rattlesnake credit from the Great Dismal Swamp Restoration Bank (Centerville location) or coordinate potential preservation with SPSA for the project's 2.59-acres of direct impacts due to the project's location within a core habitat area. Upon the completion of silviculture by others, VDOT shall provide DWR with an addendum, providing disposition and photographs of the updated site condition, anticipated by January 2023. VDOT and DWR would then coordinate and discuss habitat suitability within the potentially cleared area and determine any additional mitigation requirements.

VII. LITERATURE CITED

Conant, R., and J.T. Collins. 1991. Peterson's Field Guides: Field Guide to Reptiles and Amphibians of Eastern and Central North America. Third Edition. Houghton Mifflin Co., Boston, MA.

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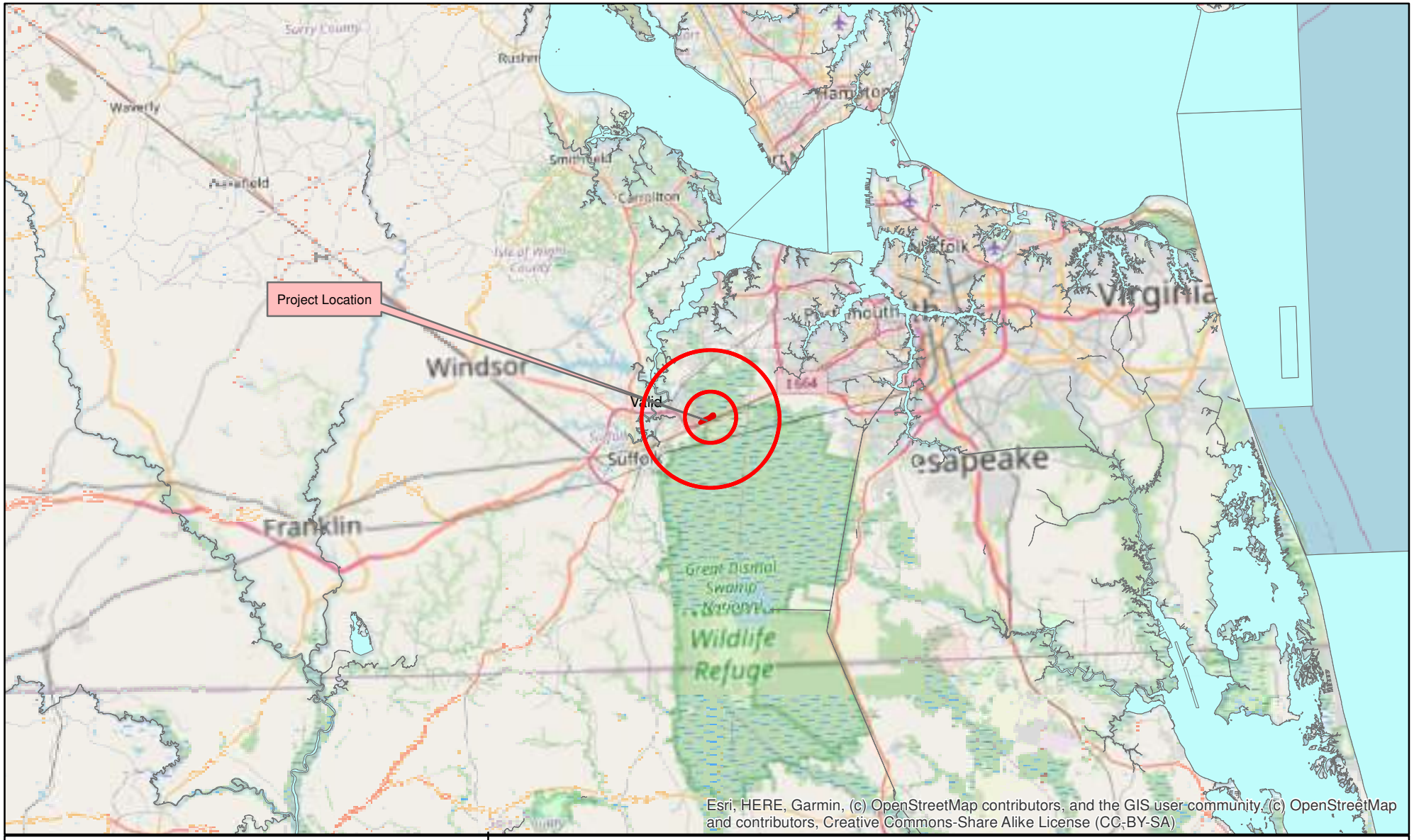
Savitzky, A.H. and C.E. Petersen. 2004. The canebrake rattlesnake on Naval Support Activity, Norfolk, Northwest Annex. Final Report for VDGIF.

Virginia Department of Game and Inland Fisheries. 2011. Canebrake Rattlesnake Conservation Plan. Bureau of Wildlife Resources. VDGIF, Richmond, VA. 25 pp.

APPENDIX A

FIGURES



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Miles

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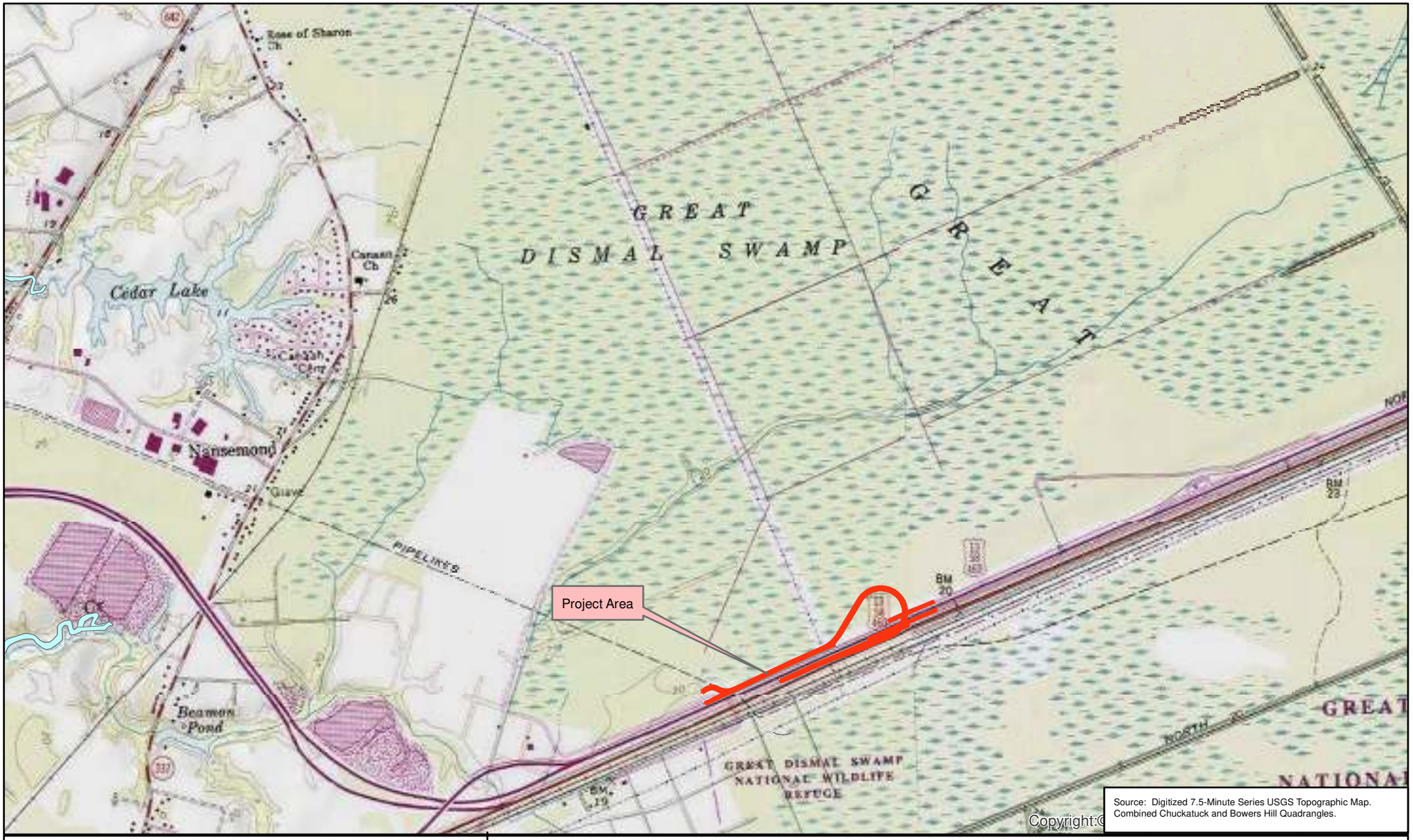
1 inch = 7.891 mi.

Figure 1- Site Location Map
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022



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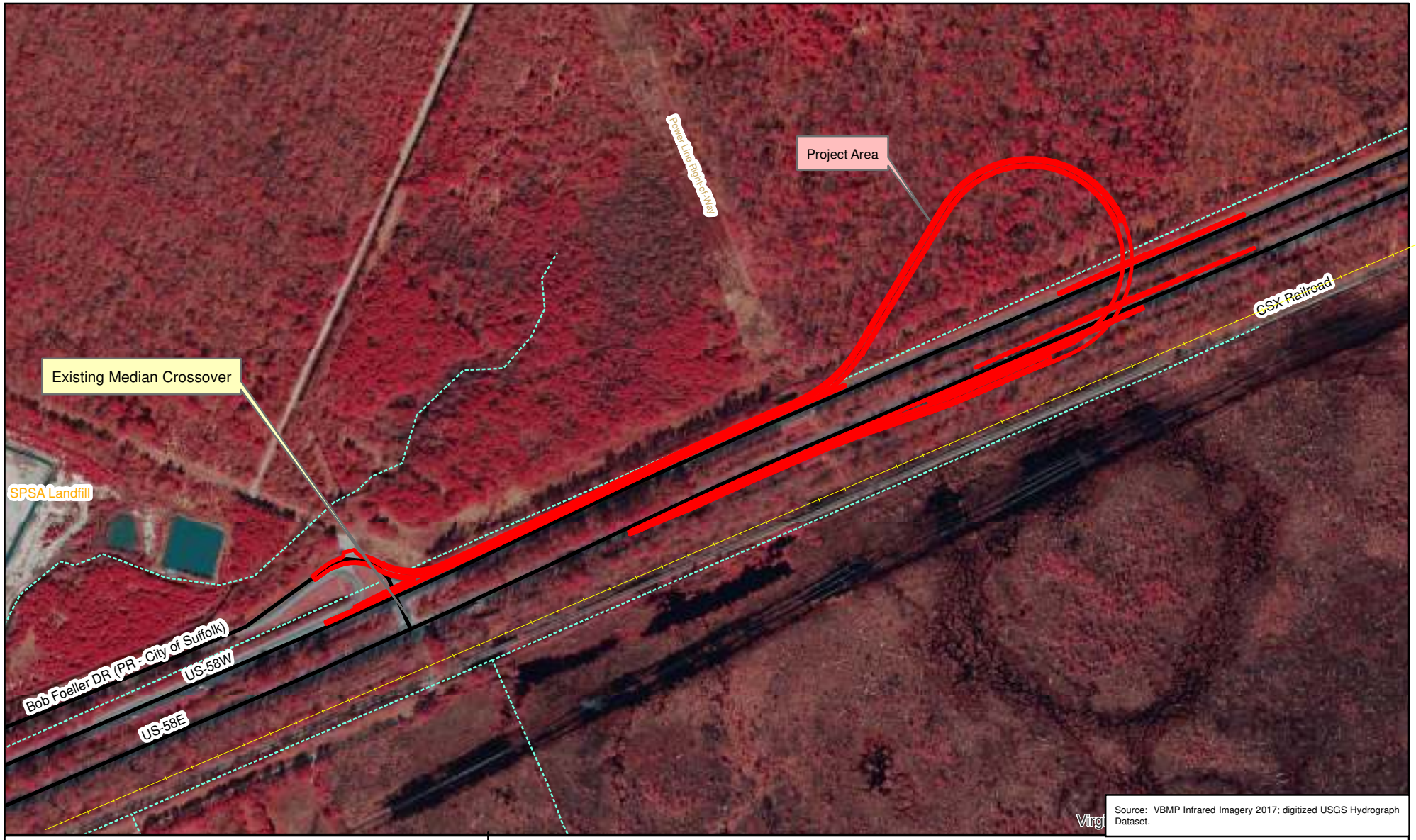
1 inch = 2,000 feet

Figure 2- USGS Topographic Map
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022



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1 inch = 500 feet

Figure 3- Aerial Map
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022

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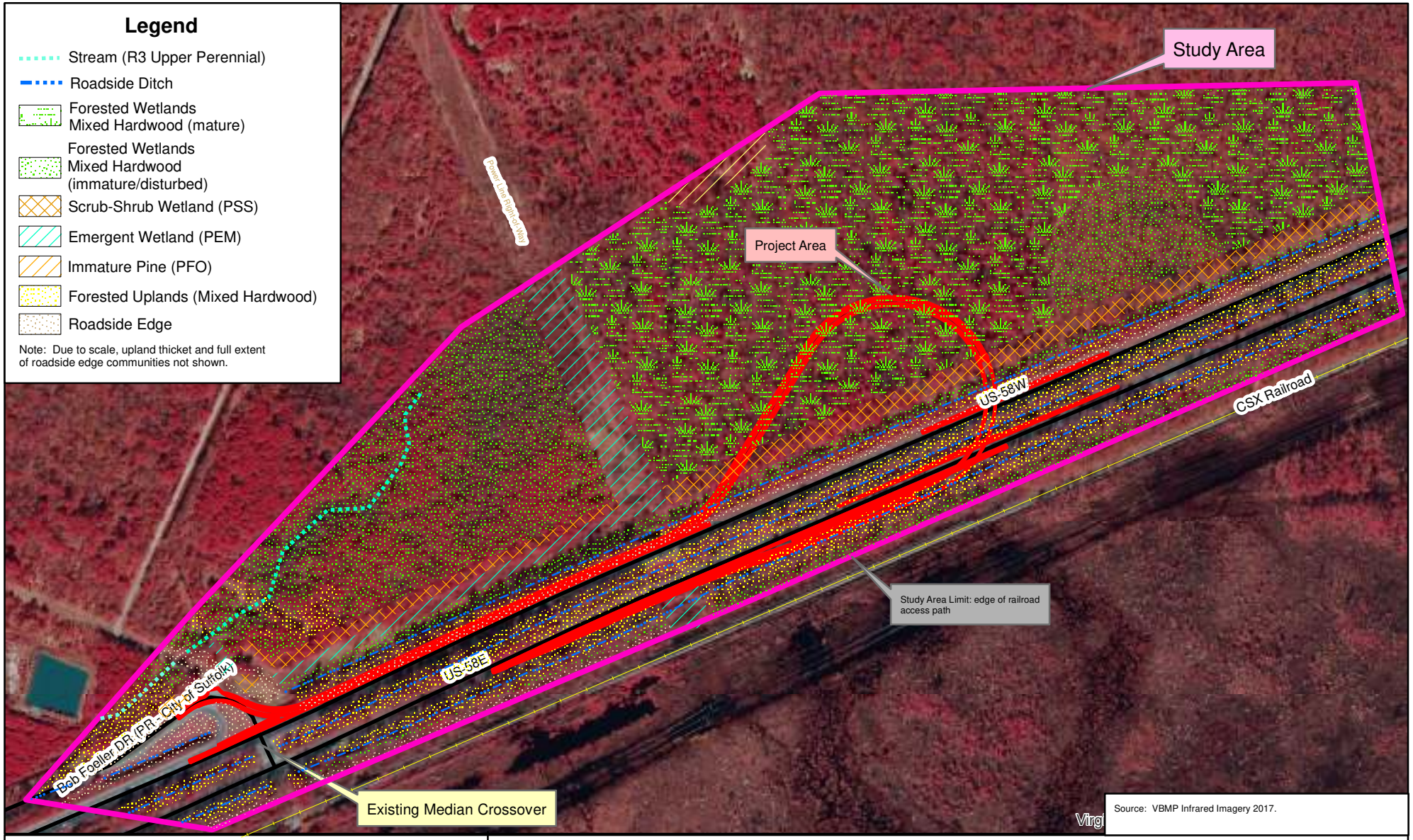
1:12,000
1 inch = 1,000 feet

Figure 4- NWI Map
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022



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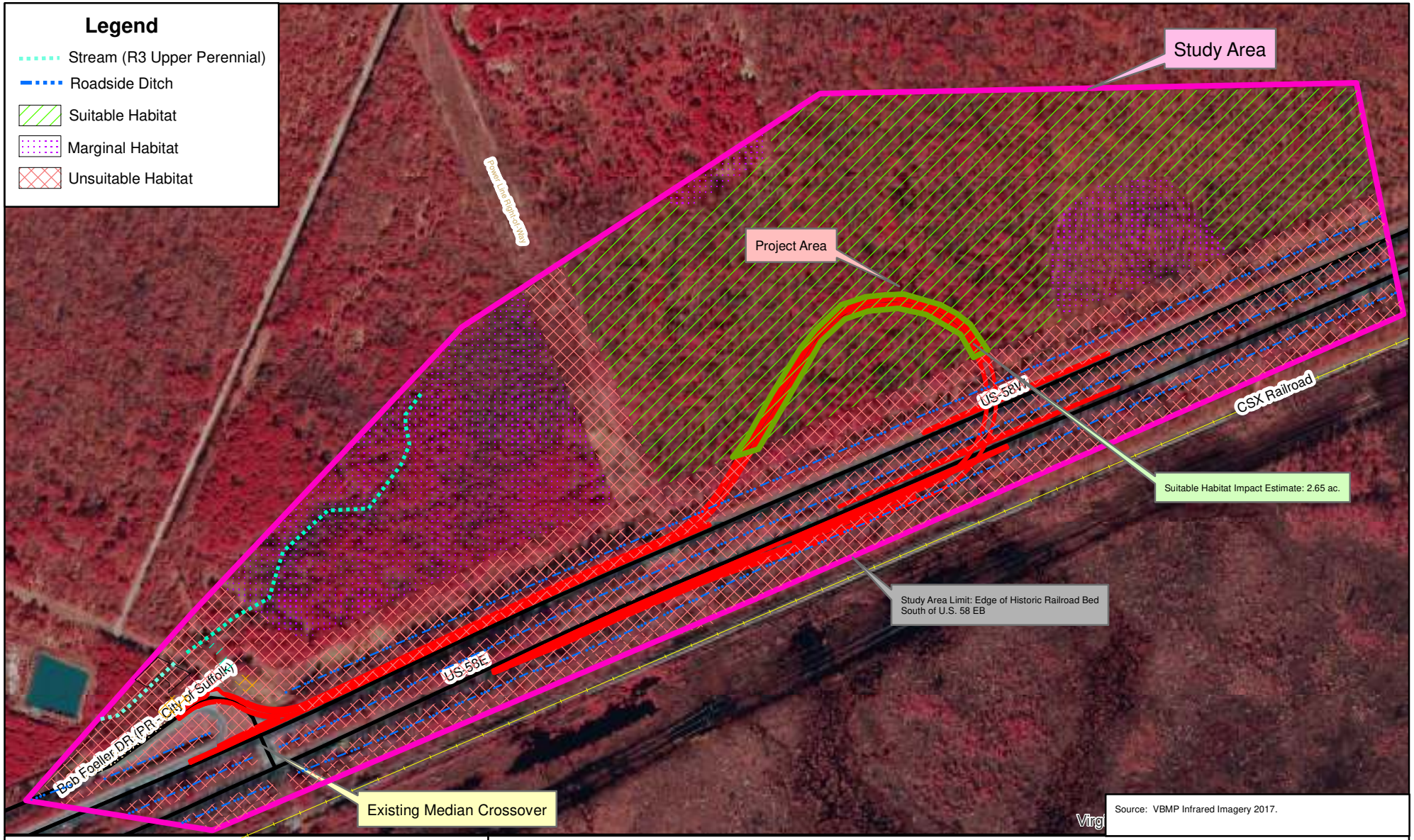
1 inch = 500 feet

Figure 5- Vegetational Communties
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022



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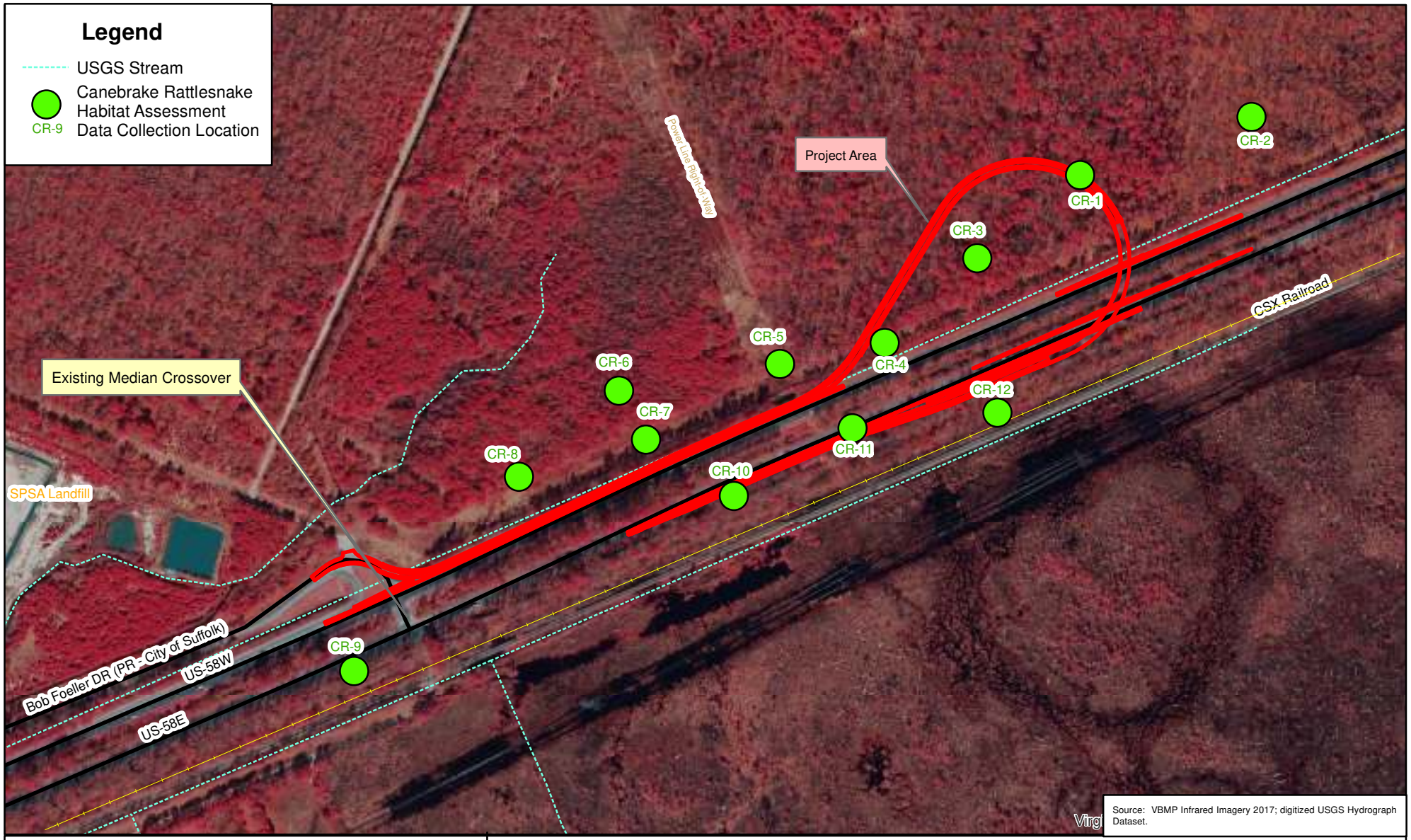
1 inch = 500 feet

Figure 6- Canebrake Rattlesnake Habitat Suitability
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022



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1 inch = 500 feet

Figure 7- Canebrake Rattlesnake Habitat Data Points
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

April 2022

APPENDIX B

CANEBRAKE RATTLESNAKE HABITAT ASSESSMENT WORKSHEET

Canebrake Rattlesnake Habitat Assessment Form

Project Information
Project/Property Name: SPSA Flyover

Project Type/Description: Transportation

Project Size * (acreage): approx. 33.2 ac.

Applicant/Landowner Name: VDOT

City/County: City of Suffolk Quad: Churchland / Bowers Hill
* Attach a copy of topographic map and a site sketch showing survey site and natural features identified.

Assessment Site Information [Areas within and at least 300 feet around the entire project area need to be assessed to the greatest extent practicable.]
Date: 6 April 2022 Time: 10:15 am

Sampling Point ID: CR-1

Latitude: 36.76024 N Longitude: -76.50079 W

Assessment Size ** (acreage): ≈ 5 ac.

** The surveyor should use his/her judgement on the size of the area that a single assessment encompasses. Additional assessment forms should be used to accurately describe and evaluate large contiguous areas by utilizing a separate form for separate habitat areas within the project boundaries. Each separate area assessed should be assigned a Site ID name that is referenced to the overall site sketch.

Weather Conditions (Note: Assessment cannot be conducted in snow cover.)
Air temperature (°F) 70° % Cloud Cover 20%

Habitat Description
General Description: mixed deciduous, mature forested wetland (bottomland)

Fragmentation/Level of remoteness/nearby disturbance (roads, homes, buildings, utility right-of-ways, etc.)

Low; roadway approximately 400 feet from sample point.

Topographical Description: flat, hummocks

Slope/Aspect (Degrees): 0-2°
Community type (e.g. deciduous forest): mixed deciduous
Forested wetlands present: yes
Forested uplands present: no
Riverine corridor present: no
Ridges adjacent to wetlands: no

Ground Cover:

% ground cover: 60%

% ground cover that receives direct sunlight: 15%

Potential Hibernaculum: ✓

Forested Cane: ✓

Thickets Present: No

Vegetative Composition:

% Tree Canopy Cover: 70%

Dominant species present in and surrounding the described habitat:

Trees: sweet gum, red maple, loblolly pine

Shrubs: highbush blueberry, American holly, privet

Other plant species of note: switchcane, Japanese stilt grass

Species Observations
Were herpetofauna species or their signs (e.g. sheds, scat, forms) observed on-site (include canebrake rattlesnake observations)? If so, what species and how many?

None

Additional Comments/Observations: (use additional sheets if necessary)

Patch contains substantial amount of cane in semi-wet locations. High amount of downed trees, stumps

INVESTIGATOR'S OPINION:

In your opinion, is there canebrake rattlesnake habitat? Yes ✓ or No ___

Rationale:

Suitable habitat - mature forested wetland with high percentage of cane in understory.

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Michael J. Mussanelli, PWS	Michael J. Mussanelli	6 April 2022
Investigator's Name (print)	**Investigators' Signature**	**Date**

Reporting, The following items need to be submitted for review:

(1) Canebrake rattlesnake habitat assessment form.
(2) A project narrative/description, exact project location, equipment to be used in earth moving activities
(3) Color photographs of surveyed area showing: general panorama, rocky areas, and specimens observed.
(4) Site sketch showing the location and direction of photos taken.
(5) Topographic map showing location of area surveyed, the identified potential habitat delineated, the proposed project and associated boundaries.

*Adapted by Virginia Department of Transportation Hampton Roads District from Pennsylvania Fish & Boat Commission Timber Rattlesnake Habitat Assessment Form for purpose of providing field assessment worksheet for canebrake rattlesnake.

Canebrake Rattlesnake Habitat Assessment Form

Project Information
Project/Property Name: SPSA Flyover

Project Type/Description: Transportation

Project Size * (acreage): 33.2 ac

Applicant/Landowner Name: VDOT

City/County: City of Suffolk Quad: Bowers Hill/Chuckatuck
* Attach a copy of topographic map and a site sketch showing survey site and natural features identified.

Assessment Site Information [Areas within and at least 300 feet around the entire project area need to be assessed to the greatest extent practicable.]
Date: 6 April 2022 Time: 9:10 am

Sampling Point ID: CR-2

Latitude: 36.76119 N Longitude: -76.49197 W

Assessment Size ** (acreage): 4.0 acres

** The surveyor should use his/her judgement on the size of the area that a single assessment encompasses. Additional assessment forms should be used to accurately describe and evaluate large contiguous areas by utilizing a separate form for separate habitat areas within the project boundaries. Each separate area assessed should be assigned a Site ID name that is referenced to the overall site sketch.

Weather Conditions (Note: Assessment cannot be conducted in snow cover.)
Air temperature (°F) 70° % Cloud Cover 40%

Habitat Description
General Description: Deciduous immature forested wetland

Fragmentation/Level of remoteness/nearby disturbance (roads, homes, buildings, utility right-of-ways, etc.)

low; roadway ~ 400' to south. Area timbered 10-15 years.

Topographical Description: flat; hummocks

Slope/Aspect (Degrees): 1-3
Community type (e.g. deciduous forest): deciduous
Forested wetlands present: yes
Forested uplands present: no
Riverine corridor present: no
Ridges adjacent to wetlands: no

Ground Cover:

% ground cover: 40%

% ground cover that receives direct sunlight: 35%

Potential Hibernaculum: yes

Forested Cane: yes

Thickets Present: yes

Vegetative Composition:

% Tree Canopy Cover: 75%

Dominant species present in and surrounding the described habitat:

Trees: red maple, sweet gum

Shrubs: ~~sweetbay~~ American holly

Other plant species of note: switch cane, netted chain fern

Species Observations
Were herpetofauna species or their signs (e.g. sheds, scat, forms) observed on-site (include canebrake rattlesnake observations)? If so, what species and how many?

black racer near edge of community (Coluber constrictor)

Additional Comments/Observations: (use additional sheets if necessary)

Community established 10-15 years; immature woody vegetation

INVESTIGATOR'S OPINION:

In your opinion, is there canebrake rattlesnake habitat? Yes ✓ or No ____

Rationale:

Mesic habitat; however, part of contiguous forested corridor

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Michael J. Mussomeli, PWS	Michael J. Mussomeli	6 April 2022
Investigator's Name (print)	**Investigators' Signature**	**Date**

Reporting, The following items need to be submitted for review:

(1) Canebrake rattlesnake habitat assessment form.
(2) A project narrative/description, exact project location, equipment to be used in earth moving activities
(3) Color photographs of surveyed area showing: general panorama, rocky areas, and specimens observed.
(4) Site sketch showing the location and direction of photos taken.
(5) Topographic map showing location of area surveyed, the identified potential habitat delineated, the proposed project and associated boundaries.

*Adapted by Virginia Department of Transportation Hampton Roads District from Pennsylvania Fish & Boat Commission Timber Rattlesnake Habitat Assessment Form for purpose of providing field assessment worksheet for canebrake rattlesnake.

Canebrake Rattlesnake Habitat Assessment Form

Project Information
Project/Property Name: SPSA Flyover

Project Type/Description: Transportation

Project Size * (acreage): 33.2 ac.

Applicant/Landowner Name: VDOT

City/County: Suffolk Quad: Chuckatuck
* Attach a copy of topographic map and a site sketch showing survey site and natural features identified.

Assessment Site Information [Areas within and at least 300 feet around the entire project area need to be assessed to the greatest extent practicable.]
Date: 6 April 2017 Time: 10:25am

Sampling Point ID: CR-3

Latitude: 36.75999 N Longitude: -76.50141 W

Assessment Size ** (acreage): 6.00 ac.

** The surveyor should use his/her judgement on the size of the area that a single assessment encompasses. Additional assessment forms should be used to accurately describe and evaluate large contiguous areas by utilizing a separate form for separate habitat areas within the project boundaries. Each separate area assessed should be assigned a Site ID name that is referenced to the overall site sketch.

Weather Conditions (Note: Assessment cannot be conducted in snow cover.)
Air temperature (°F) 75° % Cloud Cover 25%

Habitat Description
General Description: mature forested wetland, mixed deciduous

Fragmentation/Level of remoteness/nearby disturbance (roads, homes, buildings, utility right-of-ways, etc.)

Low; roadway ~ 200' south; forested corridor continues to north and west

Topographical Description: Flat, minimal relief

Slope/Aspect (Degrees): 0-2
Community type (e.g. deciduous forest): mixed deciduous
Forested wetlands present: Yes
Forested uplands present: no
Riverine corridor present: no
Ridges adjacent to wetlands: no

Ground Cover:

% ground cover: 50%

% ground cover that receives direct sunlight: 10%

Potential Hibernaculum: Yes

Forested Cane: Yes

Thickets Present: no

Vegetative Composition:

% Tree Canopy Cover: 70%

Dominant species present in and surrounding the described habitat:

Trees: red maple, loblolly pine, sweet gum

Shrubs: American holly

Other plant species of note: Smilax cane, Virginia creeper

Species Observations
Were herpetofauna species or their signs (e.g. sheds, scat, forms) observed on-site (include canebrake rattlesnake observations)? If so, what species and how many?

none

Additional Comments/Observations: (use additional sheets if necessary)

Less hammocks than CR 1 and 2

INVESTIGATOR'S OPINION:

In your opinion, is there canebrake rattlesnake habitat? Yes ✓ or No ____

Rationale:

Suitable habitat - mixed deciduous forested wetland, containing cover in understory

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Michael J. Mossoni, PWS		6 April 2022
Investigator's Name (print)	**Investigators' Signature**	**Date**

Reporting, The following items need to be submitted for review:

(1) Canebrake rattlesnake habitat assessment form.
(2) A project narrative/description, exact project location, equipment to be used in earth moving activities
(3) Color photographs of surveyed area showing: general panorama, rocky areas, and specimens observed.
(4) Site sketch showing the location and direction of photos taken.
(5) Topographic map showing location of area surveyed, the identified potential habitat delineated, the proposed project and associated boundaries.

*Adapted by Virginia Department of Transportation Hampton Roads District from Pennsylvania Fish & Boat Commission Timber Rattlesnake Habitat Assessment Form for purpose of providing field assessment worksheet for canebrake rattlesnake.

Canebrake Rattlesnake Habitat Assessment Form

Project Information
Project/Property Name: SPSA Phase C

Project Type/Description: Transportation

Project Size * (acreage): 33.2 ac

Applicant/Landowner Name: VDOT

City/County: City of Suffolk Quad: Chuckatuck
* Attach a copy of topographic map and a site sketch showing survey site and natural features identified.

Assessment Site Information [Areas within and at least 300 feet around the entire project area need to be assessed to the greatest extent practicable.]
Date: 6 April 2022 Time: 8:30am

Sampling Point ID: CR-4

Latitude: 36.75882 N Longitude: -76.50314 W

Assessment Size ** (acreage): 2.68 ac.

** The surveyor should use his/her judgement on the size of the area that a single assessment encompasses. Additional assessment forms should be used to accurately describe and evaluate large contiguous areas by utilizing a separate form for separate habitat areas within the project boundaries. Each separate area assessed should be assigned a Site ID name that is referenced to the overall site sketch.

Weather Conditions (Note: Assessment cannot be conducted in snow cover.)
Air temperature (°F) 65° % Cloud Cover 70-80% (overcast)

Habitat Description
General Description: Partially maintained access road containing scrub-shrub wetland community west of power line ROW.

Fragmentation/Level of remoteness/nearby disturbance (roads, homes, buildings, utility right-of-ways, etc.)

High - Roadway, access road, power line ROW in immediate vicinity.

Topographical Description: flat, minimal relief

Slope/Aspect (Degrees): 0-1
Community type (e.g. deciduous forest): scrub-shrub- periodically maintained
Forested wetlands present: NO
Forested uplands present: NO
Riverine corridor present: NO
Ridges adjacent to wetlands: NO

Ground Cover:

% ground cover: 80%

% ground cover that receives direct sunlight: 95%

Potential Hibernaculum: NO

Forested Cane: NO

Thickets Present: adjacent to access road

Vegetative Composition:

% Tree Canopy Cover: 0%

Dominant species present in and surrounding the described habitat:

Trees: N/A

Shrubs: sweet gum (sapling)

Other plant species of note: soft rush, Panicum sp., Juncus sp., Rubus sp.

Species Observations
Were herpetofauna species or their signs (e.g. sheds, scat, forms) observed on-site (include canebrake rattlesnake observations)? If so, what species and how many?

None

Additional Comments/Observations: (use additional sheets if necessary)

Periodically maintained access road

INVESTIGATOR'S OPINION:

In your opinion, is there canebrake rattlesnake habitat? Yes ___ or No ✓

Rationale:

Periodic disturbance; adjacent land use includes power line, highway - unsuitable habitat

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Michael J. Mussoni, pws	MJ Mussoni	6 April 2022
Investigator's Name (print)	**Investigators' Signature**	**Date**

Reporting, The following items need to be submitted for review:

(1) Canebrake rattlesnake habitat assessment form.
(2) A project narrative/description, exact project location, equipment to be used in earth moving activities
(3) Color photographs of surveyed area showing: general panorama, rocky areas, and specimens observed.
(4) Site sketch showing the location and direction of photos taken.
(5) Topographic map showing location of area surveyed, the identified potential habitat delineated, the proposed project and associated boundaries.

*Adapted by Virginia Department of Transportation Hampton Roads District from Pennsylvania Fish & Boat Commission Timber Rattlesnake Habitat Assessment Form for purpose of providing field assessment worksheet for canebrake rattlesnake.

Canebrake Rattlesnake Habitat Assessment Form

Project Information
Project/Property Name: SPSA Elgin

Project Type/Description: Transportation

Project Size * (acreage): 33.20 ac.

Applicant/Landowner Name: VDOT

City/County: City of Suffolk Quad: Chuckatuck
* Attach a copy of topographic map and a site sketch showing survey site and natural features identified.

Assessment Site Information [Areas within and at least 300 feet around the entire project area need to be assessed to the greatest extent practicable.]
Date: 6 April 2017 Time: 10:50 am

Sampling Point ID: 5

Latitude: 36.75865 N Longitude: -76.70444 W

Assessment Size ** (acreage): 1.81 ac.

** The surveyor should use his/her judgement on the size of the area that a single assessment encompasses. Additional assessment forms should be used to accurately describe and evaluate large contiguous areas by utilizing a separate form for separate habitat areas within the project boundaries. Each separate area assessed should be assigned a Site ID name that is referenced to the overall site sketch.

Weather Conditions (Note: Assessment cannot be conducted in snow cover.)
Air temperature (°F) 75° % Cloud Cover 15% (clr)

Habitat Description
General Description: Emergent wetlands within power line right-of-way

Fragmentation/Level of remoteness/nearby disturbance (roads, homes, buildings, utility right-of-ways, etc.)

High- U.S 58 to south, SPSA landfill to west, across road to south

Topographical Description: Flat, hummocks

Slope/Aspect (Degrees): 0-1
Community type (e.g. deciduous forest): emergent wetland - disturbed
Forested wetlands present: NO
Forested uplands present: NO
Riverine corridor present: NO
Ridges adjacent to wetlands: NO

Ground Cover:

% ground cover: 90%

% ground cover that receives direct sunlight: 100%

Potential Hibernaculum: none

Forested Cane: none

Thickets Present: yes

Vegetative Composition:

% Tree Canopy Cover: N/A

Dominant species present in and surrounding the described habitat:

Trees: N/A

Shrubs: N/A

Other plant species of note: Broad leaf cattail, sawgrass, planer grass, maidgrass, soft rush, Carex sp.

Species Observations
Were herpetofauna species or their signs (e.g. sheds, scat, forms) observed on-site (include canebrake rattlesnake observations)? If so, what species and how many?

None

Additional Comments/Observations: (use additional sheets if necessary)

Periodically disturbed power line right of way

INVESTIGATOR'S OPINION:

In your opinion, is there canebrake rattlesnake habitat? Yes ___ or No ✓

Rationale:

High disturbance, fragmentation

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Michael J. Mussomeli, PWS		6 April 2022
Investigator's Name (print)	**Investigators' Signature**	**Date**

Reporting, The following items need to be submitted for review:

(1) Canebrake rattlesnake habitat assessment form.
(2) A project narrative/description, exact project location, equipment to be used in earth moving activities
(3) Color photographs of surveyed area showing: general panorama, rocky areas, and specimens observed.
(4) Site sketch showing the location and direction of photos taken.
(5) Topographic map showing location of area surveyed, the identified potential habitat delineated, the proposed project and associated boundaries.

*Adapted by Virginia Department of Transportation Hampton Roads District from Pennsylvania Fish & Boat Commission Timber Rattlesnake Habitat Assessment Form for purpose of providing field assessment worksheet for canebrake rattlesnake.

Canebrake Rattlesnake Habitat Assessment Form

Project Information
Project/Property Name: SPSA Flyover

Project Type/Description: Transportation

Project Size * (acreage): 33.20 acres

Applicant/Landowner Name: VDOT

City/County: City of Suffolk Quad: Churchland

* Attach a copy of topographic map and a site sketch showing survey site and natural features identified.

Assessment Site Information [Areas within and at least 300 feet around the entire project area need to be assessed to the greatest extent practicable.]
Date: 6 April 2021 Time: 10:55am

Sampling Point ID: CR-6

Latitude: 36.75842 N Longitude: -76.50590 W

Assessment Size ** (acreage): 9.61 ac.

** The surveyor should use his/her judgement on the size of the area that a single assessment encompasses. Additional assessment forms should be used to accurately describe and evaluate large contiguous areas by utilizing a separate form for separate habitat areas within the project boundaries. Each separate area assessed should be assigned a Site ID name that is referenced to the overall site sketch.

Weather Conditions (Note: Assessment cannot be conducted in snow cover.)
Air temperature (°F) 75° % Cloud Cover 10%

Habitat Description
General Description: Immature mixed deciduous forested wetlands

Fragmentation/Level of remoteness/nearby disturbance (roads, homes, buildings, utility right-of-ways, etc.)

High disturbance/fragmentation - vicinity of roadway, across road, and powerline right of way

Topographical Description: Flat, hummocks with ditches

Slope/Aspect (Degrees): 0-2
Community type (e.g. deciduous forest): mixed deciduous immature
Forested wetlands present: yes
Forested uplands present: no
Riverine corridor present: no
Ridges adjacent to wetlands: no

Ground Cover:

% ground cover: 10%

% ground cover that receives direct sunlight: 20%

Potential Hibernaculum: no

Forested Cane: 5%

Thickets Present: no

Vegetative Composition:

% Tree Canopy Cover: 65%

Dominant species present in and surrounding the described habitat:

Trees: loblolly pine, sweet gum, red maple

Shrubs: highbush blueberry, American holly

Other plant species of note: poison ivy

Species Observations
Were herpetofauna species or their signs (e.g. sheds, scat, forms) observed on-site (include canebrake rattlesnake observations)? If so, what species and how many?

None

Additional Comments/Observations: (use additional sheets if necessary)

Area appears to have been timbered 10-15 years ago; dense tree/sapling layer ranging from 3-10" dbh.

INVESTIGATOR'S OPINION:

In your opinion, is there canebrake rattlesnake habitat? Yes ✓ or No ____

Rationale:

Marginal habitat- high adjacent disturbance (roadway, access road, landfill); however, contiguous with forested area to north

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Michael J. Mossoni, PWS	Michael J Mossoni	6 April 2021
Investigator's Name (print)	**Investigators' Signature**	**Date**

Reporting, The following items need to be submitted for review:

(1) Canebrake rattlesnake habitat assessment form.
(2) A project narrative/description, exact project location, equipment to be used in earth moving activities
(3) Color photographs of surveyed area showing: general panorama, rocky areas, and specimens observed.
(4) Site sketch showing the location and direction of photos taken.
(5) Topographic map showing location of area surveyed, the identified potential habitat delineated, the proposed project and associated boundaries.

*Adapted by Virginia Department of Transportation Hampton Roads District from Pennsylvania Fish & Boat Commission Timber Rattlesnake Habitat Assessment Form for purpose of providing field assessment worksheet for canebrake rattlesnake.

Canebrake Rattlesnake Habitat Assessment Form

Project Information
Project/Property Name: SPSA Flyover

Project Type/Description: Transportation

Project Size * (acreage): 33.20 acres

Applicant/Landowner Name: VDOT

City/County: City of Suffolk Quad: Chuckatuck
* Attach a copy of topographic map and a site sketch showing survey site and natural features identified.

Assessment Site Information [Areas within and at least 300 feet around the entire project area need to be assessed to the greatest extent practicable.]
Date: 6 April 2022 Time: 11:15 am

Sampling Point ID: CR-1

Latitude: 36.75788 N Longitude: -76.50590 W

Assessment Size ** (acreage): 0.95 ac.

** The surveyor should use his/her judgement on the size of the area that a single assessment encompasses. Additional assessment forms should be used to accurately describe and evaluate large contiguous areas by utilizing a separate form for separate habitat areas within the project boundaries. Each separate area assessed should be assigned a Site ID name that is referenced to the overall site sketch.

Weather Conditions (Note: Assessment cannot be conducted in snow cover.)
Air temperature (°F) 70° F % Cloud Cover 10%

Habitat Description
General Description: Access road containing emergent wetlands

Fragmentation/Level of remoteness/nearby disturbance (roads, homes, buildings, utility right-of-ways, etc.)

high disturbance - regularly maintained; adjacent to US 58, landfill, power line row

Topographical Description: Flat containing depressions

Slope/Aspect (Degrees): 0-1
Community type (e.g. deciduous forest): emergent wetlands (maintained)
Forested wetlands present: NO
Forested uplands present: NO
Riverine corridor present: NO
Ridges adjacent to wetlands: NO

Ground Cover:

% ground cover: 90%

% ground cover that receives direct sunlight: 100%

Potential Hibernaculum: NO

Forested Cane: NO

Thickets Present: NO

Vegetative Composition:

% Tree Canopy Cover: 0%

Dominant species present in and surrounding the described habitat:

Trees: N/A

Shrubs: N/A

Other plant species of note: Panicum sp., water purslane, primrose leaf violet

Species Observations
Were herpetofauna species or their signs (e.g. sheds, scat, forms) observed on-site (include canebrake rattlesnake observations)? If so, what species and how many?

None at times of inspection; during past site visits spring peepers observed (visual and auditory)

Additional Comments/Observations: (use additional sheets if necessary)

INVESTIGATOR'S OPINION:

In your opinion, is there canebrake rattlesnake habitat? Yes ___ or No ✓

Rationale:

High disturbance within and adjacent to access rd. Unsuitable habitat

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Michael J. Mussenden, PWS		6 April 2022
Investigator's Name (print)	**Investigators' Signature**	**Date**

Reporting, The following items need to be submitted for review:

(1) Canebrake rattlesnake habitat assessment form.
(2) A project narrative/description, exact project location, equipment to be used in earth moving activities
(3) Color photographs of surveyed area showing: general panorama, rocky areas, and specimens observed.
(4) Site sketch showing the location and direction of photos taken.
(5) Topographic map showing location of area surveyed, the identified potential habitat delineated, the proposed project and associated boundaries.

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Canebrake Rattlesnake Habitat Assessment Form

Project Information
Project/Property Name: SPSA Flyover

Project Type/Description: Transportation

Project Size * (acreage): 33.20 acres

Applicant/Landowner Name: VDOT

City/County: City of Suffolk Quad: Churchland

* Attach a copy of topographic map and a site sketch showing survey site and natural features identified.

Assessment Site Information [Areas within and at least 300 feet around the entire project area need to be assessed to the greatest extent practicable.]
Date: 6 April 2022 Time: 11:40 am

Sampling Point ID: CR-8

Latitude: 36.75754 N Longitude: -76.50131 W

Assessment Size ** (acreage): 0.95 ac.

** The surveyor should use his/her judgement on the size of the area that a single assessment encompasses. Additional assessment forms should be used to accurately describe and evaluate large contiguous areas by utilizing a separate form for separate habitat areas within the project boundaries. Each separate area assessed should be assigned a Site ID name that is referenced to the overall site sketch.

Weather Conditions (Note: Assessment cannot be conducted in snow cover.)
Air temperature (°F) 75° F % Cloud Cover 15%

Habitat Description
General Description: Scrub-shrub fringe adjacent to access road, periodically mowed

Fragmentation/Level of remoteness/nearby disturbance (roads, homes, buildings, utility right-of-ways, etc.)

Adjacent to routinely maintained access road

Topographical Description: Flat

Slope/Aspect (Degrees): 0-2
Community type (e.g. deciduous forest): scrub-shrub
Forested wetlands present: no
Forested uplands present: no
Riverine corridor present: no
Ridges adjacent to wetlands: no

Ground Cover:

% ground cover: 90%

% ground cover that receives direct sunlight: 15%

Potential Hibernaculum: no

Forested Cane: no

Thickets Present: no

Vegetative Composition:

% Tree Canopy Cover: N/A

Dominant species present in and surrounding the described habitat:

Trees: N/A

Shrubs: sweet gum, sycamore, red maple (saplings)

Other plant species of note: Rubus sp, microstegium, bushy bluestem

Species Observations
Were herpetofauna species or their signs (e.g. sheds, scat, forms) observed on-site (include canebrake rattlesnake observations)? If so, what species and how many?

none

Additional Comments/Observations: (use additional sheets if necessary)

Community Irregularly maintained

INVESTIGATOR'S OPINION:

In your opinion, is there canebrake rattlesnake habitat? Yes ___ or No ✓

Rationale:

High disturbance, fragmentation

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Michael J. Mossman, PWS		6 April 2022
Investigator's Name (print)	**Investigators' Signature**	**Date**

Reporting, The following items need to be submitted for review:

(1) Canebrake rattlesnake habitat assessment form.
(2) A project narrative/description, exact project location, equipment to be used in earth moving activities
(3) Color photographs of surveyed area showing: general panorama, rocky areas, and specimens observed.
(4) Site sketch showing the location and direction of photos taken.
(5) Topographic map showing location of area surveyed, the identified potential habitat delineated, the proposed project and associated boundaries.

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Canebrake Rattlesnake Habitat Assessment Form

Project Information
Project/Property Name: SPSA Flyover

Project Type/Description: Transportation

Project Size * (acreage): 33.20 acres

Applicant/Landowner Name: VDOT

City/County: City of Suffolk Quad: Chuckatuck
* Attach a copy of topographic map and a site sketch showing survey site and natural features identified.

Assessment Site Information [Areas within and at least 300 feet around the entire project area need to be assessed to the greatest extent practicable.]
Date: 6 April 2022 Time: 12:30 pm

Sampling Point ID: CR-9

Latitude: 36.75575 N Longitude: -76.50949 W

Assessment Size ** (acreage): 0.32 ac.

** The surveyor should use his/her judgement on the size of the area that a single assessment encompasses. Additional assessment forms should be used to accurately describe and evaluate large contiguous areas by utilizing a separate form for separate habitat areas within the project boundaries. Each separate area assessed should be assigned a Site ID name that is referenced to the overall site sketch.

Weather Conditions (Note: Assessment cannot be conducted in snow cover.)
Air temperature (°F) 75°F % Cloud Cover 5%

Habitat Description
General Description: Fringe of forested wetlands between historic railroad bed and roadside ditch / US 58 EB

Fragmentation/Level of remoteness/nearby disturbance (roads, homes, buildings, utility right-of-ways, etc.)

High disturbance adjacent to community (US 58, railroad, historic railroad bed)

Topographical Description: Marginal embankment

Slope/Aspect (Degrees): 2-4°
Community type (e.g. deciduous forest): mixed hardwoods (pine)
Forested wetlands present: NO
Forested uplands present: Yes
Riverine corridor present: NO
Ridges adjacent to wetlands: NO

Ground Cover:

% ground cover: 10%

% ground cover that receives direct sunlight: 60%

Potential Hibernaculum: NO

Forested Cane: NO

Thickets Present: NO

Vegetative Composition:

% Tree Canopy Cover: 40%

Dominant species present in and surrounding the described habitat:

Trees: Sycamore, loblolly pine, sweet gum

Shrubs: American holly, sweet pepper bush

Other plant species of note: Japanese honeysuckle

Species Observations
Were herpetofauna species or their signs (e.g. sheds, scat, forms) observed on-site (include canebrake rattlesnake observations)? If so, what species and how many?

None

Additional Comments/Observations: (use additional sheets if necessary)

INVESTIGATOR'S OPINION:

In your opinion, is there canebrake rattlesnake habitat? Yes ___ or No ✓

Rationale:

Unsuitable habitat - high fragmentation and adjacent disturbance

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Michael J. Mossmiller		6 April 2022
Investigator's Name (print)	**Investigators' Signature**	**Date**

Reporting, The following items need to be submitted for review:

(1) Canebrake rattlesnake habitat assessment form.
(2) A project narrative/description, exact project location, equipment to be used in earth moving activities
(3) Color photographs of surveyed area showing: general panorama, rocky areas, and specimens observed.
(4) Site sketch showing the location and direction of photos taken.
(5) Topographic map showing location of area surveyed, the identified potential habitat delineated, the proposed project and associated boundaries.

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Canebrake Rattlesnake Habitat Assessment Form

Project Information
Project/Property Name: SPSA Flyover

Project Type/Description: Transportation

Project Size * (acreage): 33.20 acres

Applicant/Landowner Name: VDOT

City/County: City of Suffolk Quad: Chuckatuck
* Attach a copy of topographic map and a site sketch showing survey site and natural features identified.

Assessment Site Information [Areas within and at least 300 feet around the entire project area need to be assessed to the greatest extent practicable.]
Date: 6 April 2020 Time: 12:55 pm

Sampling Point ID: CR-10

Latitude: 36.757470 N Longitude: -76.50472 W

Assessment Size ** (acreage): 1.15 ac.

** The surveyor should use his/her judgement on the size of the area that a single assessment encompasses. Additional assessment forms should be used to accurately describe and evaluate large contiguous areas by utilizing a separate form for separate habitat areas within the project boundaries. Each separate area assessed should be assigned a Site ID name that is referenced to the overall site sketch.

Weather Conditions (Note: Assessment cannot be conducted in snow cover.)
Air temperature (°F) 75°F % Cloud Cover 10%

Habitat Description
General Description: Forested wetland fringe between roadside ditch/US 58 EB and railroad (historic) bed

Fragmentation/Level of remoteness/nearby disturbance (roads, homes, buildings, utility right-of-ways, etc.)

High fragmentation and adjacent disturbance (US 58, railroad, historic railroad bed)

Topographical Description: marginal depression / possible borrow

Slope/Aspect (Degrees): 1-3°
Community type (e.g. deciduous forest): mixed hardwoods
Forested wetlands present: yes
Forested uplands present: no
Riverine corridor present: no
Ridges adjacent to wetlands: no

Ground Cover:

% ground cover: 15%

% ground cover that receives direct sunlight: 15%

Potential Hibernaculum: no

Forested Cane: yes

Thickets Present: yes

Vegetative Composition:

% Tree Canopy Cover: 60%

Dominant species present in and surrounding the described habitat:

Trees: loblolly pine, sweet gum, red maple

Shrubs: southern bayberry, sweet pepperbush

Other plant species of note: Japanese honeysuckle

Species Observations
Were herpetofauna species or their signs (e.g. sheds, scat, forms) observed on-site (include canebrake rattlesnake observations)? If so, what species and how many?

None

Additional Comments/Observations: (use additional sheets if necessary)

INVESTIGATOR'S OPINION:

In your opinion, is there canebrake rattlesnake habitat? Yes ___ or No ✓

Rationale:

High fragmentation and adjacent disturbance

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Michael J. Mussinelli, PWS		6 April 2022
Investigator's Name (print)	**Investigators' Signature**	**Date**

Reporting, The following items need to be submitted for review:

(1) Canebrake rattlesnake habitat assessment form.
(2) A project narrative/description, exact project location, equipment to be used in earth moving activities
(3) Color photographs of surveyed area showing: general panorama, rocky areas, and specimens observed.
(4) Site sketch showing the location and direction of photos taken.
(5) Topographic map showing location of area surveyed, the identified potential habitat delineated, the proposed project and associated boundaries.

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Canebrake Rattlesnake Habitat Assessment Form

Project Information
Project/Property Name: SPSA Flyover

Project Type/Description: Transportation

Project Size * (acreage): 33.20 ac.

Applicant/Landowner Name: VDOT

City/County: City of Suffolk Quad: Chuckatuck

* Attach a copy of topographic map and a site sketch showing survey site and natural features identified.

Assessment Site Information [Areas within and at least 300 feet around the entire project area need to be assessed to the greatest extent practicable.]
Date: 6 April 2021 Time: 1:20 pm

Sampling Point ID: CR-11

Latitude: 36.75788 N Longitude: -76.50329 W

Assessment Size ** (acreage): 1.32 ac.

** The surveyor should use his/her judgement on the size of the area that a single assessment encompasses. Additional assessment forms should be used to accurately describe and evaluate large contiguous areas by utilizing a separate form for separate habitat areas within the project boundaries. Each separate area assessed should be assigned a Site ID name that is referenced to the overall site sketch.

Weather Conditions (Note: Assessment cannot be conducted in snow cover.)
Air temperature (°F) 75° F % Cloud Cover 10%

Habitat Description
General Description: Roadside edge

Fragmentation/Level of remoteness/nearby disturbance (roads, homes, buildings, utility right-of-ways, etc.)

High disturbance/fragmentation - point adjacent to US 58 EB

Topographical Description: embankment

Slope/Aspect (Degrees): 2-4
Community type (e.g. deciduous forest): roadside edge
Forested wetlands present: NO
Forested uplands present: NO
Riverine corridor present: NO
Ridges adjacent to wetlands: NO

Ground Cover:

% ground cover: 95

% ground cover that receives direct sunlight: 90

Potential Hibernaculum: NO

Forested Cane: NO

Thickets Present: NO

Vegetative Composition:

% Tree Canopy Cover: 0

Dominant species present in and surrounding the described habitat:

Trees: NA

Shrubs: NA

Other plant species of note: Poaceae sp.

Species Observations
Were herpetofauna species or their signs (e.g. sheds, scat, forms) observed on-site (include canebrake rattlesnake observations)? If so, what species and how many?

None

Additional Comments/Observations: (use additional sheets if necessary)

Representative sample point for roadside edge communities in median and adjacent to US 58 WB also.

INVESTIGATOR'S OPINION:

In your opinion, is there canebrake rattlesnake habitat? Yes ___ or No ✓

Rationale:

High disturbance, fragmentation

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Michael J. Masselli, PWS	[signature]	6 April 2022
Investigator's Name (print)	**Investigators' Signature**	**Date**

Reporting, The following items need to be submitted for review:

(1) Canebrake rattlesnake habitat assessment form.
(2) A project narrative/description, exact project location, equipment to be used in earth moving activities
(3) Color photographs of surveyed area showing: general panorama, rocky areas, and specimens observed.
(4) Site sketch showing the location and direction of photos taken.
(5) Topographic map showing location of area surveyed, the identified potential habitat delineated, the proposed project and associated boundaries.

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Canebrake Rattlesnake Habitat Assessment Form

Project Information
Project/Property Name: SPSA Flyover

Project Type/Description: Transportation

Project Size * (acreage): 33.20 acres

Applicant/Landowner Name: VDOT

City/County: City of Suffolk Quad: Chuckatuck
* Attach a copy of topographic map and a site sketch showing survey site and natural features identified.

Assessment Site Information [Areas within and at least 300 feet around the entire project area need to be assessed to the greatest extent practicable.]
Date: 6 April 2022 Time: 1:55 pm

Sampling Point ID: CR-17

Latitude: 36.7382 N Longitude: -76.50135 W

Assessment Size ** (acreage): 2.10 acres

** The surveyor should use his/her judgement on the size of the area that a single assessment encompasses. Additional assessment forms should be used to accurately describe and evaluate large contiguous areas by utilizing a separate form for separate habitat areas within the project boundaries. Each separate area assessed should be assigned a Site ID name that is referenced to the overall site sketch.

Weather Conditions (Note: Assessment cannot be conducted in snow cover.)
Air temperature (°F) 75° F % Cloud Cover 10%

Habitat Description
General Description: Maintained historic regional bed

Fragmentation/Level of remoteness/nearby disturbance (roads, homes, buildings, utility right-of-ways, etc.)

High disturbance (periodically mowed); fragmentation

Topographical Description: Flat

Slope/Aspect (Degrees): 0-1
Community type (e.g. deciduous forest): upland field (maintained)
Forested wetlands present: NO
Forested uplands present: NO
Riverine corridor present: NO
Ridges adjacent to wetlands: NO

Ground Cover:

% ground cover: 90%

% ground cover that receives direct sunlight: 90%

Potential Hibernaculum: NO

Forested Cane: NO

Thickets Present: NO

Vegetative Composition:

% Tree Canopy Cover: 0%

Dominant species present in and surrounding the described habitat:

Trees: NA

Shrubs: NA

Other plant species of note: Grass sp., Tainturier's chervil

Species Observations

Were herpetofauna species or their signs (e.g. sheds, scat, forms) observed on-site (include canebrake rattlesnake observations)? If so, what species and how many?

None

Additional Comments/Observations: (use additional sheets if necessary)

INVESTIGATOR'S OPINION:

In your opinion, is there canebrake rattlesnake habitat? Yes ___ or No ✓

Rationale:

High disturbance and fragmentation. Historic railroad bed between active railroad and US 58

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

Investigator's Name (print)	**Investigators' Signature**	**Date**

Reporting, The following items need to be submitted for review:

(1) Canebrake rattlesnake habitat assessment form.
(2) A project narrative/description, exact project location, equipment to be used in earth moving activities
(3) Color photographs of surveyed area showing: general panorama, rocky areas, and specimens observed.
(4) Site sketch showing the location and direction of photos taken.
(5) Topographic map showing location of area surveyed, the identified potential habitat delineated, the proposed project and associated boundaries.

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APPENDIX C

PHOTOGRAPHS OF THE SITE

Photo 1 – Existing crossover from US 58 EB to Bob Foeller Drive, looking north, crossing US 58 WB.

Photo 2 – Exit from US 58 WB to Bob Foeller Drive, looking east, showing roadside edge community in foreground and background.

Photo 3- Roadside ditch and roadside edge community adjacent to US 58, looking west.

Photo 4- Roadside ditch in median, looking south-southeast from north bank.

Photo 5 – Roadside ditch adjacent to US 58 EB, looking north from southern bank.

Photo 6 – Access road (PEM) and scrub-shrub community within northwestern portion of study area, looking west. Project would avoid impact to these communities.

Photo 7 – Mid-successional forested wetland community within northwest portion of study area, looking north-northwest. Project would avoid impact to this community.

Photo 8 – Power line right-of-way containing emergent wetlands, seen from access path, looking north.

Photo 9 – Access road containing emergent wetlands at intersection with power line right-of-way, looking east. Project would impact fringe of emergent wetland community (0.02-ac.).

Photo 10 – Partially maintained access road containing scrub-shrub wetlands east of power line right-of-way, looking east. Project would incur minor fill (0.01-ac.) and shading (0.01-ac.) impacts within this community.

Photo 11 – Mature forested wetland community containing suitable habitat in vicinity of proposed loop, north of US 58 WB.

Photo 12 – Mature forested wetland community with switchcane (*Arundinaria tecta*) in understory containing suitable habitat in vicinity of proposed loop, north of US 58 WB.

Photo 13 – Mature forested wetland community containing suitable habitat in vicinity of proposed loop, north of US 58 WB.

Photo 14 – Mature forested wetland community containing suitable habitat with switchcane in the understory east of proposed loop, north of US 58 WB.

Photo 15 – Edge of mature forested wetland community looking east to immature patch of forested wetlands east of project area, looking east.

Photo 16 – Immature forested wetland community east of project area.

Photo 17 – Immature loblolly (*Pinus taeda*) community at the northern fringe of the study area, looking north.

Photo 18 – Historic railroad bed at southern limit of study area, south of US 58 EB, looking east. Existing, active railroad located to right (south) with wetland fringe, roadside ditch, and US 58 EB located to left (north).

Photo 19 – Fringe of forested wetlands between historic railroad bed and roadside ditch/US 58 EB, seen from historic railroad bed, looking north.

Photo 20 – View south outside of study area, showing fringe of wetlands in between historic access road and railroad. Disturbance of active railroad, historic railroad bed, roadside ditch, and US 58 EB has resulted in extensive fragmentation south of US 58 EB.

APPENDIX D

OBSERVED SPECIES LISTS

Table 1- Vegetation Observed Within Mixed Deciduous (Mature) Forested Wetland Community

Common Name	Latin Binomial
American holly	*Ilex opaca*
basket oak	*Quercus michauxii*
black gum	*Nyssa sylvatica*
cherrybark oak	*Quercus pagoda*
Chinese privet	*Ligustrum sinense*
cinnamon fern	*Osmunda cinnamomea*
common greenbriar	*Smilax rotundifolia*
coral greenbriar	*Smilax walteri*
highbush blueberry	*Vaccinium corymbosum*
Japanese honeysuckle	*Lonicera japonica*
Japanese stilt grass	*Microstegium vimineum*
lady fern	*Athyrium filix-femina*
lizard's tail	*Saururus cernuus*
loblolly pine	*Pinus taeda*
marsh fern	*Thelypteris palustris*
mayapple	*Podophyllum peltatum*
muscadine	*Vitis rotundifolia*
musclewood	*Carpinus caroliniana*
netted chain fern	*Woodwardia areolata*
paw paw	*Asimina triloba*
poison ivy	*Toxicodendron radicans*
red maple	*Acer rubrum*
slippery elm	*Ulmus rubra*
swamp chestnut oak	*Quercus michauxii*
sweet gum	*Liquidambar styracifula*
sweet pepperbush	*Clethra alnifolia*
sweetbay magnolia	*Magnolia virginiana*
sweetleaf	*Symplocos tinctoria*
switchcane	*Arundinarea tecta*
sycamore	*Platanus occidentalis*
trumpet creeper	*Campsis radicans*
tulip tree	*Liriodendron tulipifera*
Virginia creeper	*Parthenocissus quinquefolia*
water oak	*Quercus nigra*
white oak	*Quercus alba*
willow oak	*Quercus phellos*

Table 2- Vegetation Observed Within Mixed Deciduous (Immature) Forested Wetland Community

Common Name	Latin Binomial
American holly	*Ilex opaca*
black gum	*Nyssa sylvatica*
catbriar	*Smilax bona-nox*
Chinese privet	*Ligustrum sinense*
cinnamon fern	*Osmunda cinnamomea*
common greenbriar	*Smilax rotundifolia*
coral greenbriar	*Smilax walteri*
highbush blueberry	*Vaccinium corymbosum*
Japanese honeysuckle	*Lonicera japonica*
Japanese stilt grass	*Microstegium vimineum*
lady fern	*Athyrium filix-femina*
loblolly pine	*Pinus taeda*
marsh fern	*Thelypteris palustris*
muscadine	*Vitis rotundifolia*
netted chain fern	*Woodwardia areolata*
poison ivy	*Toxicodendron radicans*
red maple	*Acer rubrum*
royal fern	*Osmunda regalis*
sawbriar	*Smilax glauca*
slippery elm	*Ulmus rubra*
sweet gum	*Liquidambar styracifula*
switchcane	*Arundinarea tecta*
sycamore	*Platanus occidentalis*
trumpet creeper	*Campsis radicans*
Virginia creeper	*Parthenocissus quinquefolia*
white oak	*Quercus alba*
wild grape	*Vitis sp.*

Table 3- Vegetation Observed Within Forested Uplands.

Common Name	Latin Binomial
American holly	*Ilex opaca*
black cherry	*Prunus serotina*
black gum	*Nyssa sylvatica*
cherrybark oak	*Quercus pagoda*
Chinese privet	*Ligustrum sinense*
common greenbriar	*Smilax rotundifolia*
coral greenbriar	*Smilax walteri*
coral honeysuckle	*Lonicera sempervirens*
eastern red cedar	*Juniperus virginiana*
highbush blueberry	*Vaccinium corymbosum*
Japanese honeysuckle	*Lonicera japonica*
loblolly pine	*Pinus taeda*
paw paw	*Asimina triloba*
poison ivy	*Toxicodendron radicans*
red maple	*Acer rubrum*
sassafras	*Sassafras albidum*
slippery elm	*Ulmus rubra*
sweet gum	*Liquidambar styracifula*
switchcane	*Arundinarea tecta*
sycamore	*Platanus occidentalis*
tree of heaven	*Ailanthus altissima*
trumpet creeper	*Campsis radicans*
unidentified grass	*Poaceae sp.*
Virginia creeper	*Parthenocissus quinquefolia*
white oak	*Quercus alba*

Table 4- Vegetation Observed Within Scrub-Shrub Wetlands.

Common Name	Latin Binomial
bushy aster	*Symphyotrichum dumosum*
Canada goldenrod	*Solidago canadensis*
Canada thistle	*Cirsium arvense*
Chinese bush clover	*Lespideza cunneata*
common greenbriar	*Smilax rotundifolia*
grape	*Vitis sp.*
groundsel (shrub)	*Baccharis halimifolia*
highbush blueberry	*Vaccinium corymbosum*
Japanese honeysuckle	*Lonicera japonica*
Japanese stilt grass	*Microstegium vimineum*
little bluestem	*Schizachyrium scoparium*
loblolly pine (sapling)	*Pinus taeda*
path rush	*Juncus tenuis*
poison ivy	*Toxicodendron radicans*
Queen Anne's lace	*Daucus carota*
red maple (sapling)	*Acer rubrum*
rough goldenrod	*Solidago rugosa*
sawtooth blackberry	*Rubus argutus*
smooth sumac	*Rhus glabra*
St. Andrew's cross	*Hypericum hypericoides*
sweet gum (sapling)	*Liquidambar styracifula*
unidentified grass	*Poaceae sp.*
Virginia creeper	*Parthenocissus quinquefolia*
willow	*Salix sp.*
woolgrass	*Scirpus cyperinus*

Table 5- Vegetation Observed Within Emergent Wetlands.

Common Name	Latin Binomial
alder sp. (seedling)	*Alnus sp.*
bedstraw	*Galium sp.*
bent grass	*Agrostis* sp.
bog violet	*Viola lanceolata*
broadleaf arrowhead	*Sagittaria latifolia*
broadleaf cattail	*Typha latifolia*
bushy bluestem	*Andropogon glomeratus*
Calico aster	*Symphyotrichum lateriflorum*
Canada goldenrod	*Solidago canadensis*
Chinese bush clover	*Lespedeza cunneata*
cinnamon fern	*Osmunda cinnamomea*
common beggars-tick	*Bidens frondosa*
common boneset	*Eupatorium perfoliatum*
common cinquefoil	*Potentilla simplex*
common haircup moss	*Polytrichum commune*
deer tongue grass	*Dichanthemium clandestinum*
dog fennel	*Eupatorium capillifolium*
dwarf dandelion	*Krigia* sp.
Frank's sedge	*Carex frankii*
groundsel (seedling)	*Baccharis halimifolia*
hairy bittercress	*Cardamine hirsuta*
Heller's rosette grass	*Dichanthelium oligosanthes*
Japanese honeysuckle	*Lonicera japonica*
Japanese stilt grass	*Microstegium vimineum*
lady fern	*Athyrium filix-femina*
little quaking grass	*Briza minor*
lizard's tail	*Saururus cernuus*
lurid/sallow sedge	*Carex lurida*
marsh dewflower	*Murdannia keisak*
marsh fern	*Thelypteris palustris*
meadow fescue	*Festuca pratensis*
meadow grass	*Poa* sp.
motherwort	*Leonurus cardiac*
muscadine	*Vitis rotundifolia*
narrow-leaf primrose willow	*Ludwigia linearis*
netted chain fern	*Woodwardia areolata*
panic/rosette grass sp.	*Dichanthelium sp.*
poison ivy	*Toxicodendron radicans*
primrose-leaved violet	*Viola primulifolia*
ragwort	*Packara sp.*
red maple (seedling)	*Acer rubrum*
rough goldenrod	*Solidago rugosa*

round-leaved boneset	*Eupatorium rotundifolium*
sawtooth blackberry	*Rubus argulus*
smartweed	*Polygonum sp.*
soft rush	*Juncus effuses*
spike grass	*Eleocharis sp.*
star sedge	*Carex echinata*
stinking camphorweed	*Pluchea foetida*
straw sedge	*Cyperus strigosus*
sugarcane plumegrass	*Saccharum giganteum*
swamp dewberry	*Rubus hispidus*
swamp rose mallow	*Hibiscus moscheutos*
sweet gum (seedling)	*Liquidambar styraciflua*
sweet vernal grass	*Anthoxanthum odoratum*
switchcane	*Arundinarea tecta*
Torrey's rush	*Juncus torreyi*
trumpet creeper	*Campsis radicans*
unidentified sedge	*Carex sp.*
water pepper	*Polygonum hydropiper*
water pimpernel	*Samolus parviflorus*
water purslane	*Lythrum portula*
white beaked sedge	*Rhynchospora alba*
willow (seedling)	*Salix* sp.
woolgrass	*Scirpus cyperinus*

Table 6- Vegetation Observed Within Roadside Edge Community.

Common Name	Latin Binomial
bedstraw	*Galium sp.*
bird's eye speedwell	*Veronica persica*
birdsfoot trefoil	*Lotus corniculatus*
black cherry (seedling)	*Prunus serotina*
blue-eyed grass	*Sisyrinchium sp.*
bracken fern	*Pteridium aquilinum*
bulbous buttercup	*Ranunculus bulbosus*
bushy bluestem	*Andropogon glomeratus*
Canada thistle	*Cirsium arvense*
Carolina bristlemallow	*Modiola caroliniana*
Carolina cranesbill	*Geranium carolinianum*
catbriar	*Smilax glauca*
cleavers	*Galium aparine*
common chickweed	*Stellaria media*
common dandelion	*Taraxacum officinale*
common greenbriar	*Smilax rotundifolia*
common milkweed	*Asclepias syriaca*
common mullein	*Verbascum thapsus*
common plantain	*Plantago major*
common vetch	*Vicia americana*
common yarrow	*Achillea millefolium*
corn salad	*Valerianella locusta*
cress sp.	*Brassicaceae sp.*
curled dock	*Rumex crispus*
dove's-foot cranesbill	*Geranium molle*
English plantain	*Plantago lanceolata*
field hawkweed	*Pilosella caespitosa*
goose grass	*Eleusine indica*
ground ivy	*Glechoma hederacea*
groundsel (herb)	*Senecio vulgaris*
Indian hemp dogbane	*Apocynum cannabinum*
Japanese honeysuckle	*Lonicera japonica*
little quaking grass	*Briza minor*
loblolly pine (seedling)	*Pinus taeda*
low cudweed	*Gnaphalium uliginosum*
low hop clover	*Trifolium campestre*
lyre-leaf sage	*Salvia lyrata*
mulberry (seedling)	*Morus sp.*
muscadine	*Vitis rotundifolia*
musclewood (seedling)	*Carpinus caroliniana*
onion grass	*Allium vineale*
Oriental false hawkweed	*Youngia japonica*
oxeye daisy	*Leucanthemum vulgare*

path rush	*Juncus tenuis*
Philadelphia fleabane	*Erigeron philadelphicus*
poison ivy	*Toxicodendron radicans*
Queen Anne's lace	*Daucus carota*
rough goldenrod	*Solidago rugosa*
ryegrass	*Elymus canadensis*
southern wild chervil	*Chaerophyllum tainturieri*
sweet gum (seedling)	*Liquidambar styraciflua*
sweet vernal grass	*Anthoxanthum odoratum*
trumpet creeper	*Campsis radicans*
unidentified grass	*Poaceae sp.*
unidentified meadowgrass	*Poa sp.*
Virginia creeper	*Parthenocissus quinquefolia*
white clover	*Trifolium repens*
wild blue matter	*Sherardia arvensis*
yellow wood sorrel	*Oxalis stricta*

Table 7- List of Wildlife Observed (Macroinvertabrates only).

Common Name	Latin Binomial	Location	Observation
black racer	*Coluber constrictor*	Mature PFO (edge)	visual
grey catbird	*Dumetella carolinensis*	PSS access road, upland thicket fringes	visual, auditory
grey squirrel	*Sciurus carolinensis*	Mature PFO, Forested uplands	visual
northern cardinal	*Cardinalis cardinalis*	PSS access road	auditory, visual
northern mockingbird	*Mimus polyglottos*	PEM access road, roadside edge	visual
raccoon	*Procyon lotor*	PEM power line right-of-way, PEM access road	tracks
red fox	*Vulpes vulpes*	PEM access road	tracks
red-winged blackbird	*Agelaius phoeniceus*	PEM power line right-of-way	visual, auditory
song sparrow	*Melospiza melodia*	PEM access road	auditory
spring peeper	*Pseudacris crucifer*	PEM access road	auditory
white-tailed deer	*Odocoileus virginianus*	Mature forested wetlands, PEM power line right-of-way	tracks, scat
wild turkey	*Meleagris gallopavo*	PEM access road	visual
woodcock	*Scolopax minor*	Mature PFO	visual

Department of Conservation & Recreation
CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

Web Project ID: WEB0000014983

Client Project Number: 0058-133-459, C501, P101, R201

PROJECT INFORMATION

TITLE: SPSA Flyover

DESCRIPTION: This project is located in the City of Suffolk. The purpose is to construct a flyover ramp to accommodate the left turning Eastbound traffic entering the landfill. Additional right of way will be required for approximately 5 parcels. This project will have utility relocations. Currently, Route 460 is a 6 h through lane facility, Lane widening will occur on both sides to accommodate the ramp. No additional through lanes are being added. The loop of the ramp is located on new location and will tie back into Bob Foeller Drive. US Route 13/58/460 has 3 general purpose lanes in each direction. The proposed design includes a right exit ramp on the eastbound lanes for the traffic entering the landfill from this direction. The flyover will be located approximately 3,000 feet from the existing intersection at Bob Foeller Drive/Welsh Parkway. The exiting traffic will maintain existing traffic patterns.

EXISTING SITE CONDITIONS: Wooded

QUADRANGLES: Chuckatuck, Bowers Hill

COUNTIES: City of Suffolk

Latitude/Longitude (DMS): 36° 45' 25.9957" N / 76° 30' 17.3933" W

Acreage: 20 acres

Comments: This project requires a full SERP. Attached is the EQ-429, aerial and topographic maps and site visit photos. Please review and submit your comments NLT COB Friday, April 2, 2021.

REQUESTOR INFORMATION

Priority: N **Tier Level:** Tier II Plus **Tax ID:**

Contact Name: Richard Hedges

Company Name: Virginia Department of Transportation

Address: 7511 Burbage Dr.

City: Suffolk **State:** VA **Zip:** 23435

Phone: 75753342084 **Fax:** 7576863550 **Email:** richard.hedges@vdot.virginia.gov

Conservation Site	Site Type	Brank	Acreage	Listed Species Presence	Essential Conservation Site?
GREAT DISMAL SWAMP: NORTHWEST SECTION	Conservation Site	B5	2724	SL	YES
GREAT DISMAL SWAMP	Conservation Site	B2	101968	FL	YES

Natural Heritage Screening Features Intersecting Project Boundary

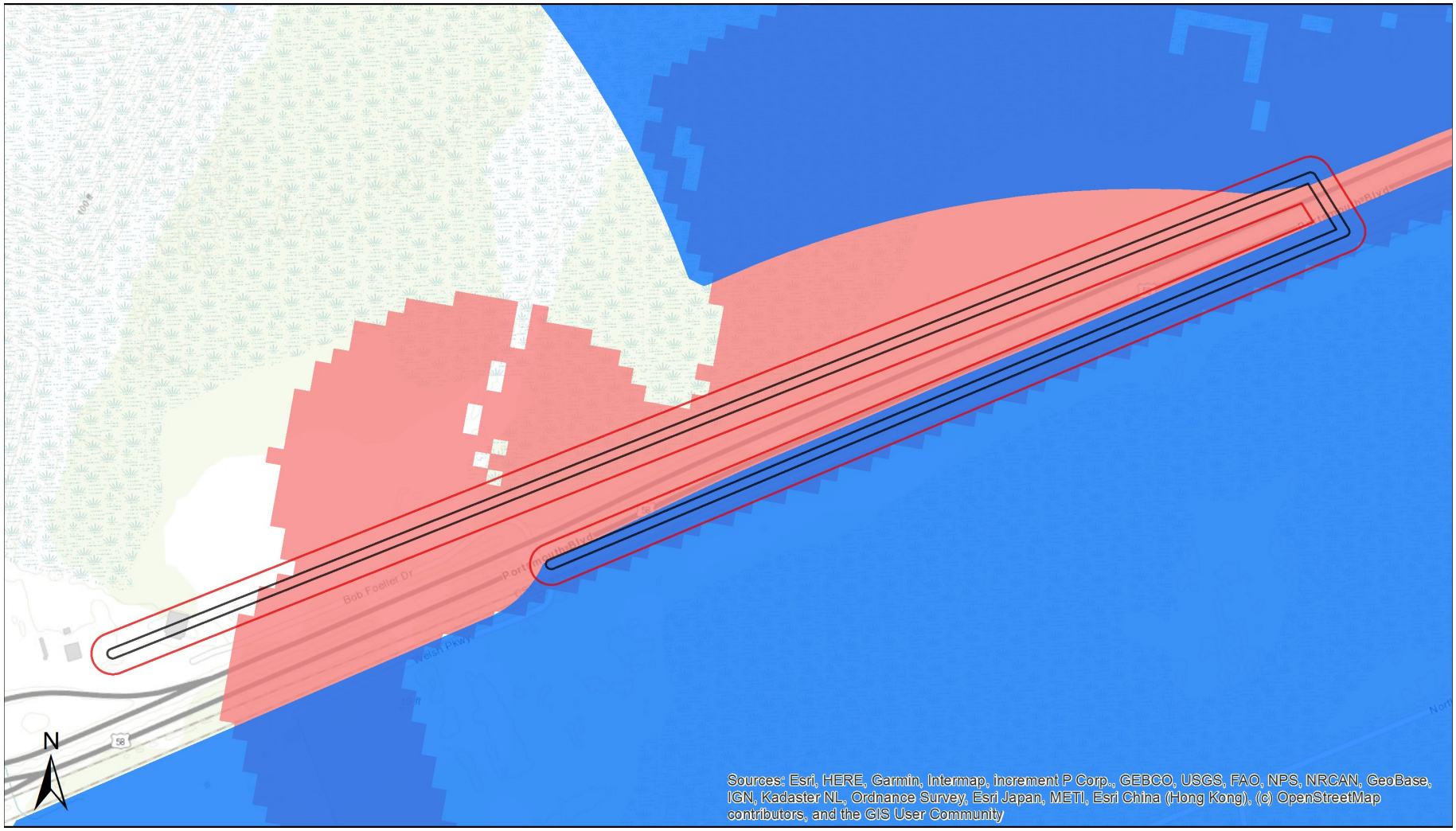
Site Name	Group Name	Common Name	Scientific Name	GRANK	SRANK	Fed Status	Species of Concern	State Status	EO Rank	Last Obs Date	Precision

Natural Heritage Resources Intersecting Project Boundary

Intersecting Predictive Models
Eastern Big-eared Bat
Canebrake Rattlesnake

Predictive Model Results

SPSA Flyover



Project Boundary

Buffered Project Boundary

Predictive Models

NH_Screening_Layer

Conservation Site

1:9,998

0 0.075 0.15 0.3 mi

0 0.125 0.25 0.5 km

Quads: Bowers Hill; Chuckatuck

Counties: City of Suffolk

Company: Virginia Department of Transportation

Lat/Long: 364525 / -763017

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

The project mapped as part of this report has been searched against the Department of Conservation and Recreation's Biotics Data System for occurrences of natural heritage resources from the area indicated for this project. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics files, NATURAL HERITAGE RESOURCES HAVE BEEN DOCUMENTED within the submitted project boundary including a 100 foot buffer and/or PREDICTED HABITAT MODELS FOR NATURAL HERITAGE RESOURCES intersect the project area.

You have submitted this project to DCR for a more detailed review for potential impacts to natural heritage resources. DCR will review the submitted project to identify the specific natural heritage resources within the proposed project area including a 100 foot buffer. Using the expertise of our biologists, DCR will evaluate whether your specific project is likely to impact these resources. DCR's response will indicate whether any negative impacts are likely and, if so, make recommendations to avoid, minimize and/or mitigate these impacts. If the potential negative impacts are to species that are state- or federally-listed as threatened or endangered, DCR will also recommend coordination with the appropriate regulatory agencies: the Virginia Department of Wildlife Resources for state-listed animals, the Virginia Department of Agriculture and Consumer Services for state-listed plants and insects, and the United States Fish and Wildlife Service for federally listed plants and animals. If your project is expected to have positive impacts we will report those to you with recommendations for enhancing these benefits.

There will be a charge for this service for "for profit companies": $60, plus an additional charge of $35 for 1-5 occurrences and $60 for 6 or more occurrences.

Please allow up to 30 calendar days for a response, unless you requested a priority response of 5 business days at an additional surcharge of $500 or 15 calendar days at an additional surcharge of $300. An invoice will be provided with your response.

We will review the project based on the information you included in the Project Info submittal form, which is included in this report. Also any additional information including photographs, survey documents, etc. attached during the project submittal process and/or sent via email referencing the project title (from the first page of this report).

Thank you for submitting your project for review to the Virginia Natural Heritage Program through the NH Data Explorer. Should you have any questions or concerns about DCR, the Data Explorer, or this report, please contact the Natural Heritage Project Review Unit at 804-371-2708.

Commonwealth of Virginia
Department of Conservation and Recreation
MEMORANDUM

TO: Richard Hedges, VDOT

FROM: Barbara Gregory, DCR-DNH

DATE: April 2, 2021

SUBJECT: 0058-133-459, C501, P101, R201, SPSA Flyover
Due April 4, 2021

The Department of Conservation and Recreation (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the Great Dismal Swamp Conservation Site and the Great Dismal Swamp: Northwest Section Conservation Site are located within the project site. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. Great Dismal Swamp Conservation Site has been given a biodiversity significance ranking of B2, which represents a site of very high significance. The natural heritage resources of concern at this site are:

Corynorhinus rafinesquii macrotis	Eastern big-eared bat	G3G4T3/S2/NL/LE
Crotalus horridus	Canebrake rattlesnake	G4T4/S1/NL/LE

The Eastern big-eared bat, named for its enormous ears twice the length of its head, is extremely rare in Virginia and is currently known only from the southeastern portion of the state. Although widespread throughout the southeast, they are never found in large numbers. These bats roost singly or in small groups in hollow trees or abandoned buildings. They forage only after dark primarily in mature forests of both upland and lowland areas along permanent bodies of water (NatureServe, 2009). The details of this bat's feeding behavior and much of its natural history remain a mystery. Lack of information regarding the ecology of the Eastern big-eared bat, and their sensitivity to disturbance, make them particularly vulnerable to destruction of roost sites and feeding areas where their presence goes undetected (Handley and Schwab 1991, Harvey 1992).

Threats to this species include forest destruction, particularly hollow tree removal, decreasing availability of abandoned buildings, and possibly, insecticides. Please note that this species is currently classified as endangered by the Virginia Department of Wildlife Resources.

Timber and Canebrake rattlesnakes are two forms of the same species (*Crotalus horridus*). The species is widespread throughout eastern United States ranging from New England to Minnesota and south to Florida and Texas. The forms differ in appearance and habitat distribution but share enough genetic similarities that they are the same species (NatureServe, 2009). The Timber rattlesnake is typically darker

or yellow-ish (Gibbons and Dorcas, 2005). In Virginia, it is found in the piedmont and mountainous regions. The Canebrake rattlesnake is typically lighter in color, often pinkish, and is found in more coastal areas, including the northern limit of its range in the southeastern counties of the coastal plain of Virginia (Gibbons and Dorcas, 2005).

Canebrake rattlesnakes in Virginia inhabit hardwood and mixed hardwood-pine forests, cane thickets and the ridges and glades of swampy areas (Mitchell and Schwab, 1991). Canebrake rattlesnakes are generally terrestrial and feed on a variety of small animals including small mammals, birds, and amphibians (Mitchell & Schwab, 1991).

The primary threats to the Canebrake rattlesnake are the loss of habitat due to development activities and persecution by humans (Mitchell, 1994). Please note that the coastal plain populations of the Canebrake rattlesnake are currently classified as endangered by the Virginia Department of Wildlife Resources (VDWR).

The Great Dismal Swamp: Northwest Section Conservation Site has been given a biodiversity significance ranking of B5, which represents a site of general significance. The natural heritage resource of concern at this site is the Canebrake rattlesnake.

In addition, according to DCR's predictive suitable habitat model and a DCR zoologist, potential may exist for the Eastern big-eared bat within the project area.

Due to the potential for this site to support populations of the Eastern big-eared bat, DCR recommends an assessment of possible roost tree within the project area. If there are large tree with possible roosts that need to be removed during construction, DCR recommends looking for signs of bat usage (guano) around the entrance of the possible roost.

To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations. Due to the legal status of the Eastern big-eared bat and Canebrake rattlesnake, DCR recommends coordination with Virginia's regulatory authority for the management and protection of these species, the VDWR, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570). If there are suitable roost trees in the project area or signs of bat use, DCR also recommends further coordination with this office.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Many invasive plant species are adapted to take advantage of soil disturbances and poor soil conditions. These adaptations are part of what enable certain species to be invasive. Non-native invasive plants are found through Virginia. Therefore, the potential exists for some VDOT projects to further the establishment of invasive species. To minimize the potential for invasive species infestation, projects should be conducted to minimize the area of disturbance, and disturbed sites should be revegetated with desirable species at the earliest opportunity following disturbance. Equally as important, species used for revegetation should not include the highly invasive species that have traditionally been used for revegetating disturbed sites. We recommend VDOT avoid using crown vetch, tall fescue, and autumn olive if at all possible.

For more information on invasive alien plants and native plants, see the DCR-Division of Natural Heritage website http://www.dcr.virginia.gov/natural-heritage/invspinfo.shtml. Guidance on identifying native plant species for potential use in the project can be found here: http://www.dcr.virginia.gov/natural-heritage/solar-site-native-plants-finder. In addition, Virginia native species alternatives to the non-native species listed in the Virginia Erosion and Sediment Control Handbook (Third Edition 1992), can be found in the 2017 addendum titled "Native versus Invasive Plant

Species", here: https://www.deq.virginia.gov/home/showpublisheddocument?id=2466. Page 3 of the addendum provides a list of native alternatives for non-natives commonly used for site stabilization including native cover crop species (i.e. Virginia wildrye).

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

All VDOT projects on state-owned lands must comply with the Virginia Erosion & Sediment Control (ESC) Law and Regulations, the Virginia Stormwater Management (SWM) Law and Regulations, the most current version of the DCR approved VDOT Annual ESC and SWM Specifications and Standards, and the project-specific ESC and SWM plans. [Reference: VESCL §10.1-560, §10.1-564; VESCR §4VAC50-30 et al; VSWML §10.1-603 et al; VSWMR §4VAC-3-20 et al].

The Virginia Department of Wildlife Resources (VDWR) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Ernie Aschenbach at 804-367-2733 or Ernie.Aschenbach@dwr.virginia.gov.

Thank you for the opportunity to comment on this project.

Cc: Ernie Aschenbach, VDWR

Literature Cited

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Handley, C.O., and D. Schwab. 1991. Eastern big-eared bat. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. p. 571-573.

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Commonwealth of Virginia
Department of Conservation and Recreation
MEMORANDUM

TO: Michael Mussomeli, VDOT

FROM: Barbara Gregory, DCR-DNH

DATE: December 16, 2022

SUBJECT: 118375, SPSA Flyover
Due December 16, 2022

The Department of Conservation and Recreation (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the Great Dismal Swamp Conservation Site and the Great Dismal Swamp: Northwest Section Conservation Site are located within the project site. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. Great Dismal Swamp Conservation Site has been given a biodiversity significance ranking of B2, which represents a site of very high significance. The natural heritage resources of concern at this site are:

Corynorhinus rafinesquii macrotis	Eastern big-eared bat	G3G4T3/S2/NL/LE
Crotalus horridus	Canebrake rattlesnake	G4T4/S1/NL/LE

The Eastern big-eared bat, named for its enormous ears twice the length of its head, is extremely rare in Virginia and is currently known only from the southeastern portion of the state. Although widespread throughout the southeast, they are never found in large numbers. These bats roost singly or in small groups in hollow trees or abandoned buildings. They forage only after dark primarily in mature forests of both upland and lowland areas along permanent bodies of water (NatureServe, 2009). The details of this bat's feeding behavior and much of its natural history remain a mystery. Lack of information regarding the ecology of the Eastern big-eared bat, and their sensitivity to disturbance, make them particularly vulnerable to destruction of roost sites and feeding areas where their presence goes undetected (Handley and Schwab 1991, Harvey 1992).

Threats to this species include forest destruction, particularly hollow tree removal, decreasing availability of abandoned buildings, and possibly, insecticides. Please note that this species is currently classified as endangered by the Virginia Department of Wildlife Resources.

Timber and Canebrake rattlesnakes are two forms of the same species (*Crotalus horridus*). The species is widespread throughout eastern United States ranging from New England to Minnesota and south to Florida and Texas. The forms differ in appearance and habitat distribution but share enough genetic similarities that they are the same species (NatureServe, 2009). The Timber rattlesnake is typically darker

or yellow-ish (Gibbons and Dorcas, 2005). In Virginia, it is found in the piedmont and mountainous regions. The Canebrake rattlesnake is typically lighter in color, often pinkish, and is found in more coastal areas, including the northern limit of its range in the southeastern counties of the coastal plain of Virginia (Gibbons and Dorcas, 2005).

Canebrake rattlesnakes in Virginia inhabit hardwood and mixed hardwood-pine forests, cane thickets and the ridges and glades of swampy areas (Mitchell and Schwab, 1991). Canebrake rattlesnakes are generally terrestrial and feed on a variety of small animals including small mammals, birds, and amphibians (Mitchell & Schwab, 1991).

The primary threats to the Canebrake rattlesnake are the loss of habitat due to development activities and persecution by humans (Mitchell, 1994). Please note that the coastal plain populations of the Canebrake rattlesnake are currently classified as endangered by the Virginia Department of Wildlife Resources (VDWR).

The Great Dismal Swamp: Northwest Section Conservation Site has been given a biodiversity significance ranking of B5, which represents a site of general significance. The natural heritage resource of concern at this site is the Canebrake rattlesnake.

In addition, according to DCR's predictive suitable habitat model, potential may exist for the Eastern big-eared bat, canebrake rattlesnake, and Mabee's salamander (*Ambystoma mabeei,* G4/S1S2/NL/LT) within the project area.

Due to the potential for this site to support populations of the Eastern big-eared bat, DCR recommends an assessment of possible roost trees within the project area. If there are large tree with possible roosts that need to be removed during construction, DCR recommends looking for signs of bat usage (guano) around the entrance of the possible roost. DCR supports conducting habitat assessments for the canebrake rattlesnake and Mabee's salamander.

To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations. Due to the legal status of the Eastern big-eared bat, Canebrake rattlesnake, and Mabee's salamander, DCR also recommends continued coordination with Virginia's regulatory authority for the management and protection of these species, the VDWR, to ensure compliance with the Virginia Endangered Species Act **(**VA ST §§ 29.1-563 – 570). If there are suitable roost trees in the project area or signs of bat use, DCR also recommends further coordination with this office. Furthermore, DCR recommends maintaining the hydrologic connection between the project area and the area on the south side of Route 58 which is part of the Great Dismal Swamp National Wildlife Refuge.

In addition, the proposed project will impact an Ecological Core (C2) as identified in the Virginia Natural Landscape Assessment (https://www.dcr.virginia.gov/natural-heritage/vaconvisvnla). Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: http://vanhde.org/content/map.

Ecological Cores are areas of at least 100 acres of continuous interior, natural cover that provide habitat for a wide range of species, from interior-dependent forest species to habitat generalists, as well as species that utilize marsh, dune, and beach habitats. Interior core areas begin 100 meters inside core edges and continue to the deepest parts of cores. Cores also provide the natural, economic, and quality of life benefits of open space, recreation, thermal moderation, water quality (including drinking water recharge and protection, and erosion prevention), and air quality (including sequestration of carbon, absorption of gaseous pollutants, and production of oxygen). Cores are ranked from C1 to C5 (C5 being the least significant) using nine prioritization criteria, including the habitats of natural heritage resources they contain.

Impacts to cores occur when their natural cover is partially or completely converted permanently to developed land uses. Habitat conversion to development causes reductions in ecosystem processes, native biodiversity, and habitat quality due to habitat loss; less viable plant and animal populations; increased predation; and increased introduction and establishment of invasive species.

DCR recommends avoidance of impacts to cores. When avoidance cannot be achieved, DCR recommends minimizing the area of impacts overall and concentrating the impacted area at the edges of cores, so that the most interior remains intact.

The proposed project will impact one or more cores with very high (C2) to outstanding (C1) ecological integrity. Further investigation of these impacts is recommended and DCR-DNH can conduct a formal impact analysis upon request. This analysis would estimate impacts to cores and habitat fragments, providing an estimate of the total acreage of direct and indirect impacts of the project. For more information about the analysis and service charges, please contact Joe Weber, DCR Chief of Biodiversity Information and Conservation Tools at Joseph.Weber@dcr.virginia.gov.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Many invasive plant species are adapted to take advantage of soil disturbances and poor soil conditions. These adaptations are part of what enable certain species to be invasive. Non-native invasive plants are found through Virginia. Therefore, the potential exists for some VDOT projects to further the establishment of invasive species. To minimize the potential for invasive species infestation, projects should be conducted to minimize the area of disturbance, and disturbed sites should be revegetated with desirable species at the earliest opportunity following disturbance. Equally as important, species used for revegetation should not include the highly invasive species that have traditionally been used for revegetating disturbed sites. We recommend VDOT avoid using crown vetch, tall fescue, and autumn olive if at all possible.

For more information on invasive alien plants and native plants, see the DCR-Division of Natural Heritage website http://www.dcr.virginia.gov/natural-heritage/invspinfo.shtml. Guidance on identifying native plant species for potential use in the project can be found here: http://www.dcr.virginia.gov/natural-heritage/solar-site-native-plants-finder. In addition, Virginia native species alternatives to the non-native species listed in the Virginia Erosion and Sediment Control Handbook (Third Edition 1992), can be found in the 2017 addendum titled "Native versus Invasive Plant Species", here: https://www.deq.virginia.gov/home/showpublisheddocument?id=2466. Page 3 of the addendum provides a list of native alternatives for non-natives commonly used for site stabilization including native cover crop species (i.e. Virginia wildrye).

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

All VDOT projects on state-owned lands must comply with the Virginia Erosion & Sediment Control (ESC) Law and Regulations, the Virginia Stormwater Management (SWM) Law and Regulations, the most current version of the DCR approved VDOT Annual ESC and SWM Specifications and Standards, and the project-specific ESC and SWM plans. [Reference: VESCL §10.1-560, §10.1-564; VESCR §4VAC50-30 et al; VSWML §10.1-603 et al; VSWMR §4VAC-3-20 et al].

The Virginia Department of Wildlife Resources (VDWR) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Amy Martin at (804-367-2211) or amy.martin@dwr.virginia.gov.

Thank you for the opportunity to comment on this project.

Cc: Amy Martin, VDWR

Literature Cited

Gibbons, W. and Dorcas, M. 2005. Snakes of the southeast. University of Georgia Press. Athens, GA. 253pp.

Handley, C.O., and D. Schwab. 1991. Eastern big-eared bat. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. p. 571-573.

Harvey, M.J. 1992. Bats of the Eastern United States. Arkansas Game and Fish Commission, Little Rock, Arkansas. pp.46

Mitchell, J.C. 1994. The reptiles of Virginia. Smithsonian Institution Press. Washington, DC. pp. 296 - 302.

Mitchell, J.C. & D. Schwab. 1991. Canebrake rattlesnake. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia.

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: March 31, 2010).

Department of Conservation & Recreation
CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

Web Project ID: WEB0000019018

Client Project Number: 118375

PROJECT INFORMATION

TITLE: SPSA Flyover

DESCRIPTION: The purpose is to construct a flyover ramp to accommodate the left-turning eastbound traffic entering the landfill. Currently, traffic accessing the SPSA landfill from U.S. 58 EB utilizes a median crossover, crossing U.S. WB to access Bob Foeller Drive (landfill access road). The crossover has a history of high accident rates and the current level of is unacceptable during peak conditions. Based on the adopted regions travel demand forecast model, peak hour volumes will increase by approximately 36% by 2040 (1.6% growth rate annually). Furthermore, the SPSA landfill is undergoing a 127-acre expansion. The closure of the Portsmouth Wheelabrator facility, which burns approximately 85% of the region's trash to produce steam energy for the U.S. Navy, would be expected to substantially increase truck traffic to the SPSA landfill. Therefore, the proposed flyover would eliminate the suboptimal median crossover by providing a safer alternative that would accommodate future landfill access needs and address immediate safety issues. Currently, U.S. 58 is a six (6) through lane facility, with three (3) general purpose lanes in each direction. Lane widening will occur on both sides of the highway to accommodate the ramp/flyover. No additional through lanes/capacity improvements are being added. The loop of the ramp is a fill slope, located on new location that will tie into Bob Foeller Drive (landfill access road). The proposed design includes a right exit ramp on the eastbound lanes for the traffic entering the landfill from this direction. The flyover will be located approximately 3,000 feet from the existing intersection at Bob Foeller Drive. The exiting traffic will maintain existing traffic patterns. Proposed design would include ditch relocation adjacent to U.S. 58 EB to accommodate the exit to the flyover. A portion of roadside ditch adjacent to U.S. 58 EB would be relocated to accommodate the exit to the flyover. Existing drainage within the proposed loop (north of U.S. 58 WB) and fill slope would be maintained via installation of four (4) culverts. The proposed project is phased. Phase I would include construction of the flyover, drainage improvements, lane widening and utility relocation. Phase II would improve ingress/egress from the facility to and from U.S. 58 WB. Right-of-way acquisition is projected for five (5) parcels. The proposed project is projected to result in approximately 6.70 acres of tree clearing.

EXISTING SITE CONDITIONS: forested wetlands, existing right-of-way, power line, emergent wetlands and scrub-shrub wetlands within an existing private access road, three (3) jurisdictional roadside ditches

QUADRANGLES: Chuckatuck, Bowers Hill

COUNTIES: City of Suffolk

Latitude/Longitude (DMS): 36° 45' 31.9412" N / 76° 30' 11.7786" W

Acreage: 55 acres

Comments: I had presented this project twice for early coordination at IACMs. I have attached comments from review August 2021. I have also

conducted habitat assessments for canebrake rattlesnake and Mabee's salamander. These reports have not been submitted as it is VDOT''s understanding that a property owner (at the area of the proposed loop ramp) plans to timber a portion of the property, which would change existing conditions (this parcel is subject to periodic silviculture). This would also change our the results of our canebrake rattlesnake assessment as the property is currently suitable habitat (mature, mixed deciduous forested wetlands) to unsuitable (emergent wetlands if clearcut). The property also contains suitable roosting habitat for tri-colored bat. No suitable habitat was identified for Mabee's salamander (report pending). VDOT is anticipating a TOY restriction for tree clearing between 1 April and 14 November due to uplisting of northern long-eared bat.

REQUESTOR INFORMATION

Priority: N **Tier Level:** Tier II Plus **Tax ID:**

Contact Name: Michael J. Mussomeli

Company Name: Virginia Department of Transportaion

Address: 1700 North Main Street

City: Suffolk **State:** VA **Zip:** 23434

Phone: 757-335-2460 **Fax:** 757-335-2460 **Email:** michael.mussomeli@vdot.virginia.gov

Conservation Site	Site Type	Brank	Acreage	Listed Species Presence	Essential Conservation Site?
GREAT DISMAL SWAMP: NORTHWEST SECTION	Conservation Site	B5	2724	SL	YES
GREAT DISMAL SWAMP	Conservation Site	B2	101968	FL	YES

Natural Heritage Screening Features Intersecting Project Boundary

Site Name	Group Name	Common Name	Scientific Name	GRANK	SRANK	Fed Status	Species of Concern	State Status	EO Rank	Last Obs Date	Precision

Natural Heritage Resources Intersecting Project Boundary

Intersecting Predictive Models
Eastern Big-eared Bat
Canebrake Rattlesnake
Mabee's Salamander

Predictive Model Results

In addition, the proposed project will impact an Ecological Core(s) C2 as identified in the Virginia Natural Landscape Assessment (https://www.dcr.virginia.gov/natural-heritage/vaconvisvnla). Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: http://vanhde.org/content/map.

Ecological Cores are areas of at least 100 acres of continuous interior, natural cover that provide habitat for a wide range of species, from interior-dependent forest species to habitat generalists, as well as species that utilize marsh, dune, and beach habitats. Interior core areas begin 100 meters inside core edges and continue to the deepest parts of cores. Cores also provide the natural, economic, and quality of life benefits of open space, recreation, thermal moderation, water quality (including drinking water recharge and protection, and erosion prevention), and air quality (including sequestration of carbon, absorption of gaseous pollutants, and production of oxygen). Cores are ranked from C1 to C5 (C5 being the least significant) using nine prioritization criteria, including the habitats of natural heritage resources they contain.

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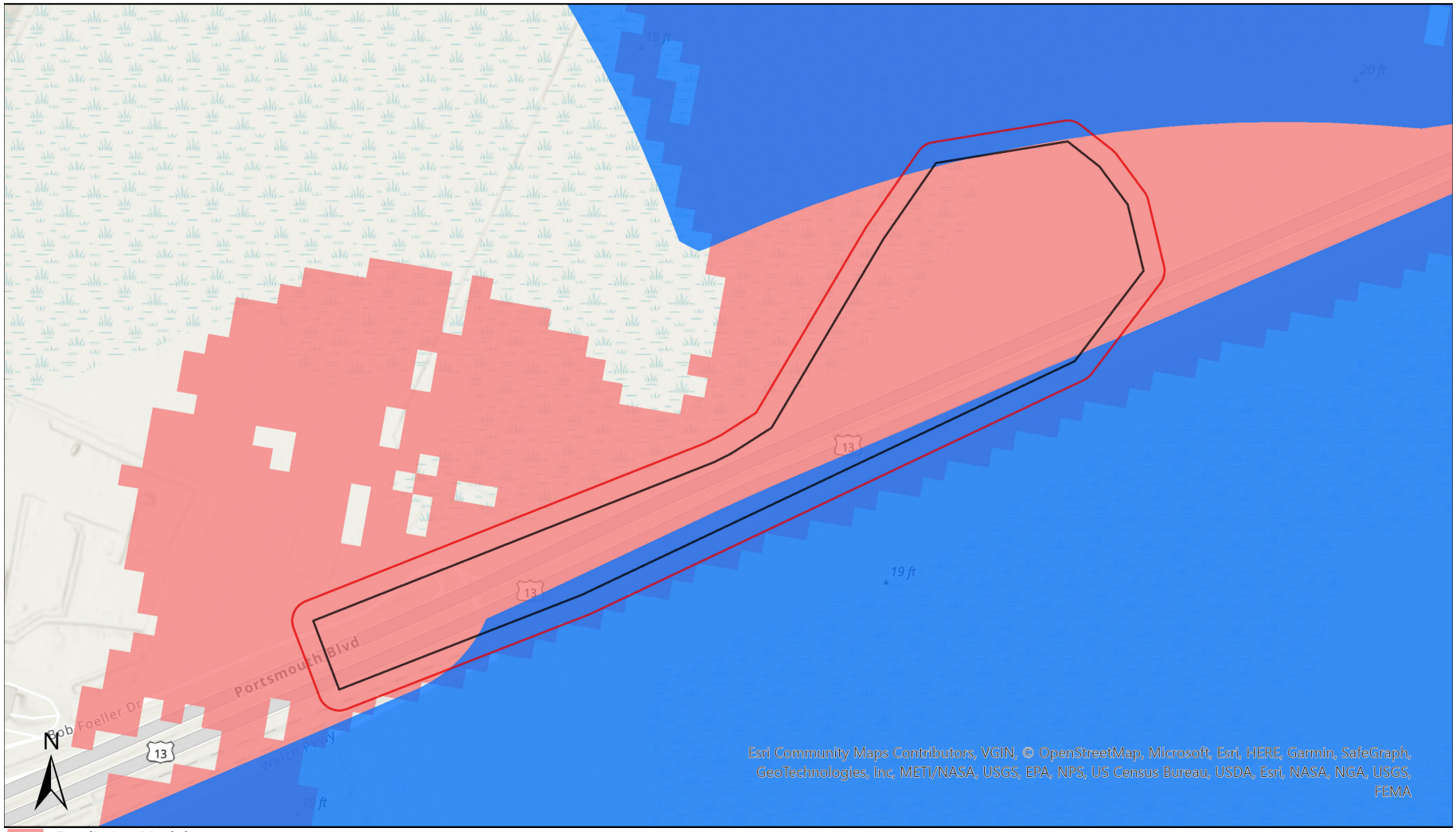
The proposed project will impact one or more cores with very high (C2) to outstanding (C1) ecological integrity. Further investigation of these impacts is recommended and DCR-DNH can conduct a formal impact analysis upon request. This analyses would estimate impacts to cores and habitat fragments, providing an estimate of the total acreage of direct and indirect impacts of the project. For more information about the analysis and service charges, please contact Joe Weber, DCR Chief of Biodiversity Information and Conservation Tools at Joseph.Weber@dcr.virginia.gov.

SPSA Flyover



Predictive Models

Conservation Site

Buffered Project Boundary

Project Boundary

0 0.05 0.1 0.2 Miles

Scale: 1:7,541

Quads: Bowers Hill; Chuckatuck

Counties: City of Suffolk

Company: Virginia Department of Transportaion

Lat/Long: 364531 / -763011

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

The project mapped as part of this report has been searched against the Department of Conservation and Recreation's Biotics Data System for occurrences of natural heritage resources from the area indicated for this project. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics files, NATURAL HERITAGE RESOURCES HAVE BEEN DOCUMENTED within the submitted project boundary including a 100 foot buffer and/or PREDICTED HABITAT MODELS FOR NATURAL HERITAGE RESOURCES intersect the project area.

You have submitted this project to DCR for a more detailed review for potential impacts to natural heritage resources. DCR will review the submitted project to identify the specific natural heritage resources within the proposed project area including a 100 foot buffer. Using the expertise of our biologists, DCR will evaluate whether your specific project is likely to impact these resources. DCR's response will indicate whether any negative impacts are likely and, if so, make recommendations to avoid, minimize and/or mitigate these impacts. If the potential negative impacts are to species that are state- or federally-listed as threatened or endangered, DCR will also recommend coordination with the appropriate regulatory agencies: the Virginia Department of Wildlife Resources for state-listed animals, the Virginia Department of Agriculture and Consumer Services for state-listed plants and insects, and the United States Fish and Wildlife Service for federally listed plants and animals. If your project is expected to have positive impacts we will report those to you with recommendations for enhancing these benefits.

There will be a charge for this service for "for profit companies": $60, plus an additional charge of $35 for 1-5 occurrences and $60 for 6 or more occurrences.

Please allow up to 30 calendar days for a response, unless you requested a priority response of 5 business days at an additional surcharge of $500 or 15 calendar days at an additional surcharge of $300. An invoice will be provided with your response.

We will review the project based on the information you included in the Project Info submittal form, which is included in this report. Also any additional information including photographs, survey documents, etc. attached during the project submittal process and/or sent via email referencing the project title (from the first page of this report).

Thank you for submitting your project for review to the Virginia Natural Heritage Program through the NH Data Explorer. Should you have any questions or concerns about DCR, the Data Explorer, or this report, please contact the Natural Heritage Project Review Unit at 804-371-2708.

From: Michael J. Mussomeli
7511 Burbage Drive
Suffolk, VA 23435
michael.mussomeli@vdot.virginia.gov
757-289-5699

To: U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061

4 November 2022

Re: Project Review Request, SPSA Flyover, City of Suffolk, Virginia (VDOT UPC: 118375)

We have reviewed the referenced project using the Virginia Field Office's online project review process and have followed all guidance and instructions in completing the review. We completed our review on 4 November 2022 and are submitting our project review package in accordance with the instructions for further review.

Our proposed action consists of: The purpose is to construct a flyover ramp to accommodate the left-turning eastbound traffic entering the landfill. Currently, traffic accessing the SPSA landfill from U.S. 58 EB utilizes a median crossover, crossing U.S. WB to access Bob Foeller Drive (landfill access road). The crossover has a history of high accident rates and the current level of is unacceptable during peak conditions. Based on the adopted regions travel demand forecast model, peak hour volumes will increase by approximately 36% by 2040 (1.6% growth rate annually). Furthermore, the SPSA landfill is undergoing a 127-acre expansion. The closure of the Portsmouth Wheelabrator facility, which burns approximately 85% of the region's trash to produce steam energy for the U.S. Navy. This closure would be expected to substantially increase truck traffic to the SPSA landfill. Therefore, the proposed flyover would eliminate the suboptimal median crossover by providing a safer alternative that would accommodate future landfill access needs and address immediate safety issues.

The location of the project and the action area are identified on the enclosed map. The latitude/longitude of the project is 36 ° 45 ' 33 ", - 76 ° 29 ' 57 ".

The project is expected to be completed April 2024 and anticipated to have an approximately two (2) year construction period.

This project review is needed for Section 7 clearance for USACE Section 404 Individual Permit for the project.

The enclosed project review package provides the information about the species and critical habitat considered in our review, and the species conclusions table included in the package identifies our determinations for the resources that may be affected by the project.

For additional information, please contact me at the address listed above.

Sincerely,

Michael J. Mussomeli, PWS

Digitatized

Michael J. Mussomeli
Senior Natural Resource Specialist
Virginia Department of Transportation

Enclosures:

1) ENTIRE PROJECT REVIEW PACKAGE
2) Other relevant project data/documents

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

Stephen C. Brich, P.E.
Commissioner

1401 East Broad Street
Richmond, Virginia 23219

(804) 786-2701
Fax: (804) 786-2940

MEMORANDUM

Date: 16 November 2022

To: Amy Martin, DWR; Tamara Doucette, DWR; Barbara Gregory, DCR

From: Michael J. Mussomeli, PWS- VDOT

RE: ESS Log 41533- VDOT SPSA Flyover Mabee's Salamander Habitat Assessment

The Virginia Department of Transportation (VDOT) has conducted a habitat assessment for the State-threatened Mabee's salamander (*Amybstoma mabeei*) for the proposed Southeastern Public Service Authority (SPSA) Flyover Project in the City of Suffolk, Virginia. The purpose of this memorandum is to analyze potential impacts to Mabee's salamander and identify suitable habitat within the project area and study area. The project area is located at and adjacent to US 58, west of a truck weigh station, east of the U.S.58 Business interchange, and east-southeast of the SPSA landfill (Attachment A – Figures 1, 2, and 3). Study area limits were established up to approximately 1,000 feet north, 1,200 feet east, 500 feet to the west, and 200 feet to the south, respectively, of the project area (shown on Attachment A – Figures 4, 5, and 6)

Project Description

The proposed project would construct a flyover ramp to accommodate the left-turning eastbound traffic entering the landfill. Currently, traffic accessing the SPSA landfill from U.S. 58 EB utilizes a median crossover, crossing U.S. WB to access Bob Foeller Drive (landfill access road). Lane widening will occur on both sides of the highway to accommodate the ramp/flyover. No additional through lanes/capacity improvements would be added. The loop of the ramp is a fill slope, located on new location that will tie into Bob Foeller Drive (landfill access road). The proposed design includes a right exit ramp on the eastbound lanes for the traffic entering the landfill from this direction. The proposed flyover would be located approximately 3,000 feet from the existing intersection at Bob Foeller Drive. The exiting traffic would maintain existing traffic patterns. Proposed design would include ditch relocation adjacent to U.S. 58 EB to accommodate the exit to the flyover.

Site Description

The SPSA landfill is located northwest of the project area. Immature, mixed deciduous forested wetlands, which are part of an SPSA wetland preservation area, are located within the northwest portion of the study area. A power line right-of-way containing emergent wetlands bisects the central portion of the project area and study area. Mature, mixed deciduous forested wetlands are located within the north-central to northwest portion of the project area and study area. Three (3) roadside ditches are located adjacent to U.S. 58 WB, U.S. 58 EB, and within the median, respectively. An access road containing emergent and

scrub-shrub wetlands is located north of the U.S. 58 WB roadside ditch. A fringe of forested uplands is located adjacent to U.S. 58 WB and U.S. 58 EB.

Bob Foeller Drive serves as an access road to the landfill, with private road (Welsh Parkway) providing access off U.S. 58 EB to a residential, agricultural, and commercial (car lot) area. A fringe of forested wetlands is located between the roadside ditch adjacent to U.S. 58 EB and a maintained historic railroad bed (southern limit of the study area), with an active CSX railroad and the Great Dismal Swamp National Wildlife Refuge to the south.

Methodology

Background investigations utilized aerial photography, USGS 7.5-Minute Series USGS Topographic Maps (Attachment A – Figure 2) and results from a previously performed wetland delineation conducted in 2021 within the study area. Field investigations conducted on the following dates: 13 January 2022 by VDOT Senior Natural Resource Specialists Michael J. Mussomeli, Dean Devereaux, and James Hatcher; 6 April 2022 by Michael J. Mussomeli and Dean Devereaux; and 26 April 2022 by Michael J. Mussomeli. The study area was traversed in a random manner, with higher concentration of effort for locations north of U.S. 58 where background investigations indicated more suitable habitat. Plant communities and conditions were evaluated for habitat suitability.

Results

As noted above, VDOT identified mature forested wetlands, immature forested wetlands, emergent wetlands, scrub-shrub wetlands, forested uplands, and roadside edge communities within the study area. No vernal pools were identified within the project area or study area. Roadside ditches, located adjacent to U.S. 58 WB, U.S. 58 EB, and within the median, were considered unsuitable, as were small, temporarily ponded areas in emergent wetlands within an access road north of U.S. 58. Forested wetlands within the project area did not exhibit indicators of seasonal flooding with an appropriate hydroperiod to support Mabee's salamander. All other community types were also considered unsuitable based on composition and hydrology.

Two (2) locations within the study area were identified as moderate quality habitat and are described below.

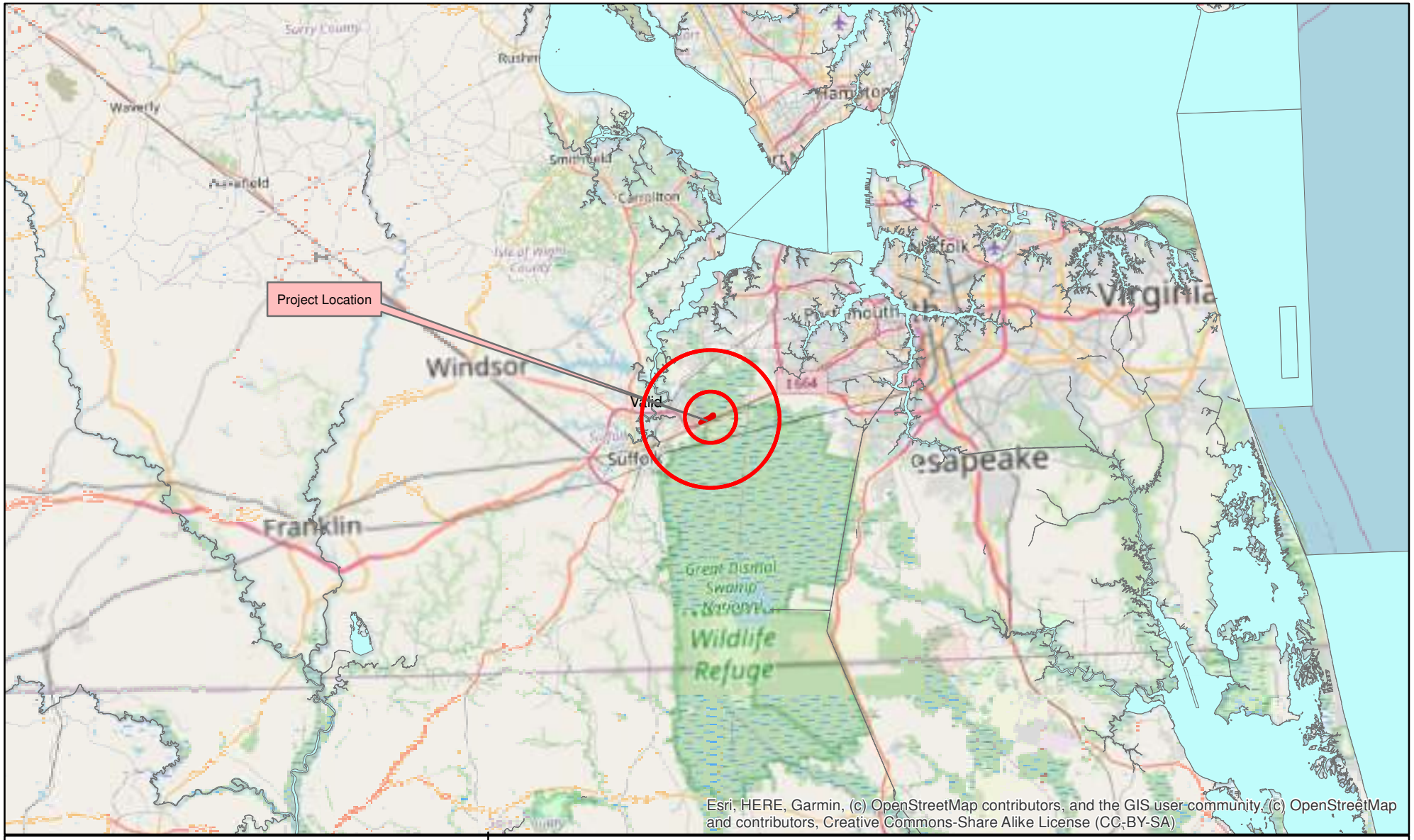
Area 1: Located approximately 400 feet north of the northwestern portion of the project area, this area contains periodically flooded forested wetlands. Water depth ranges from approximately four (4) to eighteen (18) inches. Prior to 2007-2008, this area was bisected by the headwaters of a stream (unnamed tributary of Burnett's Mill Creek) and contained abutting wetlands. The area also appears to have been subject to silviculture activities. In 2007-2008, review of aerial photography (and confirmed by field investigation) indicated a berm was constructed that blocked drainage. Figures 4 and 5 in Attachment A show conditions prior to construction of the berm in 2002 and 2006, respectively. Field investigation indicate that post-2008, water periodically ponds within this a portion of this forested area. Hydrologic indicators (e.g. water marks on trees) end approximately 530 feet west of the berm; however, more localized ponded areas may continue west through the power line right-of-way. Figure 6 shows the location of this drainageway. This area is now part of a wetland preservation site and is no longer subject to silviculture activities. Field observations determined this area contained moderately quality habitat.

Area 2: Located approximately 900 feet west of the project area, this area contains periodically flooded forested wetlands. Standing water was estimated at approximately three (3) to twelve (12) inches based on indicators of hydrology. This area does not directly abut a stream, with eventual drainage to the south and east.

These two (2) locations located within the study area exhibited characteristics of moderate quality. Additional field investigations would need to be conducted to determine hydroperiod and other field conditions (e.g. presence of fish, predatory salamanders, etc.). However, no suitable habitat for Mabee's salamander was identified within the project area. Due to the distance of the project to these two (2) areas identified as moderate quality habitat and the incorporation of strict erosion and sediment control measures, the proposed project would not be anticipated to result in adverse impact to Mabee's salamander.

ATTACHMENT A

FIGURES



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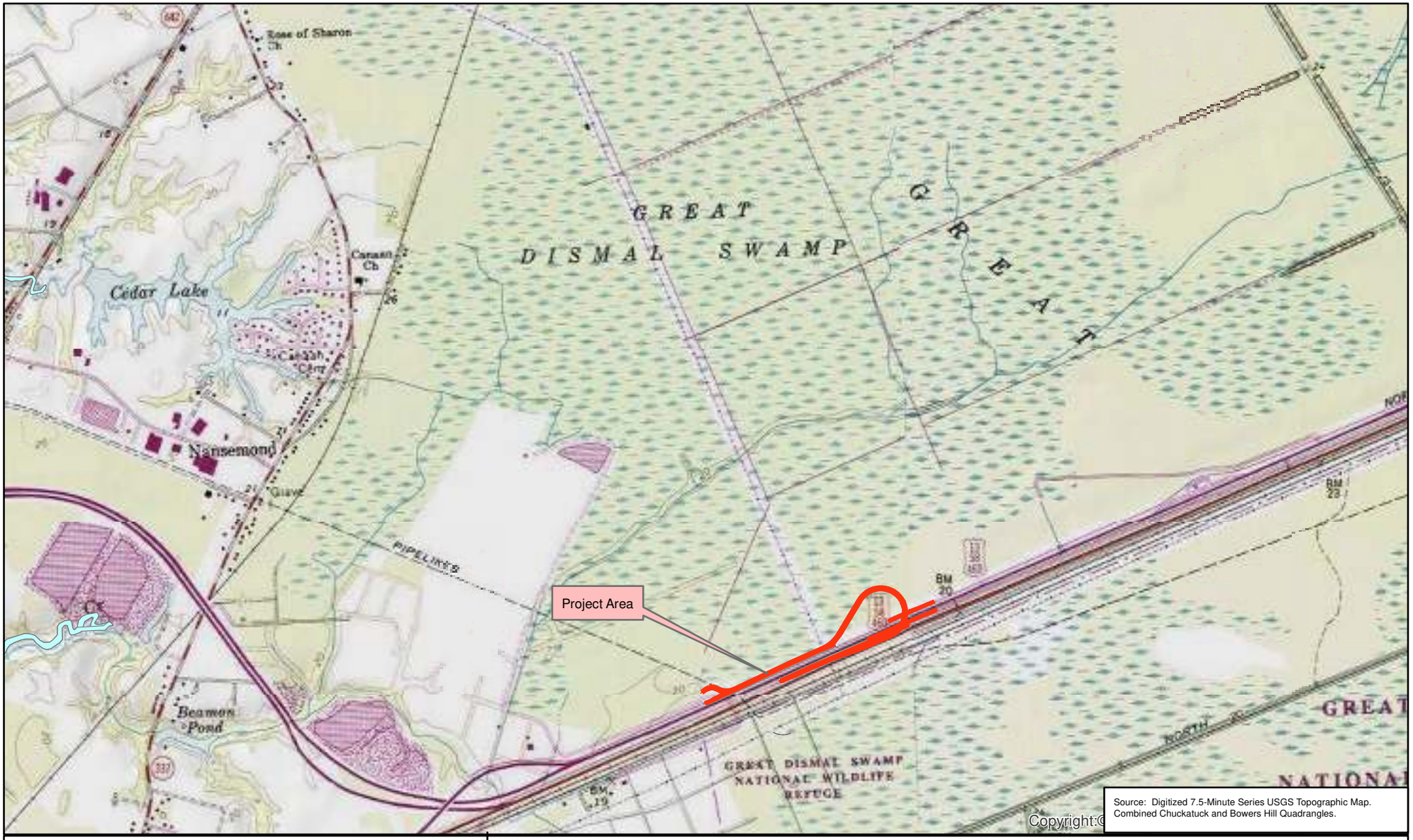
1 inch = 7.891 mi.

Figure 1- Site Location Map
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022



0 1,000 2,000 4,000
Feet

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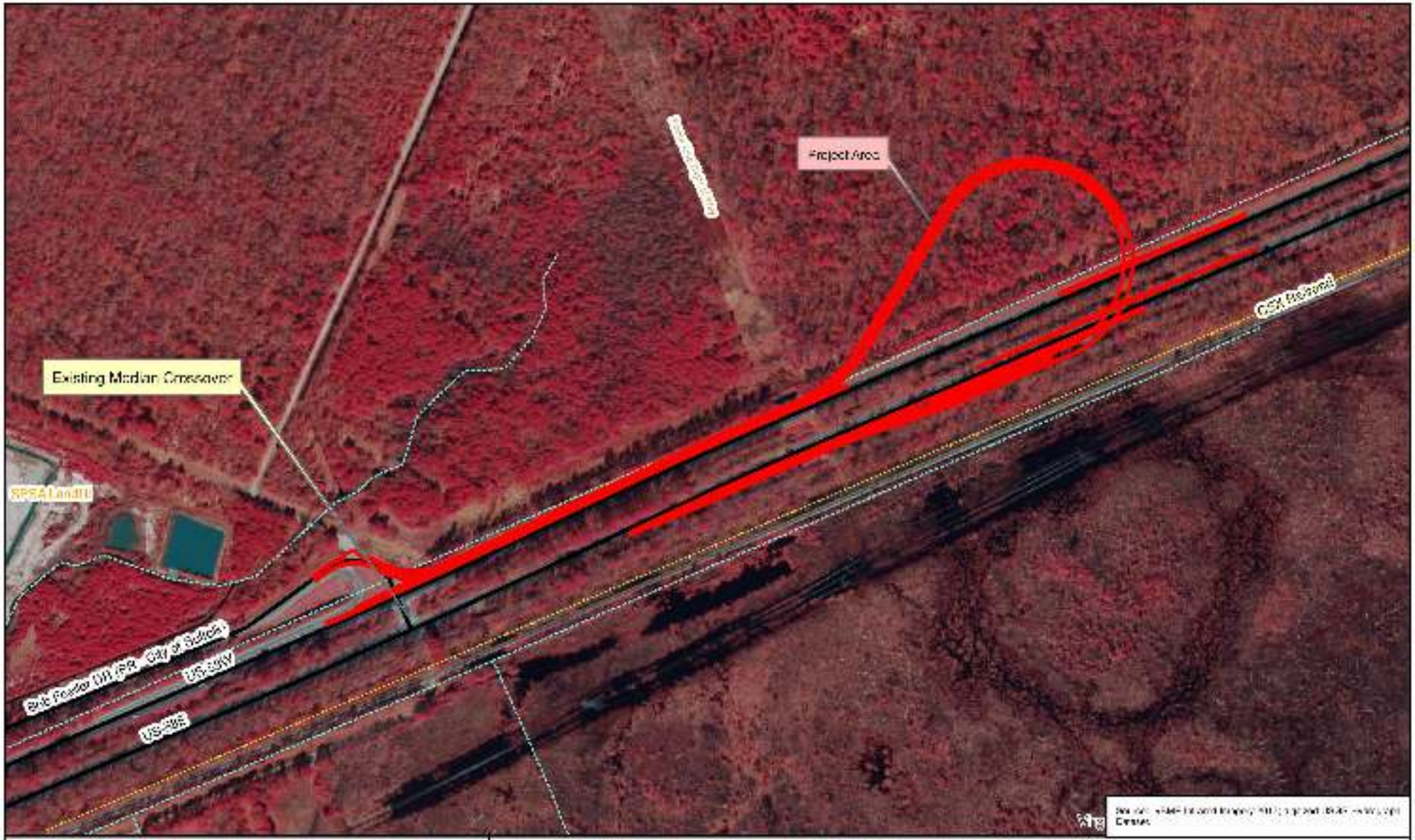
1:24,000
1 inch = 2,000 feet

Figure 2- USGS Topographic Map
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022



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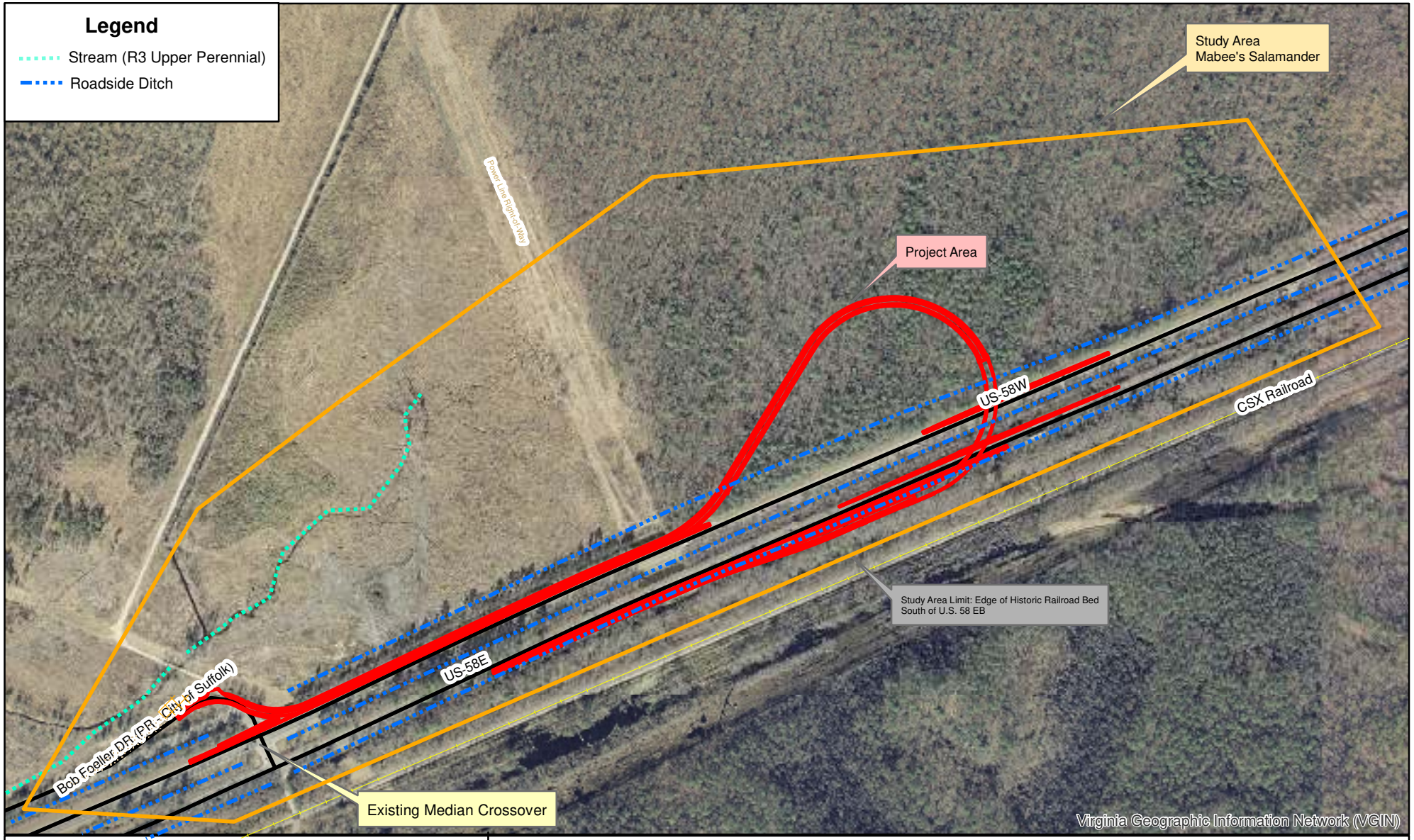
Feet

1:6,000
1 inch = 500 feet

Figure 3- Aerial Map
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022



0 250 500 1,000
Feet

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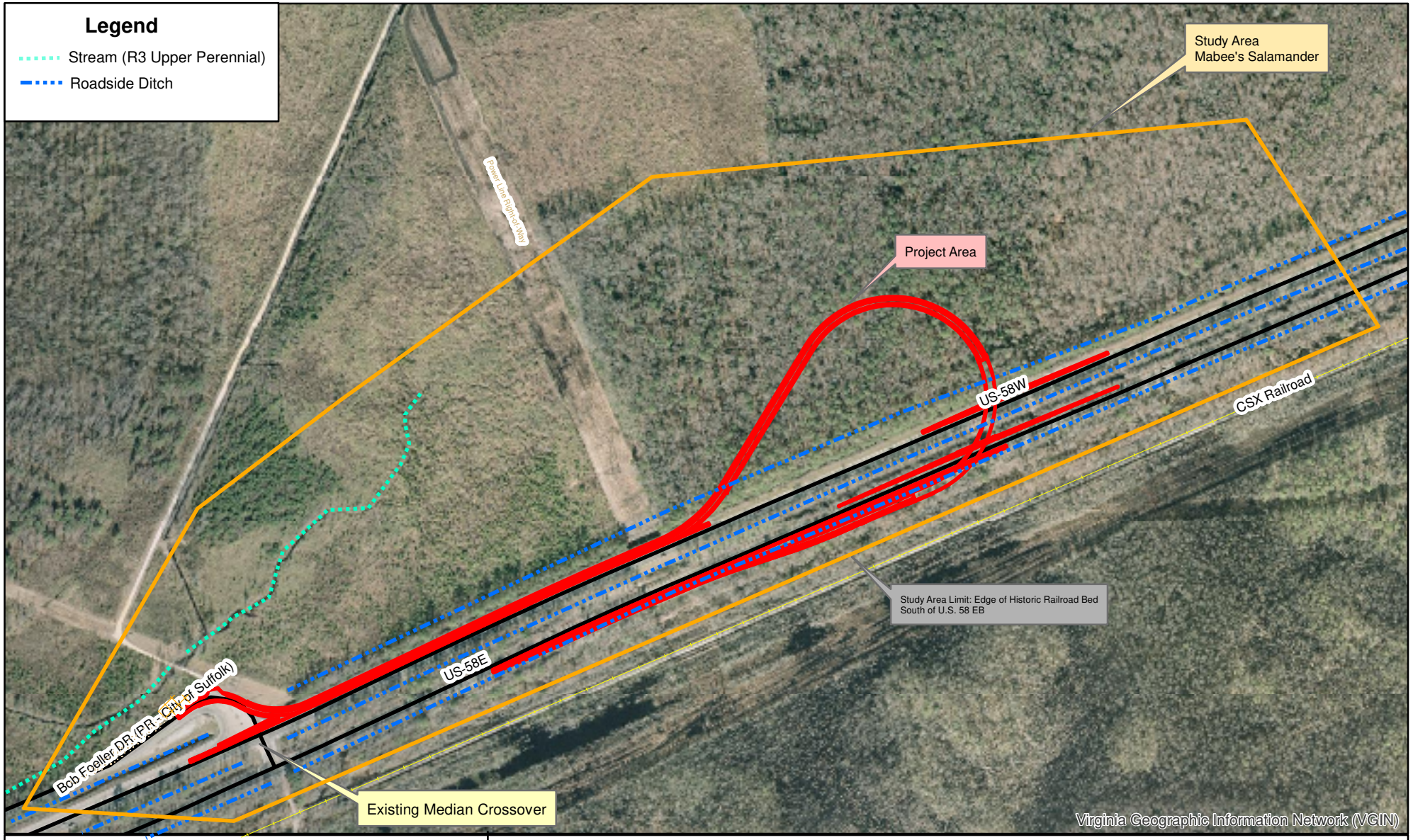
W E
S

1:6,000
1 inch = 500 feet

Figure 4- 2002 Aerial Photograph
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

December 2022



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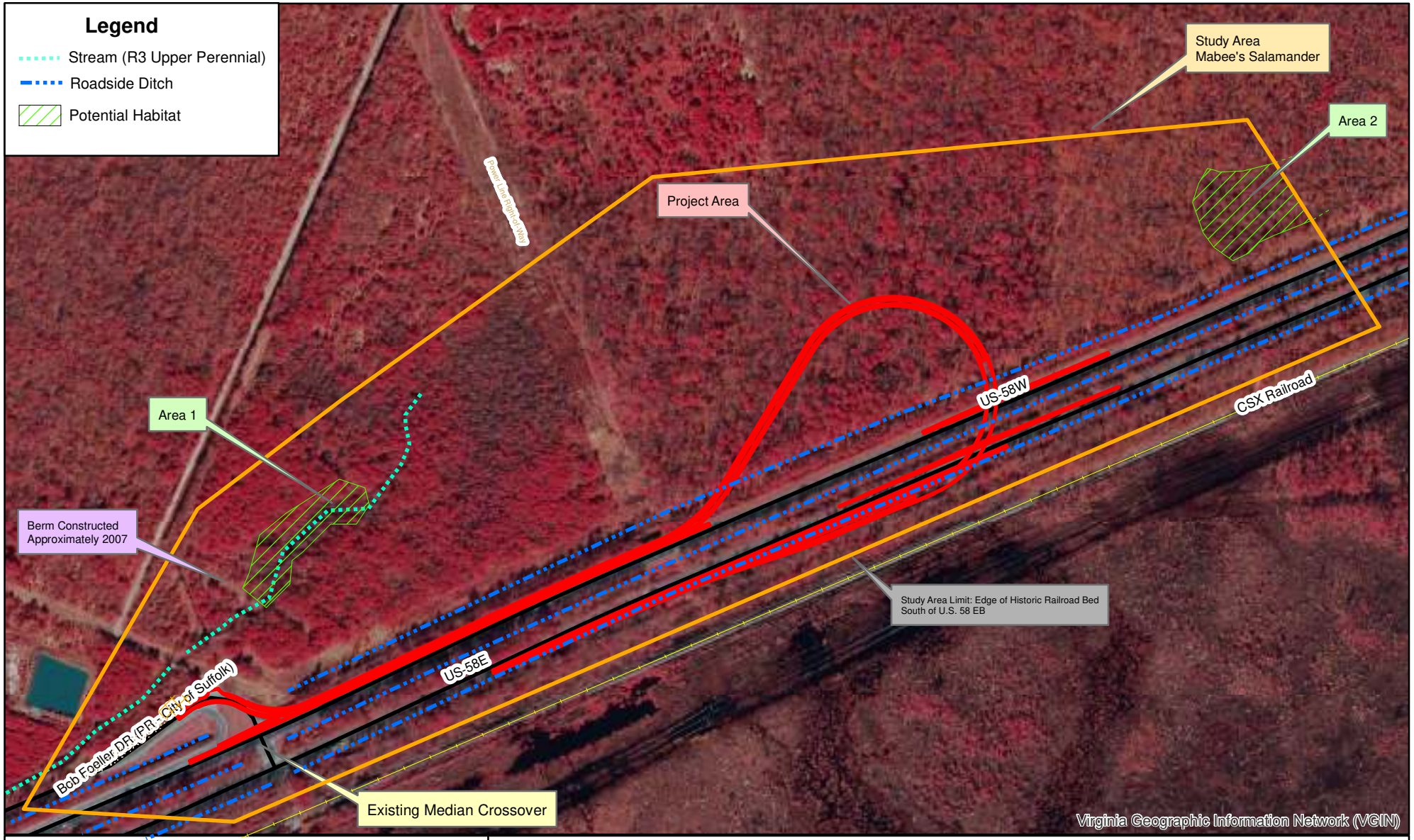
1 inch = 500 feet

Figure 5- 2006-2007 Aerial Photograph
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

December 2022



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1:6,000
1 inch = 500 feet

Figure 6- Mabee's Salamander Potenial Habitat (2017 Infrared Aerial)
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

December 2022

ATTACHMENT B

PHOTOGRAPHS OF THE SITE

Photo 1 – Existing crossover from US 58 EB to Bob Foeller Drive, looking north, crossing US 58 WB.

Photo 2 – Exit from US 58 WB to Bob Foeller Drive, looking east, showing roadside edge community in foreground and background.

Photo 3- Roadside ditch and roadside edge community adjacent to US 58, looking west.

Photo 4- Roadside ditch in median, looking south-southeast from north bank.

Photo 5 – Roadside ditch adjacent to US 58 EB, looking north from southern bank.

Photo 6 – Access road (PEM) and scrub-shrub community within northwestern portion of study area, looking west, with ponded area in background. Project would avoid impact to these communities.

Photo 7 – Mid-successional forested wetland community within northwest portion of study area, looking north-northwest. Project would avoid impact to this community.

Photo 8 – Northern edge of Area 1 within forested wetland community, approximately 1,000 feet north of project area.

Photo 9 - West-central portion of Area 1 within forested wetland community, approximately 900 feet north of project area.

Photo 10 – Water mark on tree within Area 1.

Photo 11 – Power line right-of-way containing emergent wetlands, seen from access path, looking north.

Photo 12 – Mature forested wetland community containing suitable habitat in vicinity of proposed loop, north of US 58 WB.

Photo 13 – Edge of mature forested wetland community looking east to immature patch of forested wetlands east of project area, looking east.

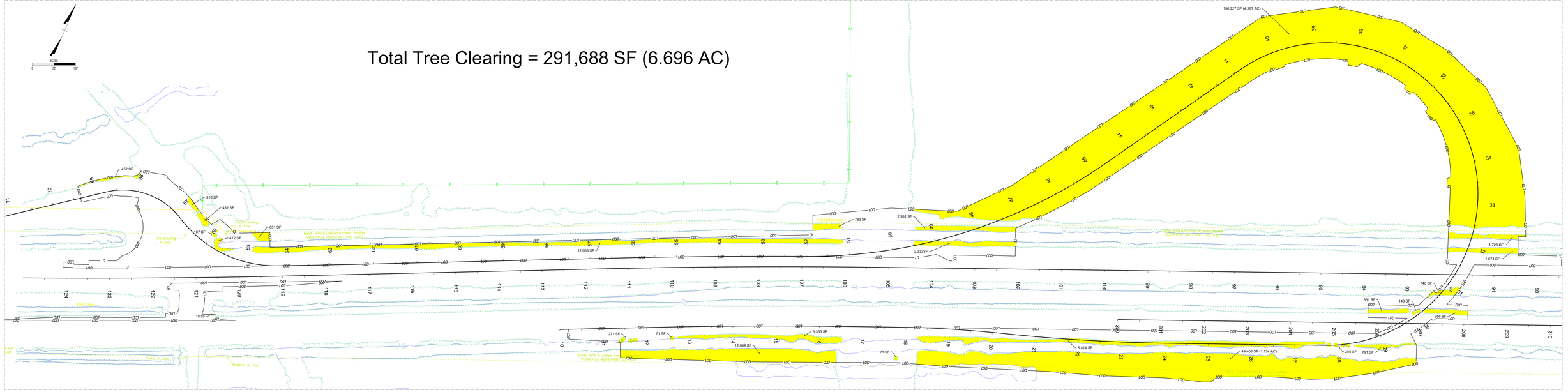
Photo 14 – Area 2, located approximately 900 feet east of the project area.

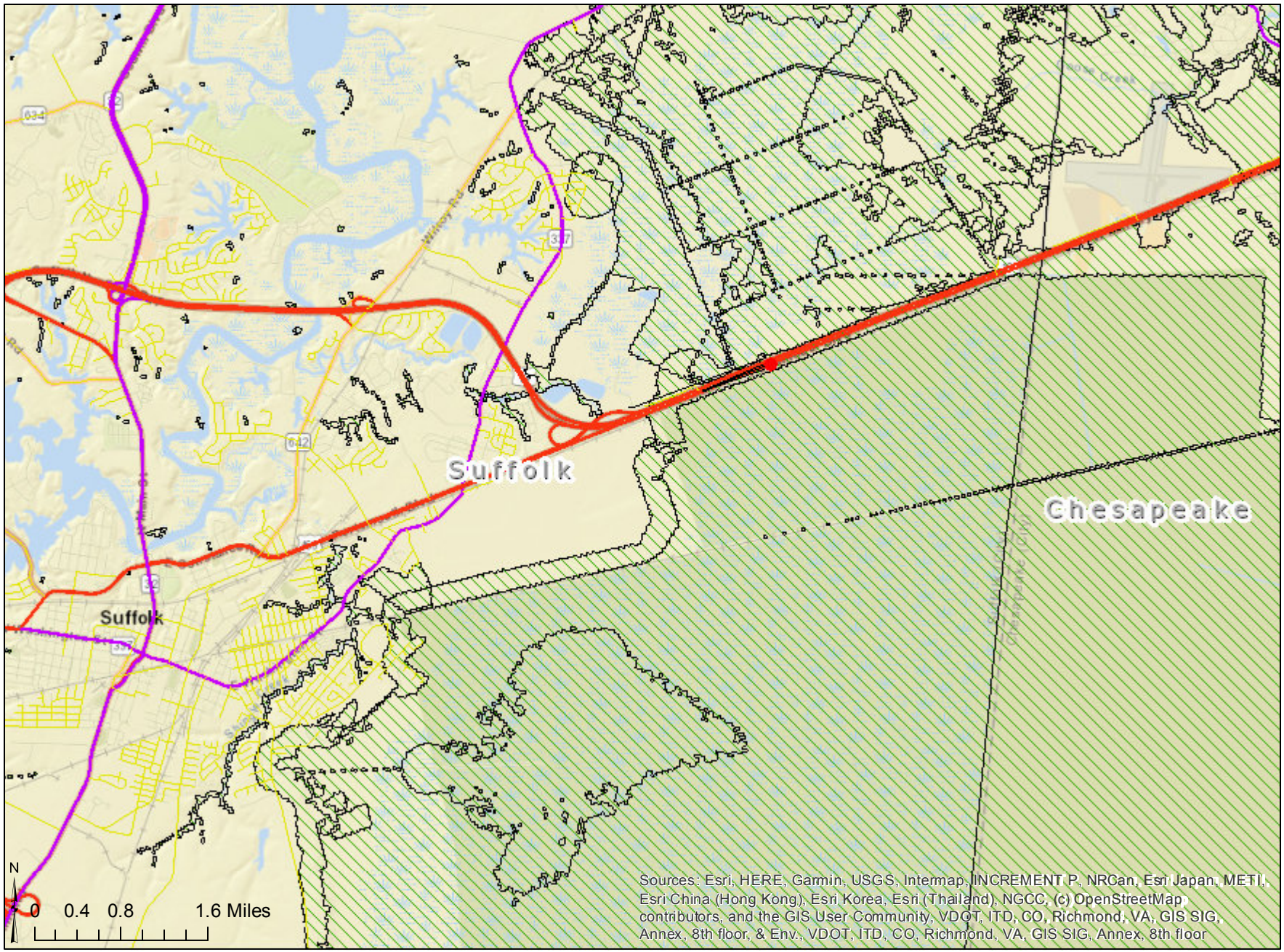
Photo 15 – Central portion of Area 2, located approximately 900 feet east of the project area.

Photo 16 – Southern portion of Area 2, looking east.

Photo 17 – Southwestern edge of Area 2, looking north.

Photo 18 – View south outside of study area, showing fringe of wetlands in between historic access road and railroad. Disturbance of active railroad, historic railroad bed, roadside ditch, and US 58 EB has resulted in extensive fragmentation south of US 58 EB.


Total Tree Clearing = 291,688 SF (6.696 AC)
SCALE
0
50
100
190,227 SF (4.367 AC)
452 SF
316 SF
432 SF
107 SF
472 SF
651 SF
Begin Existing L. A. Line
End Existing L. A. Line
Exist. R/W & Limited Access Line Per VDOT Proj. #0013-051-105, C501
12,085 SF
783 SF
2,381 SF
2,332SF
1,728 SF
1,674 SF
740 SF
831 SF
143 SF
956 SF
18 SF
271 SF
71 SF
3,365 SF
12,689 SF
71 SF
8,414 SF
49,403 SF (1.134 AC)
285 SF
791 SF
Begin L. A. Line
Exist. R/W & Limited Access Line Per VDOT Proj. #0013-051-105, C501


Suffolk
Chesapeake
Suffolk
N
0 0.4 0.8 1.6 Miles
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, VDOT, ITD, CO, Richmond, VA, GIS SIG, Annex, 8th floor, & Env., VDOT, ITD, CO, Richmond, VA, GIS SIG, Annex, 8th floor

Notes

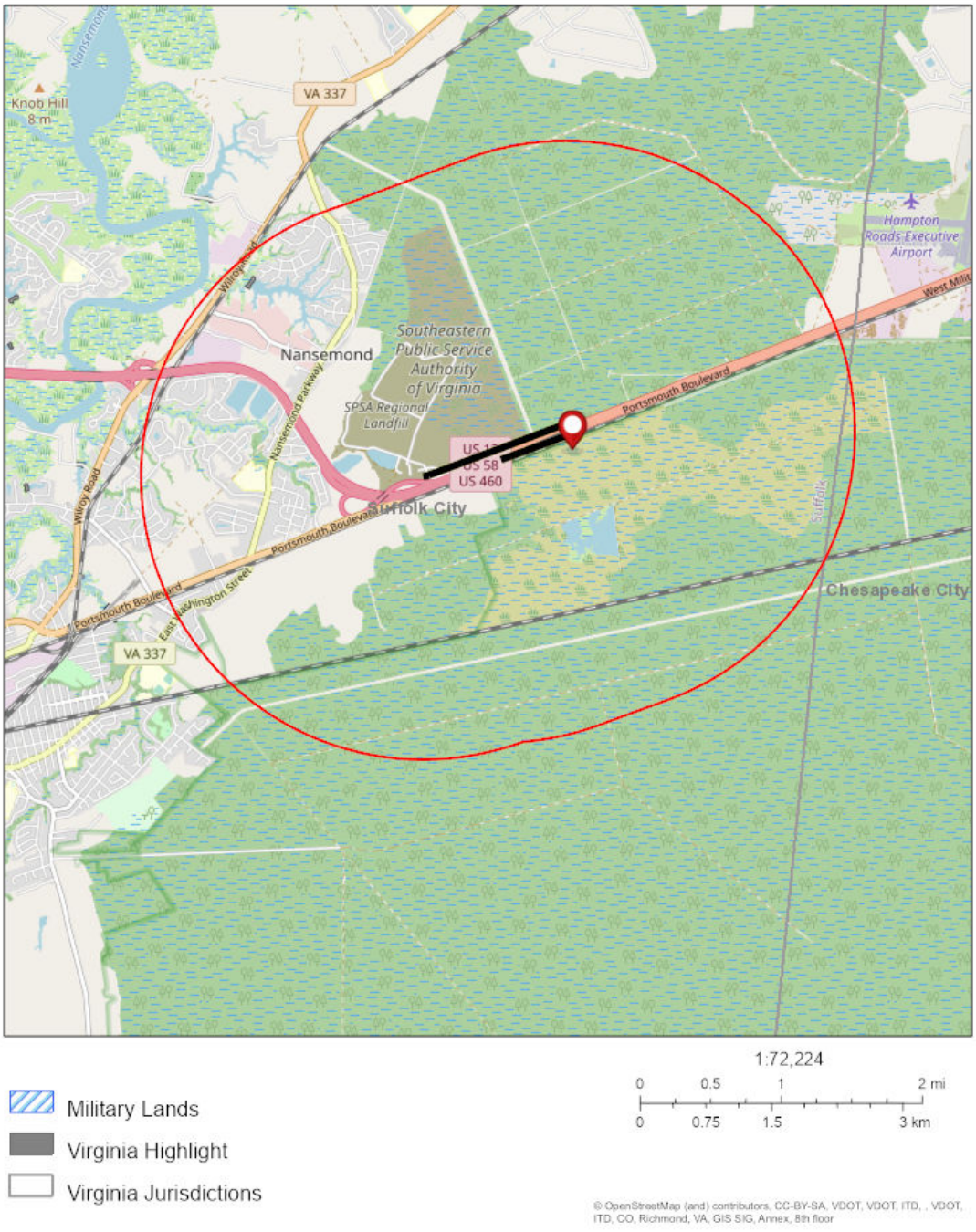
Buffer Report

Area of Interest (AOI) Information

Radius: 2 Miles

Area : 17.17 mi²

Feb 7 2023 12:11:34 Eastern Standard Time



Report Overview

Layer Name	Number of Features in Buffer
Anadromous Fish	2
Atlantic Sturgeon Critical Habitat	0
BAT Hibernacula and Roost Trees	0
BECAR	0
CCB Bald Eagle Nest Locations - 330' Buffer	0
CCB Bald Eagle Nest Locations - 660' Buffer	0
Cold Water Streams - Trout	0
Critical Habitat	0
Historic Oyster Grounds	0
Logperch - Nottoway	0
Logperch - Roanoke	0
Submerged Aquatic Vegetation (SAV)	0
T&E Species	7
T&E Streams	0
Waterbird Colonies	0

Anadromous Fish - (2 Features)

#	STATUS	Stream Name	Species	ID	Shape	Area(mi²)
1	potential	Burnetts Mill	*No Data*	1012	*No Data*	0.01
2	potential	Nansemond river	*No Data*	929	*No Data*	< 0.01

T&E Species - (7 Features)

#	Observation Date	Description	Source Database ID	BOVA	Genus
1	July 28, 1996	VDGIF Scientific Collections, TE, and Salvage permit data	*No Data*	050027	Perimyotis
2	October 9, 2001	VDGIF Scientific Collections, TE, and Salvage permit data	*No Data*	030013	Crotalus
3	May 31, 2000	VDGIF Scientific Collections, TE, and Salvage permit data	*No Data*	030013	Crotalus
4	*No Data*	Joe Mitchell's HERPS database	*No Data*	020044	Ambystoma
5	*No Data*	Joe Mitchell's HERPS database	*No Data*	030063	Clemmys
6	July 17, 2009	VDGIF Scientific Collections, TE, and Salvage permit data	*No Data*	030013	Crotalus
7	October 30, 2012	VDGIF Scientific Collections, TE, and Salvage permit data from application	*No Data*	030013	Crotalus

#	Species	Subspecies	Common Name	TE Status	CSCS Tier
1	subflavus	*No Data*	Bat, tri-colored	SE	I
2	horridus	*No Data*	Rattlesnake, canebrake	SE	II
3	horridus	*No Data*	Rattlesnake, canebrake	SE	II
4	mabeei	*No Data*	Salamander, Mabee's	ST	II
5	guttata	*No Data*	Turtle, spotted	CC	III
6	horridus	*No Data*	Rattlesnake, canebrake	SE	II
7	horridus	*No Data*	Rattlesnake, canebrake	SE	II

#	SDE_DBO_15	OBJECTID	SHAPE	Area(mi²)
1	2	462514	*No Data*	0.77
2	2	464085	*No Data*	0.77
3	2	464634	*No Data*	0.77
4	2	468560	*No Data*	0.77
5	3	468563	*No Data*	0.70
6	2	468313	*No Data*	0.65
7	2	473521	*No Data*	0.04

Attachment G

Early Coordination Final IACM Comments

Permit No. **22-6802**
Project No. **0058-133-459 B616, C501, P101, R201**

A. FEDERAL

Corps of Engineers:

I agree with all points especially the Avoidance & Minimization; note that the at grade and pile supported flyover are considered differently because conversion from forested to lesser wetlands are not considered a wetland impact so the USACE will need a strong impact analysis as to why piles are not feasible, because piles will have substantially less fill. Be sure to get the concurrence with CZMA. The USACE also needs to understand how this project is related to the landfill expansion and why it's not part of their EIS because it does not seem to be a truly separate project. During NEPA evaluation USACE will need clear evidence that the project would be required even without the landfill expansion. Please note that with 2 separate HUCs (one flows south, one flows north), mitigation costs can be different.

Fish and Wildlife Service:

Not Present 04/12/2022.

Environmental Protection Agency:

Thank you for the opportunity to review and comment on the early coordination and pre-application to discharge fill material into Waters of the United States (WOUS) associated with the SPSA Flyover project, located in Suffolk, Virginia. According to the pre-application, the project would result in permanent impacts to 3.16 acres of palustrine forested wetland, 0.02 acre of palustrine emergent wetland, 0.01 acre of palustrine scrub-shrub wetland, and 1.56 acres of palustrine unconsolidated bottom. Below are comments EPA is providing on the project as it continues to be developed.

Baseline information is important in not only assessing the impacted resources but also in identifying avoidance and minimization opportunities, assessing secondary and cumulative impacts, and evaluating appropriate mitigation for unavoidable impacts. While the US Army Corps of Engineers Norfolk District Wetland Attribute Form can provide a qualitative description of the wetlands under evaluation, EPA also recommends supplementing the findings with a detailed functional assessment of the physical, chemical, and biological characteristics to fully assess impacts as the project advances. The narrative should include a description of the methodology undertaken and photos, measurements, and other supporting information that confirm the findings.

EPA recommends clarifying if the proposed project will impact the 36-acre wetland enhancement area that provides mitigation for previously permitted SPSA projects.

EPA also recommends updating the Conceptual Designs moving forward to clearly depict wetland and PUB impacts, including their Cowardin classifications.

The only information provided in light of avoidance and minimization is that the applicant will incorporate 2:1 slopes for the flyover. EPA recommends clarifying if this is the steepest and therefore least impactful slope that they can build from a regulatory and safety perspective. Additionally, EPA recommends the applicant consider the use of additional retaining walls and document alternative design layouts that were considered and may avoid and minimize impacts to aquatic resources.

EPA is concerned with potential secondary impacts to the aquatic resources within the flyover and ramp areas. EPA recommends an evaluation of secondary effects and efforts to avoid and minimize modified hydrology and vegetation to the remaining wetlands. Should there be secondary effects, EPA recommends the consideration of additional compensatory mitigation to offset those impacts.

The review of the project should also consider the cumulative effects of the proposed actions. EPA recommends an approach that examines past, present, and reasonably foreseeable future activities, such as the expansion of the SPSA landfill in all of its phases and the Bowers Hill Interchange Improvements project, and

evaluates the linkage between the proposed impacts to the aquatic resources in the watershed.

EPA recommends providing a compensatory mitigation plan that is consistent with the 2008 Mitigation Rule, current VA IRT practice, and compensates for the functions lost in the watershed and ecosystem.

EPA recommends clarifying why it is stated that NEPA documentation is not required. MH, 04/11/2022.

We appreciate the Early Coordination - comments sent; also be sure to include the Avoidance & Minimization and temporary impacts in the application; impact analysis of the existing preservation areas too. 04/12/2022.

US Coast Guard:

Not Present 04/12/2022.

Tennessee Valley Authority:

Not Present 04/12/2022.

National Marine Fisheries Service:

Note that the mitigation for wetland losses and canebrake rattlesnake habitat are independent; support the NH and DWR comments; no nexus for NOAA trust resources and no additional comments. 04/12/2022.

B. STATE

Department of Environmental Quality (Air):

Open Burning (9 VAC 5-130 et seq.); Restrict emissions of VOC & NOX during project execution; 03/29/2022.

Department of Environmental Quality (Water):

Please ensure that all temporary and permanent impacts are reported in the JPA, as well as the Avoidance & Minimization measures and alternatives, the E&S Plan; The shading impacts require mitigation at a 1:1 ratio from DEQ. we concur with the T&E. 04/12/2022.

The early app coordination for this project would potentially qualify for an Individual Permit. Please ensure that all temporary and permanent impacts are reported in the JPA, as well as the justifications and Avoidance & Minimization measures for alternatives, provide the E&S Plan. Shading is classified as conversion impacts and require 1:1 mitigation ratio. DEQ concurs with the T&E recommendations made by the other state agencies. Will need Riparian Land owner addresses and labels. Previously impacted ditches will not require compensation. 04/21/2022.

Department of Environmental Quality (Waste):

Not Present 04/12/2022.

Department of Environmental Quality (Stormwater Management):

Not Present 04/12/2022.

Department of Conservation and Recreation (Parks and Rec):

No Comment. 04/12/2022.

Department of Conservation and Recreation (Natural Heritage):

To reiterate there are a couple of conservation sites - the Great Dismal Swamp National Refuge Area for Eastern big-eared bat and canebrake habitat; There's another conservation unit, Great Dismal Swamp Northwest and DNH recommends avoiding and minimizing impacts to these areas if possible. We'd like to discuss the PSHS for EBB further with our biologist and see an assessment for EBB and the canebrake

rattlesnake and Mabee's Salamander too; ensure there are no roost trees impacted prior to construction; maintain the hydrologic connection; Adhere to strict E&S for water quality. DNH is concerned about habitat fragmentation due to the wooded area in the loop. It comprises part of an 100 acre ecological core of continuous forest cover, so DNH recommends minimizing impacts to that core; we support DWRs request for mitigation close by and would like to hear more about that. 04/12/2022.1

(Portions of the original comment dated 5/11/22 were summarized here due to comment block size restrictions; please see CEDAR documents for the letter in its entirety)
According to the information currently in our files, the Great Dismal Swamp Conservation Site is located within the project site. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Great Dismal Swamp Conservation Site has been given a biodiversity significance ranking of B2, which represents a site of very high significance. The natural heritage resources of concern at this site are:

Corynorhinus rafinesquii macrotisEastern big-eared batG3G4T3/S2/NL/LE
Crotalus horridusCanebrake rattlesnakeG4T4/S1/NL/LE

The Eastern big-eared bat, named for its enormous ears twice the length of its head, is extremely rare in Virginia and is currently known only from the southeastern portion of the state. Although widespread throughout the southeast, they are never found in large numbers. These bats roost singly or in small groups in hollow trees or abandoned buildings. They forage only after dark primarily in mature forests of both upland and lowland areas along permanent bodies of water (NatureServe, 2009). The details of this bat's feeding behavior and much of its natural history remain a mystery. Lack of information regarding the ecology of the Eastern big-eared bat, and their sensitivity to disturbance, make them particularly vulnerable to destruction of roost sites and feeding areas where their presence goes undetected (Handley and Schwab 1991, Harvey 1992). It is classified as endangered by VDWR. Removal of hollow trees and the shortage of abandoned structures is of concern.

Timber and Canebrake rattlesnakes are two forms of the same species (Crotalus horridus). The species is widespread throughout eastern United States ranging from New England to Minnesota and south to Florida and Texas. The forms differ in appearance and habitat distribution but share enough genetic similarities that they are the same species (NatureServe, 2009). The Timber rattlesnake is typically darker or yellow-ish (Gibbons and Dorcas, 2005). In Virginia, it is found in the piedmont and mountainous regions. The Canebrake rattlesnake is typically lighter in color, often pinkish, and is found in more coastal areas, including the northern limit of its range in the southeastern counties of the coastal plain of Virginia (Gibbons and Dorcas, 2005). Canebrake rattlesnakes in Virginia inhabit hardwood and mixed hardwood pine forests, cane thickets and the ridges and glades of swampy areas (Mitchell and Schwab, 1991). Canebrake rattlesnakes are generally terrestrial and feed on a variety of small animals including small mammals, birds, and amphibians (Mitchell & Schwab, 1991). The primary threats to the Canebrake rattlesnake are the loss of habitat due to development activities and persecution by humans (Mtchell, 1994). Please note that the coastal plain populations of the Canebrake rattlesnake are currently classified as endangered by VDWR.

In addition, according to DCR's predictive suitable habitat model, potential may exist for the Eastern big-eared bat, canebrake rattlesnake, and Mabee's salamander (Ambystoma mabeei, G4/S1S2/NL/LT) within the project area.

Due to the potential for this site to support populations of the Eastern big-eared bat, DCR recommends an assessment of possible roost trees within the project area. If there are large tree with possible roosts that need to be removed during construction, DCR recommends looking for signs of bat usage (guano) around the entrance of the possible roost. DCR supports conducting habitat assessments for the canebrake rattlesnake and Mabee's salamander.

In addition, the proposed project will impact Ecological Cores (C2 and C4) as identified in the Virginia Natural Landscape Assessment (https://www.dcr.virginia.gov/natural-heritage/vaconvisvnla). Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: http://vanhde.org/content/map. Impacts to Ecological cores occur when their natural cover is partially or completely converted permanently to developed land uses. Habitat conversion to development results in changes that reduce ecosystem processes, biodiversity, population viability and habitat quality due to limited recolonization, increased predation, and increased introduction and establishment of invasive species.

Therefore, avoiding or minimizing core impacts is a key mitigation measure that will reduce deleterious effects and preserve the area and connectivity of habitats that are key components of biodiversity. DCR recommends efforts to minimize edge in remaining habitat fragments, retain natural corridors that allow movement between fragments and design the intervening landscape to support native wildlife (natural cover versus lawns).

The proposed project will impact one or more cores with very high to outstanding ecological integrity. Further investigation of these impacts is recommended and DCR-DNH can conduct a formal impact analysis upon request. This analysis would estimate direct impacts to cores and habitat fragments and indirect impacts to cores. The final products of this analysis would include an estimate of the total impact of the project in terms of acres. For more information about the analysis and service charges, please contact Joe Weber, DCR Chief of Biodiversity Information and Conservation Tools at Joseph.Weber@dcr.virginia.gov

Department of Conservation and Recreation (Floodplains):

Not Present 04/12/2022.

Department of Health:

Not Present 04/12/2022.

Department of Historic Resources:

Not Present 04/12/2022.

Virginia Institute of Marine Science:

Not Present 04/12/2022.

Department of Wildlife Resources:

DWR request to see the habitat assessment for canebrake rattlesnake and Mabee's Salamander; Please consider the secondary impacts for the area inside the flyover and we'll need to discuss the mitigation options - wetland mitigation and habitat must be considered separately and we are willing to allow for 1:1 mitigation for canebrake habitat loss even though we can ask for up to 20:1. Consider the impacts of moving the ditches to the south. Consider coordinating with the landfill in order to add acreage to the current preservation area. Please coordinate with and ensure that the staff at the Great Dismal National Wildlife Refuge have the opportunity to comment on this project. 04/12/2022.

We recommend that good pictures of an wetland and stream impacts sites so that we may confirm there is no suitability for Mabee's Salamanders. Upon review of the habitat assessment, we will make final comments about protection of that species. Regarding Canebrakerake Rattlesnakes, we need to better understand how this occupied habitat is going to be altered so that we may recommend appropriate mitigation actions to minimize impacts upon canebrake rattlesnakes and their habitats and/or compensate for their loss. We also may consider any habitat cut off from use (bisected by road) by this species impacted and in need of compensation. Once we have additional information about the suitability of any habitats proposed for impacts, we will make final comments regarding the protection of canebrake rattlesnakes and their habitats associated with this project.

We recommend , prior to the start of construction, all contractors are trained in the identification, basi c natural history, and legal status of canebrake rattlesnakes. This could be accomplished via an appropriate information sheet distributed to those working on the project (see attached). If a canebrake rattlesnake is observed at any time during the development or construction of this project, the applicant should contact DWR Terrestrial Biologist/Herpetologist John (JD) Kleopfer (804-829-6580) or our Headquarters office in Henrico

(804-367-8999) so that we may safely capture and relocate the animal to a suitable site.

We recommend adherence to all BMPs.
DWR Standard BMP's: We recommend conducting any in-stream activities during low or no-flow conditions, using non-erodible cofferdams or turbidity curtains to isolate the construction area, blocking no more than 50% of the streamflow at any given time (minimal overlap of construction footprint notwithstanding), stockpiling excavated material in a manner that prevents reentry into the stream, restoring original streambed and streambank contours, revegetating barren areas with native vegetation, and implementing strict erosion and sediment control measures. We recommend that instream work be designed and performed in a manner that minimizes impacts upon natural streamflow and movement of resident aquatic species. If a dam and pump-around must be used, we recommend it be used for as limited a time as possible and that water returned to the stream be free of sediment and excess turbidity. To minimize potential wildlife entanglements resulting from use of synthetic/plastic erosion and sediment control matting, we recommend use of matting made from natural/organic materials such as coir fiber, jute, and/or burlap. To minimize harm to the aquatic environment and its residents resulting from use of the Tremie method to install concrete, installation of grout bags, and traditional pouring of concrete, we recommend that such activities occur only in the dry, allowing all concrete to harden and cure prior to contact with open water.

We recommend that all abandoned bridge structures located within the stream/river and/or the floodplain be removed. Leaving such structures in place can lead to adverse, and sometimes significant, instream and riparian habitat impacts. In cases where aquatic or semi-aquatic listed species are known frm the project area, removal of these structures is necessary to ensure protection of these species and their habitats.
To minimize the adverse impacts of linear utility/road project development on wildlife resources, we offer the following general recommendations:
• avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable; maintain naturally vegetated buffers of at least 100 feet in width around wetlands and on both sides of perennial and intermittent streams, where practicable;
• conduct significant tree removal* and ground clearing activities outside of the primary songbird nesting season of March 15 through August 15 in support of compliance with the Migratory Bird Treaty Act (MBTA); and
• implement and maintain appropriate erosion and sediment controls throughout project construction and site restoration.
To minimize potential wildlife entanglements resulting from use of synthetic/plastic erosion and sediment control matting, we recommend use of matting made from natural/organic materials such as coir fiber, jute, and/or burlap. We understand that adherence to these general recommendations may be infeasible in some situations. We are happy to work with the applicant to develop project-specific measures as necessary to minimize project impacts upon the Commonwealth’s wildlife resources.
We recommend use of native species for all plantings and coordination with DCRDNH regarding invasive species management.
We recommend coordination with the USFWS, NOAA, and DCRDNH, as necessary.
*significant tree removal is defined as anything beyond activities such as limbing/trimming to allow access along an existing access road, removal of a dangerous tree from along a corridor or within a project area, or removal of woody vegetation from within an existing ROW (vegetation management). Examples of "significant clearing" would be things like clearing for widening/improving of an access road or ROW, clearing to develop a new access road or ROW, or clearing for construction of a new building, facility, or parking area. 05/18/2022.

Virginia Marine Resources Commission:

No Permit Required. 04/12/2022.

VDOT Response:

VDOT Hydraulics: This is an early coordination permit for pre-approval for construction of a fly-over ramp on a new location. The FEMA map shows that the project falls within a mapped Zone A. The Location Hydraulic Study indicates that no detailed engineering computations have been performed at this stage, but an assessment of the project concluded that there will be no adverse hydraulic impact. The locality will be provided a copy of the JPA for their use. JM, 05/17/2022.

Permit No. **21-6805**
Project No. **0058-133-459 B616, C501, P101, R201**

A. FEDERAL

Corps of Engineers:

The USACE requested VDOT to verify the flyover site does not impact the SPSA mitigation site. 09/14/2021.

Project manager verified during meeting that there is currently no conflict between flyover and mitigation site.

Fish and Wildlife Service:

Not Present 09/14/2021.

Environmental Protection Agency:

Not Present 09/14/2021.

US Coast Guard:

Not Present 09/14/2021.

Tennessee Valley Authority:

Not Present 09/14/2021.

National Marine Fisheries Service:

No comment. 09/14/2021.

B. STATE

Department of Environmental Quality (Air):

Open Burning (9 VAC 5-130 et seq.);Restrict emissions of VOC & NOX emissions. 09/03/2021.

Department of Environmental Quality (Water):

Will need to do a site inspection; DEQ supports avoidance and minimization of impacts; DEQ will require landowner notifications; can entertain phasing of flyover/intersection improvements but all work will fall under a single IP. 09/14/2021.

This project is a pre-application. Will need to do a site inspection for state waters; DEQ supports avoidance and minimization of impacts; DEQ will require landowner notifications at the time of JPA submittal; can entertain phasing of flyover/intersection improvements, but all work will fall under a single IP. 09/14/2021. May make additional comments when JPA is closer to submittal date. No further comments. MLS,09/24/2021.

Department of Environmental Quality (Waste):

Not Present 09/14/2021.

Department of Environmental Quality (Stormwater Management):

Not Present 09/14/2021.

Department of Conservation and Recreation (Parks and Rec):

We do not anticipate that these projects will have any adverse impacts on existing or planned recreational facilities, nor will they impact any streams on the National Park Service's Nationwide Rivers Inventory, designated or potential Virginia Scenic Rivers or existing or potential Virginia Byways. Please contact DCR for an update on this information if a significant amount of time passes before it is utilized. 09/10/2021.

Department of Conservation and Recreation (Natural Heritage):

Within the Great Dismal Swamp Conservation Site - Eastern Big-eared Bat (EBB) and Canebrake Rattlesnake (CBR) concerns. Recommend adherence to strict E&S. EBB marginal habitat but forest could be used for foraging- survey larger trees for roosts; canebreak rattlesnake may not be present but recommend coordination with DWR on EBB and CBR. 09/14/2021.

According to the information currently in our files, the Great Dismal Swamp Conservation Site is located within the project site. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Great Dismal Swamp Conservation Site has been given a biodiversity significance ranking of B2, which represents a site of very high significance. The natural heritage resources of concern at this site are:

Corynorhinus rafinesquii macrotisEastern big-eared batG3G4T3/S2/NL/LE
Crotalus horridusCanebrake rattlesnakeG4T4/S1/NL/LE

The Eastern big-eared bat, named for its enormous ears twice the length of its head, is extremely rare in Virginia and is currently known only from the southeastern portion of the state. Although widespread throughout the southeast, they are never found in large numbers. These bats roost singly or in small groups in hollow trees or abandoned buildings. They forage only after dark primarily in mature forests of both upland and lowland areas along permanent bodies of water (NatureServe, 2009). The details of this bat's feeding behavior and much of its natural history remain a mystery. Lack of information regarding the ecology of the Eastern big-eared bat, and their sensitivity to disturbance, make them particularly vulnerable to destruction of roost sites and feeding areas where their presence goes undetected (Handley and Schwab 1991, Harvey 1992).

Threats to this species include forest destruction, particularly hollow tree removal, decreasing availability of abandoned buildings, and possibly, insecticides. Please note that this species is currently classified as endangered by the Virginia Department of Wildlife Resources.

Timber and Canebrake rattlesnakes are two forms of the same species (Crotalus horridus). The species is widespread throughout eastern United States ranging from New England to Minnesota and south to Florida and Texas. The forms differ in appearance and habitat distribution but share enough genetic similarities that they are the same species (NatureServe, 2009). The Timber rattlesnake is typically darker or yellow-ish (Gibbons and Dorcas, 2005). In Virginia, it is found in the piedmont and mountainous regions. The Canebrake rattlesnake is typically lighter in color, often pinkish, and is found in more coastal areas, including the northern limit of its range in the southeastern counties of the coastal plain of Virginia (Gibbons and Dorcas, 2005).

Canebrake rattlesnakes in Virginia inhabit hardwood and mixed hardwood pine forests, cane thickets and the ridges and glades of swampy areas (Mitchell and Schwab, 1991). Canebrake rattlesnakes are generally terrestrial and feed on a variety of small animals including small mammals, birds, and amphibians (Mitchell & Schwab, 1991).

The primary threats to the Canebrake rattlesnake are the loss of habitat due to development activities and persecution by huma (Mitchell, 1994). Please note that the coastal plain populations of the Canebrake rattlesnake are currently classified as endangered by the Virginia Department of Wildlife Resources (VDWR).

In addition, according to DCR's predictive suitable habitat model and a DCR zoologist, potential may exist for the Eastern big-eared bat within the project area.

Due to the potential for this site to support populations of the Eastern big-eared bat, DCR recommends an assessment of possible roost trees within the project area. If there are large tree with possible roosts that need to be removed during construction, DCR recommends looking for signs of bat usage (guano) around the entrance

of the possible roost.

To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations. Due to the legal status of the Eastern big-eared bat and Canebrake rattlesnake, DCR recommends continued coordination with Virginia's regulatory authority for the management and protection of these species, the VDWR, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570). If there are suitable roost trees in the project area or signs of bat use, DCR also recommends further coordination with this office. 10/13/2021.

Department of Conservation and Recreation (Floodplains):

Not Present 09/14/2021.

Department of Health:

Not Present 09/14/2021.

Department of Historic Resources:

Not Present 09/14/2021.

Virginia Institute of Marine Science:

No Comment. 09/14/2021.

Department of Wildlife Resources:

Not Present 09/14/2021.

Virginia Marine Resources Commission:

No permit is required from the Marine Resources Commission. 09/07/2021.

VDOT Response:

Thank you for your coordination. VDOT anticipates a series of similar coordination meetings prior to submitting the JPA. Please consider following responses:

USACE: As noted, current projection is to avoid SPSA preservation/mitigation areas. VDOT currently preparing to submit JPA.

DEQ: VDOT in process of sending property owner letters as we prepare to submit JPA. We will schedule a field meeting with USACE and DEQ for JD confirmation as well as onsite discussion of the project.

DCR: VDOT in process of performing habitat assessments.

DGIF: (comments received separately by email) VDOT in process of performing habitat assessments. VDOT to consider and coordinate mitigation strategies for habitat impacts.

VDOT Hydraulics: This is an early coordination permit for pre-approval for construction of a fly-over ramp on a new location. The FEMA map shows that the project falls within a mapped zone A. A conceptual layout was provide but the permit did not include permit sketches or a Location Hydraulic Study. Ensure there is proper coordination with the district hydraulics group in any future submissions. The locality will be provided with a copy of the permit for their use. JM, 10/15/2021.

Attachment H

Alternatives Analysis

ALTERNATIVES ANALYSIS

SPSA FLYOVER PROJECT

City of Suffolk, Virginia

December 2022

Prepared By:
Virginia Department of Transportation
Hampton Roads District

TABLE OF CONTENTS

LIST OF APPENDICES

I. INTRODUCTION

The purpose of this report is to provide an analysis of alternatives for the Virginia Department of Transportation (VDOT)-administered Southeastern Public Service Authority (SPSA) Flyover Project in the City of Suffolk, Virginia. This alternatives analysis has been prepared in support of applications for Individual Permits from the U.S. Army Corps of Engineers (USACE) and Virginia Department of Environmental Quality (DEQ). The project area is located at and adjacent to U.S. 58, west of a truck weigh station, east of the U.S.58 Business interchange, and east-southeast of the SPSA landfill (Appendix A – Figures 1 and 2).

Section 404 of the Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into jurisdictional waters of the United States (WOUS), including wetlands. The USACE, as the 404 permitting authority, must review actions that propose to impact WOUS to determine if the action can be permitted based on a public interest review and guidelines defined in 40 CFR 230 (the 'Guidelines').

The Guidelines define the criteria to evaluate a proposed action to determine if a permit is warranted. Section 230.10 of the Guidelines establishes four (4) requirements that must be met before a permit is issued, which include:

1) No practicable alternative
2) No violation of other laws
3) No significant degradation
4) Minimization of adverse impacts

The Guidelines consider an alternative to be practicable "if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall Project purposes." Practicability criteria for alternative evaluation are listed in Table 1. The applicant is required to demonstrate that the proposed action represents the Least Environmentally Damaging Practicable Alternative (LEDPA) that meet the goals of the Project.

Section 401 of the CWA requires applicants to acquire a concurrent State Water Quality Certification, authorized by the Virginia Department of Environmental Quality (VDEQ) for the subject action. The state 401 certification identifies the proposed action meets the state's water quality standards and is documented in Virginia Water Protection (VWP) permit. An alternatives analysis is also required under Virginia Code (9VAC25-201-80.B.1.g) for compliance with VWP permits, stating: 'An alternatives analysis for the proposed Project detailing the specific on-site and off-site measures taken during Project design and development to first avoid and then minimize impacts to surface waters to the maximum extent practicable in accordance with the Guidelines for Specification of Disposal Sites for Dredged or Fill Material, 40 CFR Part 230.'

Table 1: Practicability Criteria for Evaluating Alternatives

Criteria	Definition	Basis for Criterion
Project Purpose	Meets goals and purpose of the proposed project.	Implementation of the Alternative must meet the overall goals and purpose of the proposed Project.
Logistics*	Covers factors related to the planning and implementation of the proposed project.	Must not require significant technical effort to overcome site conditions or extraordinary engineering controls that may impact long-term effectiveness.
Existing Technology	Any current proven technology capable of implementing the proposed project.	The Alternatives examined should consider the limitations of existing technology yet incorporate the most efficient/least impacting construction methods currently available.
Cost	Total amount of materials, supplies, equipment, and contractors. Includes direct and overhead expenses.	Cost is analyzed in the context of the overall cost of the Project compared to similar types of Projects and whether it is unreasonably expensive or exorbitant.

*No USACE definition exists for logistics. For the purpose of this alternative analysis the term is defined and evaluated as described above.

This alternative analysis therefore addresses both Section 404 and 401 criteria as outlined in the Guidelines. The Preferred Alternative was developed during the design phase of the project and also in collaboration with past studies within the project corridor (e.g. US 460) that it should meet LEDPA requirements. Throughout the years, this intersection has been studied by SPSA, City of Suffolk and VDOT for safety. During the conditional use permit process with the City of Suffolk, SPSA has performed analysis on options from the single flyover ramp to alternate access (Traffic Impact Study, June 2016 and Traffic Impact Study, January 2021). This information was utilized during the preliminary design to assist in the development of the Preferred Alternative.

II. Project Purpose and Need and Existing Conditions

A) Traffic and Safety Conditions

The purpose is to construct a flyover ramp to accommodate the left-turning eastbound traffic entering the landfill. Currently, traffic accessing the SPSA landfill from U.S. 460/58/13 EB utilizes a median crossover, crossing U.S. 460/58/13 WB to access Bob Foeller Drive (landfill access road). The crossover has a history of high accident rates resulting in 57.4 crashes per year within the study area. The study area also showed one (1) crash per year (2%) that involved a fatality, 26 crashes per year (45%) involving injuries, and 30.4 crashes (53%) involving property damage only. Within 500 feet of the intersection it was found that there was an average of 10.4 crashes per year with 5.4 of those crashes (52%) involving injury or fatality. Overall, the intersection was found to have a rate of 183.5 crashes per million vehicles with a death crash rate of 3.5%.

Based on the adopted regions travel demand forecast model, peak hour volumes will increase by approximately 36% by 2040 (1.6% growth rate annually). Also, based on the adopted regions travel demand forecast model, total areal traffic volume will increase by approximately 33% by 2045 (1% growth rate annually). Currently the intersection has a level of service of E, which is well below the acceptable level.

Furthermore, the SPSA landfill is undergoing a 127-acre expansion. The closure of the Portsmouth Wheelabrator facility, which burns approximately 85% of the region's trash to produce steam energy for the U.S. Navy would be expected to substantially increase truck traffic to the SPSA landfill. Therefore, the proposed flyover would eliminate the suboptimal median crossover by providing a safer alternative that would accommodate future landfill access needs and address immediate safety issues.

B) Landscape Conditions

Currently, U.S. 58 is a six (6) through lane facility, with three (3) general purpose lanes in each direction. U.S. 58 has a posted speed limit of 60 mph. An overhead power transmission line right-of-way bisects the study area from north to south. An access road north of US 58 WB provides property owner with access from Bob Foeller Drive (landfill access). A wetland enhancement area, part of compensatory mitigation for SPSA expansion, is located north of US 58 WB between Bob Foeller Drive and the aforementioned overhead power transmission line right-of-way. Adjacent to US 58 EB, a gated, private drive (Welsh Parkway) provides residents access from US 58. A landscaped, historic railroad bed is located between US 58 EB and an active CSX railroad.

Field investigations, including wetland delineations and habitat assessments, examined plant communities within the study area. Plant communities identified included roadside edge, emergent wetlands, scrub-shrub wetlands, forested wetlands, and upland. Three (3) roadside ditches are located within the study area (adjacent to US 58 EB, US 58 WB, and

within the median) and contain standing water throughout the year. A Preliminary Jurisdictional Determination (PJD) was issued by the U.S. Army Corps of Engineers (USACE) on 4 March 2022. The PJD confirms the locations of aquatic resources within the study area.

III. PROJECT OVERVIEW AND ALTERNATIVES

The purpose is to construct a flyover ramp to accommodate the left-turning eastbound traffic entering the landfill. Due to the nature of the eastbound traffic utilizing the left turning (31% trucks), the design and posted speed limit for this movement is 35 mph. with the high percentage of trucks, turning movements and the ability to obtain the posted speed are considerations for the options. As noted in Section II above, currently, traffic accessing the SPSA landfill from U.S. 58 EB utilizes a median crossover, crossing U.S. 460/58/13 WB to access Bob Foeller Drive (landfill access road). The following alternatives were considered:

Alternative 1A- Flyover East: Construction of flyover east of Preferred Alternative.
Alternative 1B- 5 Pines Parcel Flyover (Preferred Alternative)- Construction of flyover on 5 Pines Parcel east of power line right-of-way.
Alternative 1C- Flyover West- Construction of flyover west of power line right-of-way.
Alternative 2- Structure on current alignment.
Alternative 2A- Extended structure with larger radius.
Alternative 3- Route 337 Access Road.
Alternative 4- No Build.

Each alternative is described below. Alternatives involving construction south of U.S .58 EB were rejected as unfeasible due to location of active railroad and historical rail line, as well as Great Dismal Swamp National Wildlife Refuge.

<u>Alternative 1A- Flyover East</u>

Cost: $36,000,000
Permanent Wetland Impacts: 3.462 ac
Temporary Wetland Impacts: 1.145 ac
Permanent Stream Impacts: 0 sf
Temporary Stream Impacts: 0 sf
Roadside Ditch (WUS): 2.005 ac
Right-of-Way Impacts (Partial): 2 parcels at 15.290 ac
Right-of-Way Impacts (Full): 0 parcels at 0 ac

This Alternative moves the location of the flyover ramp to the east, which will require SPSA traffic from the eastbound direction to merge into the westbound direction traffic prior to exiting at the entrance. This will increase the potential for sideswipe accidents. There is also merging conflict with traffic from heavy trucks exiting a truck weigh

station. Alternative 1A does address the safety issues of the existing intersection, removes the auxiliary weave lane, and its cost is within the budget. Wetland impacts are similar to the Preferred Alternative, with slightly greater permanent wetland impacts and less temporary impacts. Roadside ditch impacts would be nearly doubled. There is the potential to impact the weigh station that is near this location with this Alternative.

This alternative was rejected due safety issues with weaves and conflict with the weigh station.

Alternative 1B – Flyover 5 Pines Parcel (Preferred)

Cost: $39,000,000
Permanent Wetland Impacts: 3.332 ac
Temporary Wetland Impacts: 2.401 ac
Permanent Stream Impacts: 0 sf
Temporary Stream Impacts: 0 sf
Roadside Ditch (WUS): 1.135 ac
Right-of-Way Impacts (Partial): 3 parcels at 11.718 ac
Right-of-Way Impacts (Full): 0 parcels at 0 ac.

The Preferred Alternative would construct the flyover ramp on the privately owned 5 Pines Parcel, east of the power line right-of-way. Alternative 1B does not potentially cause any issues with current traffic alignment or merging. This Alternative addresses the safety issues of the existing intersection, extends the auxiliary weave lane, and the cost is within budget. This Alternative incurs similar wetland impacts as Alternatives 1A and 1C, with higher temporary wetland impacts. Hydrology within the loop would be maintained through installation of four (4) culverts.

Overall, this Alternative was selected as the Preferred Alternative due safety, constructability, and cost while maintaining similar wetland impacts. This alternative does not cause issues with the current highway alignment nor does it cause issues with the weigh station that is east of this location or the US 13 Business interchange to the west. This Alternative has limited ROW and wetland impacts and the cost is within budget.

Alternative 1C – Flyover West

Cost: $38,000,000
Permanent Wetland Impacts: 3.507 ac
Temporary Wetland Impacts: 1.343 ac
Permanent Stream Impacts: 0 sf
Temporary Stream Impacts: 0 sf
Roadside Ditch (WUS): 1.684 ac
Right-of-Way Impacts (Partial): 3 parcels at 11.190 ac

Right-of-Way Impacts (Full): 0 parcels at 0 ac

This Alternative moves the preferred location of the flyover ramp to the west, which will potentially impact the US 58 Business interchange to the west. This impact may occur due to traffic from the flyover ramp merging onto the highway as traffic on the highway are preparing to take the exit for the upcoming interchange. There would not be sufficient distance to meet the required merge/weave length per the AASHTO Green Book. Permanent wetland impacts are slightly higher than 1A and 1C, though lower than Alternative 2. This Alternative does address the safety issue of the current intersection and the cost is within budget. This Alternative would also reduce the weave on the west bound auxiliary lane and has wetland impacts.

This Alternative was rejected due to safety concerns associated with conflict with the US 58 Business interchange. Merge lanes from existing WB traffic continuing westbound or accessing US 58 Business would be in conflict with vehicles entering US 58 WB and attempting to merge onto US 58 WB. This Alternative would also result in impacts to the SPSA Wetland Enhancement Site.

Alternative 2 – Extended Structure Current Alignment

Cost: $62,100,000
Permanent Wetland Impacts: 1.832 ac
Temporary Wetland Impacts: 1.439 ac
Permanent Stream Impacts: 0 sf
Temporary Stream Impacts: 0 sf
Roadside Ditch (WUS): 1.757 ac
Right-of-Way Impacts (Partial): 3 parcels at 10.433 ac
Right-of-Way Impacts (Full): 0 parcels at 0 ac

This Alternative extends the structure of the flyover bridge to a sloped section for the rest of the loop, with only a third of the loop being a fill slope. The cost increase for this alternative is significant. The proposed bridge length would increase by approximately 800 feet. The increase in length would require open deck joints to accommodate bridge movements due to thermal loads. Open deck joints would create numerous long-term maintenance issues and result in a shorter life span for the bridge when compared to bridges with no open deck joints. Deck drainage would also be required and design complexity will increase. Uplift would be anticipated to be a problem and the design would need to ensure the girders do not experience uplift during construction and under loads. Design complexity would be increased since a four (4) span and five (5) span continuous bridge unit would need to be designed. The increase in the bridge span length would significantly increase the construction timeline. Bridge construction duration would be approximately 2.5 times the length of Alternative 1B (Preferred). Due to the length of the structure and the radius there would also be constructability concerns when erecting the girders. Unwanted stresses and displacements could occur during erection.

This Alternative does address the safety issues of the current intersection and reduces wetland impacts than the previous alternatives.

This alternative would incur less wetland impacts than Alternatives 1A, 1B (Preferred), 1C, and 2A. Though the structure is shorter than Alternative 2A, necessary ground improvements and need for fill slope to taper to existing elevation would result in slightly higher wetland impacts. Project would incur shading/conversion impacts. Due to cost and logistics (constructability concerns), this alternative was rejected.

Alternative 2A – Extended Structure Larger Radius

Cost: $91,000,000
Permanent Wetland Impacts: 1.624 ac
Temporary Wetland Impacts: 2.957 ac
Permanent Stream Impacts: 0 sf
Temporary Stream Impacts: 0 sf
Roadside Ditch (WUS): 1.765 ac
Right-of-Way Impacts (Partial): 3 parcels at 37.928 ac
Right-of-Way Impacts (Full): 0 parcels at 0 ac

This Alternative extends the structure of the flyover bridge similar to the previous Alternative except with an extended radius. This extended radius would make the bridge easier to build than the previous Alternative. This Alternative has the highest cost of all the alternatives, more than 3 times the ROW impacts, and higher temporary wetland impacts than Alternative 2. The project delivery time would be increased with this Alternative and increased long-term maintenance on the bridge is expected. Design complexity will increase due to length of the bridge and the separate units that will need to be designed. Bridge length will increase by approximately 2,800 feet. The increase in length would require open deck joints to accommodate bridge movements due to thermal loads. Open deck joints create numerous long-term maintenance issues and result in a shorter life span for the bridge when compared to bridges with no open deck joints. Deck drainage would also be required. Uplift would be anticipated to be a problem and the design would need to ensure the girders do not experience uplift during construction and under loads. The increase in the bridge span length would significantly increase the construction timeline. Bridge construction duration would be approximately five (5) times the length of Alternative 1B (Preferred). There are constructability concerns related to uplift and unwanted stresses and deflections during erection of the girders and deck pour.

This Alternative does address the safety issue of the current intersection and reduces wetland impacts from other alternatives. However, due to cost, duration, and logistics (e.g. constructability concerns), this alternative was rejected.

Alternative 3 – Route 337 Access Road

Cost: $24,500,000
Permanent Wetland Impacts: 2.245 ac
Temporary Wetland Impacts: 0.642 ac
Permanent Stream Impacts: 730 sf
Temporary Stream Impacts: 210 sf
Roadside Ditch (WUS): 0 ac
Right-of-Way Impacts (Partial): 12 parcels at 6.326 ac
Right-of-Way Impacts (Full): 1 parcels at 0.649 ac

This alternative adds an access road from Route 337 to SPSA rather than building a flyover ramp. This alternative would cause SPSA to reconstuct their internal functions and relocate their scales. This approach would also add commercial traffic to primarily residential local roads, which requires city approval and result in safety concerns with the significant spike in heavy truck traffic. The access route for the trucks would be indirect and inconvenient with this Alternative and would incur property impacts including a total take from a residential property.

This Alternative does address the safety issue of the current intersection by relocating the entrance. This Alternative also reduces the amount of environmental impacts, has not WUS impacts, and has a reduced construction cost. However, the ancillary costs of roadway improvements on Route 337 as well as internal costs for SPSA, would likely drive the full cost of this alternative significantly higher. Therefore, this alternative was rejected due to safety concerns associated with the increase truck traffic on local roads, ultimate need for improvements for local roads, and impacts to the SPSA facility (e.g. relocating scales and access.

Alternative 4 – No Build

Cost: $0
Permanent Wetland Impacts: 0 ac
Temporary Wetland Impacts: 0 ac
Permanent Stream Impacts: 0 sf
Temporary Stream Impacts: 0 sf
Roadside Ditch (WUS): 0 ac
Right-of-Way Impacts (Partial): 0 parcels at 0 ac
Right-of-Way Impacts (Full): 0 parcels at 0 ac

This Alternative does not take any action to better the current intersection. This does not satisfy the intersection level of service and does not address the safety issue of the current intersection. There would be increased delays for eastbound traffic entering SPSA and the unsafe left turn would still be utilized. There will be an increase in traffic that will further increase the safety risk. The No Build Alternative has no environmental impacts or ROW impacts.

V. PREFERRED ALTERNATIVE

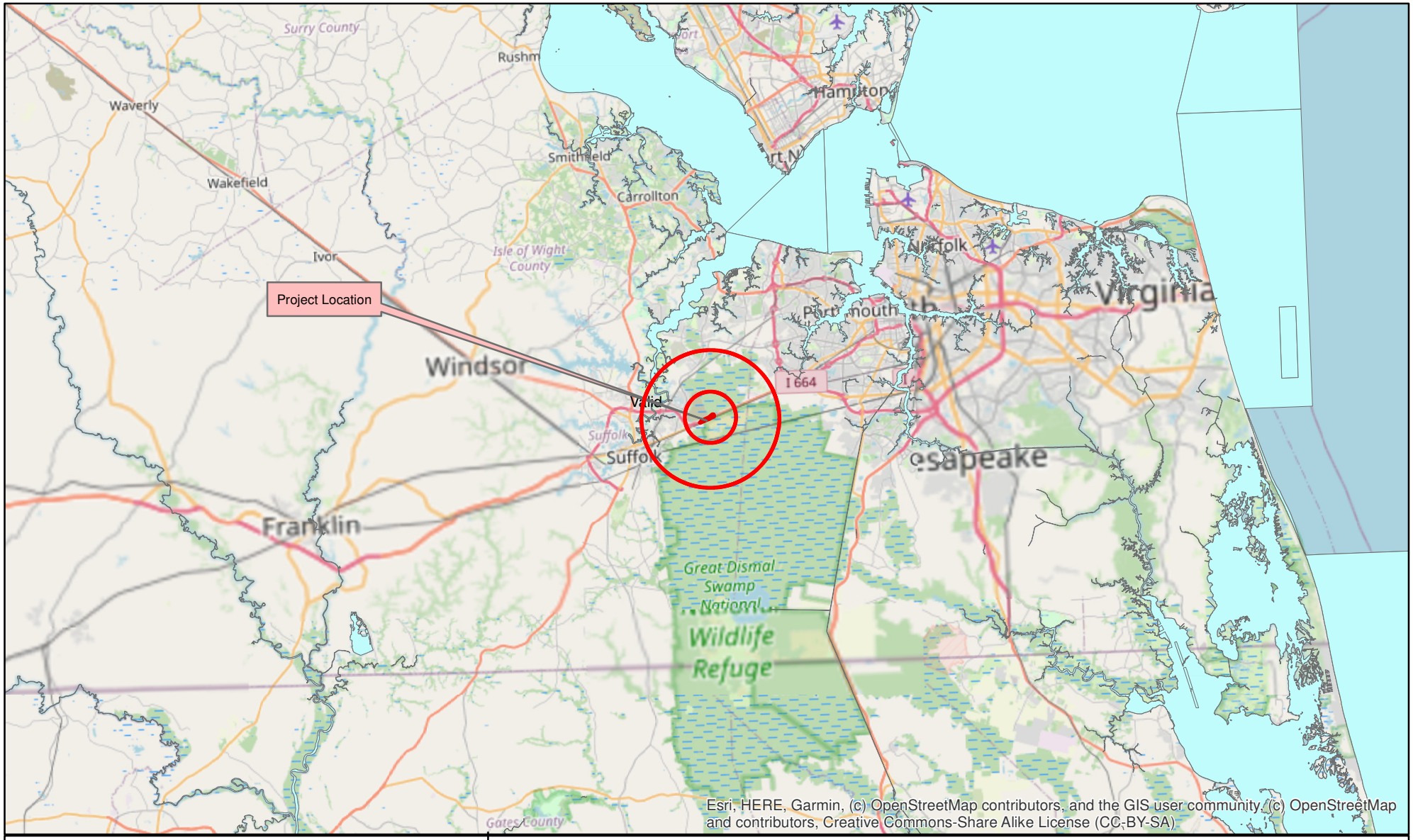
The preferred alternative for this project is Alternative 1B, for which a flyover ramp would be bridged over US 58 and pile-supported fill slope would be constructed on the 5 Pines Parcel. This Alternative allows for smooth entrance and exit to the flyover ramp and allows for a safe entrance into SPSA. This Alternative is within the project budget and addresses the safety issues at the current intersection while minimizing wetland impacts to the maximum extent practicable.

This Alternative was selected as Preferred because it presents significantly less constrains than the other alternatives. Alternative 1A and 1C, though incurring similar wetland impacts, are constrained by the weigh station and US 58 Business Interchange, respectively. Alternatives 2, though exhibiting less wetland impacts, is constrained by cost, significant constructability concern, longer construction time, and long-term maintenance. Alternative 2A incurs the least wetland impact; however, would result in most significant cost, greatest right-of-way impact, longer construction time, and added long-term maintenance. Alternative 3 would incur residential impacts including a full residential ROW take. It would also require SPSA to reconfigure their internal functions. Furthermore, Alternative 3 would result in safety concerns to a residential community through substantial increase in truck traffic. The No Build Alternative 4 does address existing safety issues that would be exacerbated over time.

Alternative 1B (Preferred Alternative) does not exhibit the constraints of other considered Alternatives while providing a long-term solution to the safety issues of the existing condition. In consideration of cost, safety, constructability, maintenance, and environmental impacts, the construction of a flyover at the 5 Pines Parcel was selected.

APPENDIX A

FIGURES



0 4 8 16
Miles

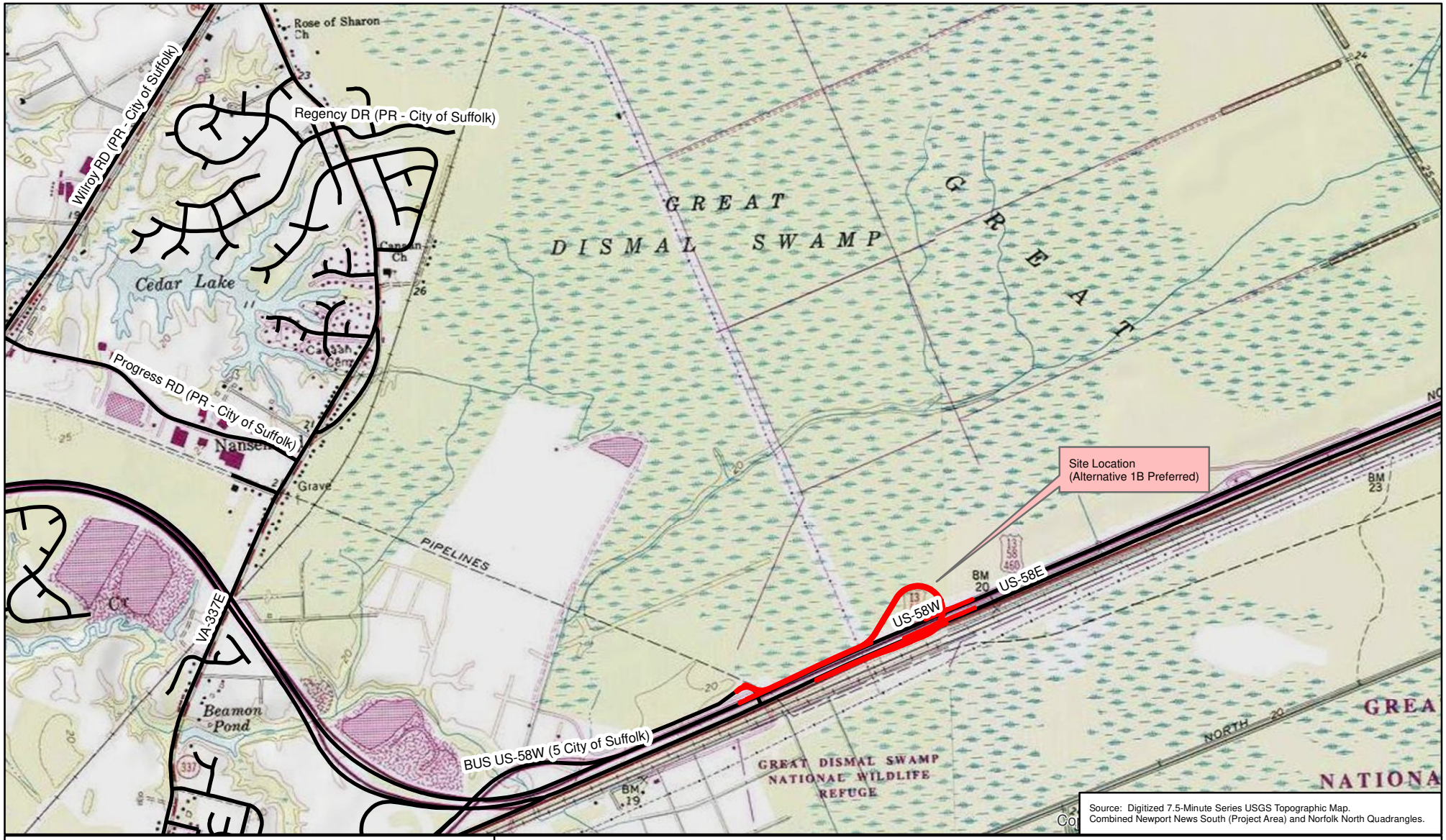
N
W E
S

1:500,000
1 inch = 7.891 mi.

Figure 1- Site Location Map
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022



0 1,000 2,000 4,000
Feet

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W E
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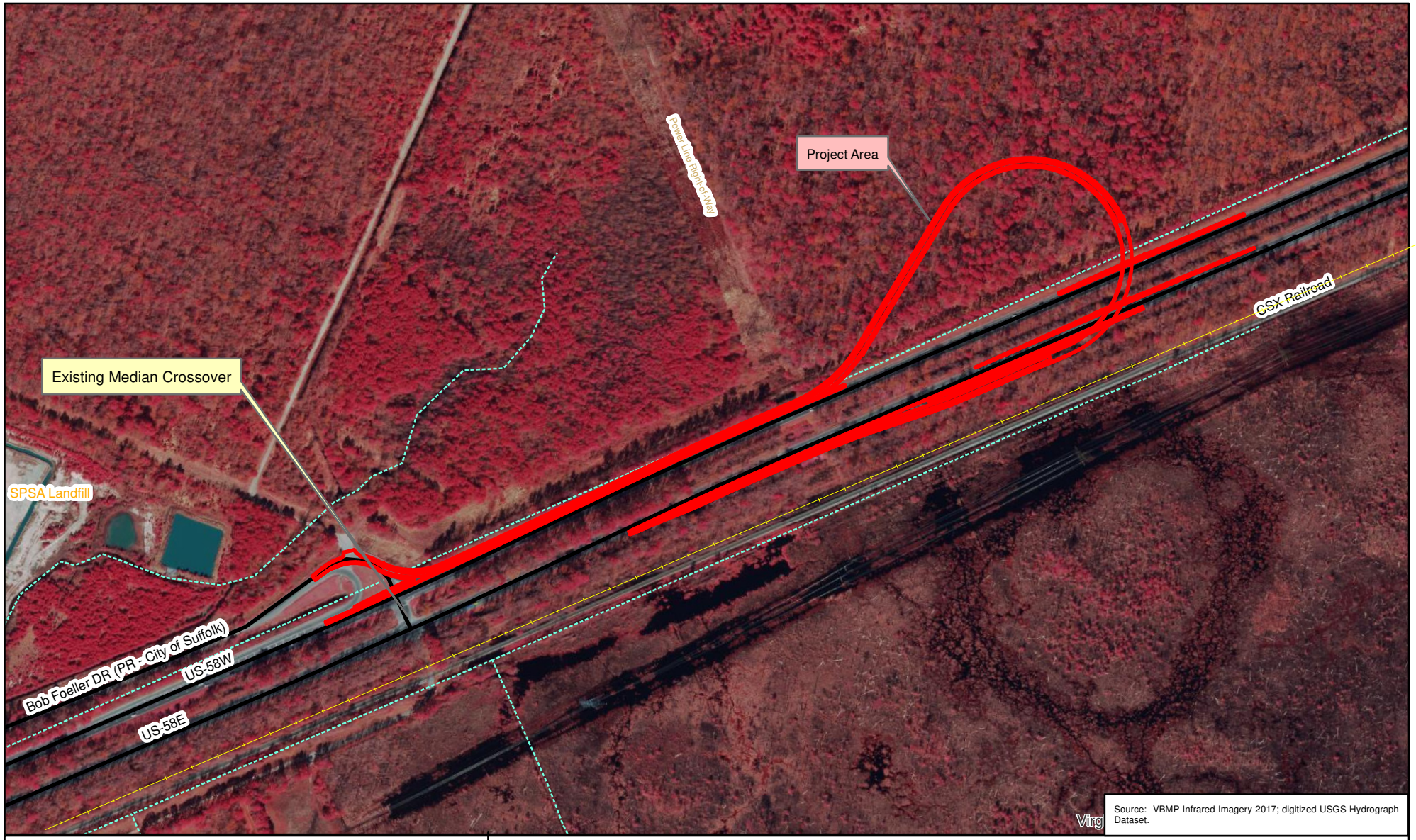
1:24,000
1 inch = 2,000 feet

Figure 2- USGS Topographic Map Showing Footprint of Alternative 1B (Preferred)
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

August 2022



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Feet

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W E
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1:6,000
1 inch = 500 feet

Figure 3- Aerial Map Showing Footprint of Preferred Alternative (1B)
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022

0 500 1,000 2,000
Feet

N
W E
S

1:12,000
1 inch = 1,000 feet

Figure 4- NWI Map Showing Footprint of Preferred Alternative (1B)
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022

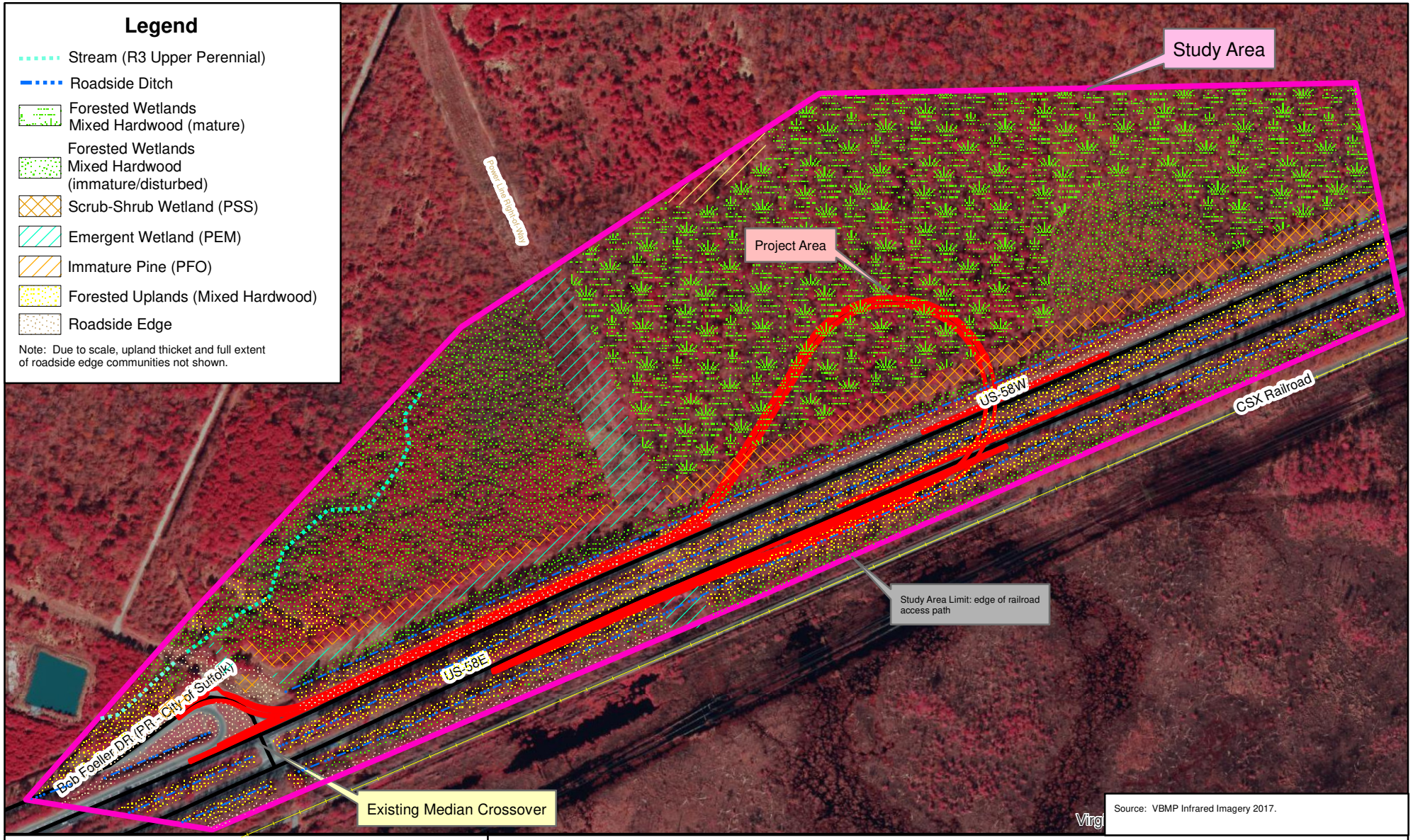


Figure 5- Vegetational Communities Showing Preferred Alternative Footprint
SPSA Flyover
City of Suffolk, Virginia

Project No./UPC: 118375

March 2022

APPENDIX B

REPRESENTATIVE PHOTOGRAPHS

Photo 1 – Existing crossover from US 58 EB to Bob Foeller Drive, looking north, crossing US 58 WB.

Photo 2 – Exit from US 58 WB to Bob Foeller Drive, looking east, showing roadside edge community in foreground and background.

Photo 3- Merge to U.S. 58 EB from truck weigh station, which would create conflict and safety concern for Alternative 1A (Flyover East).

Photo 4- Forested wetlands within impact area of Alternative 1A, east of Preferred Alternative (1B)

Photo 5 – Forested wetlands within project footprint (flyover) of Preferred Alternative (1B).

Photo 6 – U.S. 58 WB and U.S. 58 Business split; under alternative 1C (Flyover West), traffic exiting SPSA facility would be subject to unsafe merge conditions.

Photo 7 – Forested wetlands within project footprint (flyover loop) for Alternative 2 (same footprint as Preferred Alternative [Alternative 1B])

Photo 8 – PFO community north of Preferred Alternative, in vicinity of Alternative 2A (Extended Flyover on 5 Pines Parcel [Larger Radius]).

Photo 9 – Residential community on Route 337; under Alternative 3, roadway improvements would be required and increased truck traffic would be expected to impact safety.

Photo 10 – Existing condition, seen from Bob Foeller Drive, looking east. No Build Alternative (Alternative 4) would not address existing and future safety and traffic issues.

APPENDIX C

ALTERNATIVES MAPS

PROJECT MANAGER:
SURVYED BY:, DATE:
DESIGN BY:
SUBSURFACE UTILITY BY:, DATE:

STATE	ROUTE	PROJECT	SHEET NO.
VA.	58		

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Wetland Impacts

Permanent	3.462 Acres
Temporary	1.145 Acres
WUS	2.005 Acres
Loop	6.024 Acres

13 58 460

Portsmouth Blvd.

OVERHEAD UTILITY

LEGEND

- Wetlands (GIS)
- Streams (GIS)
- Proposed Bridge
- Prop. Pavement
- Proposed Guardrail
- Limits of Construction
- Limits of Disturbance
- CSX Railroad

SPSA Interchange Improvements
Route 13/58/460 East Flyover Option 1A

Date: July 2022

SCALE
0 300' 600'

PROJECT MANAGER:
SURVYED BY: DATE:
DESIGN BY:
SUBSURFACE UTILITY BY: DATE:

STATE	ROUTE	PROJECT	SHEET NO.
VA.	58		

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

SPSA TRANSFER STATION

OVERHEAD UTILITY

Wetland Impacts	
Permanent	3.332 Acres
Temporary	2.401 Acres
WUS	1.135 Acres
Loop	5.882 Acres

Bob Foeller Drive

13 58 460

Portsmouth Blvd.

OVERHEAD UTILITY

LEGEND

- Wetlands (Survey)
- Streams (Survey)
- Streams (WOUS)
- Proposed Bridge
- Prop. Pavement
- Proposed Guardrail
- Limits of Construction
- Limits of Disturbance
- CSX Railroad

SPSA Interchange Improvements
Route 13/58/460 Flyover Option 1B (Preferred)

Date: July 2022

SCALE
0 300' 600'

PROJECT MANAGER:
SURVEYED BY: DATE:
DESIGN BY:
SUBSURFACE UTILITY BY: DATE:

STATE	ROUTE	PROJECT	SHEET NO.
VA.	58		

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

SPSA TRANSFER STATION

OVERHEAD UTILITY

Wetland Impacts	
Permanent	3.507 Acres
Temporary	1.343 Acres
WUS	1.684 Acres
Loop	5.781 Acres

Bob Foeller Drive

13 58 460

Portsmouth Blvd.

OVERHEAD UTILITY

LEGEND

- Wetlands (Survey)
- Streams (Survey)
- Streams (WOUS)
- Proposed Bridge
- Prop. Pavement
- Proposed Guardrail
- Limits of Construction
- Limits of Disturbance
- CSX Railroad

SPSA Interchange Improvements
Route 13/58/460 Flyover Option 1C

Date: July 2022

SCALE
0 300' 600'

PROJECT MANAGER:
SURVEYED BY: DATE:
DESIGN BY:
SUBSURFACE UTILITY BY: DATE:

REVISED	STATE	STATE ROUTE	PROJECT	SHEET NO.
	VA.	58		

VISION FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

SPSA TRANSFER STATION

OVERHEAD UTILITY

Wetland Impacts	
Permanent	1.832 Acres
Temporary	1.439 Acres
WUS	1.757 Acres
Loop	N/A

Bob Foeller Drive

Portsmouth Blvd.

13 58 460

OVERHEAD UTILITY

LEGEND

- Wetlands (Survey)
- Streams (Survey)
- Streams (WOUS)
- Proposed Bridge
- Prop. Pavement
- Proposed Guardrail
- Limits of Construction
- Limits of Disturbance
- CSX Railroad

SPSA Interchange Improvements
Route 13/58/460 Flyover Option 2

Date: July 2022

SCALE
0 300' 600'

PROJECT	SHEET NO.

PROJECT MANAGER:
SURVEYED BY: DATE:
DESIGN BY:
SUBSURFACE UTILITY BY: DATE:

STATE	ROUTE	PROJECT	SHEET NO.
VA.	58		

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

SPSA TRANSFER STATION

OVERHEAD UTILITY

Wetland Impacts	
Permanent	1.624 Acres
Temporary	2.957 Acres
WUS	1.757 Acres
Loop	N/A

Bob Foeller Drive

Portsmouth Blvd.

13 58 460

OVERHEAD UTILITY

LEGEND

- Wetlands (Survey)
- Streams (Survey)
- Streams (WOUS)
- Proposed Bridge
- Prop. Pavement
- Proposed Guardrail
- Limits of Construction
- Limits of Disturbance
- CSX Railroad

SPSA Interchange Improvements
Route 13/58/460 Flyover Option 2A

Date: July 2022

SCALE
0 300' 600'

PROJECT MANAGER
SURVEYED BY: DATE
DESIGN BY
SUBSURFACE UTILITY BY: DATE

STATE	STATE ROUTE	PROJECT	SHEET NO.
VA.	58		

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Monticello View

Bright Ln.

Residential Property Take

Progress Rd

Amtrak RR

Nansemond Pkwy

Milum Rd

SPSA TRANSFER STATION

Wetland Impacts

Permanent	2.245 Acres
Temporary	0.65 Acres
Streams	730 SF
Loop	N/A

LEGEND

- Wetlands (GIS)
- Streams (GIS)
- Open Water (GIS/Aerial)
- Proposed Bridge
- Prop. Pavement
- Proposed Guardrail
- Limits of Construction
- Limits of Disturbance
- Railroad
- Property Lines

SPSA Interchange Improvements
Route 337 Access Road Option 3

Date: July 2022

SCALE
0 300' 600'

PROJECT	SHEET NO.

PROJECT MANAGER:
SURVYED BY: DATE:
DESIGN BY:
SUBSURFACE UTILITY BY: DATE:

STATE | ROUTE | PROJECT | SHEET NO.
VA. | 58 | : | -

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

SPSA TRANSFER STATION

Bob Foeller Drive

13 58 460

Portsmouth Blvd.

OVERHEAD UTILITY

Wetland Impacts	
Permanent	0 Acres
Temporary	0 Acres
WUS	0 Acres
Loop	0 Acres

LEGEND
- Wetlands (GIS)
- Streams (GIS)
- CSX Railroad

SPSA Interchange Improvements
Route 13/58/460 No Build

Date: July 2022

SCALE
0 300' 600'

APPENDIX D

ALTERNATIVES IMPACT TABLE

Table 1 – Alternatives and Impacts.

Alternative	1A. Flyover East	1B. Flyover 5 Pines Parcel (Preferred)	1C. Flyover West	2. Extended Structure Current Alignment	2A. Extended Structure Larger Radius	3. Route 337 Access Road	4. No Build
Cost (mil)	$36	$39	$38.5	$62.1	$91.7	$17.9	$0
Permanent Wetland Impact (ac)	3.462	3.332	3.507	1.832	1.624	2.245	0
Temporary Wetland Impact (ac)	1.145	2.401	1.343	1.439	2.957	0.642	0
Wetland Shading Impacts (ac)	0.098	0.102	0.098	0.792	2.299	0	0
Permanent Stream Impacts (sf)	0	0	0	0	0	730	0
Temporary Stream Impacts (sf)	0	0	0	0	0	210	0
Roadside Ditch Impact (WUS) (ac)	2.005	1.135	1.684	1.757	1.765	0	0
ROW Impacts Partial Take Number/Ac.	2/15.290	3/11.718	3/11.190	3/10.433	3/37.928	12/6.326	0/0
ROW Impacts Full Take Number/Ac.	0/0	0/0	0/0	0/0	0/0	1/0.649	0/0

Attachment I

Wetland Delineation Documents

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

March 4, 2022

PRELIMINARY JURISDICTIONAL DETERMINATION

Special Projects Regulatory Section
NAO-2022-00448 (Dismal Swamp)

Virginia Department of Transportation
7511 Burbage Drive Street
Suffolk, VA 23435
Attn: Michael Mussomeli

Dear Mr. Mussomeli:

This letter is in regard to your request for a preliminary jurisdictional determination of the aquatic resources (e.g., wetlands, streams, and ponds), on an approximately 115-acre portion of land located adjacent to the SPSA landfill and encompassing VDOT right-of-way in.Suffolk, Virginia hereinafter referred to as project area.

The map entitled “Route 58 Suffolk Flyover, Exhibit 5A- Wetland Delineation Map”, Figures 1 of 2, by WRA dated 11/10/2021 (copy enclosed) provides the locations of the aquatic resources within the project area referenced above. This letter is not confirming the Cowardin classifications of these aquatic resources.

These aquatic resources exhibit wetland criteria as defined in the 1987 Corps of Engineers Wetland Delineation Manual, and the Atlantic and Gulf Coastal Plain Regional Supplement. This site also contains aquatic resources with an ordinary high-water mark.

This preliminary jurisdictional determination and associated aquatic resource delineation map may be submitted with a permit application.

Please be aware that you may be required to obtain a Corps permit for any discharge of dredged and/or fill material, either temporary or permanent, into a water of the U.S. In addition, you may be required to obtain a Corps permit for certain activities occurring within, under, or over a navigable water of the U.S. subject to the Section 10 of the Rivers and Harbors Act. Furthermore, you may be required to obtain state and local authorizations, including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC), and/or a permit from your local wetlands board.

This delineation and preliminary jurisdictional determination may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. Therefore, if you or your tenant are US Department of Agriculture (USDA) program

participants, or anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

This is a preliminary jurisdictional determination and is not a legally binding determination regarding whether Corps jurisdiction applies to the aquatic resources in question. To determine Corps' jurisdiction, you may request and obtain an approved jurisdictional determination.

This delineation of aquatic resources can be relied upon for no more than five years from the date of this letter. New information may warrant revision. Enclosed is a copy of the "Preliminary Jurisdictional Determination Form". Please review the document, sign, and return one copy to the Corps, either by email (brian.c.denson@usace.army.mil) or by standard mail to Attn: Brian Denson, U.S. Army Corps of Engineers, Norfolk District, CENAO-WR-R, 803 Front Street, Norfolk, VA 23510-1011.

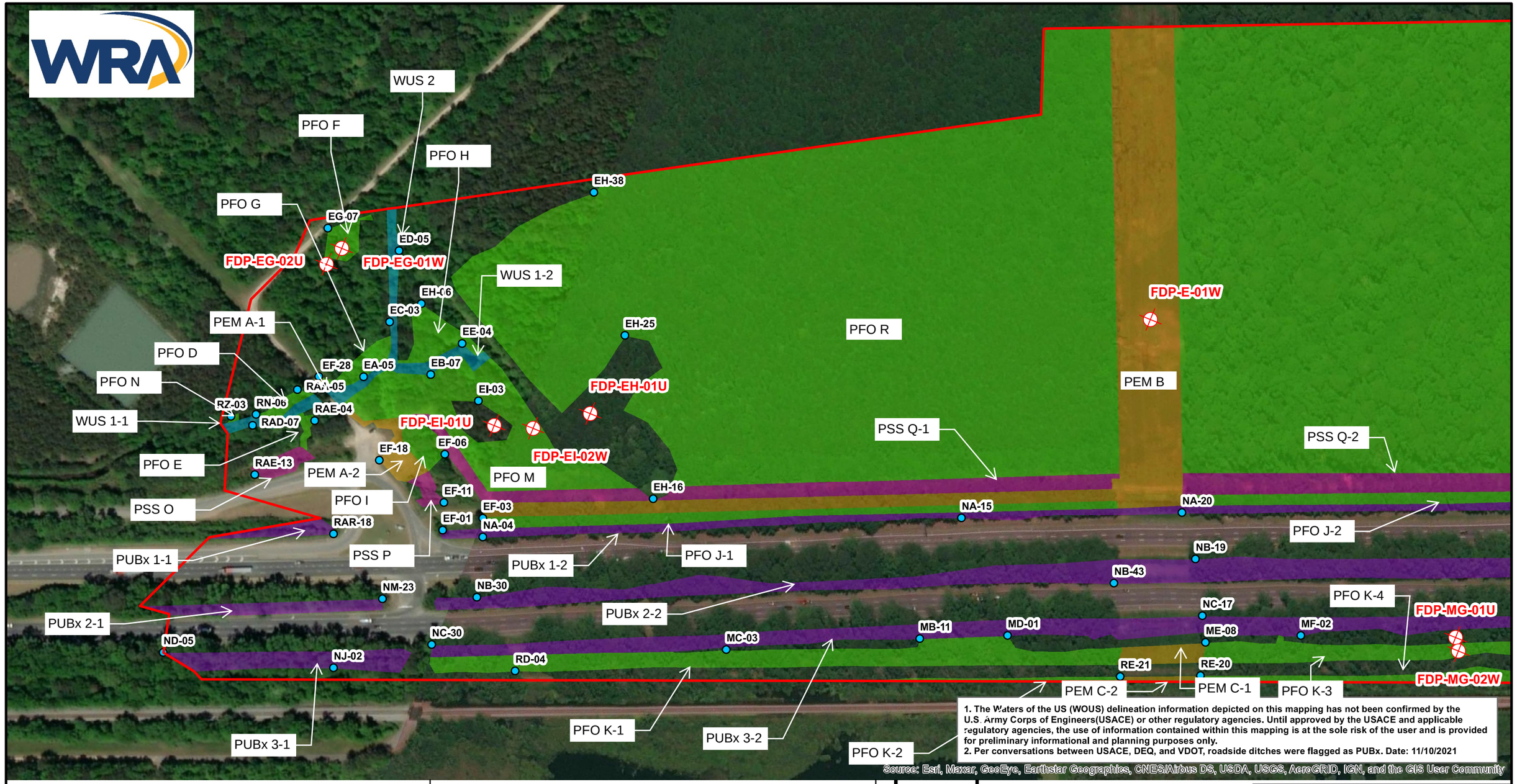
If you have any questions, please contact the office either by telephone at (757) 201-7792 or by email at brian.c.denson@usace.army.mil.

Sincerely,

Jeanne C. Richardson

Jeanne C. Richardson
Acting Chief
Special Projects Regulatory Section

Enclosure(s): Referenced Map, Preliminary JD Form



1. The Waters of the US (WOUS) delineation information depicted on this mapping has not been confirmed by the U.S. Army Corps of Engineers(USACE) or other regulatory agencies. Until approved by the USACE and applicable regulatory agencies, the use of information contained within this mapping is at the sole risk of the user and is provided for preliminary informational and planning purposes only.
2. Per conversations between USACE, DEQ, and VDOT, roadside ditches were flagged as PUBx. Date: 11/10/2021

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Exhibit 5A: Wetland Delineation Map (Natural Color Imagery)

11/10/2021

Route 58 Suffolk Flyover

City of Suffolk, VA

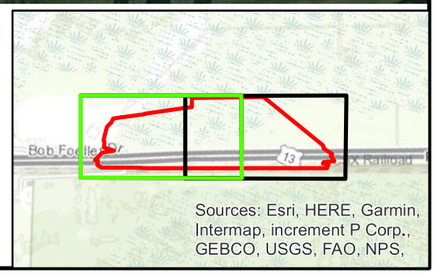
0 200 400 800 Feet

1 inch = 200 feet

Source: ESRI

Legend

- Study Area
- Data Point
- Representative Flag Location
- PUBx
- PEM
- PFO
- PSS
- R3



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS,

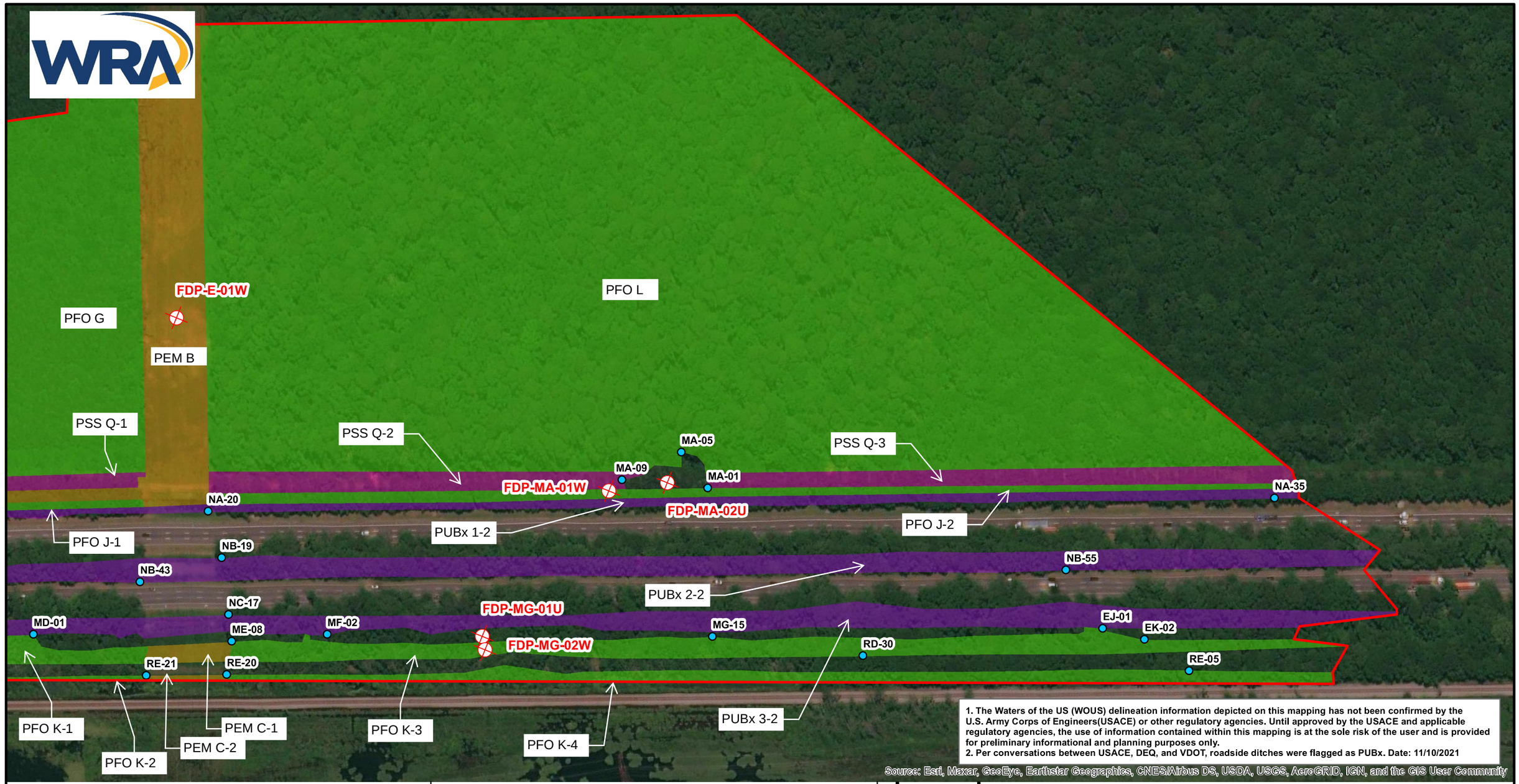


Exhibit 5A: Wetland Delineation Map (Natural Color Imagery)

Page 2 of 2
11/10/2021

Route 58 Suffolk Flyover

City of Suffolk, VA

0 200 400 800 Feet

1 inch = 200 feet

Source: ESRI

Legend

- Study Area
- Data Point Representative Flag Location
- PUBx
- PEM
- PFO
- PSS
- R3

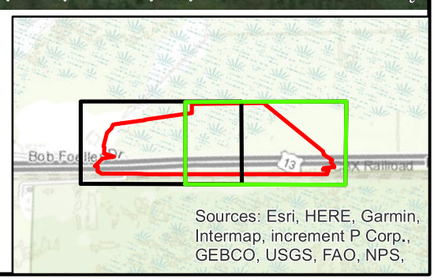


Table 1: Vegetated Wetlands within the Study Area

Polygon Label	Flag Series	Cowardin	Amount Located in Study
PEM A-1	Wetland EF Flags 26-28	PEM	0.01
PEM A-2	Wetland EF Flags 16-26	PEM	0.18
PEM B	Wetland EF/NA (Flags EF-03 to EF-04 and NA-19 to NA-20)	PEM	3.98
PEM C-1	Wetland ME/RD (Flags ME-07 to ME-08 and RD-16 to RD-18)	PEM	0.16
PEM C-2	Wetland RE Flags 20-21	PEM	0.05
PFO D	Wetland RAA	PFO	0.06
PFO E	Wetland RAE Flags 01-08 and 17-21	PFO	0.04
PFO F	Wetland EG	PFO	0.12
PFO G	Wetland EF Flags 28-32	PFO	0.14
PFO H	Wetland EH Flags 01-09	PFO	0.24
PFO I	Wetland EF Flags 06-07	PFO	0.14
PFO J-1	Wetland EF/NA (Flags EF-02 to EF-03 and NA-04 to NA-19)	PFO	0.58
PJO J-2	Wetland NA Flags 20-35	PFO	0.95
PFO K-1	Wetland MC/ME/RD	PFO	1.31
PFO K-2	Wetland RE Flags 21-30	PFO	0.10
PFO K-3	Wetland MG/ME/RD/EK	PFO	1.94
PFO K-4	Wetland RE Flags 01-20	PFO	1.25
PFO L	Wetland MA Flags 02-07	PFO	37.78
PFO M	Wetland EI	PFO	1.50
PFO N	Wetland RZ	PFO	0.01
PSS O	Wetland RAE Flags 08-17	PSS	0.10
PSS P	Wetland EF Flags 07-16	PSS	0.07
PSS Q-1	Wetland EF Flags 04-06	PSS	1.00
PSS Q-2	Wetland MA Flags 07-10	PSS	0.86
PSS Q-3	Wetland MA Flags 01-02	PSS	1.01
PFO R	Wetland EH Flags 17-38	PFO	20.05
	Total Vegetated Wetland (AC)		**73.63**

Table 2: Streams within the Study Area

Polygon Label	Flag Series	Cowardin	Amount Located within the Study	
			LF	AC
WUS 1-1	Stream RN/RAD	R3	218	0.11
WUS 1-2	Stream EA/EB/EE	R3	384	0.19
WUS 2	Stream EC/ED	R3	326	0.14
	Total Stream		**928**	**0.44**

Table 3: PUBx within the Study Area

Polygon Label	Flag Series	Cowardin	Amount Located within the Study Area (AC)
PUBx 1-1	Ditch RAR	PUBx	0.12
PUBx 1-2	Ditch EF/NA	PUBx	1.54
PUBx 2-1	Ditch NM	PUBx	0.26
PUBx 2-2	Ditch NB	PUBx	3.54
PUBx 3-1	Ditch ND/NJ	PUBx	0.44
PUBX 3-2	Ditch NC/MB/MD/MF/EJ	PUBx	3.36
	Total PUBx		**9.26**

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. **REPORT COMPLETION DATE FOR PJD:** 02-MAR-2022

B. **NAME AND ADDRESS OF PERSON REQUESTING PJD:**

Virginia Department of Transportation
7511 Burbage Drive Street
Suffolk, VA 23435
Attn: Michael Mussomeli

C. **DISTRICT OFFICE, FILE NAME, AND NUMBER:**
NAO, SPSA Flyover, NAO-2022-00448

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: VA County/parish/borough: Suffolk city City:
Center coordinates of site (lat/long in degree decimal format):
Lat.: 36.760064° Long.: -76.503206°
Universal Transverse Mercator: 18
Name of nearest waterbody: Goose Creek

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Field Determination. Date(s): March 2, 2022

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site Number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
PEM A1-2	36.756984	-76.509311	0.19 acres	Wetland	Section 404
PEM B	36.758937	-76.504597	3.98 acres	Wetland	Section 404
PEM C1-2	36.757582	-76.503851	0.21 acres	Wetland	Section 404
PFO D	36.756977	-76.510539	0.06 acres	Wetland	Section 404
PFO E	36.756811	-76.510279	0.04 acres	Wetland	Section 404
PFO F	36.758234	-76.510241	0.12 acres	Wetland	Section 404
PFO G	36.757477	-76.510161	0.14 acres	Wetland	Section 404
PFO H	36.757954	-76.509272	0.24 acres	Wetland	Section 404
PFO I	36.757069	-76.509298	0.14 acres	Wetland	Section 404
PFO J1-2	36.757538	-76.506458	1.53 acres	Wetland	Section 404
PFO K1-4	36.756561	-76.507076	4.6 acres	Wetland	Section 404
PFO L	36.760055	-76.502557	37.78 acres	Wetland	Section 404
PFO M	36.757186	-76.508937	1.5 acres	Wetland	Section 404
PFO N	36.756832	-76.510869	0.01 acres	Wetland	Section 404

[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

PFO R	36.758594	-76.505426	20.05 acres	Wetland	Section 404
PSS O	36.756753	-76.510313	0.1 acres	Wetland	Section 404
PSS P	36.756904	-76.509251	0.07 acres	Wetland	Section 404
PSS Q1-3	36.75862	-76.503322	2.87 acres	Wetland	Section 404
PUB Ditch 1-1-1-2	36.757068	-76.507778	1.66 acres	Non-wetland waters	Section 404
PUB Ditch 2-1 - 2-2	36.757396	-76.505662	3.8 acres	Non-wetland waters	Section 404
PUB Ditch 3-1 - 3-2	36.757064	-76.505769	3.8 acres	Non-wetland waters	Section 404
WUS 1-1-2	36.756884	-76.510627	0.3 acres	Non-wetland waters	Section 404
WUS 2	36.757958	-76.509672	0.14 acres	Non-wetland waters	Section 404

1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the.JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there “may be” waters of the U.S. and/or that there “may be” navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

_X__ Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: Exhibit 5A: Wetland Delineation Map, Route 58 Suffolk Flyover, Sheets 1-2.
_X__ Data sheets prepared/submitted by or on behalf of the PJD requestor.
_X__ Office concurs with data sheets/delineation report.
___ Office does not concur with data sheets/delineation report. Rationale:
_____.
___ Data sheets prepared by the Corps: _____.
___ Corps navigable waters' study: _____.
___ U.S. Geological Survey Hydrologic Atlas: _____.
___ USGS NHD data.
___ USGS 8 and 12 digit HUC maps.
_X__ U.S. Geological Survey map(s). Cite scale & quad name: __24K Chuckatuck_____.
__X_ Natural Resources Conservation Service Soil Survey. Citation: _____.
___ National wetlands inventory map(s). Cite name: _____.
___ State/local wetland inventory map(s): _____.
___ FEMA/FIRM maps: _____
___ 100-year Floodplain Elevation is: _____. (National Geodetic Vertical Datum of 1929)
_X__ Photographs: _X__ Aerial (Name & Date): Google Earth, Various Years_.
___ or _X__ Other (Name & Date): LIDAR_____.
___ Previous determination(s). File no. and date of response letter: _____.
___ Other information (please specify): _____.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

_____ _____

Signature and date of Regulatory staff member completing PJD

Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

Stephen C. Brich, P.E.
Commissioner

1401 East Broad Street
Richmond, Virginia 23219

(804) 786-2701
Fax: (804) 786-2940

8 February 2022

U.S. Army Corps of Engineers
Eastern Virginia Regulatory Section
Attn: Ms. Kim Prisco-Baggett
803 Front Street
Norfolk, VA 23510-1096

RE: Application for Preliminary Jurisdictional Determination
SPSA Flyover Project
City of Suffolk, Virginia

Applicant: Virginia Department of Transportation
7511 Burbage Drive Street
Suffolk, VA 23435
Attn: Michael Mussomeli

Dear Ms. Prisco-Baggett:

Enclosed is an application for Preliminary Jurisdictional Determination for the proposed Virginia Department of Transportation (VDOT) State-funded SPSA Flyover project located in the City of Suffolk, Virginia. Correspondence requesting review of wetland and waters under State jurisdiction has been submitted to the Virginia Department of Environmental Quality (DEQ) concurrently.

VDOT is requesting U.S. Army Corps of Engineers (USACE) review of wetland delineations performed within the project's study area between 6 April 2021 and 28 April 2021. VDOT is requesting issuance of a Preliminary Jurisdictional Determination that will be used to calculate impacts for the SPSA project. VDOT is also concurrently requesting Virginia Department of Environmental Quality (DEQ) review, though VDOT has determined that all delineated wetlands and jurisdictional waters are subject to both Federal and State regulation.

Please find attached Norfolk District Regulatory Office Pre-Application and/or Jurisdictional Waters Determination Request Form and *Jurisdictional Waters (Including Wetlands) Delineation Report*- Route 58 SPSA Flyover, dated November 2021 and prepared by Whitman, Requardt, and Associates, LLP. The Delineation Report contains Wetland Delineation Map, data sheets, representative site photographs, and descriptions of size/classification of wetlands and other waters of the U.S. identified within the Study Area.

VDOT would welcome the opportunity to schedule a field visit for review and confirmation of wetlands/waters boundaries as well as to discuss the project, which is expected to require an Individual Permit. VDOT will also be presenting this project for early coordination a second time at the April 2022 IACM and anticipates submitting Joint Permit Application for the project in July/August 2022. We respectfully request that DEQ be included on correspondence with this project. If you have any questions regarding this application or need further information, please contact me at (757)-335-2460.

Sincerely,

Virginia Department of Transportation

Michael J. Mussomeli **Digital**

Michael J. Mussomeli
Environmental Specialist II

MJM/
w/enclosures

cc: Ms. Hannah Schul, DEQ (complete submittal)
Ms. Mackenzie Scott, DEQ (complete submittal)
Mr. Brian Denson, USACE (complete submittal)
Ms. Kimberly Bryant, VDOT (transmittal only)
Ms. Claudia Walsh, VDOT/HDR (transmittal only)

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

Stephen C. Brich, P.E.
Commissioner

1401 East Broad Street
Richmond, Virginia 23219

(804) 786-2701
Fax: (804) 786-2940

8 February 2022

Ms. Hannah Schul/Ms. Mackenzie Scott
Department of Environmental Quality
Office of Wetlands and Water Protection
629 East Main Street
PO Box 1105
Richmond, VA 23218

RE: Application for Preliminary Jurisdictional Determination
SPSA Flyover Project
City of Suffolk, Virginia

Applicant: Virginia Department of Transportation
7511 Burbage Drive Street
Suffolk, VA 23435
Attn: Michael Mussomeli

Dear Ms. Schul and Ms. Scott:

Enclosed is an application for a Preliminary Jurisdictional Determination associated with proposed SPSA Flyover project located in the City of Suffolk, Virginia. This request has been submitted to the U.S Army Corps of Engineers (USACE) concurrently.

VDOT is requesting U.S. Army Corps of Engineers (USACE) review of wetland delineations performed within the project's study area between 6 April 2021 and 28 April 2021. VDOT is requesting issuance of a Preliminary Jurisdictional Determination that will be used to calculate impacts for the SPSA Flyover project. Concurrently, VDOT is also requesting Virginia Department of Environmental Quality (DEQ) review of all delineated wetlands and jurisdictional waters; VDOT has determined all wetlands and waters are subject to both Federal and State regulation.

Please find attached Norfolk District Regulatory Office Pre-Application and/or Jurisdictional Waters Determination Request Form and *Jurisdictional Waters (Including Wetlands) Delineation Report*- Route 58 SPSA Flyover, dated November 2021 and prepared by Whitman, Requardt, and Associates, LLP. The Delineation Report contains Wetland Delineation Map, data sheets, representative site photographs, and descriptions of size/classification of wetlands and other waters of the U.S. identified within the Study Area.

VDOT would welcome the opportunity to schedule a field visit for review and confirmation of wetlands/waters boundaries as well as to discuss the project, which is expected to require an Individual Permit by both DEQ and USACE. VDOT will also be presenting this project for early coordination a second time at April 2022 IACM and anticipates submitting Joint Permit Application in July/August 2022. We respectfully request that USACE be included on correspondence with this project. If you have any questions regarding this application or need further information, please contact me at (757)-335-2460.

Sincerely,

Virginia Department of Transportation

Michael J. Mussomeli **Digital**

Michael J. Mussomeli, PWS
Environmental Specialist II

MJM/
w/Enclosures

cc: Ms. Kimberly Prisco-Baggett, USACE (complete submittal)
Mr. Brian Denson, USACE (complete submittal)
Ms. Kimberly Bryant, VDOT (transmittal only)
Ms. Claudia Walsh, VDOT/HDR (transmittal only)

NORFOLK DISTRICT REGULATORY OFFICE
PRE-APPLICATION AND/OR JURISDICTIONAL WATERS DETERMINATION REQUEST FORM

This form is used when you want to determine if areas on your property fall under regulatory requirements of the U.S. Army Corps of Engineers (USACE). Please supply the following information and supporting documents described below. This form can be filled out online and/or printed and then mailed, faxed, or e-mailed to the Norfolk District. Submitting this request authorizes the US Army Corps of Engineers to field inspect the property site, if necessary, to help in the determination process. **THIS FORM MUST BE SIGNED BY THE PROPERTY OWNER TO BE CONSIDERED A FORMAL REQUEST.**

The printed form and supporting documents should be mailed to:

U.S. Army Corps of Engineers, Norfolk District
Regulatory Office
803 Front Street
Norfolk, Virginia 23510-1096

Or faxed to (757) 201-7678

Or sent via e-mail to: CENAO.REG_ROD@usace.army.mil

Additional information on the Regulatory Program is available on our website at:
http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/homepage.asp

Please contact us at 757-201-7652 if you need any assistance with filling out this form.

Location and Information about Property to be subject to a Jurisdictional Determination:

1. Date of Request: 8 February 2022

2. City or County where property located: City of Suffolk, Virginia

3. Address of property and directions (attach a map of the property location and a copy of the property plat): Project area is adjacent to SPSA landfill and encompasses VDOT right-of-way and portions of three (3) parcels. US 58 Westbound, past weigh station; take SPSA exit before US 58 Business exit (at US 58 Eastbound crossover).

4. Size of property in acres: Study area encompasses 115 acres.

5. Tax Parcel Number / GPIN (if available): n/a

6. Name of Nearest Waterway: Burnetts Mill Creek

7. Brief Description of Proposed Activity, Reason for Preapplication Request, and/or Reason for Jurisdictional Waters Determination Request:

   Jurisdictional determination request in support of VDOT SPSA Flyover project.

8. Has a wetland delineation/determination been completed by a consultant or the Corps on the property previously? ☐ YES ☐ NO ☒ UNKNOWN

   If yes, please provide the name of the consultant and/or Corps staff and Corps permit number, if available: VDOT project number 118375. Project was presented IACM 14 September 2021for early coordination and assigned early coordination 21-6805; it is unknown of an NAO number was established.

Property Owner Contact Information:

Property Owner Name: Multiple; VDOT provide notification (see VDOT point of contact).
Mailing Address:
City: State: Zip:
Daytime Telephone:
E-mail Address:

If the person requesting the Jurisdictional Determination is **NOT** the Property Owner, please also supply the Requestor's contact information here:

Requestor Name: Michael J. Mussomeli, PWS (requestor employee of VDOT)
Mailing Address: 7511 Burbage Drive
City: State: Zip: Suffolk, VA 23435
Daytime Telephone: 757-335-2460
E-mail Address: michael.mussomeli@vdot.virginia.gov

Additionally, if you have any of the following information, please include it with your request: wetland delineation map, other relevant maps, drain tile survey, topographic survey, and/or site photographs.

CERTIFICATION: I am hereby requesting a preapplication consultation or jurisdictional waters and/or wetlands determination from the U.S. Army Corps of Engineers, for the property(ies) I have described herein. I agree to allow the duly authorized representatives of the Norfolk District Corps of Engineers and other regulatory or advisory agencies to enter upon the premises of the project site at reasonable times to evaluate inspect and photograph site conditions. This consent to enter the property is superior to, takes precedence over, and waives any communication to the contrary. For example, if the property is posted as "no trespassing" this consent specifically supercedes and waives that prohibition and grants permission to enter the property despite such posting. I hereby certify that the information contained in the Request for a Jurisdictional Determination is accurate and complete:

Michael J. Mussomeli, PWS (digital)
(on behalf of VDOT)_____ 8 February 2022_____
Property Owner's Signature Date

Jurisdictional Waters (Including Wetlands) Delineation

Route 58 SPSA Flyover

Prepared For:
Virginia Department of Transportation

Prepared By:
Whitman, Requardt & Associates, LLP.

Whitman, Requardt & Associates, LLP
1915 100 YEARS 2015

NOVEMBER 2021

TABLE OF CONTENTS

EXHIBITS

1.0 EXECUTIVE SUMMARY

On behalf of the Virginia Department of Transportation (VDOT), Whitman, Requardt & Associates, LLP (WRA) conducted a delineation of jurisdictional waters (including wetlands) within an approximately 115-acre study area in support of the proposed Route 58 Southeastern Public Service Authority (SPSA) Flyover Project (Project). The proposed Project involves constructing a flyover ramp to accommodate the left turning US Route 13/58/460 eastbound traffic entering the SPSA landfill while providing increased capacity to the facility for the proposed 2026 landfill expansion, in order to address both long term and short term solutions for the SPSA facility's foreseeable growth (see ***Exhibit 1***).

The purpose of this wetland delineation was to identify the limits of jurisdictional waters that could be affected by the proposed Project. Jurisdictional waters are present within the Project study area, including approximately 928 linear feet of stream, 9.26 acres of Palustrine Unconsolidated Bottom, Excavated (PUBx), and 73.63 acres of vegetated wetlands.

2.0 REGULATORY REQUIREMENTS AND LIMITATIONS

Jurisdictional waters, including wetlands, are regulated under Sections 401 and 404 of the Federal Clean Water Act (33 U.S.C. §1251 *et seq.*) and Section 10 of the Federal Rivers and Harbors Act (33 U.S.C. §401). In Virginia, state waters, including wetlands, are regulated under the Virginia State Water Control Law (§62.1-44.15:20, §28.2-Chapters 12 and 13), the Virginia Water Protection Program Permit Regulation (9VAC 25-210-10 *et seq.*), and other applicable state and local laws and regulations. Any proposed impacts may require authorization from the appropriate federal, state, and/or local regulatory agencies.

The limits of jurisdictional waters described in this report are based on examination of field conditions at the time of this study and may differ from future observations by others. The jurisdictional nature of waters described in this report is subject to concurrence from the United States Army Corps of Engineers (USACE) and the Virginia Department of Environmental Quality (VDEQ). This report does not constitute a jurisdictional determination, as such determinations must be verified by letter from the USACE, and in some cases, VDEQ.

3.0 WETLAND DELINEATION REPORT SITE INFORMATION SUMMARY

Property Address
Project is located at the intersection of Route 58 and Bob Foeller Drive
(Approximately 115 acres)
Suffolk, Virginia

Latitude/ Longitude in Decimal Degrees using coordinate plane (NAD 1983)
Project Start: 36.75662, -76.510496
Project End: 36.760611, -76.497294

Has a previous delineation or JD been performed? If so please provide USACE Project #:
Unknown

Hydrologic Unit Code (HUC)
HUC 8: 02080208 (Hampton Roads)
HUC 10: 0208020801(Nansemond River)
HUC 12: 020802080105 (Nansemond River – Cedar Lake)

USGS Topographic Sheet
Chuckatuck and Bowers Hill, VA Quadrangles

Nearest Waterbody (example given)
Burnetts Mill Creek

Delineation Methods

- **In-office Review**

Prior to conducting field work, relevant site-specific background information was reviewed to assess whether evidence indicative of wetlands or other jurisdictional waters occur within the Project study area. Site-specific information reviewed included the U.S. Geological Survey (USGS) topographic quadrangle maps (***Exhibit 3***), Federal Emergency Management Agency (FEMA) data (***Exhibit 3***), Natural Resources Conservation Service (NRCS) soils map data (***Exhibit 4***), National Wetlands Inventory (NWI) data (***Exhibit 4***), National Hydrography Dataset (NHD) data (***Exhibit 4***), natural color aerial imagery (***Exhibit 5A***), and color infrared imagery (***Exhibit 5B***).

- **Field Investigation**

Jurisdictional waters (including wetlands) were delineated pursuant to the USACE Wetland Delineation Manual, Technical Report Y-87-1 (1987 Manual), USACE November 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region Version 2.0 (USACE, 2010), and subsequent regulatory guidance.

Samples of vegetation, soils, and hydrology were taken at representative locations in wetlands and adjacent non-wetland areas to determine wetland boundaries. Wetland determination data forms describing representative plant communities, hydrology indicators, and soil

characteristics were taken to describe the area. The 2018 National Wetland Plant List (v3.4) was used to apply a wetland indicator status to plants located on-site.

All soil colors were determined from moist, undisturbed peds using Munsell Soil-Color Charts. NRCS digital soils data and mapping were obtained from the NRCS website (Web Soil Survey) and compared with the observed conditions encountered during the field investigations. The Field Indicators of Hydric Soils in the United States (Version 8.2) was used to identify hydric soils on-site.

Surface waters in the study area were classified using the USACE / Environmental Protection Agency (EPA) regulatory guidance. Other waters (including springs, streams, swales, ditches, and drainage culverts) were delineated based on the application of the hydrology parameter and the regulatory definition of ordinary high water (33 CFR Part 328) and in accordance with new jurisdictional determination guidance wrought by the June 5, 2007, Rapanos court decision and subsequent regulatory guidance.

Streams were assessed using Form 1 of the USACE/ VDEQ Unified Stream Methodology (USM) to assign a Reach Condition Index (RCI) to each stream reach. The RCI includes channel condition, riparian buffers, instream habitat/available cover, and channel alteration.

During the field investigations, the Project study area was also assessed for the presence of "high value wetlands" defined by the Virginia Administrative Code, 9VAC25-680-40, as wetlands composed of 10% or more of the following species (singly or in combination) in a vegetative stratum: Atlantic white cedar (*Chamaecyparis thyoides*), bald cypress (*Taxodium distichum*), water tupelo (*Nyssa aquatica*), or overcup oak (*Quercus lyrata*).

On-Site Investigation Date(s)
Wetland boundary delineation and site data collection was conducted April 6 – April 28, 2021 by Emily Drahos, PWD, PWS; Ralph Tuck, WPIT; Mike McQuade; Nick Kevey; and Kylie Roehrle.

Wetland Delineation Plan
The proposed wetland boundaries and Wetland Determination Data Form locations are depicted on the plans entitled ***Exhibit 5A Wetland Delineation Map (Natural Color Background)*** and ***Exhibit 5B Wetland Delineation Map (Color Infrared Background)*** prepared by WRA on November 10, 2021.

Wetland Investigation Results (Examples given, this is a summary of totals, please also provide a table with each individual water, Cowardin classification, and area shown. See table at end of questionnaire.)

Vegetated Wetlands
Approximately 4.38 acres of palustrine emergent (PEM) wetlands, 3.04 acres of palustrine scrub-shrub (PSS) wetlands, and 66.21 acres of palustrine forested (PFO) wetlands were identified within the 115-acre Project study area (see ***Table 1***, below). These wetlands, described by data points FDP-E-01W, FDP-EG-01W, FDP-EI-02W, FDP-MA-01W, and FDP-MG-02W, are provided in ***Exhibit 6***.

Table 1: Vegetated Wetlands within the Study Area

Jurisdictional Waters of the U.S.*	Cowardin	Amount Located in Study Area
Wetland EF/NA (Flags EF-02 to EF-03 and NA-04 to NA-19)	PFO	0.58
Wetland EF/NA (Flags EF-03 to EF-04 and NA-19 to NA-20)	PEM	3.98
Wetland EF Flags 04-06	PSS	1.00
Wetland EF Flags 06-07	PFO	0.14
Wetland EF Flags 07-16	PSS	0.07
Wetland EF Flags 16-26	PEM	0.18
Wetland EF Flags 26-28	PEM	0.01
Wetland EF Flags 28-32	PFO	0.14
Wetland EG	PFO	0.12
Wetland EH Flags 01-09	PFO	0.24
Wetland EH Flags 17-38	PFO	20.05
Wetland EI	PFO	1.50
Wetland MA Flags 01-02	PSS	1.01
Wetland MA Flags 02-07	PFO	37.78
Wetland MA Flags 07-10	PSS	0.86
Wetland MC/ME/RD	PFO	1.31
Wetland ME/RD (Flags ME-07 to ME-08 and RD-16 to RD-18)	PEM	0.16
Wetland MG/ME/RD/EK	PFO	1.94
Wetland NA Flags 20-35	PFO	0.95
Wetland RAA	PFO	0.06
Wetland RAE Flags 01-08 and 17-21	PFO	0.04
Wetland RAE Flags 08-17	PSS	0.10
Wetland RE Flags 01-20	PFO	1.25
Wetland RE Flags 20-21	PEM	0.05
Wetland RE Flags 21-30	PFO	0.10
Wetland RZ	PFO	0.01
Total Vegetated Wetland (AC)		**73.63**

*Flag numbers provided to uniquely identify each polygon. Listed flag numbers may not include all flags associated with the polygon.

All delineated wetlands appear to have connections to other waters. Wetland EG, in the northwestern portion of the Project area, is adjacent to but not directly abutting a relatively permanent water (RPW). However, this wetland is connected to other wetlands and waters via flooding and consequently, has a significant nexus and is subject to federal jurisdiction. All other wetlands are either contiguous to perennial streams or connected to perennial streams via roadway culverts. Therefore, all delineated wetlands and waters appear to be subject to USACE and VDEQ jurisdiction.

Few (<5) high value wetland plants (bald cypress and water tupelo) were observed along streams EA/EB/EE and RN/RAD and their associated wetlands. These individual plants were sparse and did not make up 10% aerial coverage of any wetland. Therefore, no high value wetlands, as defined by 9VAC25-680-40, were identified.

Stream Channels: Approximately 928 linear feet of stream (0.44 acres) were identified within the 115-acre Project study area (see ***Table 2***, below). These stream channels have a bed, bank, and ordinary high water mark. USM forms are included as ***Exhibit 8***.

Table 2: Streams within the Study Area

Jurisdictional Waters of the U.S. Type	Cowardin	Amount Located within the Study Area	
		LF	AC
Stream EA/EB/EE	R3	384	0.19
Stream EC/ED	R3	326	0.14
Stream RN/RAD	R3	218	0.11
Total Stream		**928**	**0.44**

Other Waters: Several excavated features (*i.e.*, ditches) are located parallel and adjacent to the roadway. At the time of fieldwork, these features were fully inundated and had minimal emergent vegetation rooted along the edges (where present). These features were likely excavated for the purposes of conveying stormwater and are currently functioning as roadside ditches. The USACE and VDEQ have advised VDOT on similar projects that the appropriate classification for these features is Palustrine Unconsolidated Bottom, Excavated (PUBx). A total of 9.26 acres of ditch features were identified within the Project study area (see ***Table 3***, below).

Table 3: PUBx within the Study Area

Jurisdictional Waters of the U.S. Type	Cowardin	Amount Located within the Study Area (AC)
Ditch EF/NA	PUBx	1.54
Ditch NB	PUBx	3.54
Ditch NC/MB/MD/MF/EJ	PUBx	3.36
Ditch ND/NJ	PUBx	0.44
Ditch NM	PUBx	0.26
Ditch RAR	PUBx	0.12
Total Stream		**9.26**

Water bodies onsite identified as Section 10: None present.

Uplands: Approximately 31.67 acres of the Project study area were classified as uplands, as described by data points FDP-EG-02U, FDP-EH-01U, FDP-EI-01U, FDP-MA-02U, and FDP-MG-01U. These data points are included in ***Exhibit 6***. Representative site photos are provided in ***Exhibit 7***.

100-Year Floodplains: As depicted on FEMA's on-line Flood Insurance Rate Maps # 5101560119E eff. 8/3/2015 and 5101560140D eff. 11/16/2011, approximately 53.57 acres of the Project study area are within 100-year floodplain (Flood Zone A). The remaining 61.43 acres of the Project study area are flood zone X. FEMA flood mapping is included in ***Exhibit 3***.

National Wetlands Inventory

The on-line National Wetland Inventory (***Exhibit 4***) identifies ten types of wetlands within the Project study area (see ***Table 4***, below).

Table 4: NWI Wetlands within the Study Area

Cowardin Code	Cowardin Classification	Acres
PEM1Cd	Palustrine, Emergent, Persistent, Seasonally Flooded, Partially Drained/Ditched	2.55
PEM1Ed	Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated, Partially Drained/Ditched	0.93
PFO1Cd	Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded, Partially Drained/Ditched	3.60
PFO1Ed	Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded/Saturated, Partially Drained/Ditched	28.24
PFO4Cd	Palustrine, Forested, Needle-Leaved Evergreen, Seasonally Flooded, Partially Drained/Ditched	21.91
PSS1/4Cd	Palustrine, Scrub-Shrub, Broad-Leaved Deciduous/Needle-Leaved Evergreen, Seasonally Flooded, Partially Drained/Ditched	6.30
PSS1Ed	Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded/Saturated, Partially Drained/Ditched	5.98
R4SBCx	Riverine, Intermittent, Streambed, Seasonally Flooded, Excavated	1.47
R5UBFx	Riverine, Unknown Perennial, Unconsolidated Bottom, Semipermanently Flooded, Excavated	1.02
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	0.26
Total		72.26

USDA Soil Survey

The on-line USDA Natural Resource Conservation Service Soil Survey (***Exhibit 4***) identifies five soil mapping units within the Project study area, all of which have hydric components (see ***Table 5***, below).

Table 5: NRCS Hydric Soils Map Unit Information

Soil Map Unit Name (Symbol)	Landform	% Hydric	Hydric Soils Rating Code	Acres in Study Area	% of Study Area
Belhaven Muck (2)	Swamps	100	A/D	18.14	16%
Deloss Mucky Loam (4)	Marine Terraces	99	B/D	59.99	52%
Rains Fine Sandy Loam (19)	Depressions	80	B/D	4.43	4%
Tomotley Loam (24)	Marine Terraces	95	B/D	17.38	15%
Torhunta Loam (25)	Swamps	100	A/D	15.04	13%

National Hydrography Dataset

The on-line NHD (***Exhibit 4***) identifies two streams within the Project study area, one spanning the northwestern portion of the Project study area and the other one in the roadway ditch of the westbound travel lane. Delineated streams EA/EB/EE and RN/RAD make up a portion of the northwestern stream; however, delineated streams EA/EB/EE and RN/RAD do not extend as far upstream as the NHD stream. Based on historic aerial imagery, an upland berm was placed at the upstream extent of stream EA/EB/EE around 2007, effectively cutting it off from its headwaters. During the 2021 wetland delineation, no culverts were observed connecting the waters on both sides of the berm. Impounded water was observed on the eastern side of the berm, making a stream channel indiscernible.

During the 2021 wetland delineation, no streams were delineated in the roadway ditch where NHD depicts a stream. This ditch appeared to be excavated for the purposes of conveying stormwater from the road. Sidecast was visible along the ditch; however, stream features, such as flowing water, sinuosity, depositional features, and grade control, were absent. Portions of this ditch contained vegetation and the entire ditch was surrounded by unmaintained vegetation. Per preliminary coordination between USACE, VDEQ, and VDOT, these roadside ditches were delineated as PUBx.

Notes

The Project is located in the Coastal Plain Physiographic Region, which includes Major Land Resource Area (MLRA) 153B (Tidewater Area) and Land Resource Region (LRR) T (Atlantic and Gulf Coast Lowland Forest and Crop Region).

4.0 REFERENCES

Cowardin, L., V. Carter, F. C. Golet and E. T. LaRoe. (1979). Classification of Wetlands and Deepwater Habitats of the United States. U. S. Fish and Wildlife Service Document OBS/79-31.
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Reed, P. B. 1988. National list of plant species that occur in wetlands: Northeast (Region 1). U.S. Fish and Wildlife Service, St. Petersburg, FL.

Schoeneberger, P.J., D.A. Wysocki, E.C. Benham, and Soil Survey Staff (2012). Field book for describing and sampling soils, Version 3.0. Natural Resources Conservation Service, National Soil Survey Center; Lincoln, NE.

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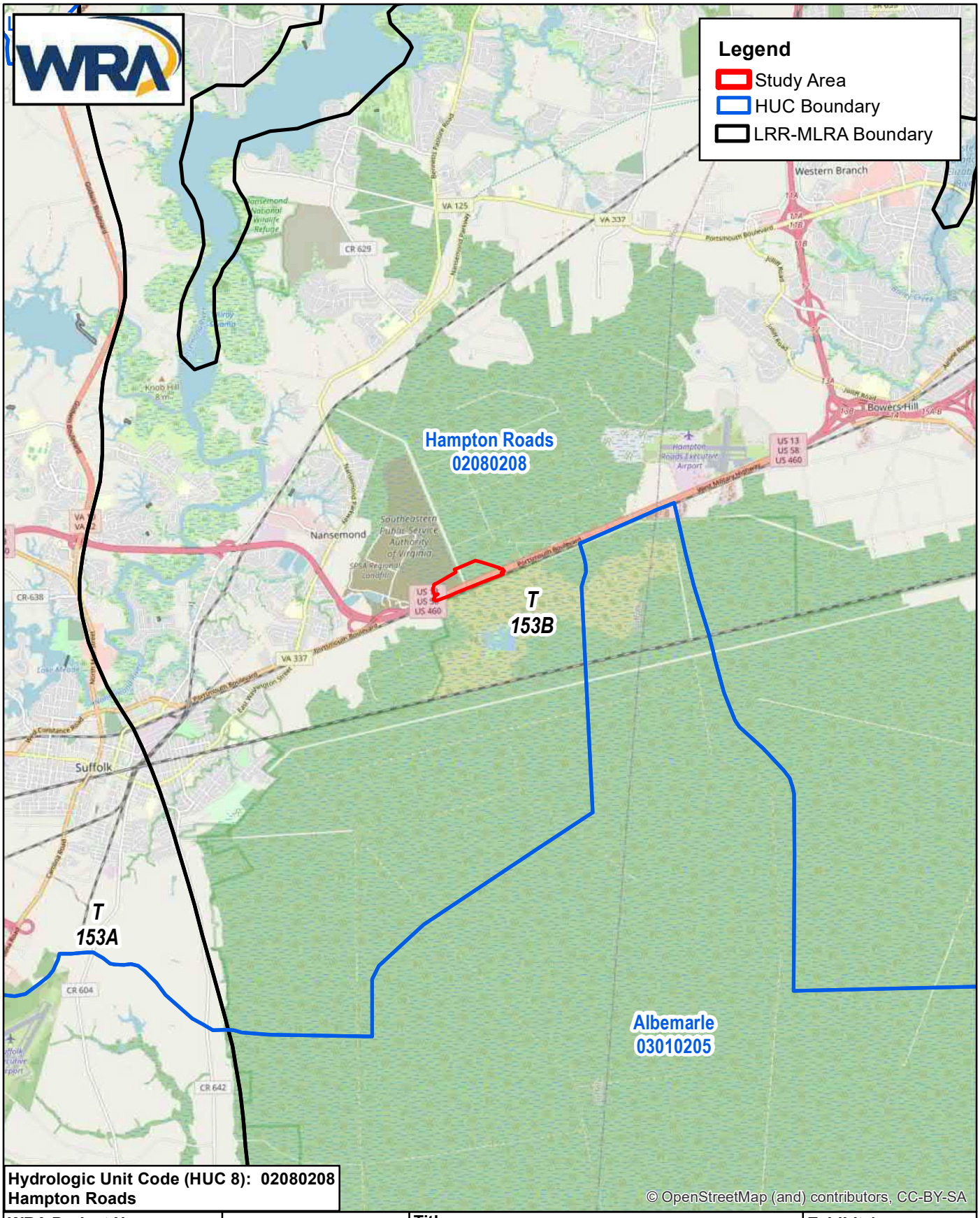
X-Rite. 2009. Munsell® soil color charts: Revised edition. X-Rite. Grand Rapids, MI.

EXHIBITS

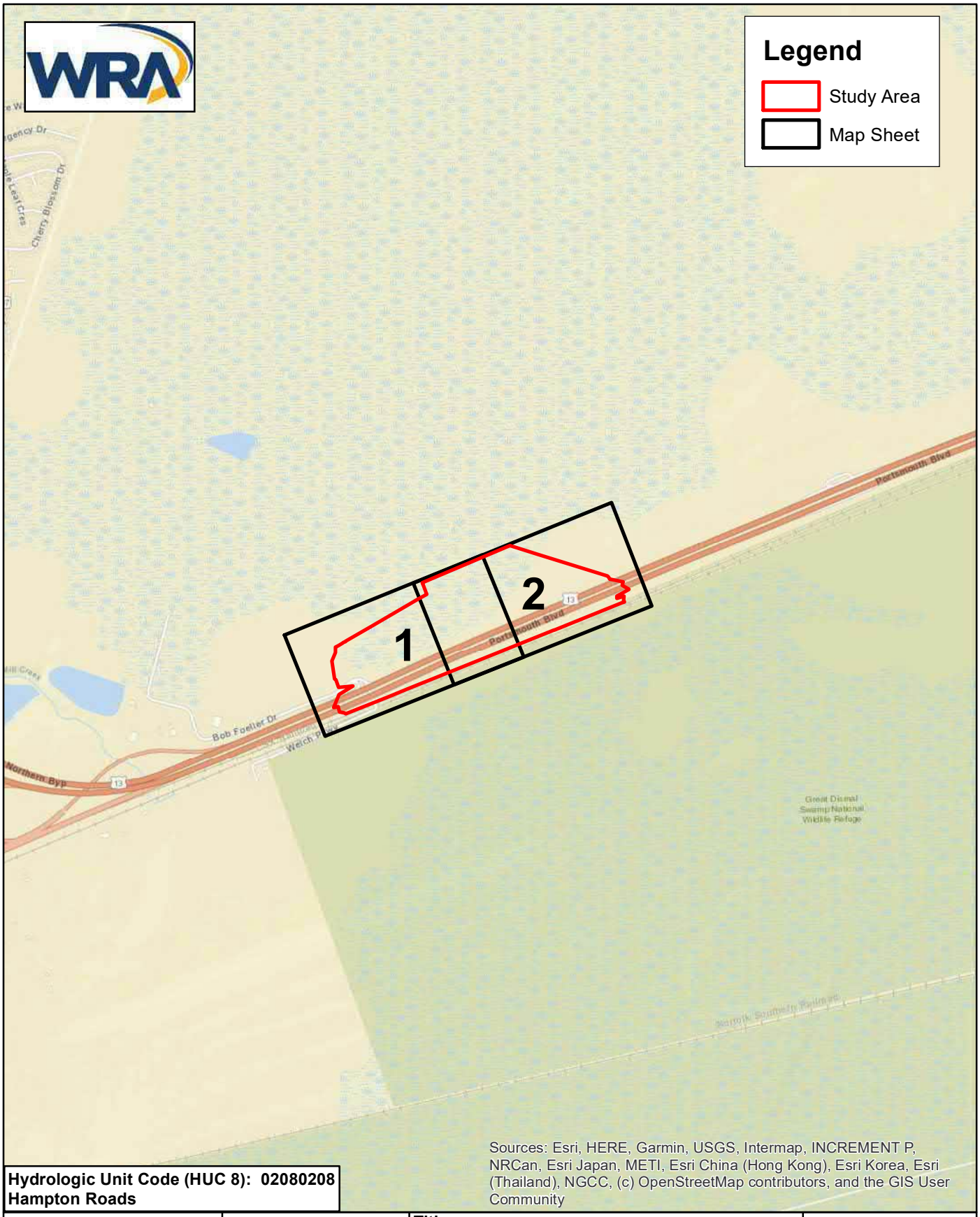
EXHIBIT 1 PROJECT LOCATION MAP



Hydrologic Unit Code (HUC 8): 02080208
Hampton Roads

WRA Project No.: 45618-009	N, W, E, S	**Title:** **Route 58 SPSA Flyover** City of Suffolk, Virginia	**Exhibit 1:** Project Location Map
Client: VDOT	0 1 2 Miles		
Date: 10/13/2021		**Source:** Open Street Map, USGS, USACE	

EXHIBIT 2 PROJECT INDEX MAP



Hydrologic Unit Code (HUC 8): 02080208
Hampton Roads

WRA Project No.: 45618-009	N W E S	**Title:** **Route 58 SPSA Flyover** City of Suffolk, Virginia	**Exhibit 2:** Project Index Map
Client: VDOT	0 1,000 2,000 Feet		
Date: 10/13/2021	1 inch = 2000 feet	**Source:** ESRI	

EXHIBIT 3 USGS AND FEMA MAP

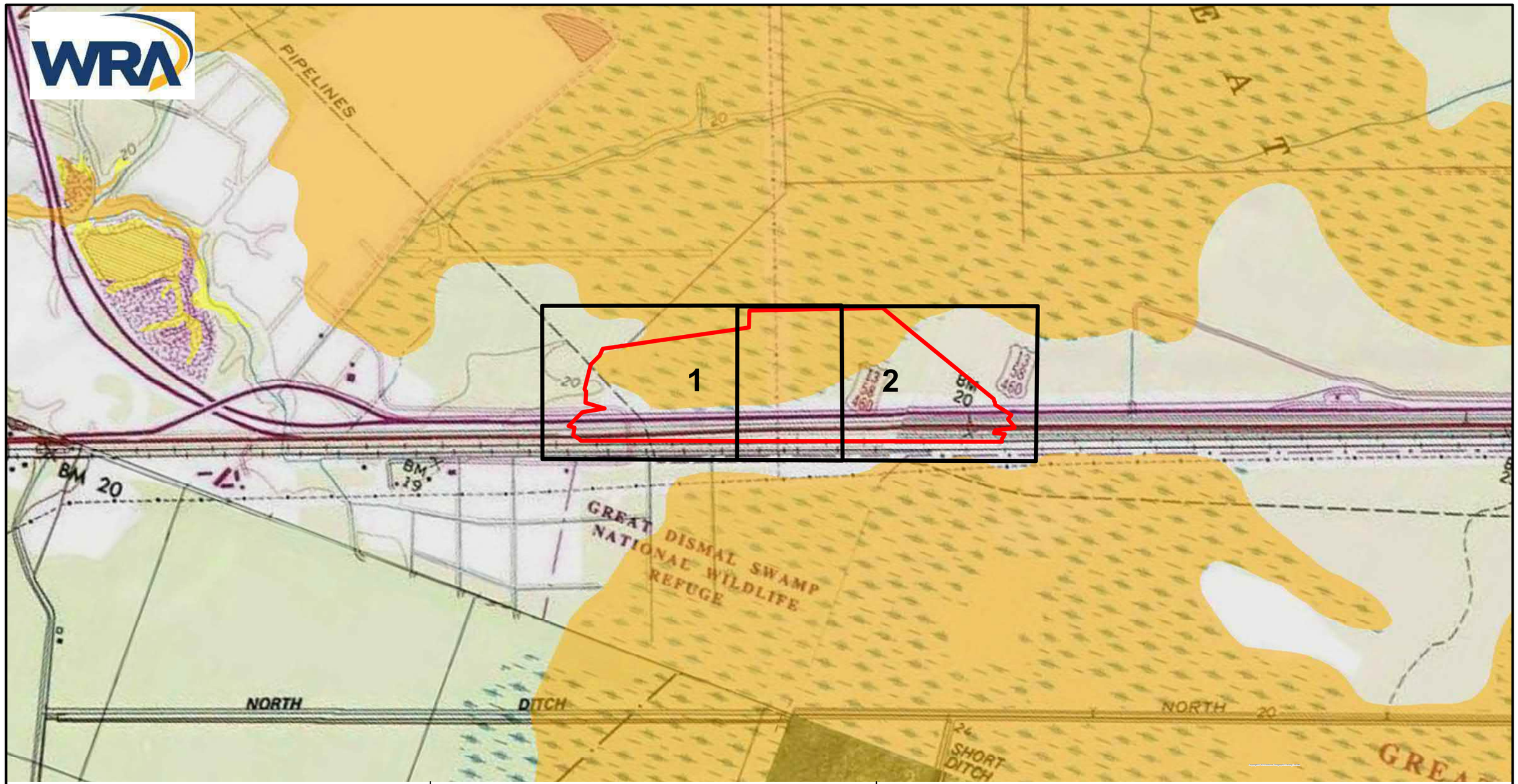


Exhibit 3
USGS & FEMA Map

10/13/2021

Route 58 SPSA Flyover

City of Suffolk, VA

0 1,000 2,000 4,000 Feet

1 inch = 1,000 feet

Source: ESRI, USGS, FEMA

Legend

- Study Area
- Map Sheet
- 100-Year Floodplain
- 500-Year Floodplain

EXHIBIT 4 NATURAL RESOURCES INVENTORY MAP

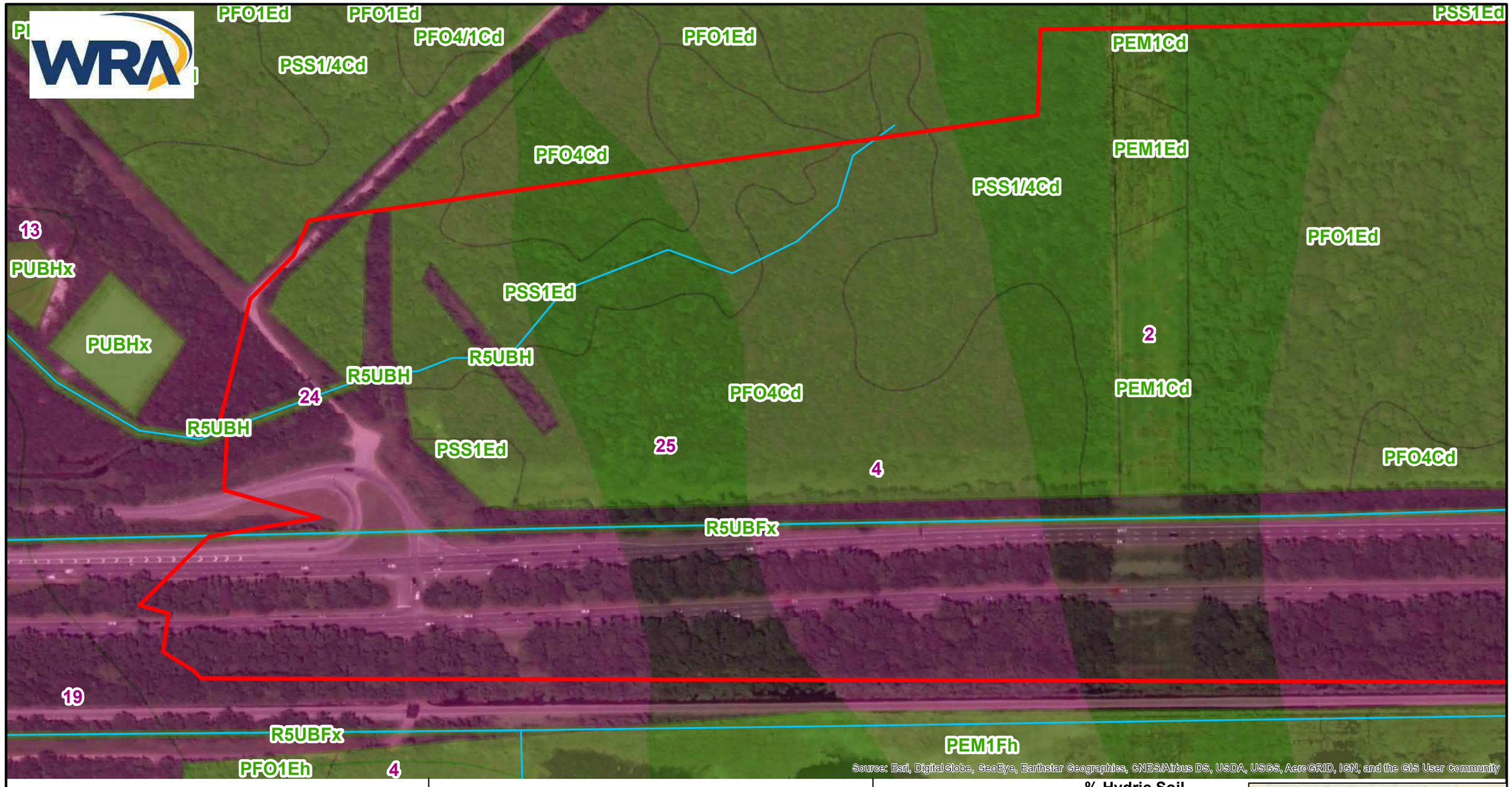


Exhibit 4
Natural Resources Inventory (NRI) Map

10/13/2021

Route 58 SPSA Flyover
City of Suffolk. VA

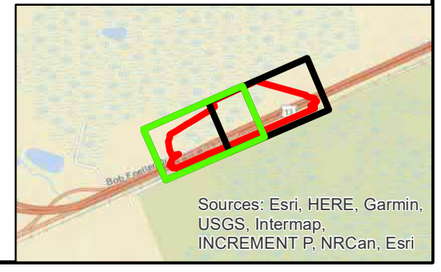
0 200 400 800 Feet

1 inch = 200 feet

Source: ESRI, NHD, NWI, Web Soil Survey

Legend
- Study Area
- NHD
- NWI Wetlands

% Hydric Soil
- 0%
- 1 - 32%
- 33 - 65%
- 66 - 99%
- 100%



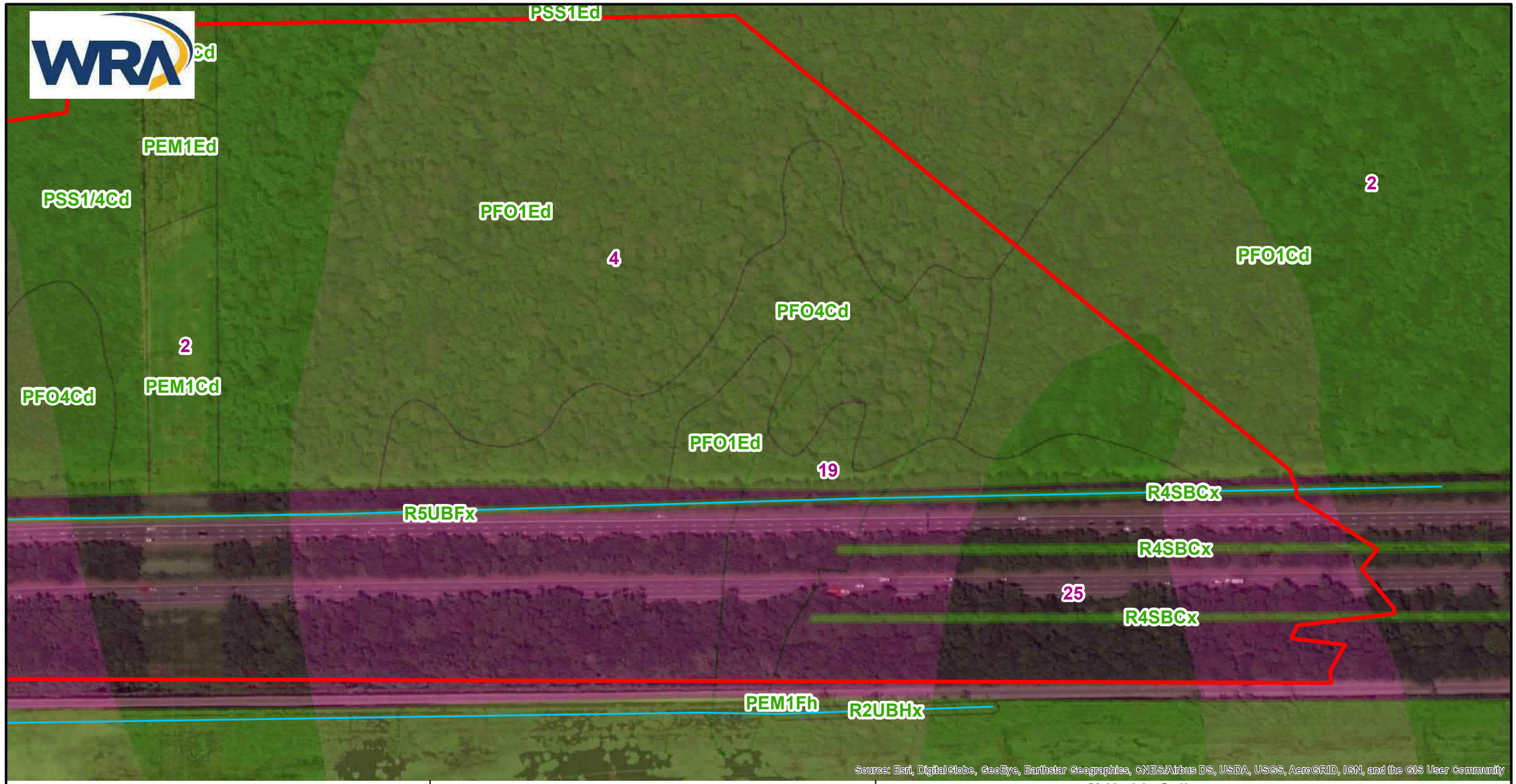


Exhibit 4
Natural Resources Inventory (NRI) Map

10/13/2021

Route 58 SPSA Flyover
City of Suffolk. VA

0 200 400 800 Feet

1 inch = 200 feet

Source: ESRI, NHD, NWI, Web Soil Survey

Legend
- Study Area
- NHD
- NWI Wetlands

% Hydric Soil
- 0%
- 1 - 32%
- 33 - 65%
- 66 - 99%
- 100%

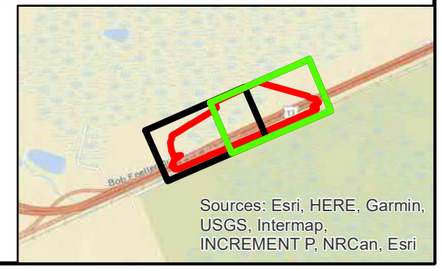
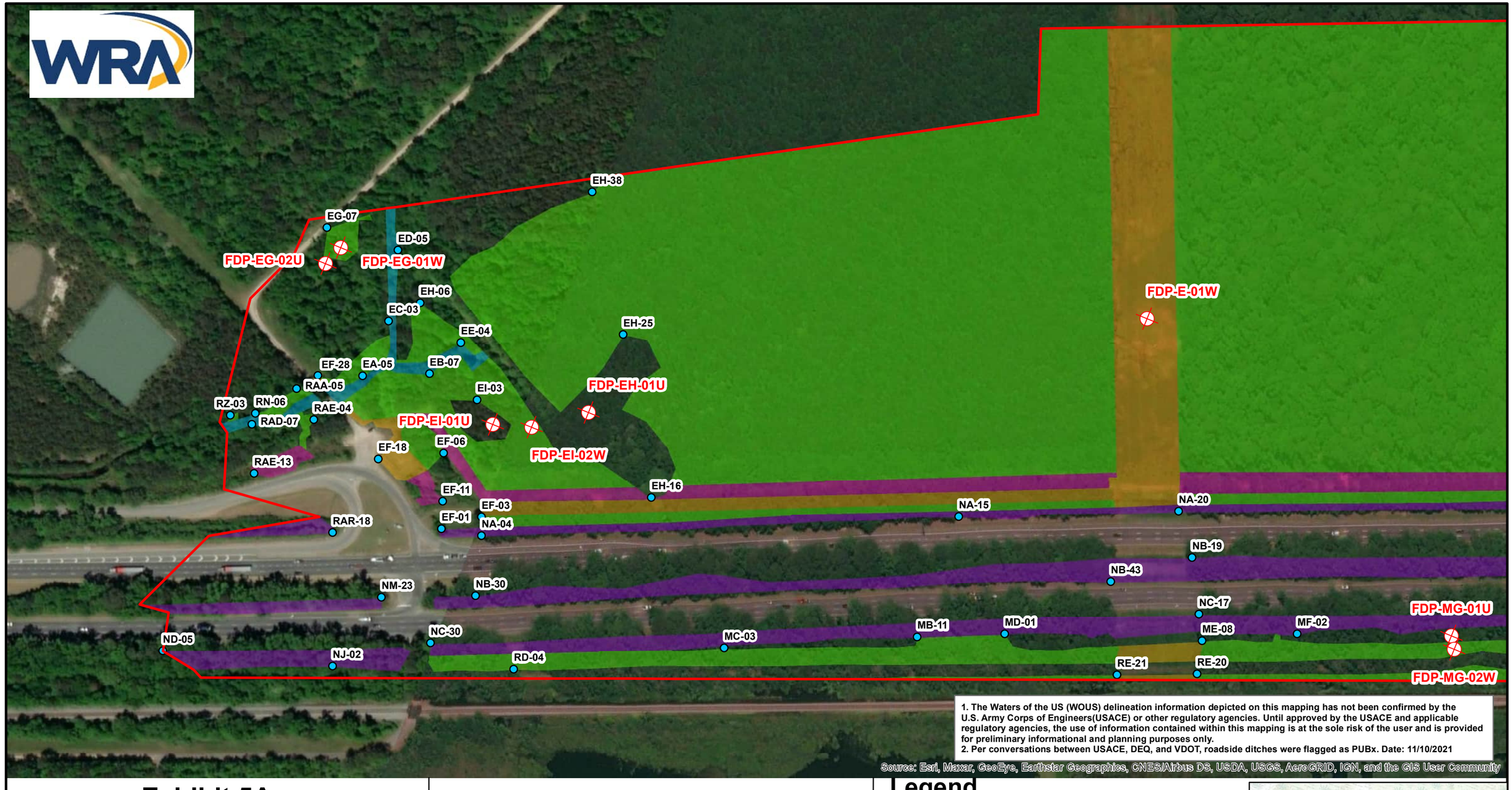


EXHIBIT 5A WETLAND DELINEATION MAP (NATURAL COLOR IMAGERY)



1. The Waters of the US (WOUS) delineation information depicted on this mapping has not been confirmed by the U.S. Army Corps of Engineers(USACE) or other regulatory agencies. Until approved by the USACE and applicable regulatory agencies, the use of information contained within this mapping is at the sole risk of the user and is provided for preliminary informational and planning purposes only.
2. Per conversations between USACE, DEQ, and VDOT, roadside ditches were flagged as PUBx. Date: 11/10/2021

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Exhibit 5A: Wetland Delineation Map (Natural Color Imagery)

Page 1 of 2
11/10/2021

Route 58 Suffolk Flyover

City of Suffolk, VA

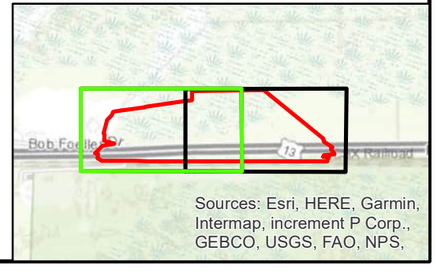
0 200 400 800 Feet

1 inch = 200 feet

Source: ESRI

Legend

- Study Area
- Data Point
- Representative Flag Location
- PUBx
- PEM
- PFO
- PSS
- R3



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS,

FDP-E-01W
MA-05
MA-09
MA-01
FDP-MA-01W
FDP-MA-02U
NA-35
NA-20
NB-19
NB-43
NB-55
NC-17
FDP-MG-01U
MD-01
ME-08
MF-02
MG-15
EJ-01
EK-02
FDP-MG-02W
RD-30
RE-21
RE-20
RE-05

1. The Waters of the US (WOUS) delineation information depicted on this mapping has not been confirmed by the U.S. Army Corps of Engineers(USACE) or other regulatory agencies. Until approved by the USACE and applicable regulatory agencies, the use of information contained within this mapping is at the sole risk of the user and is provided for preliminary informational and planning purposes only.
2. Per conversations between USACE, DEQ, and VDOT, roadside ditches were flagged as PUBx. Date: 11/10/2021

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Exhibit 5A: Wetland Delineation Map (Natural Color Imagery)

Page 2 of 2
11/10/2021

Route 58 Suffolk Flyover

City of Suffolk, VA

N W E S

0 200 400 800 Feet

1 inch = 200 feet

Source: ESRI

Legend

- Study Area
- Data Point
- Representative Flag Location
- PUBx
- PEM
- PFO
- PSS
- R3

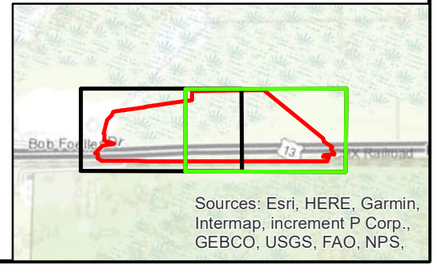
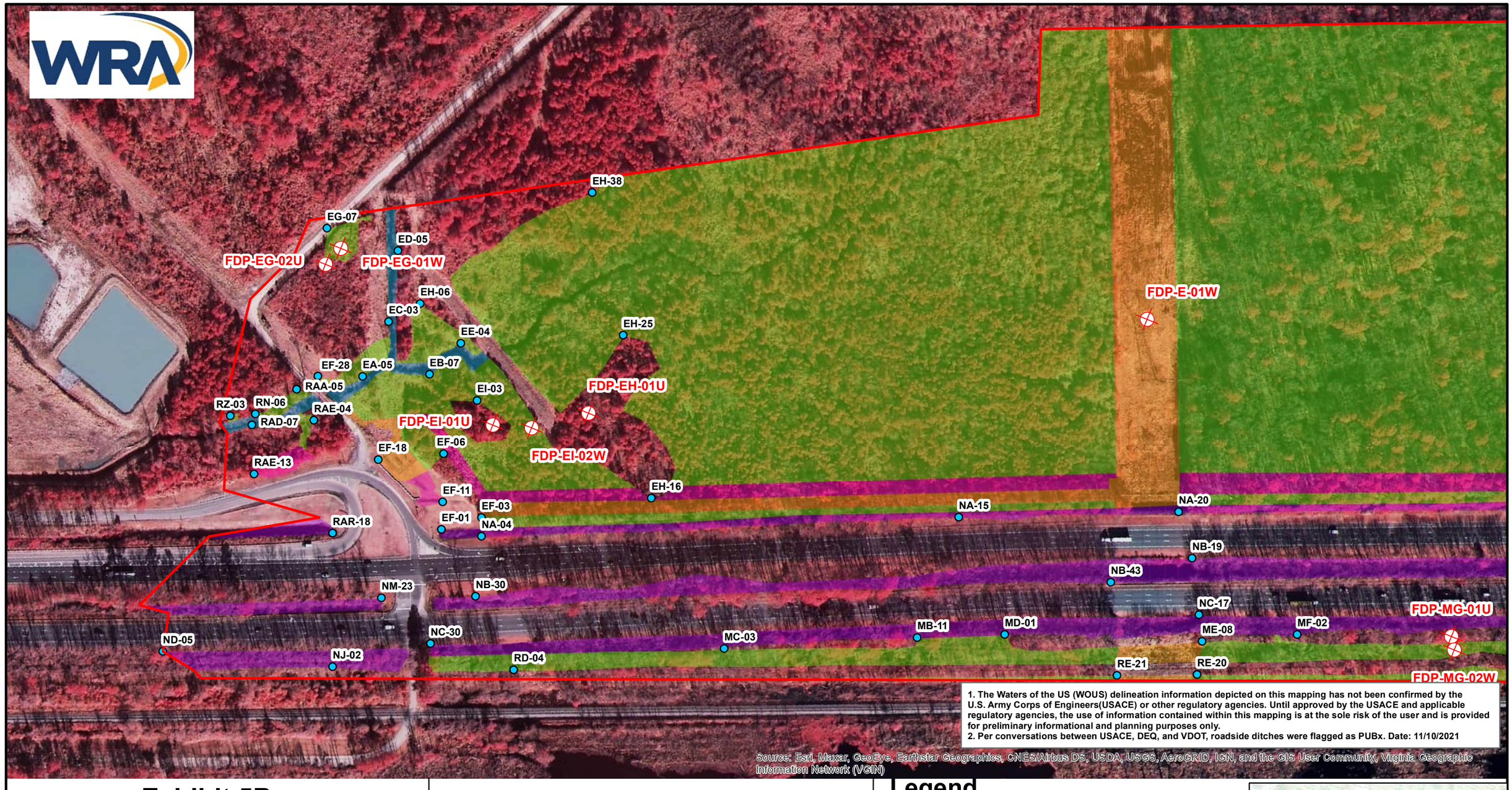


EXHIBIT 5B WETLAND DELINEATION MAP (COLOR INFRARED IMAGERY)



1. The Waters of the US (WOUS) delineation information depicted on this mapping has not been confirmed by the U.S. Army Corps of Engineers(USACE) or other regulatory agencies. Until approved by the USACE and applicable regulatory agencies, the use of information contained within this mapping is at the sole risk of the user and is provided for preliminary informational and planning purposes only.
2. Per conversations between USACE, DEQ, and VDOT, roadside ditches were flagged as PUBx. Date: 11/10/2021

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Virginia Geographic Information Network (VGIN)

Exhibit 5B: Wetland Delineation Map (Color Infrared Imagery)

11/10/2021

Route 58 SPSA Flyover

City of Suffolk, VA

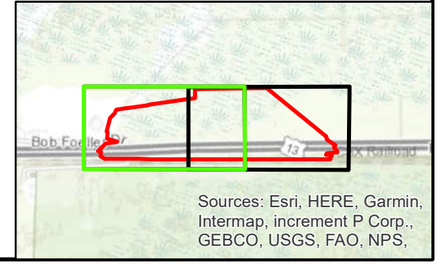
0 200 400 800 Feet

1 inch = 200 feet

Source: ESRI

Legend

- Study Area
- Data Point Representative Flag Location
- PUBx
- PEM
- PFO
- PSS
- R3



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS,

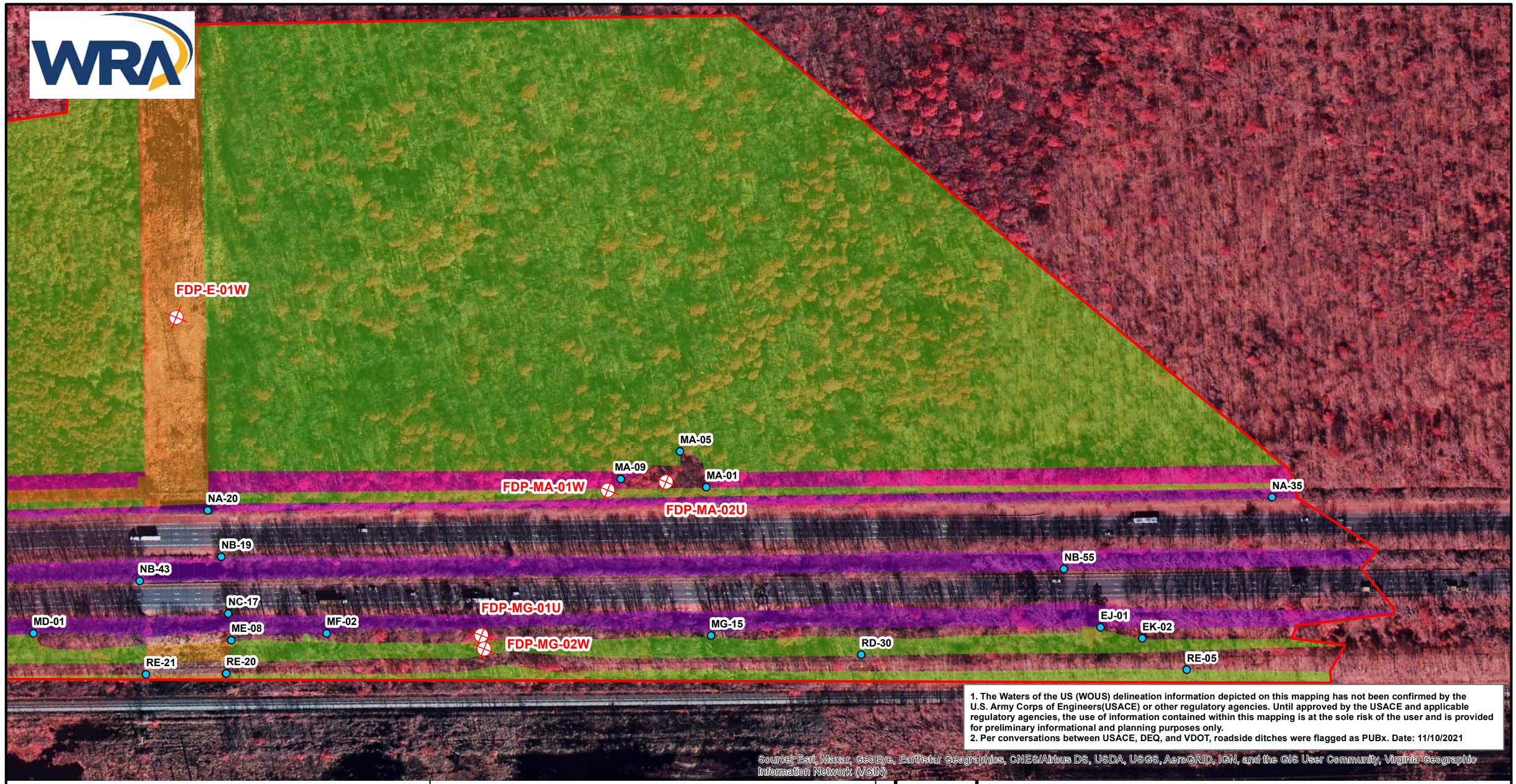


Exhibit 5B: Wetland Delineation Map (Color Infrared Imagery)

11/10/2021

Route 58 SPSA Flyover

City of Suffolk, VA

0 200 400 800 Feet

1 inch = 200 feet

Source: ESRI

Legend

- Study Area
- Data Point
- Representative Flag Location
- PUBx
- PEM
- PFO
- PSS
- R3

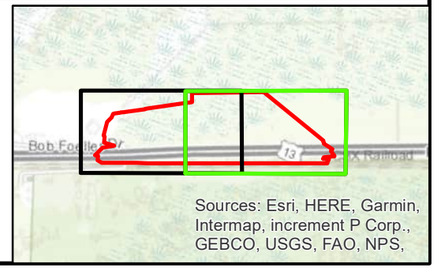


EXHIBIT 6 WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Route 58 SPSA Flyover City/County: Suffolk Sampling Date: 04/16/2021

Applicant/Owner: Virginia Department of Transportation State: VA Sampling Point: FDP-E-01W

Investigator(s): Emily Drahos, Ralph Tuck Section, Township, Range:

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

Subregion (LRR or MLRA): LRR T, MLRA 153B Lat: 36.759291 Long: -76.504782 Datum: NAD83

Soil Map Unit Name: Belhaven muck (2) 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:

Data point is located within a utility easement. Vegetation is maintained and soil is compacted.

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): 3.5"
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 7"

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: FDP-E-01W

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Sapling/Shrub Stratum (Plot size: 30 feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Herb Stratum (Plot size: 30 feet)			
1. *Arundinaria tecta*	65	Yes	FACW
2. *Rubus argutus*	15	No	FAC
3. *Eupatorium capillifolium*	15	No	FACU
4. *Lonicera japonica*	5	No	FACU
5. *Solidago canadensis*	8	No	FACU
6. *Potentilla simplex*	5	No	FACU
7. *Microstegium vimineum*	30	No	FAC
8. *Liquidambar styraciflua*	5	No	FAC
9. *Acer rubrum*	2	No	FAC
10. *Juncus effusus*	5	No	OBL
11. *Scirpus cyperinus*	5	No	OBL
12. *Schedonorus pratensis*	15	No	FACU
	175 = Total Cover		
50% of total cover: 87.5	20% of total cover: 35		

Woody Vine Stratum (Plot size: 30 feet)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (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: FDP-E-01W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1"	10YR 3/1	100					FSL	
1-7"	10YR 4/1	60	7.5YR 4/6	10	C	M, PL	SCL	Mixed matrix. Compacted
	10YR 3/1	30						
7-12"	10YR 3/1	100					SL	
12-16"	10YR 4/1	95	10YR 4/6	5	C	M	SCL	
16-18"	2.5Y 4/1	85	7.5YR 4/6	15	C	M	SCL	Compacted

[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: Route 58 SPSA Flyover City/County: Suffolk Sampling Date: 04/15/2021

Applicant/Owner: Virginia Department of Transportation State: VA Sampling Point: FDP-EG-01W

Investigator(s): Emily Drahos, Ralph Tuck Section, Township, Range:

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

Subregion (LRR or MLRA): LRR T, MLRA 153B Lat: 36.758004 Long: -76.510444 Datum: NAD83

Soil Map Unit Name: Tomotley loam (24) NWI classification: PFO

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:

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): 1"

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

Buttressing

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

Sampling Point: FDP-EG-01W

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus michauxii*	25	Yes	FACW
2. *Acer rubrum*	45	Yes	FAC
3. *Liquidambar styraciflua*	30	Yes	FAC
4.			
5.			
6.			
7.			
8.			
	100	= Total Cover	
50% of total cover: 50	20% of total cover: 20		

Sapling/Shrub Stratum (Plot size: 30 feet)			
1. *Acer rubrum*	20	Yes	FAC
2. *Ligustrum sinense*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	30	= Total Cover	
50% of total cover: 15	20% of total cover: 6		

Herb Stratum (Plot size: 30 feet)			
1. *Microstegium vimineum*	30	Yes	FAC
2. *Arundinaria tecta*	20	Yes	FACW
3. *Parthenocissus quinquefolia*	5	No	FACU
4. *Lonicera japonica*	5	No	FACU
5. *Quercus pagoda*	2	No	FACW
6. *Smilax walteri*	10	No	OBL
7. *Ligustrum sinense*	3	No	FAC
8.			
9.			
10.			
11.			
12.			
	75	= Total Cover	
50% of total cover: 37.5	20% of total cover: 15		

Woody Vine Stratum (Plot size: 30 feet)			
1. *Smilax walteri*	15	Yes	OBL
2. *Vitis rotundifolia*	8	Yes	FAC
3. *Lonicera japonica*	5	No	FAC
4.			
5.			
	28	= Total Cover	
50% of total cover: 14	20% of total cover: 5.6		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 9 (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 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (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: FDP-EG-01W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 2/1	100					SIL	
12-15"	10YR 3/1	100					SICL	
15-23"	10YR 4/1	38	10YR 4/6	2	C	M	SCL	Mixed matrix with redox
	10YR 5/1	60						

[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: Route 58 SPSA Flyover City/County: Suffolk Sampling Date: 04/15/2021

Applicant/Owner: Virginia Department of Transportation State: VA Sampling Point: FDP-EG-02U

Investigator(s): Emily Drahos, Ralph Tuck Section, Township, Range: _____

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

Subregion (LRR or MLRA): LRR T, MLRA 153B Lat: 36.757883 Long: -76.510509 Datum: NAD83

Soil Map Unit Name: Tomotley loam (24) NWI classification: UPL

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:

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: FDP-EG-02U

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	60	Yes	FAC
2. *Liriodendron tulipifera*	20	Yes	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
	90	= Total Cover	

50% of total cover: 45 20% of total cover: 18

Sapling/Shrub Stratum (Plot size: 30 feet)			
1. *Aralia spinosa*	5	Yes	FAC
2. *Nyssa sylvatica*	3	Yes	FAC
3. *Asimina triloba*	2	No	FAC
4. *Rubus argutus*	3	Yes	FAC
5.			
6.			
7.			
8.			
	13	= Total Cover	

50% of total cover: 6.5 20% of total cover: 2.6

Herb Stratum (Plot size: 30 feet)			
1. *Lonicera japonica*	5	No	FACU
2. *Microstegium vimineum*	30	Yes	FAC
3. *Arundinaria tecta*	8	No	FACW
4. *Parthenocissus quinquefolia*	8	No	FACU
5. *Ilex opaca*	2	No	FAC
6. *Smilax walteri*	10	Yes	OBL
7. *Vitis rotundifolia*	2	No	FAC
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	

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

Woody Vine Stratum (Plot size: 30 feet)			
1. *Vitis rotundifolia*	20	Yes	FAC
2. *Lonicera japonica*	8	No	FAC
3. *Smilax walteri*	40	Yes	OBL
4.			
5.			
	68	= Total Cover	

50% of total cover: 34 20% of total cover: 13.6

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 89% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (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: FDP-EG-02U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8"	10YR 2/1	100					SIL	
8-15"	10YR 4/2	70					SICL	Mixed matrix
	10YR 2/1	30						
15-18"	10YR 4/2	90	10YR 4/6	10	C	M	SICL	

[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: Route 58 SPSA Flyover City/County: Suffolk Sampling Date: 04/16/2021

Applicant/Owner: Virginia Department of Transportation State: VA Sampling Point: FDP-EH-01U

Investigator(s): Emily Drahos, Ralph Tuck Section, Township, Range: _____

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

Subregion (LRR or MLRA): LRR T, MLRA 153B Lat: 36.757615 Long: -76.508334 Datum: NAD83

Soil Map Unit Name: Tomotley loam (24) NWI classification: UPL

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:

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: FDP-EH-01U

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liriodendron tulipifera*	60	Yes	FACU
2. *Pinus taeda*	30	Yes	FAC
3. *Prunus serotina*	15	No	FACU
4. *Acer rubrum*	10	No	FAC
5. *Liquidambar styraciflua*	5	No	FAC
6.			
7.			
8.			
	120	= Total Cover	
50% of total cover: 60	20% of total cover: 24		

Sapling/Shrub Stratum (Plot size: 30 feet)			
1. *Liquidambar styraciflua*	20	Yes	FAC
2. *Vaccinium fuscatum*	20	Yes	FACW
3. *Prunus serotina*	15	Yes	FACU
4. *Ilex opaca*	5	No	FAC
5. *Aralia spinosa*	3	No	FAC
6.			
7.			
8.			
	63	= Total Cover	
50% of total cover: 31.5	20% of total cover: 12.6		

Herb Stratum (Plot size: 30 feet)			
1. *Podophyllum peltatum*	20	Yes	FACU
2. *Microstegium vimineum*	60	Yes	FAC
3. *Parthenocissus quinquefolia*	5	No	FACU
4. *Vaccinium fuscatum*	5	No	FACW
5. *Rubus argutus*	2	No	FAC
6. *Lonicera japonica*	2	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	94	= Total Cover	
50% of total cover: 47	20% of total cover: 18.8		

Woody Vine Stratum (Plot size: 30 feet)			
1. *Smilax rotundifolia*	5	Yes	FAC
2. *Parthenocissus quinquefolia*	5	Yes	FACU
3. *Vitis rotundifolia*	3	Yes	FAC
4.			
5.			
	13	= Total Cover	
50% of total cover: 6.5	20% of total cover: 2.6		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (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: FDP-EH-01U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 2/1	100					FSL	
8-14"	2.5Y 5/2	70	7.5YR 4/6	5	C	M	SL	Mixed matrix with redox
	10YR 3/2	25						
14-16"	2.5Y 5/2	60					FSL	Mixed matrix
	10YR 2/1	40						
16-18"	2.5Y 5/2	85	7.5YR 4/6	15	C	M	FSL	

[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: Route 58 SPSA Flyover City/County: Suffolk Sampling Date: 04/16/2021

Applicant/Owner: Virginia Department of Transportation State: VA Sampling Point: FDP-EI-01U

Investigator(s): Emily Drahos, Ralph Tuck Section, Township, Range:

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

Subregion (LRR or MLRA): LRR T, MLRA 153B Lat: 36.757353 Long: -76.508953 Datum: NAD83

Soil Map Unit Name: Tomotley loam (24) NWI classification: UPL

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:

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): 17"
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 16"

Wetland Hydrology Present? Yes ____ No ✔

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

Remarks:

Saturation and the water table were observed below 12 inches, and therefore do not meet indicators A2 and A3.

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

Sampling Point: FDP-EI-01U

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus taeda*	80	Yes	FAC
2. *Liquidambar styraciflua*	10	No	FAC
3. *Ilex opaca*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
	100	= Total Cover	

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

Sapling/Shrub Stratum (Plot size: 30 feet)			
1. *Ilex opaca*	15	Yes	FAC
2. *Liquidambar styraciflua*	10	No	FAC
3. *Symplocos tinctoria*	5	No	FAC
4. *Vaccinium fuscatum*	15	Yes	FACW
5. *Asimina triloba*	3	No	FAC
6. *Acer rubrum*	5	No	FAC
7.			
8.			
	53	= Total Cover	

50% of total cover: 26.5 20% of total cover: 10.6

Herb Stratum (Plot size: 30 feet)			
1. *Podophyllum peltatum*	8	No	FACU
2. *Microstegium vimineum*	40	Yes	FAC
3. *Smilax walteri*	5	No	OBL
4. *Parthenocissus quinquefolia*	5	No	FACU
5. *Liquidambar styraciflua*	2	No	FAC
6. *Lonicera japonica*	2	No	FACU
7. *Toxicodendron radicans*	5	No	FAC
8. *Quercus nigra*	1	No	FAC
9.			
10.			
11.			
12.			
	68	= Total Cover	

50% of total cover: 34 20% of total cover: 13.6

Woody Vine Stratum (Plot size: 30 feet)			
1. *Smilax walteri*	7	Yes	OBL
2. *Vitis rotundifolia*	3	Yes	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: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (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: FDP-EI-01U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5"	10YR 2/1	100					SIL	
5-15"	10YR 3/2	80					SIL	Mixed matrix
	10YR 2/1	20						
15-18"	10YR 3/2	100					SICL	

[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: Route 58 SPSA Flyover City/County: Suffolk Sampling Date: 04/16/2021

Applicant/Owner: Virginia Department of Transportation State: VA Sampling Point: FDP-EI-02W

Investigator(s): Emily Drahos, Ralph Tuck Section, Township, Range:

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

Subregion (LRR or MLRA): LRR T, MLRA 153B Lat: 36.757421 Long: -76.508693 Datum: NAD83

Soil Map Unit Name: Tomotley loam (24) NWI classification: PFO

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:

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): 0.5"
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:

Buttressing

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

Sampling Point: FDP-EI-02W

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus taeda*	50	Yes	FAC
2. *Acer rubrum*	50	Yes	FAC
3. *Liquidambar styraciflua*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
	105	= Total Cover	
50% of total cover: 52.5		20% of total cover: 21	

Sapling/Shrub Stratum (Plot size: 30 feet)			
1. *Ilex opaca*	5	No	FAC
2. *Liquidambar styraciflua*	20	Yes	FAC
3. *Acer rubrum*	10	Yes	FAC
4. *Vaccinium fuscatum*	5	No	FACW
5. *Magnolia virginiana*	2	No	FACW
6.			
7.			
8.			
	42	= Total Cover	
50% of total cover: 21		20% of total cover: 8.4	

Herb Stratum (Plot size: 30 feet)			
1. *Quercus pagoda*	2	No	FACW
2. *Parthenocissus quinquefolia*	2	No	FACU
3. *Acer rubrum*	2	No	FAC
4. *Arundinaria tecta*	5	Yes	FACW
5. *Smilax walteri*	5	Yes	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	16	= Total Cover	
50% of total cover: 8		20% of total cover: 3.2	

Woody Vine Stratum (Plot size: 30 feet)			
1. *Gelsemium sempervirens*	2	Yes	FAC
2. *Lonicera japonica*	5	Yes	FACU
3. *Smilax walteri*	2	Yes	OBL
4.			
5.			
	9	= Total Cover	
50% of total cover: 4.5		20% of total cover: 1.8	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 89% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (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: FDP-EI-02W

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"	10YR 2/1						FSL	
8-15"	10YR 2/1						SCL	
15-18"	10YR 3/1						SCL	
18-24"	10YR 4/1	60					CL	Mixed matrix
	10YR 3/1	38	10YR 4/4	2	C	M		

[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: Route 58 SPSA Flyover City/County: Suffolk Sampling Date: 04/09/2021

Applicant/Owner: Virginia Department of Transportation State: VA Sampling Point: FDP-MA-01W

Investigator(s): Emily Drahos, Mike McQuade Section, Township, Range:

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

Subregion (LRR or MLRA): LRR T, MLRA 153B Lat: 36.759266 Long: -76.501417 Datum: NAD83

Soil Map Unit Name: Deloss mucky loam (4) NWI classification: PFO

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:

Data point is located within a utility easement. Vegetation is maintained and soils are compacted.

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: FDP-MA-01W

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus taeda*	40	Yes	FAC
2. *Liquidambar styraciflua*	5	No	FAC
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
	50	= Total Cover	

50% of total cover: 25 20% of total cover: 10

Sapling/Shrub Stratum (Plot size: 30 feet)			
1. *Liquidambar styraciflua*	60	Yes	FAC
2. *Pinus taeda*	5	No	FAC
3. *Morella cerifera*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
	70	= Total Cover	

50% of total cover: 35 20% of total cover: 14

Herb Stratum (Plot size: 30 feet)			
1. *Lonicera japonica*	5	No	FACU
2. *Cirsium arvense*	3	No	FACU
3. *Juncus effusus*	3	No	OBL
4. *Panicum virgatum*	25	Yes	FAC
5. *Microstegium vimineum*	30	Yes	FAC
6. *Eupatorium capillifolium*	15	No	FACU
7. *Hibiscus moscheutos*	10	No	OBL
8. *Rubus argutus*	3	No	FAC
9. *Liquidambar styraciflua*	20	Yes	FAC
10.			
11.			
12.			
	114	= Total Cover	

50% of total cover: 57 20% of total cover: 22.8

Woody Vine Stratum (Plot size: 30 feet)			
1. *Toxicodendron radicans*	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	

50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (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: FDP-MA-01W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4"	2.5Y 3/2	100	5YR 4/6	10	C	PL	LC	Oxidized rhizospheres
4-10"	2.5Y 2.5/1	85					LC	Mixed matrix
	2.5Y 5/3	15					LC	Fill
10-16"	2.5Y 3/1	100					SIL	

[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: Route 58 SPSA Flyover City/County: Suffolk Sampling Date: 04/09/2021

Applicant/Owner: Virginia Department of Transportation State: VA Sampling Point: FDP-MA-02U

Investigator(s): Emily Drahos, Mike McQuade Section, Township, Range:

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

Subregion (LRR or MLRA): LRR T, MLRA 153B Lat: 36.759409 Long: -76.50103 Datum: NAD83

Soil Map Unit Name: Deloss mucky loam (4) NWI classification: UPL

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:

Data point is located within a utility easement. Vegetation is maintained and soils are compacted.

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: FDP-MA-02U

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus taeda*	40	Yes	FAC
2. *Acer rubrum*	15	Yes	FAC
3. *Platanus occidentalis*	10	No	FACW
4.			
5.			
6.			
7.			
8.			
	65	= Total Cover	
50% of total cover: 32.5		20% of total cover: 13	

Sapling/Shrub Stratum (Plot size: 30 feet)			
1. *Liquidambar styraciflua*	30	Yes	FAC
2. *Symplocos tinctoria*	5	No	FAC
3. *Rubus argutus*	40	Yes	FAC
4. *Platanus occidentalis*	5	No	FACW
5. *Rhus copallinum*	5	No	UPL
6.			
7.			
8.			
	85	= Total Cover	
50% of total cover: 42.5		20% of total cover: 17	

Herb Stratum (Plot size: 30 feet)			
1. *Rubus argutus*	5	No	FAC
2. *Liquidambar styraciflua*	20	Yes	FAC
3. *Schedonorus pratensis*	30	Yes	FACU
4. *Hibiscus moscheutos*	5	No	OBL
5. *Arundinaria tecta*	5	No	FACW
6. *Eupatorium capillifolium*	8	No	FACU
7. *Lonicera japonica*	3	No	FACU
8. *Lespedeza cuneata*	5	No	FACU
9. *Juncus effusus*	5	No	OBL
10. *Securigera varia*	5	No	NI
11.			
12.			
	91	= Total Cover	
50% of total cover: 45.5		20% of total cover: 18.2	

Woody Vine Stratum (Plot size: 30 feet)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0		20% of total cover: 0	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (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: FDP-MA-02U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8"	2.5Y 4/1	85	10YR 4/6	15	C	M	FSL	
8-16"	2.5Y 3/1	100					FSL	

[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:

No moisture

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Route 58 SPSA Flyover City/County: Suffolk Sampling Date: 04/16/2021

Applicant/Owner: Virginia Department of Transportation State: VA Sampling Point: FDP-MG-01U

Investigator(s): Emily Drahos, Ralph Tuck Section, Township, Range:

Landform (hillslope, terrace, etc.): Upland berm Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): LRR T, MLRA 153B Lat: 36.758191 Long: -76.501886 Datum: NAD83

Soil Map Unit Name: Deloss mucky loam (4) NWI classification: UPL

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:

Berm is approximately 5' in elevation above wetland

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: FDP-MG-01U

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus taeda*	15	Yes	FAC
2. *Prunus serotina*	20	Yes	FACU
3. *Quercus pagoda*	15	Yes	FACW
4. *Quercus phellos*	15	Yes	FACW
5. *Liquidambar styraciflua*	5	No	FAC
6. *Acer rubrum*	5	No	FAC
7.			
8.			
	75	= Total Cover	
50% of total cover: 37.5		20% of total cover: 15	

Sapling/Shrub Stratum (Plot size: 30 feet)			
1. *Quercus pagoda*	3	No	FACW
2. *Clethra alnifolia*	30	Yes	FACW
3. *Aralia spinosa*	8	No	FAC
4. *Morella cerifera*	10	No	FAC
5. *Liquidambar styraciflua*	3	No	FAC
6.			
7.			
8.			
	54	= Total Cover	
50% of total cover: 27		20% of total cover: 10.8	

Herb Stratum (Plot size: 30 feet)			
1. *Lonicera japonica*	3	No	FACU
2. *Aralia spinosa*	8	Yes	FAC
3. *Clethra alnifolia*	2	No	FACW
4. *Vitis rotundifolia*	5	Yes	FAC
5. *Quercus pagoda*	2	No	FACW
6. *Acer rubrum*	2	No	FAC
7. *Parthenocissus quinquefolia*	5	Yes	FACU
8.			
9.			
10.			
11.			
12.			
	27	= Total Cover	
50% of total cover: 13.5		20% of total cover: 5.4	

Woody Vine Stratum (Plot size: 30 feet)			
1. *Vitis rotundifolia*	8	Yes	FAC
2. *Lonicera japonica*	5	Yes	FACU
3.			
4.			
5.			
	13	= Total Cover	
50% of total cover: 6.5		20% of total cover: 2.6	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 70% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (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: FDP-MG-01U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 2/1	100					FSL	
6-16"	10YR 5/2	60					SCL	Mixed matrix; compacted
	10YR 2/1	30	7.5YR 4/6	10	C	M		
16-18"	10YR 5/1	85	7.5YR 4/6	15	C	M	SCL	Compacted

[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: Route 58 SPSA Flyover City/County: Suffolk Sampling Date: 04/16/2021

Applicant/Owner: Virginia Department of Transportation State: VA Sampling Point: FDP-MG-02W

Investigator(s): Emily Drahos, Ralph Tuck Section, Township, Range:

Landform (hillslope, terrace, etc.): Between UPL berm and gravel road Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR T, MLRA 153B Lat: 36.758122 Long: -76.501837 Datum: NAD83

Soil Map Unit Name: Deloss mucky loam (4) NWI classification: PFO

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:

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): 4"
Water Table Present?	Yes ✔	No ____	Depth (inches): 1"
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:

Buttressing

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

Sampling Point: FDP-MG-02W

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	60	Yes	FAC
2. *Acer rubrum*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	90	= Total Cover	

50% of total cover: 45 20% of total cover: 18

Sapling/Shrub Stratum (Plot size: 30 feet)			
1. *Acer rubrum*	60	Yes	FAC
2. *Morella cerifera*	30	Yes	FAC
3. *Asimina triloba*	15	No	FAC
4. *Ulmus americana*	5	No	FAC
5.			
6.			
7.			
8.			
	110	= Total Cover	

50% of total cover: 55 20% of total cover: 22

Herb Stratum (Plot size: 30 feet)			
1. *Asimina triloba*	10	Yes	FAC
2. *Acer rubrum*	2	No	FAC
3. *Ulmus americana*	2	No	FAC
4. *Pteridium aquilinum*	5	No	FACU
5. *Lonicera japonica*	15	Yes	FACU
6. *Smilax walteri*	2	No	OBL
7. *Quercus pagoda*	2	No	FACW
8. *Rubus argutus*	3	No	FAC
9. *Ilex opaca*	2	No	FAC
10.			
11.			
12.			
	43	= Total Cover	

50% of total cover: 21.5 20% of total cover: 8.6

Woody Vine Stratum (Plot size: 30 feet)			
1. *Lonicera japonica*	8	Yes	FACU
2.			
3.			
4.			
5.			
	8	= Total Cover	

50% of total cover: 4 20% of total cover: 1.6

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (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: FDP-MG-02W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8"	10YR 2/1	100					LS	
8-17"	10YR 2/1	100					SL	
17-24"	10YR 3/1	100					FSC	

[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:

EXHIBIT 7 REPRESENTATIVE SITE PHOTOGRAPHS

Exhibit 7: Representative Site Photographs

FDP-E-01W (PEM). Powerline easement.

FDP-E-01W (PEM) soils

FDP-EG-01W (PFO)

FDP-EG-01W (PFO) soils

Exhibit 7: Representative Site Photographs

FDP-EG-02U (UPL)

FDP-EG-02U (UPL) soils

FDP-EH-01U (UPL)

FDP-EH-01U (UPL) soils

Exhibit 7: Representative Site Photographs

FDP-EI-01U (UPL)

FDP-EI-01U (UPL) soils

FDP-EI-02W (PFO)

FDP-EI-02W (PFO) soils

Exhibit 7: Representative Site Photographs

FDP-MA-01W (PFO). Utility easement.

FDP-MA-01 (PFO) soils

FDP-MA-02U (UPL)

FDP-MA-02U (UPL) soils

Exhibit 7: Representative Site Photographs

FDP-MG-01U (UPL). Earthen berm.

FDP-MG-01U (UPL) soils

FDP-MG-02W (PFO)

FDP-MG-02W (PFO) soils

Exhibit 7: Representative Site Photographs

Representative tree buttressing in wetland.

Representative photo of mineral flat wetland N of US Route 13/58/460 and E of powerline.

Hydric soils and oxidized rhizospheres in utility easement soils.

Upland roadbed between RD and RE wetland lines (S of US Route 13/58/460).

Exhibit 7: Representative Site Photographs

Representative roadside ditch (PUBx) adjacent to US Route 13/58/460.

Stream EA/EB/EE

Stream EC/ED

Stream RN/RAD

EXHIBIT 8 UNIFIED STREAM METHODOLOGY (USM) FORMS

Stream Assessment Form (Form 1)

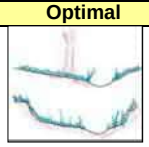
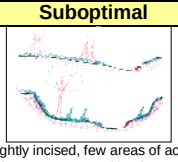
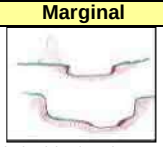
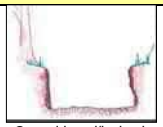
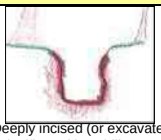
Unified Stream Methodology for use in Virginia

For use in wadeable channels classified as intermittent or perennial

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor
45618-009	Route 58 SPSA Flyover	Suffolk	R3	02080208	4/9/2021	EA/EB/EE-USM-01		

Name(s) of Evaluator(s)	Stream Name and Information
Emily Drahos	Stream EA/EB/EE; upstream extent of reach is at an upland berm and downstream extent is at a culvert.

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation)

	Conditional Category					
	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Condition	 Very little incision or active erosion; 80-100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.	 Slightly incised, few areas of active erosion or unprotected banks. Majority of banks are stable (60-80%). Vegetative protection or natural rock prominent (60-80%) AND/OR Depositional features contribute to stability. The bankfull and low flow channels are well defined. Stream likely has access to bankfull benches, or newly developed floodplains along portions of the reach. Transient sediment covers 10-40% of the stream bottom.	 Often incised, but less than Severe or Poor. Banks more stable than Severe or Poor due to lower bank slopes. Erosion may be present on 40-60% of both banks. Vegetative protection on 40-60% of banks. Streambanks may bevertical or undercut. AND/OR 40-60% of stream is covered by sediment. Sediment may be temporary/transient, contribute instability. Deposition that contribute to stability, may be forming/present. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and depositional features which contribute to stability.	 Overwidened/incised. Vertically/laterally unstable. Likely to widen further. Majority of both banks are near vertical. Erosion present on 60-80% of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability. AND/OR V-shaped channels have vegetative protection is present on > 40% of the banks and stable sediment deposition is absent.	 Deeply incised (or excavated), vertical/lateral instability. Severe incision, flow contained within the banks. Streambed below average rooting depth, majority of banks vertical/undercut. Vegetative protection present on less than 20% of banks, is not preventing erosion. Obvious bank sloughing present. Erosion/raw banks on 80-100%. AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. Multiple thread channels and/or subterranean flow.	CI
Score	3	2.4	2	1.6	1	3.0
NOTES>>	Very little incision or active erosion.					

2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)

	Conditional Category							
	Optimal	Suboptimal		Marginal		Poor		NOTES>>
Riparian Buffers	Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover and a non-maintained understory. Wetlands located within the riparian areas.	**High Suboptimal:** Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian areas with tree stratum (dbh > 3 inches) present, with > 30% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).	**High Marginal:** Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.	**Low Marginal:** Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory.	**High Poor:** Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.	**Right bank:** **1.5 = Tree stratum with non-maintained understory/wetlands** **0.85 = Non-maintained upland berm with dense herbaceous vegetation, shrubs, and less than 30% tree canopy cover** **Left Bank:** **1.5 = Tree stratum with non-maintained understory/wetlands**
		High	Low	High	Low	High	Low	
Condition Scores	1.5	1.2	1.1	0.85	0.75	0.6	0.5	

1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.
2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.
3. Enter the % Riparian Area and Score for each riparian category in the blocks below.

Ensure the sums of % Riparian Blocks equal 100

Right Bank	% Riparian Area>	90%	10%					100%	
	Score >	1.5	0.85						
									CI= (Sum % RA * Scores*0.01)/2
Left Bank	% Riparian Area>	100%						100%	Rt Bank CI > 1.44 / CI
	Score >	1.5							Lt Bank CI > 1.50 / CI 1.47

3. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embededness; shade; undercut banks; root mats; SAV; riffle poole complexes, stable features.

	Conditional Category					
	Optimal	Suboptimal	Marginal	Poor	NOTES>>	
Instream Habitat/ Available Cover	Habitat elements are typically present in greater than 50% of the reach.	Stable habitat elements are typically present in 30-50% of the reach and are adequate for maintenance of populations.	Stable habitat elements are typically present in 10-30% of the reach and are adequate for maintenance of populations.	Habitat elements listed above are lacking or are unstable. Habitat elements are typically present in less than 10% of the reach.	**Shade, debris, varied water depths**	CI
Score	1.5	1.2	0.9	0.5		1.50

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor
45618-009	VDOT	Suffolk	R3	02080208	4/9/2021	EA/EB/EE-USM-01	0	0

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

NOTES>> Minor alteration (wooden retaining wall and culverts)

	Conditional Category						
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not	Greater than 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines AND/OR 80% of banks shored with gabion, riprap, or cement.	
SCORE	1.5	1.3	1.1	0.9	0.7	0.5	1.30

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

NOTE: **The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.**

THE REACH CONDITION INDEX (RCI) >>	**1.45**
RCI= (Sum of all CI's)/5	
COMPENSATION REQUIREMENT (CR) >>	**0**
CR = RCI X LF X IF	

INSERT PHOTOS:

Upstream

Downstream

Left Bank

Right Bank

DESCRIBE PROPOSED IMPACT:

To Be Determined

Stream Assessment Form (Form 1)

Unified Stream Methodology for use in Virginia

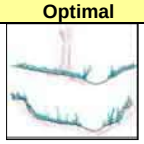
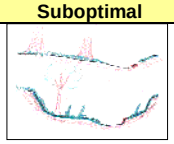
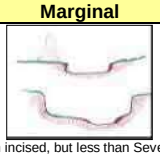
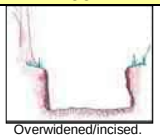
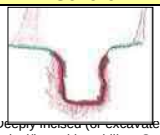
For use in wadeable channels classified as intermittent or perennial

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor
45618-009	Route 58 SPSA Flyover	Suffolk	R3	02080208	4/7/21	EC/ED-USM-01		

Name(s) of Evaluator(s)	Stream Name and Information
Emily Drahos, Ralph Tuck	EC/ED; upstream extent is at culvert and downstream extent is at confluence with stream EA/EB/EE.

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation)

Conditional Category

	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Condition	 Very little incision or active erosion; 80-100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.	 Slightly incised, few areas of active erosion or unprotected banks. Majority of banks are stable (60-80%). Vegetative protection or natural rock prominent (60-80%) AND/OR Depositional features contribute to stability. The bankfull and low flow channels are well defined. Stream likely has access to bankfull benches, or newly developed floodplains along portions of the reach. Transient sediment covers 10-40% of the stream bottom.	 Often incised, but less than Severe or Poor. Banks more stable than Severe or Poor due to lower bank slopes. Erosion may be present on 40-60% of both banks. Vegetative protection on 40-60% of banks. Streambanks may bevertical or undercut. AND/OR 40-60% of stream is covered by sediment. Sediment may be temporary/transient, contribute instability. Deposition that contribute to stability, may be forming/present. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and depositional features which contribute to stability.	 Overwidened/incised. Vertically/laterally unstable. Likely to widen further. Majority of both banks are near vertical. Erosion present on 60-80% of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability. AND/OR V-shaped channels have vegetative protection is present on > 40% of the banks and stable sediment deposition is absent.	 Deeply incised (or excavated), vertical/lateral instability. Severe incision, flow contained within the banks. Streambed below average rooting depth, majority of banks vertical/undercut. Vegetative protection present on less than 20% of banks, is not preventing erosion. Obvious bank sloughing present. Erosion/raw banks on 80-100%. AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. Multiple thread channels and/or subterranean flow.	CI
Score	3	2.4	2	1.6	1	2.4
NOTES>>	Slightly incised; few areas of undercut banks with no vegetative protection					

2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)

Conditional Category

	Optimal	Suboptimal		Marginal		Poor		NOTES>>
Riparian Buffers	Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover and a non-maintained understory. Wetlands located within the riparian areas.	**High Suboptimal:** Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian areas with tree stratum (dbh > 3 inches) present, with > 30% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).	**High Marginal:** Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.	**Low Marginal:** Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory.	**High Poor:** Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.	**Right Bank:** 1.5 = Tree stratum with non-maintained understory/wetlands **Left Bank:** 1.5 = Tree stratum with non-maintained understory/wetlands 0.85 = Non-maintained upland berm with dense herbaceous vegetation, shrubs, and less than 30% tree canopy cover
		High	Low	High	Low	High	Low	
Condition Scores	1.5	1.2	1.1	0.85	0.75	0.6	0.5	

1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.
2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.
3. Enter the % Riparian Area and Score for each riparian category in the blocks below.

Ensure the sums of % Riparian Blocks equal 100

Right Bank	% Riparian Area>	100%						100%		
	Score >	1.5								
									CI= (Sum % RA * Scores*0.01)/2	
Left Bank	% Riparian Area>	90%	10%					100%	Rt Bank CI >	1.50
	Score >	1.5	0.85						Lt Bank CI >	1.44

3. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embededness; shade; undercut banks; root mats; SAV; riffle poole complexes, stable features.

Conditional Category

	Optimal	Suboptimal	Marginal	Poor	NOTES>>	
Instream Habitat/ Available Cover	Habitat elements are typically present in greater than 50% of the reach.	Stable habitat elements are typically present in 30-50% of the reach and are adequate for maintenance of populations.	Stable habitat elements are typically present in 10-30% of the reach and are adequate for maintenance of populations.	Habitat elements listed above are lacking or are unstable. Habitat elements are typically present in less than 10% of the reach.	Shade, undercut banks, overhanging vegetation	CI
Score	1.5	1.2	0.9	0.5		1.50

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor
45618-009	VDOT	Suffolk	R3	02080208	4/7/21	EC/ED-USM-01	0	0

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

NOTES>>Channel straightened

	Conditional Category							
	Negligible	Minor		Moderate		Severe		
Channel Alteration	Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered.	Greater than 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines AND/OR 80% of banks shored with gabion, riprap, or cement.		
SCORE	**1.5**	**1.3**	**1.1**	**0.9**	**0.7**	**0.5**		**0.50**

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

NOTE: **The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.**

THE REACH CONDITION INDEX (RCI) >>	**1.17**
RCI= (Sum of all CI's)/5	
COMPENSATION REQUIREMENT (CR) >>	**0**
CR = RCI X LF X IF	

INSERT PHOTOS:

Upstream

Downstream

Left Bank

Right Bank

DESCRIBE PROPOSED IMPACT:

To Be Determined

Stream Assessment Form (Form 1)

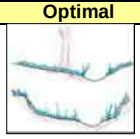
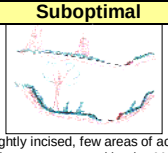
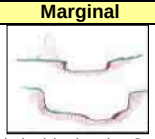
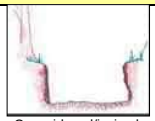
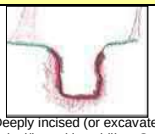
Unified Stream Methodology for use in Virginia

For use in wadeable channels classified as intermittent or perennial

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact/SAR length	Impact Factor
45618-009	Route 58 SPSA Flyover	Suffolk	R3	02080208	4/21/21	RN/RAD-USM-01		

Name(s) of Evaluator(s)	Stream Name and Information
Ralph Tuck	Stream RN/RAD, flags RAD-01 to RAD-12; upstream extent is at culvert.

1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation)

	Conditional Category					
	Optimal	Suboptimal	Marginal	Poor	Severe	
Channel Condition	 Very little incision or active erosion; 80-100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.	 Slightly incised, few areas of active erosion or unprotected banks. Majority of banks are stable (60-80%). Vegetative protection or natural rock prominent (60-80%) AND/OR Depositional features contribute to stability. The bankfull and low flow channels are well defined. Stream likely has access to bankfull benches, or newly developed floodplains along portions of the reach. Transient sediment covers 10-40% of the stream bottom.	 Often incised, but less than Severe or Poor. Banks more stable than Severe or Poor due to lower bank slopes. Erosion may be present on 40-60% of both banks. Vegetative protection on 40-60% of banks. Streambanks may bevertical or undercut. AND/OR 40-60% of stream is covered by sediment. Sediment may be temporary/transient, contribute instability. Deposition that contribute to stability, may be forming/present. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and depositional features which	 Overwidened/incised. Vertically/laterally unstable. Likely to widen further. Majority of both banks are near vertical. Erosion present on 60-80% of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability. AND/OR V-shaped channels have vegetative protection is present on > 40% of the banks and stable sediment deposition is absent.	 Deeply incised (or excavated), vertical/lateral instability. Severe incision, flow contained within the banks. Streambed below average rooting depth, majority of banks vertical/undercut. Vegetative protection present on less than 20% of banks, is not preventing erosion. Obvious bank sloughing present. Erosion/raw banks on 80-100%. AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. Multiple thread channels and/or subterranean flow.	CI
Score	3	2.4	2	1.6	1	3.0
NOTES>>	Optimal channel condition.					

2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)

	Conditional Category						
	Optimal	Suboptimal		Marginal		Poor	
Riparian Buffers	Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover and a non-maintained understory. Wetlands located within the riparian areas.	**High Suboptimal:** Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** Riparian areas with tree stratum (dbh > 3 inches) present, with > 30% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).	**High Marginal:** Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.	**Low Marginal:** Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory.	**High Poor:** Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition.	**Low Poor:** Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.
		High	Low	High	Low	High	Low
Condition Scores	1.5	1.2	1.1	0.85	0.75	0.6	0.5

NOTES>>
Right Bank:
1.5 = Tree stratum with non-maintained understory/wetlands
Left Bank:
1.5 = Tree stratum with non-maintained understory/wetlands
0.85 = Overgrown utility easement with non-maintained dense herbaceous vegetation with a shrub layer

1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.
2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.
3. Enter the % Riparian Area and Score for each riparian category in the blocks below.

Ensure the sums of % Riparian Blocks equal 100

Right Bank	% Riparian Area>	100%						100%	
	Score >	1.5							
								CI= (Sum % RA * Scores*0.01)/2	
Left Bank	% Riparian Area>	75%	25%					100%	Rt Bank CI > 1.50 / CI
	Score >	1.5	0.85						Lt Bank CI > 1.34 / 1.42

3. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embededness; shade; undercut banks; root mats; SAV; riffle poole complexes, stable features.

NOTES>>
Shade, organic debris, and exposed roots

	Conditional Category				
	Optimal	Suboptimal	Marginal	Poor	
Instream Habitat/ Available Cover	Habitat elements are typically present in greater than 50% of the reach.	Stable habitat elements are typically present in 30-50% of the reach and are adequate for maintenance of populations.	Stable habitat elements are typically present in 10-30% of the reach and are adequate for maintenance of populations.	Habitat elements listed above are lacking or are unstable. Habitat elements are typically present in less than 10% of the reach.	CI
Score	1.5	1.2	0.9	0.5	1.50

Stream Impact Assessment Form Page 2

Project #	Applicant	Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor
45618-009	VDOT	Suffolk	R3	02080208	4/21/21	RN/RAD-USM-01	0	0

4. CHANNEL ALTERATION: Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

NOTES>> Minor alteration (wooden retaining wall and culverts)

	Conditional Category						
	Negligible	Minor		Moderate		Severe	
Channel Alteration	Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not	Greater than 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines AND/OR 80% of banks shored with gabion, riprap, or cement.	
SCORE	**1.5**	**1.3**	**1.1**	**0.9**	**0.7**	**0.5**	**1.30**

REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH

NOTE: **The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.**

THE REACH CONDITION INDEX (RCI) >>	**1.44**
RCI= (Sum of all CI's)/5	
COMPENSATION REQUIREMENT (CR) >>	**0**
CR = RCI X LF X IF	

INSERT PHOTOS:

Upstream

Downstream

Left Bank

Right Bank

DESCRIBE PROPOSED IMPACT:

To Be Determined

Stream Assessment Summary Form (Form 2)

Unified Stream Methodology
for use in Virginia

Project	Applicant	Date
Route 58 SPSA Flyover	VDOT	101/5/2021
Evaluators	**HUC**	**Locality**
Emily Drahos, Ralph Tuck	2080208	Suffolk

Data Point Stream Name	**Impact # Reach ID**	**Length of Impact (L_I)** (feet)	**Reach Condition Index (RCI)**	**Impact Factor (IF)**	**Compensation Requirement (CR) ($L_I \times RCI \times IF$)**
EA/EB/EE-USM-01	EA/EB/EE-USM-01	0	1.45	0.00	0
EC/ED-USM-01	EC/ED-USM-01	0	1.17	0.00	0
RN/RAD-USM-01	RN/RAD-USM-01	0	1.44	0.00	0
	Total L_I	**0**		**Total CR**	**0**

Note: Round all feet & CR's to the next whole number.

Attachment J

Compensatory Mitigation

IACM DATE: 02/14/2023
VDOT PROJECT #: 0058-133-459, B616, C501, P101, R201
PERMIT #: 23-4011 PRE-APP#:

Mitigation Strategies Report

Mitigation Required						
	EM	SS	FO	Stream	Other l.f	Other s.f
Tidal						
Non tidal	6511	42165.5	578814			

Running Sum	Wetland	Stream	Other l.f	Other s.f
Mitigation Required	627490.5	0	0	0
Mitigation Proposed	627490.5	0	0	0

Mitigation Proposed										
Strategies Name	Site Name	Lat/Long	GSA	Basin	Sub-basin	County	HUC	Topo Quad	Debit	Payment
SPSA Flyover	Lewis Farm Bank - Credit Purchase	N/A/ N/A	02080208 and a portion of 02080206	James River Basin	2C. Lwr James River Sub-basin	Chesapeake	02080208	DEEP CREEK	627490.5	$0.00

IACM DATE: 02/14/2023
VDOT PROJECT #: 0058-133-459, B616, C501, P101, R201
PERMIT #: 23-4011 PRE-APP#:

Lewis Farm Bank - Credit Purchase MS-131-0003 Ledger Sheet
HUC 02080208

Wetland

Project Number	Permit Number	Permit Type/Date Issued	Basin/Sub-basin	HUC	City/County	USFWS Class. of Impact	Debit (ft2)	Site Size (ft2)	Site Size (ac.)	% of Total Credits	Remaining Credits
0064-M06-033	N/A	Individual VWPP/NA, Individual/NA	2C. Lwr James River Sub-basin	02080208	Hampton Roads District Wide	E1OW, E2FO, PSS, E2RS, PEM, PFO, PUB, E2EM, E2SS, E2US	1.03	1915333.2	43.97	0.00	1915332.17
0058-133-459 *	23-4011	Individual VWPP/NA, Individual/NA	2C. Lwr James River Sub-basin	02080208	Suffolk	PSS, PEM, PFO, PUB	627490.5	1915332.17	43.97	33.00	1287841.67

*** Proposed Debit**

Attachment K

Photographs

SPSA Flyover Ramp; City of Suffolk, VA
Project No. 00460-133-25132686

Photo 1 – Roadside ditch and forested wetlands adjacent to US. 13/58/460 WB, looking north.

Photo 2 – Forested wetlands within northern portion of project area, looking north.

Photo 3- Forested wetlands, flooded near berm adjacent to project area.

Photo 4- Forested wetlands on mineral flat at eastern fringe of project area, north of US 58.

Photo 5 – Northwestern portion of project area, looking north-northeast.

Photo 6 – US 13/58/460 EB, looking east, showing trees in median at left and forested wetlands at right.

Photo 7 – Roadside edge, roadside ditch, and forested wetlands adjacent to Route 13/58/460, looking east.

Photo 8 – Maintained access road, immediately adjacent to project area.

Photo 9 – Forested wetlands between access road (previous photo and US 58 EB).