



**Dominion
Energy[®]**

**Application, Direct
Testimony, Appendices,
and Schedules of Virginia
Electric and Power
Company**

Before the State Corporation
Commission of Virginia

For approval and certification of
the Coastal Virginia Offshore
Wind Commercial Project and
Rider Offshore Wind, pursuant to
§ 56-585.1:11, § 56-46.1, § 56-265.1
et seq., and § 56-585.1 A 6 of the
Code of Virginia

Volume 6 of 11
PUBLIC ONLY VERSION

Case No. PUR-2021-00142

Filed: November 5, 2021

**Application of Virginia Electric and Power Company
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Case No. PUR-2021-00142**

TABLE OF CONTENTS

PUBLIC AND EXTRAORDINARILY SENSITIVE VOLUMES 1 of 11

Application

Direct Testimony of Mark D. Mitchell (redacts / contains extraordinarily sensitive information)

Company Exhibit No. __, MDM, Schedule 1 – Filing Index

Company Exhibit No. __, MDM, Schedule 2 – Currency and Commodity Exposure (redacts / contains extraordinarily sensitive information)

Direct Testimony of Joshua J. Bennett (redacts / contains extraordinarily sensitive information)

Direct Testimony of Glenn A. Kelly

Company Exhibit No. __, GAK, Schedule 1 – EIA Levelized Cost of New Generation, 2019 Annual Energy Outlook

Direct Testimony of Grant T. Hollett

Direct Testimony of Lauren V. Adkins (redacts / contains extraordinarily sensitive information)

Direct Testimony of Scott Lawton

Direct Testimony of John Larson

PUBLIC AND EXTRAORDINARILY SENSITIVE VOLUMES 2 of 11

Generation Appendix (redacts / contains extraordinarily sensitive information)

PUBLIC VOLUME ONLY 3 of 11

Direct Testimony of J. Kevin Curtis

Direct Testimony of Peter Nedwick

Direct Testimony of Sherrill A. Crenshaw

Direct Testimony of Shane A. Moulton

Direct Testimony of Thomas A. Dorsey

**Application of Virginia Electric and Power Company
For approval and certification of the Coastal Virginia Offshore Wind
Commercial Project, and Rider Offshore Wind, pursuant to § 56-585.1:11, § 56-46.1,
§ 56-265.1 *et seq.*, and § 56-585.1 A 6 of the Code of Virginia
Case No. PUR-2021-00142**

TABLE OF CONTENTS

Direct Testimony of Lane E. Carr

Direct Testimony of Rachel Studebaker

Direct Testimony of Robert Richardson

Direct Testimony of Jon M. Berkin

Transmission Appendix

PUBLIC VOLUME ONLY 4 of 11

Transmission Appendix (continued)

PUBLIC VOLUME ONLY 5 of 11

Transmission Appendix (continued)

PUBLIC VOLUME ONLY 6 of 11

DEQ Supplement

PUBLIC VOLUME ONLY 7 of 11

DEQ Supplement (continued)

PUBLIC VOLUME ONLY 8 of 11

Environmental Routing Study

PUBLIC VOLUME ONLY 9 of 11

Environmental Routing Study (continued)

PUBLIC VOLUME ONLY 10 of 11

Environmental Routing Study (continued)

**Application of Virginia Electric and Power Company
For approval and certification of the Coastal Virginia Offshore Wind
Commercial Project, and Rider Offshore Wind, pursuant to § 56-585.1:11, § 56-46.1,
§ 56-265.1 et seq., and § 56-585.1 A 6 of the Code of Virginia
Case No. PUR-2021-00142**

TABLE OF CONTENTS

PUBLIC AND EXTRAORDINARILY SENSITIVE VOLUMES 11 of 11

Direct Testimony of Christopher J. Lee

Company Exhibit No. __, CJL, Schedule 1 – Rider OSW Rate Year Revenue Requirement

Direct Testimony of J. Scott Gaskill

Company Exhibit No. __, JSG, Schedule 1 – Jurisdictional Allocation Factors

Company Exhibit No. __, JSG, Schedule 2 – Virginia Jurisdictional Class Allocation Factors

Direct Testimony of Timothy P. Stuller

Company Exhibit No. __, TPS, Schedule 1 – Allocation of the Revenue Requirement for Rider OSW for the Rate Year

Company Exhibit No. __, TPS, Schedule 2 – Rider OSW

Company Exhibit No. __, TPS, Schedule 3 – Typical Bills

Company Exhibit No. __, TPS, Schedule 4 – Typical Bill Breakdown for Residential Customer

Filing Schedules 3, 4, 5, and 8

Sponsored by Company Witness Christopher J. Lee

Filing Schedule 46.b.1.i

Statement 1 – Construction Costs by Type of Cost and Year (redacts / contains extraordinarily sensitive information) (sponsored by Company Witness Joshua J. Bennett)

Statement 2 – Projected and Actual Maintenance Capex and O&M Costs by Type of Cost and Year (redacts / contains extraordinarily sensitive information) (sponsored by Company Witness Joshua J. Bennett)

Filing Schedule 46.b.1.ii

Statement 1 – Transaction-level Details (sponsored by Company Witness Joshua J. Bennett)

Filing Schedule 46.b.1.iii

Statement 1 – Justification of Proposed Costs (sponsored by multiple witnesses)

Filing Schedule 46.b.1.iv

Statement 1 – Documentation Supporting Projected Costs – Economic Analyses (sponsored by Company Witness Glenn A. Kelly)

Statement 2 – Documentation Supporting Projected Costs – Contracts (sponsored by Company Witness Grant T. Hollett)

Statement 3 – Documentation Supporting Projected Costs – Generation RFPs and RFI Summary Reports (sponsored by Company Witness Grant T. Hollett)

Statement 4 – Documentation Supporting Projected Costs – Network Upgrade Costs (sponsored by Company Witness Peter Nedwick)

**Application of Virginia Electric and Power Company
For approval and certification of the Coastal Virginia Offshore Wind
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§ 56-265.1 *et seq.*, and § 56-585.1 A 6 of the Code of Virginia
Case No. PUR-2021-00142**

TABLE OF CONTENTS

Statement 5 – Documentation Supporting Projected Costs –Transmission RFP Summary Report
(sponsored by Company Witness Shane A. Moulton)

Filing Schedule 46.b.1.v

Statement 1 – Documentation Supporting Projected Costs – Senior Management Materials
(redacts / contains extraordinarily sensitive information) (sponsored by Company Witness
Mark D. Mitchell)

Filing Schedule 46.b.1.vi

Statement 1 – Annual Revenue Requirement for the Rate Year Ending August 31, 2023
(sponsored by Company Witness Christopher J. Lee)

Statement 2 – Annual Revenue Requirement for the Duration of the Proposed Rate Adjustment
Clause (sponsored by Company Witness Christopher J. Lee)

Statement 3 – Documentation Supporting Statement 2 (redacts / contains extraordinarily
sensitive information) (sponsored by Company Witness Christopher J. Lee)

Statement 4 – Annual Revenue Requirement by Class for the Duration of the Proposed Rate
Adjustment Clause (sponsored by Company Witness Timothy P. Stuller)

Filing Schedule 46.b.1.vii

Statement 1 – Allocation of the Revenue Requirement (sponsored by multiple witnesses)

Filing Schedule 46.b.2.i

Statement 1 – Need or Justification for Proposed Generating Unit (sponsored by multiple
witnesses)

Filing Schedule 46.b.2.ii

Statement 1 – Feasibility and Engineering Studies – Structures and Site Selection (sponsored by
Company Witness Grant T. Hollett)

Statement 2 – Feasibility and Engineering Studies – Site Selection (sponsored by Company
Witness Grant T. Hollett)

Filing Schedule 46.b.2.iii

Statement 1 – Fuel Studies (not applicable)

Filing Schedule 46.b.2.iv

Statement 1 – Planning Assumptions (sponsored by multiple witnesses)

Filing Schedule 46.b.2.v

Statement 1 – Economic Studies (sponsored by Company Witness Glenn A. Kelly)

Filing Schedule 46.b.2.vi

Statement 1 – Projected and Actual Costs (sponsored by multiple witnesses)

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF
VIRGINIA ELECTRIC AND POWER COMPANY
FOR APPROVAL AND CERTIFICATION
OF ELECTRIC FACILITIES

Virginia Facilities

Application No. 308

DEQ Supplement

Case No. PUR-2021-00142

Filed: November 5, 2021

Table of Contents

	Page
1. Project Description	1
2. Environmental Analysis	2
A. Air Quality	3
B. Water Source.....	3
C. Discharge of Cooling Waters.....	6
D. Tidal and Non-tidal Wetlands.....	6
E. Solid and Hazardous Waste	10
F. Natural Heritage, Threatened and Endangered Species.....	18
G. Erosion and Sediment Control.....	24
H. Archaeological, Historic, Scenic, Cultural or Architectural Resources.....	24
I. Chesapeake Bay Preservation Areas.....	38
J. Wildlife Resources.....	38
K. Recreation, Agricultural, and Forest Resources	41
L. Use of Pesticides and Herbicides.....	44
M. Geology and Mineral Resources.....	45
N. Transportation Infrastructure	46
Attachments.....	51

Based on consultations with the Department of Environmental Quality (“DEQ”), Virginia Electric and Power Company (“Dominion Energy Virginia” or the “Company”) has developed this DEQ Supplement to facilitate review and analysis of the proposed Project by DEQ and other relevant agencies.

1. Project Description

In order to interconnect the proposed CVOW Commercial Project reliably as requested by the Customer, and to maintain the structural integrity and reliability of the transmission system in compliance with mandatory North American Electric Reliability Corporation (“NERC”) Reliability Standards, Dominion Energy Virginia proposes the following in the Cities of Virginia Beach and Chesapeake, Virginia (collectively referred to as the “Virginia Facilities”):

- Offshore Export Circuits: Install nine 230 kV submarine export circuits, which begin approximately 3.0 miles offshore at the Virginia jurisdictional line demarcating state-owned submerged lands and extend to an onshore Cable Landing Location on the State Military Reservation (“SMR”) in the City of Virginia Beach, Virginia;¹
- Onshore Export Circuits: At the onshore Cable Landing Location on SMR, the Offshore Export Circuits will transition to nine underground 230 kV Onshore Export Circuits, which will extend underground approximately 4.4 miles to the proposed Harpers Switching Station located on Naval Air Station Oceana (“NAS Oceana”) property in Virginia;
- Harpers Switching Station: Construct a 230 kV Gas Insulated Station (“GIS”), 12 line-position, breaker-and-a-half bus configuration switching station on a site located along Harpers Road at NAS Oceana, which will transition the nine Onshore Export Circuits to three Overhead Transmission Circuits. The proposed arrangement will include twenty-five 230 kV 4000A circuit breakers, nine 230 kV 180 MVAR² fixed reactor banks, two 230 kV 150 MVAR variable reactor banks, three 250 MVAR static synchronous compensators (“STATCOMs”), and associated facilities;
- Overhead Transmission Circuits: Install three new overhead 230 kV transmission circuits, each with a rating of approximately 1,500 MVA, along the same corridor extending approximately 14.2 miles between the Harpers Switching Station and the Company’s existing Fentress Substation and utilizing a combination of new, existing and expanded right-of-way in the Cities of Virginia Beach and Chesapeake, Virginia;

¹ For purposes of the DEQ Supplement, the Offshore Export Circuits commence 3.0 miles offshore. Use of “Offshore Export Circuits” herein refers to the grouping of three Offshore Export Cables (totaling nine) coming in from an offshore substation for transfer of electricity from 3.0 miles offshore to the Cable Landing Location at SMR.

² Apparent power, measured in megavolt amperes (“MVA”), is made up of real power (megawatt or “MW”) and reactive power megavolt ampere reactive (“MVAR”). The power factor (“pf”) is the ratio of real power to apparent power. For loads with a high pf (approaching unity), real power will approach apparent power and the two can be used interchangeably. Load loss criteria specify real power (MW) units because that represents the real power that will be dropped; however, MVA is used to describe the equipment ratings to handle the apparent power, which includes the real and reactive load components.

- Line #271 Partial Rebuild: Wreck and rebuild approximately 6.1 miles of the Company's existing approximately 7.1-mile 230 kV overhead Landstown-Pocaty Line #271, which also supports idle 115 kV Line #I-74. With a few exceptions discussed in Section I.A of this Appendix, the Company will wreck the existing double circuit lattice structures for Lines #271/#I-74 and replace them with (i) new double circuit monopole structures to carry Line #271 and one Overhead Transmission Circuit, and (ii) either new single circuit or double circuit monopole structures to carry the two remaining Overhead Transmission Circuits. The Line #271 Partial Rebuild will rebuild COR-TEN® towers that have been identified for replacement and remove idle Line #I-74. The Company determined based on sound engineering judgment that it is prudent to wreck these COR-TEN® structures in order to accommodate the Overhead Transmission Circuits on co-located structures within the existing right-of-way and during the same outage, and expedite the rebuild of these structures as part of the Virginia Facilities;
- Line #2240 Rebuild: Wreck and rebuild the entire approximately 1.9 miles of the Company's existing 230 kV overhead Fentress-Pocaty Line #2240, which also supports idle 115 kV Line #I-74, where all three Overhead Transmission Circuits will be co-located on structures within a 40-foot expanded right-of-way (from the existing 120-foot-wide right-of-way to an expanded 160-foot right-of-way). The Line #2240 Partial Rebuild will rebuild COR-TEN® towers that have been identified for replacement and remove idle Line #I-74. The Company determined based on sound engineering judgment that it is prudent to wreck these COR-TEN® structures in order to accommodate the Overhead Transmission Circuits on co-located structures within the existing right-of-way and during the same outage, and expedite the rebuild of these structures as part of the Virginia Facilities;
- Fentress Substation Expansion: Expand the Company's existing 500-230 kV Fentress Substation in Chesapeake, Virginia. The proposed arrangement will expand the existing 500 kV yard into a GIS six-position ring bus, install three new 230 kV line terminals, uprate the existing 230 kV Line #2240 terminal to 4000A, which includes replacement of four disconnect switches, and install a new control house to accommodate communications and protective relays. The proposed arrangement, which also includes installation of circuit breakers, transformers and related equipment, expands the Fentress Substation entirely within Company-owned property. Based on conceptual design, in order to expand the Fentress Substation to the north and accommodate the routing of existing Line #2128 into the station, two structures (Structures #2128/1 and #2128/2) will be removed and replaced with four new structures (Structures #2128/1, #2128/1A, #2128/1B, and #2128/2), all entirely within existing right-of-way or on Company-owned property. Additionally, the Company proposes to remove three 500 kV structures (Structures #588/254, #588/255, and #588/256) and replace with two new 500 kV structures (Structures #588/254 and #588/255). Proposed Structure #588/255 is a backbone structure and will be located inside Fentress Substation, while proposed structure #588/254 will be in existing right of way to the west of Fentress Substation.

2. **Environmental Analysis**

The Company solicited comments from all relevant federal, state, and local agencies requesting comments on the Virginia Facilities in September 2021. Copies of these letters

are included as Attachment 2. The DEQ provided letters in response to the Company's scoping request for the Virginia Facilities on September 28, 2021, and October 21, 2021. A copy of these letters is included as Attachments 2.A.1 and 2.A.2.

A. Air Quality

The Virginia Facilities will include emergency generator engines at the Harpers Switching Station and Fentress Substation. Three 260-KW generator engines will be at the Harpers Switching Station. Two generator engines (410 kW and 310 kW) will be at the Fentress Substation. The generators will utilize either natural gas or propane and will each operate for no more than 500 hours per year. It is anticipated that these engines will be exempt from Virginia's minor New Source Review ("NSR") permitting program and will also be exempt from Virginia's Emergency Generator General Permit based on the exemption for emergency engines at 9 VAC 5-80-1105.B.2. However, the onshore emergency generators will still be subject to the applicable federal emissions standards for spark-ignition stationary engines under 40 CFR Part 60 Subpart JJJJ.

The Company will control fugitive dust during construction in accordance with DEQ regulations. During construction, if the weather is dry for an extended period of time, there will be airborne particles from the use of vehicles and equipment within the right-of-way. However, minimal earth disturbance will take place and vehicle speed, which is often a factor in airborne particulate, will be kept to a minimum. Erosion and sedimentation control is addressed in Section 2.G of this DEQ Supplement. Equipment and vehicles that are powered by gasoline or diesel motors will be used during the construction of the line so there will be exhaust from those motors.

Tree clearing will be required as part of the Virginia Facilities. Tree clearing would be on existing (in the form of limited trimming), new, and temporary right-of-way. The Company does not expect to burn cleared material, but, if necessary, the Company will coordinate with the responsible locality to obtain applicable permits and will comply with any conditions set forth by the locality, or take actions as otherwise set forth in the Company's right-of-way easements. The Company's tree clearing methods are described in Section 2.K.

B. Water Source (No water source is required for transmission lines so this discussion will focus on potential waterbodies to be crossed by the proposed transmission line rebuild.)

The Virginia Facilities are located within the Eastern Lower Delmarva watershed, Hydrologic Unit Code 02040304, and the Albemarle watershed, Hydrologic Unit Code 03010205. The U.S. Geological Survey ("USGS") National Hydrography Dataset was reviewed to identify the waterbodies crossed by the Cable Landing to Harpers ("CLH") Proposed Route, Harpers to Fentress ("HF") Proposed Route 1, HF Alternative Route 2, HF Alternative Route 5, HF Alternative Hybrid Route, Dam Neck Route Variation, and Line #2085 Route Variation. Named waterbodies crossed by the individual segments are provided below. For overhead installations, no transmission structures are planned to be

installed within waterbodies. For underground installations along the CLH Proposed Route and HF Alternative Hybrid Route, minor waterbodies would be crossed by surface trenching; larger waterbodies, such as Lake Christine, Owl Creek, and West Neck Creek, would be crossed by horizontal directional drill (“HDD”).

Cable Landing to Harpers Proposed Route

The CLH Proposed Route would cross two fingers of Lake Christine (perennial; approximate mileposts (“MP”) 0.1 and 0.2), an unnamed tributary to Lake Christine (intermittent; approximate MP 0.5), and Owl Creek (perennial; approximate MP 1.0). Lake Christine and Owl Creek would each be crossed by HDD, which would avoid direct impacts on these waterbodies. The intermittent tributary to Lake Christine would be crossed by surface trenching.

Harpers to Fentress Proposed Route 1

HF Proposed Route 1 crosses six perennial and one intermittent streams:

- three crossings of an unnamed waterbody (perennial) at approximate MPs 1.3, 2.1, and 2.6
- one crossing of an unnamed tributary to West Neck Creek (perennial) at approximate MP 2.9
- one crossing of West Neck Creek (perennial) at approximate MP 3.3
- three crossings of an unnamed tributary to North Landing River (perennial) at approximate MPs 5.9, 6.2, and 6.7
- one crossing of the North Landing River (perennial) at approximate MP 7.2
- one crossing of the Intracoastal Waterway canal (perennial) at approximate MP 10.4
- one crossing of an intermittent tributary to Pocatoy River at approximate MP 13.0

Harpers to Fentress Alternative Route 2

HF Alternative Route 2 crosses three perennial and one intermittent streams:

- one crossing of a tributary to the North Landing River (perennial) at approximate MP 6.6
- one crossing of the North Landing River (perennial) at approximate MP 8.2
- one crossing of the Intracoastal Waterway canal (perennial) at approximate MP 8.5
- one crossing of a tributary to Pocatoy River (intermittent) at approximate MP 14.0

Harpers to Fentress Alternative Route 5

HF Alternative Route 5 crosses six perennial streams:

- one crossing of a tributary to North Landing River (perennial) at approximate MP 6.9

- one crossing of a tributary to North Landing River (perennial) at approximate MP 9.1
- one crossing of the North Landing River (perennial) at approximate MP 9.2
- one crossing of a tributary to the Pocatoy River (perennial) at approximate MP 12.4
- one crossing of a tributary to the Pocatoy River (perennial) at approximate MP 12.8
- three crossings of the Pocatoy River (perennial) at approximate MPs 13.1, 15.3, and 15.7

Harpers to Fentress Alternative Hybrid Route

The HF Alternative Hybrid Route would cross the same waterbodies as HF Proposed Route 1. The crossings of the unnamed perennial waterbody at MPs 1.3, 2.1, and 2.6 and the perennial tributary to West Neck Creek at MP 2.9 would be by surface trenching. The crossing of West Neck Creek at MP 3.3 would be by HDD. The remainder of the crossings would be overhead installations with no transmission structures placed within the waterbodies.

Dam Neck Route Variation

The Dam Neck Route Variation would cross two unnamed perennial tributaries to West Neck Creek at approximate MPs 0.8 and 0.9 and West Neck Creek at approximate MP 2.5.

Line #2085 Route Variation

The Line #2085 Route Variation would cross an unnamed perennial tributary to the North Landing River at approximate MP 3.5, the main stem of the North Landing River at approximate MP 3.8, and the perennial Intracoastal Waterway canal at approximate MP 4.1.

Waterways crossed by the proposed and alternative routes, and route variations would be maintained for proper drainage during construction through the use of culverts or other crossing devices, as needed, according to the Company's standard policies. Where clearing of trees and/or woody shrubs is required, clearing within 100 feet of a stream would be conducted by hand. Vegetation would be at or slightly above ground level, and stumps would not be grubbed. To protect waterways from soil erosion and sedimentation during construction, the Company would use sediment barriers along waterways and steep slopes. If a section of line cannot be accessed from existing roads, the Company may need to install a culvert or temporary bridge to cross small streams. In such case, some temporary fill material may be required that would be placed on erosion control fabric and removed when work is completed, returning the surface to original contours.

The Company solicited comments from the Virginia Marine Resources Commission ("VMRC") regarding the proposed CVOW Project, including the Virginia Facilities, in September 2021. The Company received a response from VMRC on October 18, 2021, which indicated that the Virginia Facilities may be within jurisdictional areas of the VMRC and a permit from the agency may be required. See Attachment 2.B.1. If necessary, a Joint

Permit Application will be submitted for review by the VMRC, DEQ, and the U.S. Army Corps of Engineers (the “Corps”) to authorize jurisdictional crossings and for any impacts to jurisdictional features.

C. Discharge of Cooling Waters

No discharge of cooling waters is associated with the Virginia Facilities.

D. Tidal and Non-tidal Wetlands

On behalf of the Company, Environmental Resources Management (“ERM”) has identified wetlands within the Virginia Facilities right-of-way using a desktop wetlands delineation. A copy of ERM’s Desktop Wetland Report for the Virginia Facilities is included in Attachment 2.D.1.

The sources reviewed to complete the desktop analysis include:

- National Agricultural Imagery Program (“NAIP”) Digital Ortho-Rectified Images:
- NAIP Digital Ortho-Rectified Natural Color Images, Virginia, 1-meter pixel resolution, photo dated January 2021 (NAIP 2019)
- NAIP Digital Ortho-Rectified Infrared Images, Virginia, 1-meter pixel resolution, photo dated November 2020 (NAIP 2019)
- U.S. Geological Survey (“USGS”) Topographic Mapping (USGS 2021a)
- U.S. Fish and Wildlife Service (“USFWS”) National Wetland Inventory (“NWI”) mapping (USFWS 2021)
- U.S. Department of Agriculture-Natural Resources Conservation Service (“USDA-NRCS”) Soil Survey Geographic (“SSURGO”) database (USDA 2021)
- USGS National Hydrography Dataset (“NHD”; USGS 2021b)

ERM used a stepwise process to identify probable wetland and waterbody areas along the alternative transmission line routes and associated onshore facilities, as follows:

1. Infrared and natural color aerial photography was used in conjunction with USGS topographic maps, soils maps, and other data sources to identify potential wetland areas. Boundaries were assigned to the areas that appeared to exhibit wetland signatures based on this review and a cover type was determined based on aerial photo interpretation.
2. To further determine the probability of a wetland occurring within a given location, the Interpreted Wetland polygon shapefiles were digitally layered with the NWI and NHD mapping and hydric soils information from the SSURGO database.
3. The probability of a wetland occurring was assigned based on the number of overlapping data layers (*i.e.*, indicators of potential wetland presence) that occurred in a particular area (see Table D-1 below).

Table D-1 Virginia Facilities Wetland Probability Criteria	
Probability Class	Criteria
High	Areas where layers of hydric soils, Interpreted Wetlands, and NWI data overlap
Medium/High	NWI data overlaps hydric soils; or NWI data overlaps Interpreted Wetlands with or without partially hydric soils; or hydric soils overlap Interpreted Wetlands
Medium	Interpreted Wetlands with or without overlap by partially hydric soils
Medium/Low	Hydric soils only; or NWI data with or without overlap by partially hydric soils
Low	Partially hydric soils only
Very Low	Non-hydric soils only

Using the above criteria, a range of wetland and waterbody occurrence probabilities were identified from very low to high for each transmission route, with acreages of each probable type of wetland according to probability class. The probability of wetland and waterbody occurrence increases as multiple indicators begin to overlap toward the “high” end of the spectrum. The medium-high and high probability category are the most reliable representation of in-situ conditions, due to overlapping data sets.

Cable Landing to Harpers Proposed Route

The CLH Proposed encompasses 0.41 acres of estuarine subtidal, unconsolidated bottom (“E1UB”) and 1.65 acres of estuarine intertidal, emergent (“E2EM”) associated with Owl Creek. These aquatic resources would be crossed via HDD and therefore impacts to these wetlands are not anticipated. Excluding areas crossed by HDD, the CLH Proposed Route would affect 14.6 acres of wetlands, all within new right-of-way, including:

- 11.3 acres of freshwater forested wetlands
- 3.2 acres of freshwater emergent wetlands
- 0.1 acre of riverine wetlands

Harpers to Fentress Proposed Route 1

HF Proposed Route 1 would affect 149.2 acres of wetlands, including:

- 68.8 acres of freshwater forested wetlands, of which 1.3 acres would be within existing Company-owned right-of-way and 67.5 acres would be within new or expanded right-of-way
- 45.4 acres of freshwater scrub/shrub wetlands, of which 43.6 acres would be within existing Company-owned right-of-way and 1.8 acres would be within new or expanded right-of-way
- 25.5 acres of freshwater emergent wetlands, of which 17.9 acres would be within existing Company-owned right-of-way and 7.6 acres would be within new or expanded right-of-way
- 8.0 acres of riverine wetlands, of which 3.7 acres would be within existing Company-owned right-of-way and 4.3 acres would be within new or expanded right-of-way
- 1.4 acres of freshwater ponds, of which 0.3 acre would be within existing Company-owned right-of-way and 1.1 acres would be within new or expanded right-of-way

Harpers to Fentress Alternative Route 2

HF Alternative Route 2 would affect 159.8 acres of wetlands, including:

- 122.3 acres of freshwater forested wetlands, of which 1.0 acre would be within existing Company-owned right-of-way and 121.3 acres would be within new or expanded right-of-way
- 9.8 acres of freshwater scrub/shrub wetlands, of which 8.2 acres would be within existing Company-owned right-of-way and 1.6 acres would be within new or expanded right-of-way
- 18.2 acres of freshwater emergent wetlands, of which 10.1 acres would be within existing Company-owned right-of-way and 8.1 acres would be within new or expanded right-of-way
- 8.1 acres of riverine wetlands, of which 1.4 acres would be within existing Company-owned right-of-way and 6.7 acres would be within new or expanded right-of-way
- 1.4 acres of freshwater ponds, of which 0.3 acre would be within existing Company-owned right-of-way and 1.1 acres would be within new or expanded right-of-way

Harpers to Fentress Alternative Route 5

HF Alternative Route 5 would affect 185.8 acres of wetlands, including:

- 152.0 acres of freshwater forested wetlands, of which 1.1 acres would be within existing Company-owned right-of-way and 150.9 acres would be within new or expanded right-of-way
- 4.9 acres of freshwater scrub/shrub wetlands, of which 3.7 acres would be within existing Company-owned right-of-way and 1.2 acres would be within new or expanded right-of-way
- 17.5 acres of freshwater emergent wetlands, of which 5.2 acres would be within existing Company-owned right-of-way and 12.3 acres would be within new or expanded right-of-way
- 10.7 acres of riverine wetlands, of which 0.9 acre would be within existing Company-owned right-of-way and 9.7 acres would be within new or expanded right-of-way
- 0.7 acre of freshwater ponds, of which 0.3 acre would be within existing Company-owned right-of-way and 0.4 acre would be within new or expanded right-of-way

Harpers to Fentress Alternative Hybrid Route

Excluding areas crossed by HDD or micro-tunnel, the HF Alternative Hybrid Route would affect 173.9 acres of wetlands, including:

- 92.3 acres of freshwater forested wetlands, of which 0.8 acre would be within existing Company-owned right-of-way and 91.5 acres would be within new or expanded right-of-way
- 45.3 acres of freshwater scrub/shrub wetlands, of which 43.5 acres would be within existing Company-owned right-of-way and 1.8 acres would be within new or expanded right-of-way
- 26.9 acres of freshwater emergent wetlands, of which 17.1 acres would be within existing Company-owned right-of-way and 9.8 acres would be within new or expanded right-of-way
- 7.9 acres of riverine wetlands, of which 3.6 acres would be within existing Company-owned right-of-way and 4.3 acres would be within new or expanded right-of-way
- 1.4 acres of freshwater ponds, of which 0.3 acres would be within existing Company-owned right-of-way and 1.2 acres would be within new or expanded right-of-way

Dam Neck Route Variation

The Dam Neck Route Variation would affect 27.4 acres of wetlands, including:

- 25.5 acres of freshwater forested wetlands, all of which would be within new or expanded right-of-way
- 1.0 acre of freshwater emergent wetlands, of which 0.3 acre would be within existing Company-owned right-of-way and 0.7 acre would be within new or expanded right-of-way

- 1.0 acre of riverine wetlands, all of which would be within new or expanded right-of-way
- <0.1 acre of freshwater pond, all of which would be within new or expanded right-of-way

Line #2085 Route Variation

The Line #2085 Route Variation would affect 44.4 acres of wetlands, including:

- 29.1 acres of freshwater forested wetlands, of which 0.1 acre would be within existing Company-owned right-of-way and 29.0 acres would be within new or expanded right-of-way
- 4.8 acres of freshwater scrub/shrub wetlands, of which 3.5 acres would be within existing Company-owned right-of-way and 1.3 acres would be within new or expanded right-of-way
- 2.1 acres of freshwater emergent wetlands, of which 0.7 acre would be within existing Company-owned right-of-way and 1.4 acres would be within new or expanded right-of-way
- 8.1 acres of riverine wetlands, of which 0.6 acre would be within existing Company-owned right-of-way and 7.5 acres would be within new or expanded right-of-way
- 0.3 acre of freshwater ponds, nearly all of which would be within existing Company-owned right-of-way

Prior to construction, the Company will delineate wetlands and other waters of the United States using the *Routine Determination Method*, as outlined in the *1987 Corps of Engineers Wetland Delineation Manual* and methods described in the *2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0).

The Company solicited comments from the Corps and the DEQ Office of Wetlands and Stream Protection in September 2021. The Company will also obtain any necessary permits to impact jurisdictional resources. While most wetlands will be spanned, forested wetlands and scrub-shrub wetlands will require at least initial vegetation clearing. All wetlands will require protective matting to be installed to support construction vehicles and equipment and materials during construction.

E. Solid and Hazardous Waste

Environmentally regulated sites in the study area were identified using publicly-available GIS databases obtained from the U.S. Environmental Protection Agency (“EPA”) and the DEQ (EPA, 2021a; EPA, 2021b; DEQ, 2021). These databases provide “information about facilities, sites, or places subject to environmental regulation or of environmental interest.” These include sites that use and/or store hazardous materials, waste producing facilities operating under permits from the EPA or other regulatory authorities, Superfund sites, the storage of petroleum, petroleum release sites, and solid waste sites. The identification of a

site in the databases does not mean that the site necessarily has contaminated soil or groundwater.

A summary of the information from the EPA and DEQ databases within a 1.0 mile buffer of the centerlines of the CLH Proposed Route, HF Proposed Route 1, HF Alternative Route 2, HF Alternative Route 5, and the HF Alternative Hybrid Route is provided in Table E-1 below and depicted in Attachment 2.E.1.

Table E-1 Virginia Facilities					
Environmental Regulated Facilities and Hazardous Waste/Petroleum Release Sites within 1 Mile					
Database	CLH Proposed Route	HF Proposed Route 1	HF Alternative Route 2	HF Alternative Route 5	HF Alternative Hybrid Route
Waste	13	19	23	21	19
Toxics	2	1	1	1	1
Land	4	2	2	2	2
Air	5	9	12	9	9
Water	2	6	9	5	6
Solid Waste Facilities	2	2	2	2	2
Petroleum Facilities	10	19	21	21	19
Petroleum Releases	34	30	31	27	30
Total¹	72	88	101	88	88

¹ Note that a single facility may be associated with multiple environmental permits; as such, the total number reflects the number of permits and releases within the specified distance from the Project.

Notes
Waste (Facilities that handle or generate hazardous wastes)
Toxics (Facilities that release toxic substances to the environment)
Land (Site cleanup under RCRA, Superfund, Brownfield, and DEQ VRP programs)
Air (Facilities with a release of pollutants to the air)
Water (Facilities that discharge storm or process water to surface water)
Solid Waste Facilities (Former and existing landfills)
Petroleum Facilities (Regulated petroleum storage)
Petroleum Releases (Typically associated with storage tank releases)

No Brownfield or DEQ Voluntary Remediation Program (“VRP”) sites identified in the reviewed databases were located within 1.0 mile of the CLH Proposed Route, HF Proposed Route 1, HF Alternative Route 2, HF Alternative Route 5, and the HF Alternative Hybrid Route. However, one Superfund site and one RCRA Corrective Action site are located within 1.0 mile of the HF Proposed Route 1, HF Alternative Route 2, HF Alternative Route 5, and the HF Alternative Hybrid Route. In addition, three Superfund sites and one RCRA Corrective Action site are located within 1.0 mile of the CLH Proposed Route. The Superfund sites located within 1.0 mile of the transmission routes are not listed on the National Priorities List (“NPL”). As the Superfund site boundaries are located within 1,000 feet of the transmission line routes, these sites are described in further detail below.

To evaluate the potential impact to the routes, ERM further assessed the sites within 1,000 feet of CLH Proposed Route, HF Proposed Route 1, HF Alternative Route 2, HF Alternative Route 5, and the HF Alternative Hybrid Route (see Table E-2 below).

Environmental Regulated Facilities and Hazardous Waste/Petroleum Release Sites within 1,000 Feet					
Database	CLH Proposed Route	HF Proposed Route 1	HF Alternative Route 2	HF Alternative Route 5	HF Alternative Hybrid Route
Waste	6	3	2	2	3
Toxics	1	0	0	0	0
Land	4	1	1	1	2
Air	1	0	0	0	0
Water	1	1	2	2	1
Solid Waste Facilities	0	1	1	0	1
Petroleum Facilities	1	0	0	1	0
Petroleum Releases	7	2	2	2	2
Total ¹	21	8	8	8	9

¹ Note that a single facility may be associated with multiple environmental permits; as such, the total number reflects the number of permits and releases within the specified distance from the Virginia Facilities.

Notes
Waste (Facilities that handle or generate hazardous wastes)
Toxics (Facilities that release toxic substances to the environment)
Land (Site cleanup under RCRA, Superfund, Brownfield, and DEQ VRP programs)
Air (Facilities with a release of pollutants to the air)
Water (Facilities that discharge storm or process water to surface water)
Solid Waste Facilities (Former and existing landfills)
Petroleum Facilities (Regulated petroleum storage)
Petroleum Releases (Typically associated with storage tank releases)

A review of sites listed in the EPA databases indicates that three Superfund sites are located within 1,000 feet of the CLH Proposed Route centerline; one of the three sites is located within 1,000 feet of the HF Proposed Route 1, HF Alternative Route 2, HF Alternative Route 5, and the HF Alternative Hybrid Route centerlines. In addition, one RCRA Corrective Action site is located within 1,000 feet of the CLH Proposed Route and within 1,500 feet of Harpers Switching Station.

Cable Landing to Harpers Proposed Route

The CLH Proposed Route crosses the state military reservation USN Camp Pendleton Superfund site between MPs 0.0 and 0.8. In 1998, the DEQ and the Joint Legislative Audit and Review Commission of the Virginia General Assembly (“JLARC”) conducted a review to determine if it would be feasible to convert Camp Pendleton into a state park. Based on review of the report (JLARC, 1998), the DEQ identified several areas of likely or potential contamination at Camp Pendleton, including:

- Lead-contaminated soils and potential unexploded ordnances (“UXO”) at the target end of the rifle range, where the proposed offshore-onshore connection will be located for the Virginia Facilities;
- Impacted sediments and surface waters in Lake Christine caused by drainage from the rifle range and the proximity of a truck washing compound where waste was discarded;
- Uncontrolled cut and fill materials (*e.g.*, dirt and debris) transported to the site to construct the banks of Lake Christine. The DEQ recommended an environmental assessment of the material, as there was no control over where the material was historically sourced; and
- Surface soil contamination including storage of coal piles on the ground near the main entrance, oil usage in the motor pool area, and historic use of lead-based paint and heating oil near the barracks.

Regarding the potential for lead-contaminated soils and/or unexploded ordnances in the area of the offshore-onshore connection near the rifle range, ERM recommends further evaluation of the soils in the area and screening for UXO prior to construction to confirm the absence of UXO and soils containing elevated concentrations of lead.

The CLH Proposed Route would cross Lake Christine using the HDD method with no disturbance to the bed or banks of the lake; as such, it is unlikely that uncontrolled cut and fill material at the banks of the lake and/or potentially contaminated sediments or surface waters would impact the CLH Proposed Route.

Finally, the potential exists that surface soils within Camp Pendleton may have been contaminated by historic coal pile storage, oil dumping, or lead-based paint in localized areas of the site. ERM recommends soil screening for potential contamination prior to or during trenching activities to monitor for the presence of contaminated soils.

The Oceana Naval Air Station Superfund site boundary encompasses the right-of-way for the CLH Proposed Route between MPs 1.8 and 4.4. Based on review of the Naval Air Station Oceana Community Involvement Plan dated March 2020, the CLH Proposed Route would be located near two Installation Restoration Program (“IRP”) sites, including the Oceana Pond located south and east of the HF Proposed Route between MPs 1.9 and 2.3, which formerly operated as a borrow pit, and Solid Waste Management Unit (“SWMU”) 100 adjacent to HF Proposed Route MP 3.0. The location of SWMU 100 correlates with the Oceana Salvage Yard site described below. The CLH Proposed Route would not be located near other SWMUs or IRP sites.

Situated on NAS Oceana property, the Oceana Salvage Yard Superfund site (SWMU 100) is a 9-acre property located immediately east of the CLH Proposed Route between MPs 2.8 and 3.1. Based on review of available EPA files, the site is owned by a private salvage company that improperly disposed of cracked battery casings and other parts on-site, which caused elevated concentrations of lead in soils. Based on review of a Removal Site Assessment the EPA completed in 2006, soils on the south side of the property and beneath the two debris piles at the site contained lead at concentrations up to 86,500 milligrams per

kilogram. The EPA required the site to address the lead-contaminated soils under an Administrative Order on Consent effective September 2008. Approximately 1,200 cubic yards of lead-contaminated soils were treated and capped beginning in October 2008. Available EPA reports indicate the waste piles are located approximately 500 feet east of the CLH Proposed Route. Additional investigations in 2005, 2010, and 2011 to delineate the extent of battery casings in shallow soils indicated the access road leading from the CLH Proposed Route to the former waste piles contained battery debris and elevated lead concentrations, and a portion of the HF Proposed Route may cross a debris pile based on visual observations from a site visit conducted in March 2011 (CH2M Hill, 2011). ERM recommends that soil screening be conducted prior to excavating within the right-of-way near the Oceana Salvage access road to confirm the absence of a former debris pile and elevated lead concentrations in soil.

The Controls Corporation of America (“CCA”) RCRA Corrective Action site is located approximately 140 feet south of the CLH Proposed Route between MPs 4.2 and 4.3. The facility manufactures precision gas control products, and operated as a hazardous waste container storage area between 1980 and 1985. Of the 19-acre site, 12 acres are undeveloped. Based on a review of available EPA files, including a report associated with a 2008 EPA site visit, there are no reported spills or unpermitted releases to the environment associated with the site operations. In addition, two 2009 EPA reports determined that migration of contaminated groundwater and human exposure were found to be “under control.” These EPA reports further indicated that no environmental media (*e.g.*, groundwater, surface soils, surface water, etc.) were reported to be known or suspected to be contaminated above appropriately protective risk-based levels. Finally, based on the local topographic contours and proximity to nearby surface waters, the CCA site is estimated to be located hydraulically down-gradient from the CLH Proposed Route. As such, it is unlikely that the site impacted soil and/or groundwater in the CLH Proposed Route right-of-way.

Based on a review of sites listed in the DEQ database located within 1,000 feet of the various route centerlines and the estimated depth to groundwater and flow direction, ERM further evaluated one reported petroleum release located approximately 100 feet south of the CLH Proposed Route at MP 3.5, on the southwestern corner of Harpers Road and Oceana Boulevard. The 7-Eleven Store petroleum release was reported in July 1991, and the DEQ closed the release case in August 1994. The DEQ deems a petroleum release closed once no further risk to the general public has been identified, although petroleum residue might remain. The risk assessment does not always consider the risk to subsurface utility work nor address additional costs associated with managing contaminated soil or groundwater. Based on the local topographic contours and proximity to nearby surface waters, the petroleum release site is estimated to be located hydraulically down-gradient of the CLH Proposed Route; as such, it is unlikely that the site impacted soil and/or groundwater in the proposed CLH Proposed Route right-of-way.

Harpers to Fentress Proposed Route 1, Harpers to Fentress Alternative Routes 2 and 5

There are no Brownfield, DEQ VRP, or RCRA Corrective Action sites located within 1,000 feet of HF Proposed Route 1, and HF Alternative Routes 2, and 5. The Harper Switching Station and MP 0.0 of the routes are located inside the southern boundary of the Oceana Naval Air Station Superfund site; however, based on review of available EPA files, there are no SWMUs or other areas of concern associated with the site that overlap the Harper Switching Station and transmission routes. In addition, the undeveloped northwestern boundary of the CCA RCRA Corrective Action site is located approximately 560 feet southeast of the Harper Switching Station; however, due to the distance from the station, it is unlikely that the site impacted soil and/or groundwater within the footprint of the Harper Switching Station.

The Battlefield Golf Club, a DEQ-approved coal combustion byproducts beneficial use project is located adjacent to the HF Proposed Route 1 between MPs 12.6 and 13.8 and the HF Alternative Route 2 between MPs 13.7 and 14.9. As construction of the HF Proposed Route 1 and HF Alternative Route 2 would not involve excavation activities or installation of facilities within the expanded right-of-way across the golf course property, construction of the routes would not impact the coal ash fill material at the site, nor is it anticipated that the site has impacted soil or groundwater within the existing right-of-way.

Based on a review of sites listed in the DEQ database located within 1,000 feet of the various route centerlines and the estimated depth to groundwater and flow direction, there are no confirmed petroleum releases located within 100 feet and up-gradient of HF Proposed Route 1 and HF Alternative Routes 2 and 5, the HF Alternative Hybrid Route, or the HF Proposed Route.

Harpers to Fentress Alternative Hybrid Route

The undeveloped northwestern boundary of the CCA RCRA Corrective Action site described above is located approximately 220 feet south of where the HF Alternative Hybrid Route connects to the HF Proposed Route. Local topographic contours and nearby surface waters suggest that the CCA site is located hydraulically down-gradient of the HF Alternative Hybrid Route. Based on the estimated hydraulic gradient, no reported spills or unpermitted releases to the environment as of a 2008 EPA site visit, and review of available EPA files indicating that environmental media were not considered to be contaminated above appropriate protective risk-based levels, it is unlikely that the CCA site impacted soil and/or groundwater in the HF Alternative Hybrid Route right-of-way.

The Battlefield Golf Club site described above is located adjacent to the HF Alternative Hybrid Route. As construction of the HF Proposed Alternative Hybrid Route would not involve excavation activities or installation of facilities within the expanded right-of-way across the golf course property, construction of the routes would not impact the coal ash fill material at the site, nor is it anticipated that the site has impacted soil or groundwater within the existing right-of-way.

Dam Neck Route Variation and Line #2085 Route Variation

In addition, ERM conducted a review of facilities listed in EPA and DEQ databases (EPA, 2021a; EPA, 2021b; DEQ, 2021) located within a 1.0 mile buffer of the centerlines of the Dam Neck Route Variation and Line #2085 Route Variation is provided in Table E-3 below and depicted in Attachment 2.E.1.

Table E-3 Virginia Facilities		
Environmental Regulated Facilities and Hazardous Waste/Petroleum Release Sites within 1 Mile		
Database	Dam Neck Route Variation	Line #2085 Route Variation
Waste	10	5
Toxics	0	0
Land	1	0
Air	4	2
Water	2	2
Solid Waste Facilities	0	0
Petroleum Facilities	3	6
Petroleum Releases	5	8
Total¹	25	23

¹ Note that a single facility may be associated with multiple environmental permits; as such, the total number reflects the number of permits and releases within the specified distance from the Virginia Facilities.

Notes
Waste (Facilities that handle or generate hazardous wastes)
Toxics (Facilities that release toxic substances to the environment)
Land (Site cleanup under RCRA, Superfund, Brownfield, and DEQ VRP programs)
Air (Facilities with a release of pollutants to the air)
Water (Facilities that discharge storm or process water to surface water)
Solid Waste Facilities (Former and existing landfills)
Petroleum Facilities (Regulated petroleum storage)
Petroleum Releases (Typically associated with storage tank releases)

To evaluate the potential impact to the route variations, ERM further assessed the sites located within 1,000 feet of the Dam Neck and Line #2085 route variations (see Table E-4 below).

TABLE E-4 Virginia Facilities		
Environmental Regulated Facilities and Hazardous Waste/Petroleum Release Sites within 1,000 Feet		
Database	Dam Neck Route Variation	Line #2085 Route Variation
Waste	0	3
Toxics	0	0
Land	0	0
Air	0	1
Water	1	2
Solid Waste Facilities	0	0
Petroleum Facilities	1	1
Petroleum Releases	1	2
Total ¹	3	9

¹ Note that a single facility may be associated with multiple environmental permits; as such, the total number reflects the number of permits and releases within the specified distance from the Virginia Facilities.

Notes
Waste (Facilities that handle or generate hazardous wastes)
Toxics (Facilities that release toxic substances to the environment)
Land (Site cleanup under RCRA, Superfund, Brownfield, and DEQ VRP programs)
Air (Facilities with a release of pollutants to the air)
Water (Facilities that discharge storm or process water to surface water)
Solid Waste Facilities (Former and existing landfills)
Petroleum Facilities (Regulated petroleum storage)
Petroleum Releases (Typically associated with storage tank releases)

Dam Neck Route Variation

Based on a review of sites listed in the DEQ database located within 1,000 feet of the various route centerlines and the estimated depth to groundwater and flow direction, there are no confirmed petroleum releases or other sites associated with releases to the environment located within 100 feet and up-gradient of the Dam Neck Route Variation.

Line #2085 Route Variation

Based on a review of sites listed in the DEQ database located within 1,000 feet of the various route centerlines and the estimated depth to groundwater and flow direction, there are no confirmed petroleum releases or other sites associated with releases to the environment located within 100 feet and up-gradient of the Line #2085 Route Variation.

Care will be taken to operate and maintain construction equipment to prevent any fuel or oil spills. Any waste created by the construction crews will be disposed of in a proper manner and recycled where appropriate and will be further detailed in the Company's stormwater pollution prevention plan, a component of the Virginia Stormwater Management Program, which will be submitted to the Virginia Department of Conservation and Recreation ("VDCR").

F. Natural Heritage, Threatened and Endangered Species

On behalf of the Company, ERM conducted online database searches for rare, candidate, and federal and state listed threatened and endangered species in the vicinity of the Virginia Facilities. ERM queried the VDCR's Natural Heritage Data Explorer ("NHDE"), the Virginia Department of Wildlife Resources' ("VDWR") Fish and Wildlife Information Service ("VaFWIS"), and the FWS Information for Planning and Consultation ("IPaC") Tool to identify rare, candidate, and federal and commonwealth listed threatened and endangered species that may occur within the Virginia Facilities project area. Digital data was also obtained from the Wildlife Environmental Review Map Service ("WERMS") to identify locations within the Project area that potentially support protected species. See [Attachment 2.F.1](#).

Query results from NHDE include rare and protected species known to occur in Virginia Beach and Chesapeake, as well as ecological communities known to historically or currently contain protected species. Query results from VaFWIS include species documented as confirmed or with potential to occur within a 10-mile radius of the project center point. Query results from FWS IPaC include federally listed and candidate species that may occur within a 600-foot buffer of each of the alternative transmission routes. To obtain the most current eagle nest data, ERM reviewed the Center for Conservation Biology's ("CCB") *VA Eagle Nest Locator* mapping portal and the FWS Bald Eagle Concentration Area Map, which provide information about the Virginia Bald Eagle population. The CCB *VA Eagle Nest Locator* also includes the results of the CCB's annual eagle nest survey.

On behalf of the Company, ERM submitted the Virginia Facilities to the Division of Natural Heritage ("DNH") for Environmental Review and results from the VDCR's DNH were received on July 13, 2021. The DNH Environmental Review includes natural heritage resources, including habitat for rare, threatened, or endangered plant and animal species, unique and exemplary natural communities, and significant geologic formalities potentially impacted by the alternative transmission routes. Based on the DNH Environmental Review and research conducted by ERM, four conservation sites would be crossed by or within the alternative routes and associated facilities: Camp Pendleton Dam Neck Dunes and Swales, Oceana Ponds and Forests, West Neck Creek, and North Landing River. None of the routes cross Stream Conservation Units or any State Natural Area Preserves under VDCR's jurisdiction. See [Attachment 2.F.1](#).

ERM's desktop review identified nine species that are both federal and state listed, and an additional 10 species that are listed only by the Commonwealth. In addition, the IPaC, NHDE, and DNH Environmental Review identified eight federal Species of Concern, one federal candidate species, and one non-listed rare species. Rare and protected species with the potential to occur within the Virginia Facilities project vicinity are presented in [Attachment 2.F.1](#), Table F-1. A copy of the database search results can be found in [Attachment 2.F.1](#). A copy of the letter from the DCR dated July 13, 2021, is included in [Attachment 2.F.2](#).

Cable Landing to Harpers Proposed Route

Protected Species: The CLH Proposed Route would encompass 19.4 acres of forested land (including 8.5 acres of forested wetland) that may provide suitable habitat for northern long-eared bat (*Myotis septentrionalis*), Rafinesque's big-eared bat (*Corynorhinus rafinesquii macrotis*), tricolored bat (*Perimyotis subflavus*), barking treefrog (*Hyla gratiosa*), canebrake rattlesnake (*Crotalus horridus*), eastern glass lizard (*Ophisaurus ventralis*), and Raven's seedbox (*Ludwigia ravenii*). Based on VDWR spatial data, no known bat maternity roosts would be within 1.5 miles of the right-of-way for this route. The CLH Proposed Route would encompass 8.8 acres of lands classified as open space and 5.2 acres of agricultural lands that may contain nearby artificial perching structures and utility poles suitable for Peregrine Falcon (*Falco peregrinus*) foraging. According to CCB spatial data, no documented Bald Eagle nests are within 660 feet of the CLH Proposed Route.

Sea turtles, including green (*Chelonia mydas*), loggerhead (*Caretta caretta*), and Kemp's ridley (*Lepidochelys kempii*), may use the shoreline adjacent to the Cable Landing Location and associated workspace for nesting during the late spring and summer seasons. No ground disturbing activities would occur on the dune and beach areas; however, construction activities at the Cable Landing Location and associated workspace could result in temporary indirect impacts (e.g., light, dust, noise) near the shoreline habitat.

In addition, the CLH Proposed Route would cross or affect two conservation sites: Camp Pendleton Dam Neck Dunes and Swales and the Oceana Ponds and Forest.

Camp Pendleton Dam Neck Dunes and Swales: A portion of the Cable Landing Location and associated workspace at the SMR would be within this conservation site, encompassing a total of approximately 9.0 acres. This entire area is heavily disturbed (almost completely denuded of vegetation), consisting of an active rifle range and associated parking lot. No areas of the conservation site containing natural vegetation would be affected by the CLH Proposed Route.

Oceana Ponds and Forest: The CLH Proposed Route would cross approximately 1.1 miles of this conservation site between approximate MPs 1.9 and 3.0, encompassing about 8.2 acres, all of which would be new right-of-way. The route would follow the edge of the northern and southern boundaries of the conservation site within NAS Oceana. Between approximate MPs 1.8 to 2.0, the route would cross forested lands in the northeast corner of the site near Bells Road in an area previously disturbed by a former sand pit, which ceased operations in the early 1980s. Between approximate MPs 2.0 to 2.6, the route would cross an agricultural field, first following a tree line, then a gravel access road, and then Oceana Boulevard. Between approximate MPs 2.4 to 3.0, the route would cross mostly forested lands immediately adjacent to Oceana Boulevard, which forms the western boundary of the conservation site. The alignment of the CLH Proposed Route would avoid crossing areas of interior habitat and the ponds within the conservation site.

Harpers to Fentress Proposed Route 1

Protected Species: HF Proposed Route 1 would encompass 101.2 acres of forested lands (including 68.8 acres of forested wetland) that may provide suitable habitat for northern long-eared bat, Rafinesque's big-eared bat, tricolored bat, barking treefrog, canebrake rattlesnake, eastern glass lizard, and Raven's seedbox. Based on VDWR spatial data, no known bat maternity roosts would be within 1.5 miles of the right-of-way for this route. According to CCB spatial data, no documented Bald Eagles nests are within 660 feet of HF Proposed Route 1.

In addition to forested lands, HF Proposed Route 1 would encompass 118.5 acres of open land and 37.4 acres of agricultural lands that may contain nearby artificial perching structures and utility poles suitable for Peregrine Falcon foraging.

In addition, the HF Proposed Route 1 would cross or affect two conservation sites, West Neck Creek and North Landing River:

West Neck Creek: HF Proposed Route 1 would cross about 1.2 miles of the West Neck Creek conservation site between approximate MPs 2.1 and 3.3. The entire length of the crossing would be within the Southeastern Expressway and Greenbelt Corridor ("SEPG") corridor,³ with an approximately 1.0-mile-long segment between MPs 2.3 and 3.3 also within and adjacent to the Company's existing right-of-way for Lines #2118/147. The crossing would encompass 20.2 acres within the site, consisting of 4.4 acres of existing Company-owned right-of-way (open space) and 15.8 acres of new or expanded right-of-way (forested). Overlap within the existing right-of-way would reduce the amount of new tree clearing required within the conservation site.

North Landing River: HF Proposed Route 1 would cross about 2.7 miles of the North Landing River conservation site between approximate MPs 7.7 and 10. The entire length of the crossing would be within and adjacent to the Company's existing right-of-way for Lines #271/I-74. The crossing would encompass 51.8 acres, including 39.0 acres of existing right-of-way (open space) and 12.8 acres of expanded right-of-way (forested). In this area, the Company would utilize the entire width of the existing 120-foot-wide right-of-way plus an additional 40 feet of new right-of-way to wreck the existing lattice

³ In the 1990s and early 2000s, the Cities of Virginia Beach and Chesapeake and the Virginia Department of Transportation evaluated a potential highway project, referred to as the SEPG, to address traffic congestion in the area. While the project was abandoned, much of the study corridor remains undeveloped, with a large portion of the land in the Virginia Beach portion of the corridor owned by the City of Virginia Beach. (<https://www.vbgov.com/government/departments/planning/areaplans/Pages/Southeastern-Parkway-Greenbelt-Location-Study.aspx>).

structures and install new monopole structures for Line #271 and the new onshore circuits for the Virginia Facilities. The overlap with the existing right-of-way would minimize the amount of new tree clearing required within the conservation site.

Harpers to Fentress Alternative Route 2

Protected Species: HF Alternative Route 2 would encompass 156.9 acres of forested lands (including 122.3 acres of forested wetland) that may provide suitable habitat for the northern long-eared bat, Rafinesque's big-eared bat, tricolored bat, barking treefrog, canebrake rattlesnake, eastern glass lizard, and Raven's seedbox. In addition to crossing forested areas that may support bat foraging and commuting, HF Alternative Route 2 would fall within 1.5 miles of a cluster of six VDWR-documented northern long-eared bat maternity roosts along Mt. Pleasant Road in Chesapeake. The nearest maternity roost would be approximately 0.8 mile south of the HF Alternative Route 2 alignment. The roost tree was first observed by a VDWR biologist in June 2015 and may or may not be active today. HF Alternative Route 2 would also encompass 51.7 acres of open space and 58.0 acres of agricultural lands that may contain nearby artificial perching structures and utility poles suitable for Peregrine Falcon foraging. According to CCB spatial data, no documented Bald Eagle nests are within 660 feet of HF Alternative Route 2.

In addition, HF Alternative Route 2 would cross two conservation sites, West Neck Creek and North Landing River. Because the route would use the same alignment and configuration as HF Route 1 between approximate MPs 0.0 and 5.5, the affected environment within the West Neck Creek conservation site would be the same as described above for HF Proposed Route 1.

North Landing River: HF Alternative Route 2 would cross approximately 1.7 miles of the North Landing River conservation site along a greenfield alignment between approximate MPs 7.3 and 9.0 (generally the area between Indiana River Road and Mount Pleasant Road). The route would encompass about 29.5 acres of new right-of-way within the site, nearly all of which would be forested. The route across the site would include crossings of North Landing River and the Intracoastal Waterway. The route would create a new corridor across the conservation site in a heavily forested area.

Harpers to Fentress Alternative Route 5

Protected Species: HF Alternative Route 5 would encompass 191.0 acres of forested lands (including 152.0 acres of forested wetland) that may provide suitable habitat for the northern long-eared bat, Rafinesque's big-eared bat, tricolored bat, barking treefrog, canebrake rattlesnake, eastern glass lizard, and Raven's seedbox. In addition to crossing forested areas that may support bat foraging and commuting, HF Alternative Route 5 would fall within 1.5 miles of a cluster of six VDWR-documented northern long-eared bat maternity roosts along Mt. Pleasant Road in Chesapeake. The nearest maternity roost would be approximately 890 feet west of the right-of-way for HF Alternative Route 5. The roost tree was first observed by a VDWR biologist in June 2015 and may or may not still be active today. HF Alternative Route 5 would also encompass 31.7 acres of open space

and 135.0 acres of agricultural lands that may contain artificial perching structures and utility poles suitable for Peregrine Falcon foraging. According to CCB spatial data, no documented Bald Eagle nests are within 660 feet of HF Alternative Route 5.

In addition, the HF Alternative Route 5 would cross two conservation sites, West Neck Creek and North Landing River. Because the route would use the same alignment and configuration as HF Proposed Route 1 between approximate MPs 0.0 and 5.5, the affected environment within the West Neck Creek conservation site would be the same as described above for the HF Proposed Route 1.

North Landing River: HF Alternative Route 5 would cross approximately 2.7 miles of the North Landing River conservation site between approximate MPs 8.1 and 10.3 (generally the area between Indian River Road and Mount Pleasant Road). An approximately 0.2-mile-long segment of the route between approximate MPs 8.1 to 8.3 would be within and adjacent to the Company's existing right-of-way for Line #2085, with the remainder of the route consisting of new right-of-way. HF Alternative Route 5 would encompass about 45.8 acres of the conservation site, including 1.4 acres of existing Company-owned right-of-way (open space) and 44.4 acres of new right-of-way (nearly all forested). The segment of the route that crosses the site would include a crossing of the North Landing River near the North Landing River Bridge. The route would create a new corridor in a heavily forested area across much of the conservation site.

Harpers to Fentress Alternative Hybrid Route

Protected Species: The HF Alternative Hybrid Route would encompass 101.1 acres of forested lands (including 81.0 acres of forested wetlands) that may provide suitable habitat for the northern long-eared bat, Rafinesque's big-eared bat, tricolored bat, barking treefrog, canebrake rattlesnake, eastern glass lizard, and Raven's seedbox. Based on VDWR spatial data, no known bat maternity roosts would be within 1.5 miles of this route. The HF Alternative Hybrid Route would also encompass 115.4 acres of open space and 28.1 acres of agricultural lands that may contain nearby artificial perching structures and utility poles suitable for Peregrine Falcon foraging. According to CCB spatial data, no documented Bald Eagle nests are within 660 feet of the HF Alternative Hybrid Route.

In addition, the underground segment of the HF Alternative Hybrid Route would cross the West Neck Creek conservation site, as discussed below. The overhead segment of the HF Alternative Hybrid Route would follow the same alignment and use the same configuration as HF Proposed Route 1 between approximate MPs 4.6 to 14.2 and would cross the North Landing River conservation site.

West Neck Creek: Approximately 1.2 miles of the West Neck Creek conservation site would be crossed by the HF Alternative Hybrid Route between approximate MPs 2.3 and 3.5, with the route crossing the creek near MP 3.3. The entire length of the crossing would be within the SEPG corridor, with a 1.0-mile-long segment between approximate MPs 2.5 and 3.5 also within and adjacent to the Company's existing right-of-way for Lines #2118/147. The transmission circuits required for the underground portion of the hybrid

route would be installed by surface trenching for much of the alignment across the site; however, about 0.1 mile of the route (including the crossing of West Neck Creek) would be installed by HDD. The route would encompass 14.5 acres of the conservation site, including 3.0 acres of existing Company-owned right-of-way (open space) and 11.5 acres of new right-of-way (forested). Overlap with the existing transmission right-of-way and use of the HDD installation for part of the crossing would reduce the amount of new tree clearing required within the site.

Dam Neck Route Variation

Protected Species: The Dam Neck Route Variation would encompass 32.1 acres of forested land (including 25.5 acres of forested wetlands) that may provide suitable habitat for northern long-eared bat, Rafinesque's big-eared bat, tricolored bat, barking treefrog, canebrake rattlesnake, eastern glass lizard, and Raven's seedbox. Based on VDWR spatial data, no known bat maternity roosts are within 1.5 miles of this route's right-of-way. The Dam Neck Route Variation would also encompass 0.4 acre of open space and 13.4 acres of agricultural lands that may contain nearby artificial perching structures and utility poles suitable for Peregrine Falcon foraging. According to CCB spatial data, no documented Bald Eagle nests are within 660 feet of the Dam Neck Route Variation

In addition, the Dam Neck Route Variation would cross one conservation site, West Neck Creek.

West Neck Creek: The Dam Neck Route Variation would cross approximately 1.0 mile of the West Neck Creek conservation site between approximate MPs 1.6 and 2.6 along a greenfield alignment (generally the area between Dam Neck Road and Holland Pines Park). The route would encompass about 16.7 acres of new right-of-way within the site, all of which would be forested. An approximately 0.2-mile-long segment of the route would be on city-owned lands within the park. The route would create a new corridor in a heavily forested area across the conservation site.

Line #2085 Route Variation

Protected Species: The Line #2085 Route Variation would encompass 34.6 acres of forested lands (including 29.1 acres of forested wetland) that may provide suitable habitat for the northern long-eared bat, Rafinesque's big-eared bat, tricolored bat, barking treefrog, canebrake rattlesnake, eastern glass lizard, and Raven's seedbox. The Line #2085 Route Variation would encompass 9.8 acres of open space and 28.9 acres of agricultural land that may contain artificial perching structures and utility poles suitable for Peregrine Falcon foraging. According to CCB spatial data, no documented Bald Eagle nests are within 660 feet of the Line #2085 Route Variation.

In addition, Line #2085 Route Variation would cross one conservation site, North Landing River:

North Landing River: The Line #2085 Route Variation would cross approximately 1.9 miles of the North Landing River conservation site between approximate MPs 2.5 and 4.3

(generally the area between Indian River Road and the Intracoastal Waterway). An approximately 0.2-mile-long segment of the route from approximate MPs 2.5 to 2.7 would be within and adjacent to the Company's existing right-of-way for Line #2085, with the remainder consisting of new right-of-way. The route would encompass about 39.9 acres of the site, including 1.4 acres of existing Company-owned right-of-way (open space) and 38.4 acres of new right-of-way (nearly all forested). The route would create a new corridor in a heavily forested area across much of the conservation site.

The Company requested comments from the USFWS, DWR, and DCR regarding the proposed Projects in September 2021. The response from DCR is included as [Attachment 2.F.3](#).

As the Company will obtain all necessary permits prior to construction, such as authorization from the VMRC, DEQ, and the Corps, coordination with the DWR, DCR, and USFWS will take place through the respective permit processes to avoid and minimize impacts to listed species.

New and updated information is continually added to the DCR's Biotics database. Following the DCR-DNH SCC planning stage project review, the Company shall resubmit project information with completed information services order form and a map to DCR-DNH or submit the project on-line through the Natural Heritage Data Explorer. This review shall occur during the final stage of engineering and upon any major modifications of the project during construction (*e.g.*, deviations, permanent or temporary, from the original study area and/or the relocation of a tower(s) into sensitive areas) for an update on natural heritage information and coordination of potential project modifications to avoid and minimize impacts to natural heritage resources.

G. Erosion and Sediment Control

The DEQ approved the Company's *Standards & Specification for Erosion & Sediment Control and Stormwater Management for Construction of Linear Electric Transmission Facilities (TE VEP 8000)*. These specifications are given to the Company's contractors and require erosion and sediment control measures to be in place before construction of the line begins and specifies the requirements for rehabilitation of the right-of-way. A copy of the current DEQ approval letter dated August 13, 2019, is provided as [Attachment 2.G.1](#). According to the approval letter, coverage was effective through August 12, 2020. The Company submitted the renewal application on August 3, 2020, and is awaiting approval.

H. Archaeological, Historic, Scenic, Cultural or Architectural Resources

For the pre-application analysis of cultural resources, ERM considered National Historic Landmark ("NHL") properties located within a 1.5-mile radius of the transmission line centerline; National Register of Historic Places ("NRHP")-listed properties, NHLs, battlefields, and historic landscapes within a 1.0-mile radius of the centerline; NRHP-eligible and -listed properties, NHLs, battlefields, and historic landscapes within a 0.5-mile radius of the centerline; and qualifying architectural resources and archaeological sites

located within the right-of-way for each alternative route. See [Attachment 2.H.1](#) for ERM's Pre-Application Analysis completed for the Project in November 2021. Information on the resources in each tier was collected from the Virginia Cultural Resource Information System ("VCRIS"). ERM also collected information from the City of Virginia Beach City Council's Historic and Cultural Overlay Districts, the Virginia Beach Historical Register, and the City of Chesapeake's Historic Preservation Commission to find locally significant resources within a 1.0-mile radius of each centerline. In addition, ERM collected information on battlefields surveyed and assessed by the National Park Service's American Battlefield Protection Program ("ABPP").

Along with the records review carried out for the four tiers defined by Virginia Department of Historic Resources ("VDHR"), ERM conducted field assessments of known NRHP-eligible or -listed architectural resources for each Project alternative in accordance with the VDHR Guidelines. Digital photographs of each architectural resource and views to the proposed transmission line were taken. Photosimulations were prepared to assess visual effects on considered resources within the tiered study area. For previously recorded archaeological sites under consideration, aerial photographs were examined to assess the current land condition and the spatial relationship between the sites and any existing or proposed transmission line structures.

A summary of the considered resources identified in the vicinity of each project alternative and recommendations concerning project effects are provided in the following discussion. The information presented here derives from existing records and does not purport to encompass the entire suite of historic and archaeological resources that may ultimately be affected by the undertaking.

The resources located within the right-of-way of the transmission line alternative routes may be subject to both direct impacts from placement of the line across the property, as well as visual impacts from changes to the viewshed introduced by the new transmission line structures. Resources in the 0-0.5 mile tier would not be directly impacted, but are likely to be visually impacted, unless topography or vegetation obscures the view to the transmission line. At a distance over 0.5 mile, it becomes less likely that a resource would be within line-of-sight of the proposed transmission line. However, the full architectural survey mandated in the second stage of VDHR's transmission line review process would determine which resources actually would be visually impacted. Many of the same resources in the 0.50-mile tier also extend into the 1.0-mile tier. Beyond 1.0 mile, it becomes even less likely that a given resource would be within line-of-sight of the proposed Virginia Facilities.

Because of the overlap between several of the routes, many of the same cultural resources would be impacted, regardless of the alternative selected. The nature of those impacts, while estimated in this study with the assistance of photosimulations, would depend on the final Virginia Facilities project design in which the exact placement and height of transmission line structures would be determined. As part of the forthcoming full architectural survey, actual Virginia Facilities impacts would be assessed, and additional (as of yet, unrecorded) historic properties would be identified in the study area. The study

area would be defined based on the height of the proposed transmission line structures (including overhead versus underground), topography, tree cover, and other factors impacting the line-of-sight to the proposed routes.

Cable Landing to Harpers Proposed Route

Four aboveground historic resources were identified within the VDHR tiers for the CLH Proposed Route (Table H-1). Construction and operation of the HF Proposed Route would have no impact on two of these resources. Of the remaining resources, the route would have a minimal impact on one resource, and a severe impact on the other.

Building 1 in Camp Pendleton (134-0413-0110) is located approximately 0.28 mile to the northwest of the CLH Proposed Route, and the Winford White House (134-0917) is located 0.44 mile to the south of the route. Both structures will have no view of the CLH Proposed Route due to intervening vegetation and distance; thus, both would have no impact from the CLH Proposed Route.

The underground transmission line associated with the HF Proposed Route would run north to south across the street from the James Bell House (134-0003) boundary, passing approximately 15 feet from the edge of the resource. The route is underground, so the only impact on the resource would be a minor change to its viewshed from a slight tree cut across the street from the property, resulting in minimal impact on the property from the HF Proposed Route.

The CLH Proposed Route would run east to west, crossing 0.93 mile of 134-0413, the Camp Pendleton SMR Historic District (“District”). The eastern portion of the District would not be impacted by the underground route because the circuits in this area would be installed by HDD, a trenchless installation method, and the HDD operation would not require the removal of any existing vegetation. The area around Lake Christine would be within the HDD path and no tree cutting would occur. However, construction of the route would remove trees and vegetation near the western edge of the District, north of the main entrance. In addition to the removal of trees, this route would also result in the demolition of two contributing structures to the District, Building 410 and Building 59. Building 410 is a fire house constructed between 1940 and 1942. Building 59 is a mess hall constructed in 1934, during the period in which the State Rifle Range was expanded between the world wars; it is one of nine nearly identical buildings. Building 410 is a unique structure, constructed for a specific purpose during the World War II expansion of the base. The loss of this building would have a greater impact on the overall integrity of the District, since it represents a specific activity that took place at the facility. While the vegetation is part of the District’s historic landscape, it is not as integral to the resource’s historic setting and feeling as the built environment. Because the destruction of the two contributing structures would be permanent, the CLH Proposed Route would have a severe impact on the historic district. The Company worked cooperatively with SMR staff to develop a route that minimizes impacts on existing and potential future land uses within the base, and Virginia’s Department of Military Affairs (“DMA”) supported the CLH Proposed Route alignment in letters to the Company.

Table H-1 Virginia Facilities				
Cable Landing to Harpers Proposed Route Impacts to Above Ground Architectural Resources in VDHR Tiers				
Buffer(miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	NA	NA	NA
0.5 to 1.0	National Register Properties (Listed)	NA	NA	NA
0.0 to 0.5	National Register Properties (Listed)	134-0413-0110	Building 1	None
	National Register – eligible	134-0917	Winford White House	None
0.0 (within ROW)	National Register - eligible	134-0003	Bell House	Minimal
	National Register Properties (Listed)	134-0413	Camp Pendleton/State Military Reservation Historic District	Severe

The pre-application analysis also considered the potential effects to archaeological resources. Five archaeological sites lie within the new right-of-way associated with the CLH Proposed Route: sites 44VB0204, 44VB0361, 44VB0389, 44VB0395, and 44VB0396. All have been determined not eligible for listing on the NRHP and, except for site 44VB0361, all are associated with the Camp Pendleton SMR. Site 44VB0204 is a historic period trash scatter, whose southern extent appears to be intersected by the CLH Proposed Route. Site 44VB0361 is a historic farmstead and it appears as if the southern portion of the site boundary would intersect the route. Site 44VB0389 includes a prehistoric lithic scatter and historic architectural remains. A small portion of 44VB0389's northern boundary intersects the CLH Proposed Route. Site 44VB0395 is approximately 60 feet to the south of the route, and contains both prehistoric lithic and historic artifact scatters. Finally, site 44VB0396 includes a historic artifact scatter approximately 86 feet to the north of the route. Because all five archaeological sites have been determined not eligible for the NRHP, they do not require further consideration.

Harpers to Fentress Proposed Route 1

Six aboveground resources were identified within the VDHR tiers for HF Proposed Route 1 (Table H-2), which is an overhead route. HF Proposed Route 1 would have no impact on three of these resources, and a minimal impact on three resources.

The Jonathan Woodhouse House (134-0038), is approximately 0.47 mile southeast of HF Proposed Route 1 where the route would require new right-of-way. Two other resources, 134-0072 and 134-0702, are associated with sections of HF Proposed Route 1 located along the existing Landstown to Virginia Beach transmission line (Line # 2118/147). The

Thomas Lovett House/Rollingswood Academy (134-0072) is located 0.32 mile south of the route. St. John's Baptist Church (134-0702) is 0.86 mile south of the route. Although the right-of-way at these locations would be expanded, these three resources would have no view to HF Proposed Route 1 due to intervening vegetation and residential subdivisions. Because the views from these three resources to the route are entirely screened, there would be no impact from HF Proposed Route 1.

HF Proposed Route 1 intersects 500 feet of the Albemarle & Chesapeake Canal (131-0044) and 0.43 mile of the Albemarle & Chesapeake Canal Historic District (131-5333). This route segment is located along a section of the existing Landstown-Pocaty transmission line (Line # 271). HF Proposed Route 1 would include a wreck-and-rebuild of the existing double-circuit line structures as well as the construction of two additional single-circuit structures, for a total of three new structures. The views of the transmission line in the vicinity of the Canal and District would be noticeable from the Canal due to vegetation removal and the construction of additional structures, which would make the new transmission lines more visible than the existing transmission line that already intersects the resource. However, because of the presence of the existing transmission line and how the majority of views are obscured by vegetation, HF Proposed Route 1 would have a minimal impact on the Albemarle & Chesapeake Canal and the Albemarle & Chesapeake Canal Historic District.

The Centreville-Fentress Historic District (131-5071) is approximately 174 feet west of HF Proposed Route 1 at its nearest point. This portion of the HF Proposed Route 1 is located along existing transmission line Fentress-Pocaty line #2240 and would require a wreck-and-rebuild of the existing line structures and the construction of two additional structures, for a total of three new structures per grouping. The Fentress Substation is also visible from the resource. As is the case with the Albemarle & Chesapeake Canal, while the transmission line and substation would be visible from multiple points within the historic district, few views would be significantly altered because of the presence of the existing line. Therefore, HF Proposed Route 1 would have a minimal impact on the Centreville-Fentress Historic District.

Table H-2 Virginia Facilities				
Harpers to Fentress Proposed Route 1 Impacts to Above Ground Architectural Resources in VDHR Tiers				
Buffer(miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	NA	NA	NA
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church	None
0.0 to 0.5	National Register Properties (Listed)	131-5071	*Centreville-Fentress Historic District	Minimal
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/William Woodhouse House	None
0.0 (within ROW)	National Register - eligible	134-0072	Thomas Lovett House/ Rollingswood Academy	None
	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District	Minimal
	National Register - eligible	131-0044	Albemarle & Chesapeake Canal	Minimal

*Also within the VDHR 1-mile tier of the Fentress Substation.

The pre-application analysis also considered the potential effects to archaeological resources. Five archaeological sites are crossed by the right-of-way for HF Proposed Route 1. of these sites have been determined not eligible for the NRHP and require no further consideration. The first, site 44VB0274, is a prehistoric artifact scatter and remains of a historic farmstead. The other ineligible site, 44VB0314, contains remains from a historic dwelling. One archaeological site, site 44VB0306, is no longer extant; and therefore, also requires no further consideration.

One of the sites is not evaluated for the NRHP (44CS0250) and one is potentially eligible for the NRHP (44VB0162). Site 44CS0250 is a multicomponent prehistoric camp intersected by the existing right-of-way for the Landstown-Pocaty transmission line (Line # 271). This section of the HF Proposed Route 1 would be a wreck-and-rebuild involving removal of existing lattice structures and construction of three monopole structures. The existing right-of-way is 120 feet wide, and an additional 40 feet would be needed for HF Proposed Route 1, for a total right-of-way width of 160 feet. There are no existing transmission structures within the site boundary. One set of one double-circuit and two single-circuit, monopole structures would be installed within the site along its southern boundary to accommodate the rebuild of Line #271 and the new transmission circuits required for the onshore Virginia Facilities.

Site 44VB0162, the NRHP-potentially eligible site, consists of a prehistoric camp and a historic period cemetery. HF Proposed Route 1 crosses site 44VB0162 in a greenfield segment of the route. Two sets of transmission line structures would be within the site boundary (three structures in each set). The historic cemetery is in the southwestern corner of the site in a grove of trees. The remainder of the site consists of materials associated

with a prehistoric camp. There appears to be 75 feet between the known limits of the cemetery and the right-of-way for HF Route 1. Therefore, the cemetery should not be impacted by the construction of the route.

Harpers to Fentress Alternative Route 2

Six aboveground historic resources were identified within the VDHR tiers for HF Route 2, which is an overhead route (see Table H-3 below). HF Alternative Route 2 would have no impact on three of these resources. Of the remaining resources, HF Alternative Route 2 would have a minimal impact on one resource, and a moderate impact on the two resources associated with the Albemarle & Chesapeake Canal.

HF Alternative Route 2 follows the same route as HF Proposed Route 1 for the segment closest to the Jonathan Woodhouse House (134-0038), the Thomas Lovett House/Rollingswood Academy (134-0072), and St. John's Baptist Church (134-0702). Therefore, as discussed above with respect to HF Proposed Route 1, there would be no impact on these resources from HF Alternative Route 2.

HF Alternative Route 2 also follows the same route as HF Proposed Route 1 for the segment closest to the Centreville-Fentress Historic District (131-5071), where the route is located along the Company's existing transmission Line #2240 and would include a wreck-and-rebuild of the existing line structures, as well as the construction of two additional structures. As discussed above, the new transmission lines would be visible from multiple points of the historic district, but few views would be significantly altered because of the presence of the existing line. Therefore, HF Alternative Route 2 would have a minimal impact on the Centreville-Fentress Historic District.

HF Alternative Route 2 runs parallel to the Albemarle & Chesapeake Canal (131-0044) and associated Historic District (131-5333). The route is about 0.18-mile south of the Canal and traverses an approximately 420-foot segment of the Canal's eastern portion. In addition, the route intersects an approximately 0.58-mile portion of the eastern side of the District. The new structures would be located on either side of the Canal, supporting lines that would be seen when traveling the Canal. This area of the route would be greenfield and would require new right-of-way and vegetation removal. However, the intersected section of the Canal would be small in comparison to the Canal as a whole. Given the visibility of the transmission lines from the heavily used public bridge and the fact that this alternative route would introduce significant new transmission facilities into the viewshed, HF Alternative Route 2 would have a moderate impact on the Albemarle & Chesapeake Canal and the Albemarle & Chesapeake Canal Historic District.

**Table H-3
Virginia Facilities**

**Harpers to Fentress Alternative Route 2
Impacts to Above Ground Architectural Resources in VDHR Tiers**

Buffer(miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	NA	NA	NA
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church	None
0.0 to 0.5	National Register Properties (Listed)	131-5071	*Centreville-Fentress Historic District	Minimal
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/ William Woodhouse House	None
	National Register - eligible	134-0072	Thomas Lovett House/ Rollingswood Academy	None
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District	Moderate
	National Register - eligible	131-0044	Albemarle & Chesapeake Canal	Moderate

*Also within the VDHR 1-mile tier of the Fentress Substation

The pre-application analysis also considered the potential effects to archaeological resources. Three archaeological sites lie within the right-of-way for HF Alternative Route 2. Two of these, sites 44VB0274 and 44VB0314, which are also in the right-of-way for HF Proposed Route 1, have been determined not eligible for the NRHP. As noted above, site 44VB0274 consists of a prehistoric artifact scatter and a historic farmstead and site 44VB0314 is associated with a historic dwelling. Because both have been determined ineligible for listing on the NRHP, no further consideration is required. Site 44VB0275, also located within the right-of-way for HF Alternative Route 2, is a potentially eligible site that consists of an antebellum historic trash scatter. The centerline of HF Alternative Route 2 intersects the site. One set of three single-circuit, monopole structures would be installed within the site for this route.

Harpers to Fentress Alternative Route 5

Six aboveground historic resources were identified within the VDHR tiers for HF Alternative Route 5, which is an overhead route (see Table H-4 below). HF Alternative Route 5 would have no impact on three of these resources. Of the remaining resources, HF Alternative Route 5 would have a moderate impact on the two resources associated with the Albemarle & Chesapeake Canal and a moderate impact on the Centreville-Fentress Historic District.

HF Alternative Route 5 follows the same route as HF Proposed Route 1 for the segment closest to the Jonathan Woodhouse House (134-0038), the Thomas Lovett House/Rollingswood Academy (134-0072), and St. John's Baptist Church (134-0702). As

discussed above with respect to HF Proposed Route 1, there similarly would be no impact on these resources from HF Alternative Route 5.

HF Alternative Route 5 crosses the Albemarle & Chesapeake Canal (131-0044) approximately 0.10-mile southeast of the North Landing River Bridge. The route also intersects approximately 295 feet of the southeast corner of the Albemarle & Chesapeake Canal Historic District (131-5333). These areas of the route are greenfield and require new right-of-way, which would necessitate vegetation removal. In addition, 120 to 150-foot-tall structures would be installed on either side of the Canal. From the vantage point of the Canal, the proposed structures would be visible, but not obtrusive. The structures would be set back from the Canal and partially screened by dense tree coverings on either side of the route, which would obscure the view except while in close proximity. For the Historic District, the eastern views from the Canal would be most prominent, but only seen when crossing the bridge due to the dense vegetation that surrounds the Canal. The intersected section of the Canal and Historic District are small in comparison to the resources as a whole, but given the visibility of new infrastructure from the heavily used public bridge, HF Alternative Route 5 would have a moderate impact on the Albemarle & Chesapeake Canal and the Albemarle & Canal Historic District.

HF Alternative Route 5 differs from the other alternative transmission line routes in relation to the Centreville-Fentress Historic District (131-5071) because the segment of the route to the south of the District would consist of a new, greenfield right-of-way. The other alternative routes in the vicinity of the District follow the existing transmission line right-of-way which passes to the east of the District, then turns west and runs along the south side of the Battlefield Gold Club. In contrast, HF Alternative Route 5 turns south/southwest where the route deviates from existing Line #2085 and follows a mostly greenfield alignment (except for a short segment that parallels Blackwater Road), continuing southwest from where it crosses Blackwater Road, then northwest, and approaches the Fentress Substation from the south. As HF Alternative Route 5 approaches the Fentress Substation, it turns north and intersects with the right-of-way for existing transmission Line #2240 at a point about 0.18 mile south of the Centreville-Fentress District boundary. From this point, HF Alternative Route 5 follows the existing right-of-way into the Fentress Substation, similar to HF Proposed Route 1, HF Alternative Route 2, and the HF Alternative Hybrid Route. As noted above, the new transmission line would require a wreck-and-rebuild of the existing line structures, as well as the construction of two additional structures, for a total of three new structures in a single grouping.

Since the segment of HF Route 5 that approaches the Fentress Substation would be greenfield and require new right-of-way, it would require the construction of new transmission line structures in along an area where none currently exist. These structures would be between approximately 110 and 125 feet tall. Although there currently is a view of existing Fentress-Pocaty transmission Line #2240, HF Alternative Route 5 would significantly change the viewshed from the Historic District because the viewshed to the south would have more expansive views of the transmission line, and the overall visibility of the Virginia Facilities would be greater in this area because of the construction of the additional structures and the removal of vegetation within greenfield. Because only one

portion of the Historic District would be impacted, HF Alternative Route 5 would have a moderate impact on the Centreville-Fentress Historic District.

Buffer(miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	NA	NA	NA
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church	None
0.0 to 0.5	National Register Properties (Listed)	131-5071	*Centreville-Fentress Historic District	Moderate
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal	Moderate
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/ William Woodhouse House	None
	National Register Properties (Listed)	134-0072	Thomas Lovett House/ Rollingswood Academy	None
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District	Moderate

*Also within the VDHR 1-mile tier of the Fentress Substation.

The pre-application analysis also considered the potential effects to archaeological resources. Eight archaeological sites are within the right-of-way for HF Alternative Route 5. Three of these have been determined ineligible for the NRHP: sites 44VB0274, 44VB0280, and 44VB0314. The portion of HF Alternative Route 5 that intersects the recorded boundaries of site 44VB0280 is in the same right-of-way that would be used for the Line #2085 Route Variation. Likewise, the section of HF Alternative Route 5 that intersects site 44VB0314, remains of a historic dwelling, follows the same alignment as HF Proposed Route 1, HF Alternative Route 2, and the HF Alternative Hybrid Route.

Site 44VB0280, a late 19th/early 20th century cemetery, was identified on the property of the Kempsville Mennonite Church along North Landing Road in Virginia Beach. This small cemetery was recorded as an archaeological site (44VB0280) at this location as part of a survey completed in 1996. The site was defined on the basis on surface observation (“some fallen stones”) and informant testimony. The cemetery reportedly contained 12 graves dating from the late nineteenth/early twentieth centuries associated with the Bell family. The VCRIS indicates that the site was revisited in 2020, but no evidence of headstones, depressions, or other signs of burials were observed on the surface. Field survey would be required to confirm if burials are present at the site. No structures would be installed within the site boundary.

Two unevaluated sites (44CS0016 and 44CS0156) and three potentially eligible sites (44VB0263, 44VB0267, and 44VB0275) are within the right-of-way for HF Alternative Route 5. The greenfield portion of HF Alternative Route 5 intersects the western portion of site 44CS0016, a prehistoric site located in an open field. One set of three single-circuit,

monopole structures associated with this route would be installed along the site's northwestern boundary. The greenfield portion of HF Alternative Route 5 intersects the eastern half of site 44CS0156, which consists of a multicomponent historic artifact scatter in an open field. No transmission structures would be within the site boundary.

Two of the potentially eligible sites (44VB0263 and 44VB0267) are located where both HF Alternative Route 5 and the Line # 2085 Route Variation have the same alignment, and site 44VB0275 would be intersected by HF Alternative Route 2 as well. Site 44VB0263 consists of a historic artifact scatter, site 44VB0267 consists of a multicomponent historic trash scatter, and site 44VB0275 includes a historic trash scatter. The sites are within the existing right-of-way for the Landstown to West Landing transmission line (Line #2085). These sections of HF Alternative Route 5 include a 90-foot expansion to the existing 120-foot-wide transmission line's right-of-way, for a total of a 210-foot-wide right-of-way. Two single-circuit, monopole structures would be installed within 44VB0263, one single-circuit monopole structure would be installed within 44VBO267, and two single-circuit, monopole structures would be installed within 42VB0275.

Harpers to Fentress Alternative Hybrid Route

Six aboveground resources were identified within the VDHR tiers for the HF Alternative Hybrid Route, which includes both underground and overhead segments (see Table H-5 below). The HF Alternative Hybrid Route would have no impact on three of these resources, a minimal impact on the Centreville-Fentress Historic District, and a minimal impact on the two resources associated with the Albemarle & Chesapeake Canal.

The Jonathan Woodhouse House (134-0038) is approximately 0.47-mile southeast of an underground portion of the proposed HF Alternative Hybrid Route where the route would be greenfield and require new right-of-way. Two additional resources, 1340072 and 134-0702, are associated with sections of the HF Alternative Hybrid Route located along the Landstown to Virginia Beach (Line #2118/147) existing transmission line. The Thomas Lovett House/Rollingswood Academy (134-0072) is 0.32-mile south of an underground segment of the proposed route. St. John's Baptist Church (134-0702) is 0.86-mile south of an underground segment of the proposed route. All three resources would have no view to HF Alternative Hybrid Route due to intervening vegetation and residential subdivisions. Because their views to the route are entirely screened, there would be no impact from the HF Alternative Hybrid Route.

In the vicinity of the Albemarle & Chesapeake Canal (131-0044), the Albemarle & Chesapeake Canal Historic District (131-5333), and Centreville-Fentress Historic District (1315071), the HF Alternative Hybrid Route would be an overhead route following the same alignment as HF Proposed Route 1. Therefore, for the same reasons described above for HF Proposed Route 1, the HF Alternative Hybrid Route would have minimal impacts on these three resources.

**Table H-5
Virginia Facilities**

**Harpers to Fentress Alternative Hybrid Route
Impacts to Above Ground Architectural Resources in VDHR Tiers**

Buffer(miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	NA	NA	NA
0.5 to 1.0	Locally Significant Resources	134-0702	St. John's Baptist Church	None
0.0 to 0.5	National Register Properties (Listed)	131-5071	*Centreville-Fentress Historic District	Minimal
	Locally Significant Resources	134-0038	Jonathan Woodhouse House/ William Woodhouse House	None
	Locally Significant Resources	134-0072	Thomas Lovett House/ Rollingswood Academy	None
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District	Minimal
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal	Minimal

*Also within the VDHR 1-mile tier of the Fentress Substation.

The pre-application analysis also considered the potential effects to archaeological resources. The HF Alternative Hybrid Route follows the same alignment as HF Proposed Route 1 (with one minor exception to follow the edge of an agricultural field). Thus, the same five archaeological sites lie within the right-of-way for the HF Alternative Hybrid Route as identified for HF Proposed Route 1 (*i.e.*, sites 44VB0274, 44VB0314, 44VB0306, 44CS0250, and 44VB0162). All are associated with the overhead portion of the hybrid route; therefore, potential impacts of the HF Alternative Hybrid Route on these sites would be the same as those described for HF Proposed Route 1.

Dam Neck Route Variation

Two locally significant resources, 134-0038 and 134-0072, were identified within the VDHR tiers for the Dam Neck Route Variation. They are located between 0.5 and 1.0 mile from the route and would not be impacted (see Table H-6 below).

Table H-6 Virginia Facilities				
Dam Neck Variation Impacts to Above Ground Architectural Resources in VDHR Tiers				
Buffer(miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	Not applicable	None identified	Not applicable
0.5 to 1.0	Locally Significant Resources	134-0038	Jonathan Woodhouse House/ William Woodhouse House	None
	National Register Properties (Listed)	134-0072	Thomas Lovett House/ Rollingswood Academy	None
0.0 to 0.5	National Register Properties (listed)	Not applicable	None identified	Not applicable
	Locally Significant Resources	Not applicable	None identified	Not applicable
0.0 (within ROW)	National Register Properties (listed)	Not applicable	None identified	Not applicable
	National Register (eligible)	Not applicable	None identified	Not applicable

There are no known archaeological sites along the right-of-way for the Dam Neck Route Variation.

Line #2085 Route Variation

Two historic architectural resources, the Albemarle & Chesapeake Canal Historic District (131-5333) and the Albemarle & Chesapeake Canal (131-0044), were identified within the VDHR tiers for the Line #2085 Route Variation (see Table H-7 below). Both would be moderately impacted by this route.

The Line #2085 Route Variation, an overhead route, crosses an approximately 714-foot segment of the Albemarle & Chesapeake Canal at the eastern portion of the Canal, then runs parallel to the Canal about 0.18-mile to the south of the canal. This area of the route variation would be greenfield and require new right-of-way, which would necessitate vegetation removal and the installation of three 170-foot-tall structures on either side of the Canal. The removal of the trees and construction of the new structures would introduce modern elements to a portion of the Canal that currently contains only the Canal itself surrounded by dense vegetation. This route would impact the Canal and associated Historic District more than the other alternative routes due to its visibility from either side of the North Landing Bridge. This route would result in the removal of more trees and vegetation than the other routes, and would be visible by drivers as well as those using the Canal. As the existing viewshed does not contain a transmission line and the view to the

proposed transmission line would be relatively unobstructed, the proposed, new transmission line would introduce a significant change to the setting of the Canal and Historic District. Because views of the proposed transmission line in the vicinity of the Albemarle & Chesapeake Canal (131-0044) and Historic District (131-5333) would be expansive and constitute a noticeable change to the viewshed, the Line #2085 Route Variation would have a severe impact on these resources.

Line #2085 Route Variation Impacts to Above Ground Architectural Resources in VDHR Tiers				
Buffer(miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	NA	NA	NA
0.5 to 1.0	Locally Significant Resources	NA	NA	NA
0.0 to 0.5	National Register Properties (Listed)	NA	NA	NA
	Locally Significant Resources	NA	NA	NA
0.0 (within ROW)	National Register Properties (Listed)	131-5333	Albemarle & Chesapeake Canal Historic District	Severe
	National Register – eligible	131-0044	Albemarle & Chesapeake Canal	Severe

The pre-application analysis also considered the potential effects to archaeological resources. There are four reported archaeological sites along the Line #2085 Route Variation within a segment of right-of-way that would be the same for HF Route 5. One of the sites is 44VB0280, a late 19th/early 20th century cemetery determined ineligible for listing on the NRHP. A potential cemetery was identified on the property of the Kempsville Mennonite Church along North Landing Road in Virginia Beach. A small cemetery was recorded as an archaeological site (44VB0280) at this location as part of a survey completed in 1996 (Stuck and Higgins 1997). The site was defined on the basis on surface observation (“some fallen stones”) and informant testimony. The cemetery reportedly contained 12 graves dating from the late nineteenth/early twentieth centuries associated with the Bell family. The VCRIS indicates that the site was revisited in 2020, but no evidence of headstones, depressions, or other signs of burials were observed on the surface. Field survey would be required to confirm if burials are present at the site. No transmission structures would be installed within the site boundary.

The other three sites in the Line # 2085 right-of-way are potentially eligible for the NRHP. Site 44VB0263 consists of a historic artifact scatter, 44VB0267 consists of a multicomponent historic trash scatter, and 44VB0275 is a historic trash scatter. The sites are within the existing right-of-way for the Landstown to West Landing transmission line (Line #2085) where the route variation includes a 90-foot expansion to the existing 120-foot-wide transmission line’s right-of-way, for a total of a 210-foot-wide proposed right-of-way. Two single-circuit, monopole structures would be installed within 44VB0263 and

one single-circuit monopole structure would be installed within 44VBO267, and two single-circuit, monopole structures would be installed within 42VB0275.

I. Chesapeake Bay Preservation Areas

Construction, installation, operation and maintenance of electric transmission lines are conditionally exempt from the Chesapeake Bay Act as stated in the exemption for public utilities, railroads, public roads, and facilities in 9 VAC 25-830-150. The Company will meet those conditions.

J. Wildlife Resources

Agency databases were reviewed and agency consultations initiated with the USFWS, DWR, and DCR in order to assess the potential presence of federal or state listed threatened or endangered species in the vicinity of the Virginia Facilities. As discussed in Section 2.F, certain federal and state listed species were identified as confirmed and potentially occurring in the area of the Virginia Facilities. The Company will coordinate with the USFWS, DWR, and DCR as appropriate to determine whether surveys are necessary and to minimize impacts on specific protected wildlife resources.

Natural habitats provide refuge for thousands of species of animals and plants, in addition to a variety of recreational opportunities and open space resources for the public. The VDCR refers to these habitat types as “ecological cores” due to increased ecological integrity. An ecological core must contain an area of unfragmented natural cover with at least 100 acres of interior habitat. Because the quality of ecological cores varies across different landscapes, the VDCR evaluates ecological cores using an Ecological Integrity Score that ranks the relative contribution of different ecosystem services. Ecological cores are associated with areas of high ecological value. The ecological cores that would be crossed by the alternative transmission line routes are generally associated with conservation sites (see Table J-1 below).

While these areas may have provided habitat for wildlife species living in the Projects area, there are significant forest lands adjacent to the Projects area and the areas converted to maintained right-of-way could provide a corridor for foraging species, like bats or pollinators.

**Table J-1
Virginia Facilities**

Ecological Cores Crossed by the Alternative Transmission Line Routes

Alternative Route	Ecological Core Crossed
CLH Proposed Route	<ul style="list-style-type: none"> ▪ MPs 1.0 to 1.6 – The route would cross a C4 moderate significance core area approximately between General Booth Boulevard and Bells Road ▪ MPs 1.9 to 2.0 and MPs 2.7 to 3.4 – The route would cross a C5 general significance core area south of Bells Road and along Oceana Boulevard
HF Proposed Route 1	<ul style="list-style-type: none"> ▪ MPs 0.7 to 0.8 – The route would cross a C5 general significance core area north of Dam Neck Road ▪ MPs 3.2 to 3.3 – The route would cross a C5 general significance core area east of West Neck Creek within the SEPG corridor and within and adjacent to Company’s existing ROW for Lines #2118/147 ▪ MPs 4.1 to 4.6 – The route would cross parts of two adjacent C5 general significance core areas approximately between Holland Road and Princess Anne Road within the SEPG corridor ▪ MPs 7.8 to 11.0 – The route would pass between a C3 high significance core area and a C2 very high significance core area approximately between Indian River Farms Park and the Intracoastal Waterway within and adjacent to the Company’s existing ROW for Lines #217/I-74. The Nature Conservancy (“TNC”) owns two tracts of land on either side of the Intracoastal Waterway. According to a letter from The TNC dated October 29, 2021, the TNC prefers that the Company expand its existing ROW across this area rather than create a new greenfield ROW through undisturbed C2 and C3 core areas on their property. A copy of the TNC letter is included as Attachment 2.J.1.
HF Alternative Route 2	<ul style="list-style-type: none"> ▪ MPs 0.7 to 0.8 – The route would cross a C5 general significance core area north of Dam Neck Road ▪ MPs 3.2 to 3.3 – The route would cross a C5 general significance core area east of West Neck Creek within the SEPG corridor and within and adjacent to the Company’s existing ROW for Lines #2118/147 ▪ MPs 4.1 to 4.6 – The route would cross parts of two adjacent C5 general significance core areas approximately between Holland Road and Princess Anne Road within the SEPG corridor ▪ MPs 7.0 to 7.2 – The route would cross a C4 moderate significance core area south of Salem Road ▪ MPs 7.3 to 11.8 – The route would cross a C2 very high significance core area approximately between Indian River Road in Virginia Beach and Mt. Pleasant Road in Chesapeake
HF Alternative 5	<ul style="list-style-type: none"> ▪ MPs 0.7 to 0.8 – The route would cross a C5 general significance core area north of Dam Neck Road

**Table J-1
Virginia Facilities**

Ecological Cores Crossed by the Alternative Transmission Line Routes

Alternative Route	Ecological Core Crossed
	<ul style="list-style-type: none"> ▪ MPs 3.2 to 3.3 – The route would cross a C5 general significance core area east of West Neck Creek within the SEPG corridor and within and adjacent to the Company’s existing ROW for Lines #2118/147 ▪ MPs 4.1 to 4.6 – The route would cross parts of two adjacent C5 general significance core areas approximately between Holland Road and Princess Anne Road within the SEPG corridor ▪ MPs 8.0 to 9.4 – The route would cross a C1 outstanding significance core area approximately between Indian River Road in Virginia Beach and Mt. Pleasant Road in Chesapeake ▪ MPs 9.5 to 10.0 – The route would cross a C2 very high significance core area west of Mt. Pleasant Road ▪ MPs 10.1 to 10.3 – The route would cross a C1 outstanding significance core area east of Mt. Pleasant Road ▪ MPs 10.6 to 11.2 – The route would cross a C5 general significance core area west of Fentress Airfield Road ▪ MPs 12.7 to 13.1 – The route would cross a C1 outstanding significance core area east of Blackwater Road ▪ MPs 13.3 to 15.8 – The route would cross a C3 high significance core area south of the Pocaty River
HF Alternative Hybrid Route	<ul style="list-style-type: none"> ▪ MPs 0.9 to 1.0 – The route would cross a C5 general significance core area north of Dam Neck Road ▪ MPs 3.5 to 3.6 – The route would cross a C5 general significance core area east of West Neck Creek within the SEPG corridor and within and adjacent to the Company’s existing ROW for Lines #2118/147 ▪ MPs 4.3 to 4.8 – The route would cross parts of two adjacent C5 general significance core areas approximately between Holland Road and Princess Anne Road within the SEPG corridor ▪ MPs 8.0 to 11.2 – The route would pass between a C3 high significance core area and a C2 very high significance core area approximately between Indian River Farms Park and the Intracoastal Waterway within and adjacent to the Company’s existing ROW for Lines #217/I-74. TNC owns two tracts of land on either side of the Intracoastal Waterway. According to a letter from The TNC dated October 29, 2021, the TNC prefers that the Company expand its existing ROW across this area rather than create a new greenfield ROW through undisturbed C2 and C3 core areas on their property. A copy of the TNC letter is included as Attachment 2.J.1.
Dam Neck Route Variation	<ul style="list-style-type: none"> ▪ MPs 2.2 to 2.5 – The route would cross a C5 general significance core area approximately between Dam Neck Road and Holland Pines Park

Table J-1 Virginia Facilities	
Ecological Cores Crossed by the Alternative Transmission Line Routes	
Alternative Route	Ecological Core Crossed
Line #2085 Route Variation	<ul style="list-style-type: none"> ▪ MPs 2.5 to 3.7 – The route would cross a C1 outstanding significance core area approximately between Indian River Road and North Landing Road ▪ MPs 3.7 to 4.3 – The route would cross a C2 very high significance core area approximately between North Landing Road and the Intracoastal Waterway
Notes: <i>MP = milepost; ROW = right-of-way; SEPG = Southeastern Parkway and Greenway</i>	

K. Recreation, Agricultural, and Forest Resources

The CLH Proposed Route, HF Proposed Route 1, HF Alternative Routes 2 and 5, HF Alternative Hybrid Route, Dam Neck Route Variation, and Route #2085 Variation are expected to have minimal, incremental impacts on recreational, agricultural, and forest resources. Opportunities for collocation with the Company’s existing electric transmission rights-of-way were considered, where possible for the alternative routes. For example: HF Proposed Route 1 would be collocated with existing electric transmission lines for 7.8 miles; HF Alternative Route 2 for 3.3 miles; HF Alternative Route 5 for 2.9 miles; HF Alternative Hybrid Route for 7.8 miles; and Line #2085 Route Variation for 2.7 miles.

Cable Landing to Harpers Proposed Route

The CLH Proposed Route would cross two trails (the Seashore to Cypress Loop of the Virginia Birding and Wildlife Coastal Train and the Rudee Inlet Water Trail). The trails would be crossed via a HDD reducing overall impacts. Additionally, the route would cross Owls Creek Preservation Area and Virginia Marine Science Museum. These areas would be crossed via a HDD.

The CLH Proposed Route would cross 19.4 acres of forest land. Additionally, 5.2 acres of agricultural lands would be crossed by the right-of-way for the CLH Proposed Route.

Harpers to Fentress Proposed Route 1

The HF Proposed Route 1 would cross 1.7 miles (28.1 acres) of City of Virginia Beach Parks. The parks crossed are categorized as neighborhood parks, general open spaces, or as sports facility/athletic fields. Additionally, the route is adjacent to a neighborhood park for 0.1 mile. The route would also cross a total of 1.2 miles (30.2 acres) of three golf courses, including: the Aeropines Golf Course, Virginia Beach National Golf Course and Battlefield Golf Club. The HF Proposed Route 1 also would cross the Seashore to Cypress Loop of the Virginia Birding and Wildlife Coastal Trail, the Southeast Coast Saltwater

Paddling Trail as well as multiple existing and future trails within the ITA Trail Network. Finally, the route would cross the North Landing River and the Albemarle & Chesapeake Canal.

HF Proposed Route 1 would cross approximately 2.1 miles (37.4 acres) of agricultural lands. Of those lands, 23.7 acres would be located in new or expanded right-of-way.

HF Proposed Route 1 would cross approximately 4.2 miles (101.2 acres) of forested lands. Of those lands, the majority (100.3 acres) would be located in new or expanded right-of-way, resulting in the removal of the forested areas.

Harpers to Fentress Alternative Route 2

The HF Alternative Route 2 would cross 0.9 miles (13.2 acres) of City of Virginia Beach Parks. The parks crossed are categorized as neighborhood parks, general open spaces, or as sports facility/athletic fields. Additionally, the route is located adjacent to a neighborhood park for 0.1 mile. The route would also cross a total of 1.2 miles (30.2 acres) of three golf courses, including the Aeropines Golf Course, Virginia Beach National Golf Course and Battlefield Golf Club. The Route also would cross the Seashore to Cypress Loop of the Virginia Birding and Wildlife Coastal Trail, the Southeast Coast Saltwater Paddling Trail as well as multiple existing and future trails within the ITA Trail Network. Finally, the HF Alternative Route 2 would cross the North Landing River and the Albemarle & Chesapeake Canal.

HF Alternative Route 2 would cross approximately 3.4 miles (58.0 acres) of agricultural lands. Of those lands, 44.3 acres would be located in new or expanded right-of-way.

HF Alternative Route 2 would cross approximately 8.4 miles (156.9 acres) of forested lands. Of those lands, the majority of them (156.0 acres) would be located in new or expanded right-of-way, resulting in the removal of the forested areas.

Harpers to Fentress Alternative Route 5

The HF Alternative Route 5 crosses 1.2 miles (18.2 acres) of City of Virginia Beach Parks. The parks crossed are categorized as neighborhood parks, general open spaces, or a sports facility/athletic fields. Additionally, the route is adjacent to a neighborhood park for 0.1 mile. The route also crosses two golf courses for 0.1 miles (7.6 acres), including the Aeropines Golf Course and the Virginia Beach National Golf Course. The Route also crosses the Seashore to Cypress Loop of the Virginia Birding and Wildlife Coastal Trail, the Southeast Coast Saltwater Paddling Trail, as well as multiple existing and future trails within the ITA Trail Network. Finally, the route crosses the North Landing River.

HF Alternative Route 5 would cross approximately 8.4 miles (135.0 acres) of agricultural lands. Of those lands, 124.6 acres would be located in new or expanded right-of-way.

HF Alternative Route 5 would cross approximately 10.7 miles (191.0 acres) of forested lands. Of those lands, the majority of them (190.1 acres) would be located in new or expanded right-of-way, resulting in the removal of the forested areas.

Harpers to Fentress Alternative Hybrid Route

The HF Alternative Hybrid Route crosses 1.7 miles (28.4 acres) of City of Virginia Beach Parks. The parks crossed are categorized as neighborhood parks, general open spaces, or a sports facility/athletic fields. Additionally, the route is adjacent to a neighborhood park for 0.1 mile. The route also would cross a total of 1.2 miles (22.6 acres) of three golf courses, including the Aeropines Golf Course, Virginia Beach National Golf Course and Battlefield Golf Club. The route would also cross the Seashore to Cypress Loop of the Virginia Birding and Wildlife Coastal Trail, the Southeast Coast Saltwater Paddling Trail, as well as multiple existing and future trails within the ITA Trail Network. Finally, the HF Alternative Hybrid Route would cross the North Landing River and the Albemarle & Chesapeake Canal.

HF Alternative Hybrid Route would cross approximately 2.1 miles (28.1 acres) of agricultural lands. Of those lands, 14.4 acres would be located in new or expanded right-of-way.

HF Alternative Hybrid Route would cross approximately 3.6 miles (101.1 acres) of forested lands. Of those lands, the majority of them (100.2 acres) would be located in new or expanded right-of-way, resulting in the removal of the forested areas

Dam Neck Route Variation

The Dam Neck Route Variation crosses one City of Virginia Beach park, Holland Pines Park, for 0.5 mile (7.7 acres). The route also would cross the Southeast Coast Saltwater Paddling Trail.

The Dam Neck Route Variation would cross approximately 0.9 miles (13.4 acres) of agricultural lands. All of those lands would be located in new or expanded right-of-way.

Dam Neck Route Variation would cross approximately 1.8 miles (32.1 acres) of forested lands. All of those lands would be located in new or expanded right-of-way, resulting in the removal of the forested areas.

Line #2085 Route Variation

The Line #2085 Route Variation crosses one City of Virginia Beach park, Holland Pines Park, for 0.3 mile (5.3 acres). As the route is collocated with an existing Company-owned transmission line at the crossing of this park, only 2.0 acres of the crossing would be located in new right-of-way. The route also crosses the Seashore to Cypress Loop of the Virginia Birding and Wildlife Coastal Trail. Finally, the route would cross the North Landing River and the Albemarle & Chesapeake Canal.

Line #2085 Route Variation would cross approximately 1.7 miles (28.9 acres) of agricultural lands. Of those lands, 19.2 acres would be located in new or expanded right-of-way.

Line #2085 Route Variation would cross approximately 1.9 miles (34.6 acres) of forested lands. Of those lands, the majority of them (34.5 acres) would be located in new or expanded right-of-way, resulting in the removal of the forested areas.

The Virginia Scenic Rivers Act seeks to identify, designate, and protect rivers and streams that possess outstanding scenic, recreational, historic, and natural characteristics of statewide significance for future generations. Two scenic rivers, the North Landing River and the Pocaty River (a scenic designated tributary to the North Landing River) is crossed by HF Alternative Route 5.

The Company solicited comments from the Virginia Department of Forestry (“DOF”), Virginia Outdoors Foundation (“VOF”), TNC, and DCR in letters sent in September 2021. TNC’s response is included as [Attachment 2.J.1](#). In a letter dated October 27, 2021, DOF stated that the proposed project should utilize existing rights-of-way wherever possible and that if new right-of-way is established, every effort should be made to avoid or minimize disturbance to high conservation value forest, streams or wetlands, and conserved lands. See [Attachment 2.K.1](#).

Trees and brush located within 100 feet of streams will be cleared by hand in accordance with the Company approved Erosion and Sediment Control specifications. Any tree along the right-of-way that is tall enough to endanger the conductors if it were to break at the stump or uproot and fall directly towards the conductors and exhibits signs or symptoms of disease or structural defect that make it an elevated risk for falling will be designated as a “danger tree” and may be removed. The Company’s arborist will contact the property owner if possible before any danger trees are cut, except in emergency situations. The Company’s Forestry Coordinator will field inspect the right-of-way and designate any danger trees present. Qualified contractors working in accordance with the Company’s Electric Transmission specifications will perform all danger tree cutting. The Virginia Facilities are expected to have minimal, if any, impact on agricultural or forest resources as the proposed facilities involve rebuilding a portion of an existing line, which is already cleared and maintained for existing facility operation, and no additional right-of-way is required.

L. Use of Pesticides and Herbicides

Of the techniques available, selective foliar is the preferred method of herbicide application. The Company typically maintains transmission line right-of-way by means of selective, low volume applications of EPA-approved, non-restricted use herbicides. The goal of this method is to exclude tall growing brush species from right-of-way by establishing early successional plant communities of native grasses, forbs, and low growing woody vegetation. “Selective” application means the Company sprays only the undesirable plant species (as opposed to broadcast applications). “Low volume”

application means the Company uses only the volume of herbicide necessary to remove the selected plant species. The mixture of herbicides used varies from one cycle to the next to avoid the development of resistance by the targeted plants. There are four means of dispersal available to the Company, including by-hand application, backpack, fixed nozzle-radiarc, and aerial. Very little right-of-way maintenance incorporates aerial equipment. The Company uses licensed contractors to perform this work that are either certified applicators or registered technicians in the Commonwealth of Virginia.

DEQ has previously requested that only herbicides approved for aquatic use by the EPA or the USFWS be used in or around any surface water. The Company intends to comply with this request.

M. Geology and Mineral Resources

The Virginia Facilities are located within the Coastal Plain geologic province, which is characterized by a series of ancient shorelines that form a terraced landscape extending east of Richmond to the Atlantic Ocean. The province primarily comprises Quaternary-age (<2.6 million years old) sand, silt, clay, and gravel deposited as a result of fluctuating sea levels during interglacial periods. The lowland sub-province, where the onshore Virginia Facilities would be located, encompasses the low-relief coastal area adjacent to the Atlantic Ocean with an elevation range of 0 to 60 feet. The study area is underlain by Quaternary-age sand and silt, localized Holocene-age (<11,700 years old) marsh and intertidal mud deposits along streams and beach sand, and dune sand deposits along the coastline (Virginia Division of Geology and Mineral Resources 2021; William and Mary Department of Geology 2021).

ERM reviewed publicly available Virginia Department of Mines, Minerals, and Energy (“DMME”; DMME 2021) and USGS Mineral Resources Data System (“MRDS”; USGS 1996) datasets, USGS topographic quadrangles (USGS 2019), and recent (2018) digital aerial photographs (Historic Aerials 2021) to identify mineral resources in the study area.

Cable Landing to Harpers Proposed Route

One inactive mineral operation, a former sandpit labeled on the USGS topographic quadrangle (USGS 2019), is located approximately 200 feet south of approximate MP 2.2 of the CLH Proposed Route. Based on available historical aerial imagery (Historic Aerials 2021) and review of DMME and USGS MRDS databases, the sandpit mining operation has not been active since 1982 (DMME 2021; USGS 1996). In addition, the inactive Lilley Pit sand mine is approximately 0.25 mile north of approximate MP 2.0 of the Proposed Route. This mine has not been operational since 2017. The CLH Proposed Route would not impact any identified mineral resources.

Harpers to Fentress Proposed Route 1, Harpers to Fentress Alternative Routes 2 and 5, Harpers to Fentress Alternative Hybrid Route, Dam Neck Route Variation, and Line #2085 Route Variation

One active mineral operation is within 500 feet of HF Proposed Route 1, HF Alternative Routes 2 and 5 (each from approximate MPs 0.3 to 0.9), the HF Alternative Hybrid Route (approximate MPs 0.5 to 1.1), and the Dam Neck Route Variation (approximate MPs 0.0 to 0.2). The Taylor Farm Pit, operated by DWH, Inc., is a sand and gravel operation that the DMME permitted in 2012. According to a publicly available agenda from a City of Virginia Beach public hearing held in March 2016, the mine property owner, Taylor Farms Land Company, LLC, submitted a Conditional Use Permit application to expand the borrow pit area to the north and east, toward the Virginia Facilities project area (City of Virginia Beach 2016d). Available aerial imagery corroborates that the borrow pit expanded to the north and east between 2016 and 2018. A portion of HF Proposed Route 1, HF Alternative Routes 2 and 5, and the HF Alternative Hybrid Route would be within the parcel owned by Taylor Farms Land Company, LLC, but outside the expanded pit footprint and permitted mine area. None of the routes would impact active mineral operations but could restrict future mining operations within the parcel. No additional active mines are present within 0.25 mile of the routes.

N. Transportation Infrastructure

Road and Railroad Crossings

The CLH Proposed Route crosses nine roads, with General Booth Boulevard and Oceana Boulevard being the major trunk roads and the remainder consisting of smaller tertiary and residential roads. From the Harpers Switching Station to the point where the transmission line routes diverge from one another, HF Proposed Route 1, HF Alternative Routes 2 and 5, and the HF Alternative Hybrid Route cross six roads, with the major trunk roads being Dam Neck Road, London Bridge Road, and Princess Anne Road.

South of Princess Anne Road, the transmission line alternative routes follow different alignments. HF Proposed Route 1 and the HF Alternative Hybrid Route cross eight roads between the Princess Anne Road and the Fentress Substation, with the major crossings consisting of Landstown Road, Salem Road, Indian River Road, Mt. Pleasant Road, and Centerville Turnpike. HF Alternative Route 2 crosses six roads between and south of Princess Anne Road and Fentress Substation with major crossings consisting of Salem Road, Indian River Road, Mt. Pleasant Road, and Centerville Turnpike. HF Alternative Route 5 crosses 14 roads between Princess Anne Road and Fentress Substation, including North Landing Road, Indian River Road, Mt. Pleasant Road (two crossings), Blackwater Road (three crossings), Land of Promise Road (two crossings), and Centerville Turnpike.

HF Proposed Route 1, HF Alternative Routes 2 and 5, and the HF Alternative Hybrid Route cross the Chesapeake & Albemarle Railroad before entering the Fentress Substation.

The Dam Neck Route Variation crosses two roads: London Bridge Road and Harpers Road.

The Line #2085 Route Variation crosses three roads: North Landing Road (two crossings), Indian River Road, and Upton Lane.

For underground routes or underground route segments, most roads would be crossed via surface trenching, but some roads would be crossed by HDD or microtunnel, including General Booth Boulevard (CLH Proposed Route) and Dam Neck and London Bridge roads (the underground segment of the HF Alternative Hybrid Route). Road crossings along overhead route segments would comply with applicable clearance requirements over the roads. All road crossings would be as near to perpendicular as practicable given the surrounding constraints, alignment of existing transmission infrastructure (where applicable), and the general orientation of the routes.

Some temporary closures of roads and or traffic lanes may be required during construction of the project. No long-term impacts to roads are anticipated. Prior to construction, the Company will secure right-of-way permits from the Cities of Virginia Beach and Chesapeake for aerial crossings of City-maintained roads and for construction entrances from the Cities of Chesapeake and Virginia Beach rights-of-way. The Company will prepare traffic control plans for the Cities' review and approval for all work that may result in temporary road closures, such as when surface trenching, HDD or microtunneling is required. In September 2021, the Company solicited the City of Chesapeake and City of Virginia Beach Traffic Engineering Departments for comments on the proposed Virginia Facilities. The Company also solicited comments from the Virginia Department of Transportation ("VDOT"). Because the Virginia Facilities are located on or across road systems not maintained by VDOT, land use permits from VDOT are not expected to be required.

Airports

As part of the USN and Virginia Beach/Chesapeake Air Installations Compatible Use Zones ("AICUZ") Program, the USN has established Accident Protection Zones ("APZs") around both NAS Oceana and NALF Fentress. APZs are areas where an aircraft accident is most likely to occur if one should occur (City of Virginia Beach 2017c). APZs follow arrival, departure, and pattern flight tracks, and are found extending from the end of runways and around airfields. Three specific zones are defined: the clear zone, APZ 1, and APZ 2. The clear zone extends 3,000 feet beyond the runway and has the highest potential for an accident. APZ 1 generally extends 5,000 feet beyond the clear zone, and APZ 2 generally extends 7,000 feet beyond APZ 1.

The Federal Aviation Administration ("FAA") is responsible for overseeing air transportation in the United States. The FAA manages air traffic in the United States and evaluates physical objects that may affect the safety of aeronautical operations through an obstruction evaluation. The prime objective of the FAA in conducting an obstruction evaluation is to ensure the safety of air navigation and the efficient utilization of navigable airspace by aircraft.

Per USN restrictions, overhead electric transmission lines are prohibited in the clear zone and APZ 1, but allowed within APZ 2. Underground electric transmission lines are allowed in all three zones. None of the overhead segments of the alternative routes would cross areas within the clear zone or APZ 1.

The runways associated with NAS Oceana and NALF Fentress are the only two airports in the vicinity of the project area where a proposed tower may have the potential to interfere with the FAA defined airfields. Both airports are governed by FAA and Department of Defense (“DOD”) aviation regulations. The Company conducted a preliminary evaluation of structure heights and locations using FAA DOD military airport surfaces and applying standard GIS tools, including ESRI’s ArcMap 3D and Spatial Extension software. This software was used to create and geo-reference the imaginary surfaces in space and in relation to the locations and proposed heights of the transmission structures. Ground surface data for the study area were derived by using a USGS 10 Meter Digital Elevation Model. The overhead alternative routes and route segments were aligned in a way that would maintain distance from the ends of the runways of NAS Oceana and NALF Fentress. Consequently, the conclusion of the airport evaluation indicated there was no penetration of any of the FAA DOD imaginary surfaces by any proposed structures.

The Company reviewed the FAA’s website⁴ to identify airports within 10 miles of the Proposed and Alternative routes. Based on this review, 15 FAA-restricted airports and heliport were identified, as shown in Table N-1 below.

Table N-1 Virginia Facilities		
FAA Restricted Airports within 10 Miles of the Virginia Facilities		
Airport Name	Approximate Distance and Direction from Proposed Dominion Energy Virginia Facility (nautical miles)	Use
NAS Oceana	<ul style="list-style-type: none"> ○ 0.4 west of CLH Proposed Route ○ 1.3 northwest of HF Proposed Route 1 Route 1, HF Hybrid Route, and HF Alternative Routes 2 and 5 ○ 1.3 northwest of Harpers Switching Station 	Military Use
NALF Fentress	<ul style="list-style-type: none"> ○ 1.3 east of HF Proposed Route 1 and Harper to Fentress Hybrid Route ○ 1.1 south of HF Alternative Route 2 and Line #2085 Route Variation ○ 0.6 west of HF Alternative Route 5 	Military Use

⁴ See <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.

**Table N-1
Virginia Facilities**

FAA Restricted Airports within 10 Miles of the Virginia Facilities

Airport Name	Approximate Distance and Direction from Proposed Dominion Energy Virginia Facility (nautical miles)	Use
Sentara Princess Anne Heliport	<ul style="list-style-type: none"> ○ 1.0 northwest of HF Proposed Route 1, HF Hybrid Route, and HF Alternative Routes 2 and 5 	Private Use
Virginia Beach Municipal Heliport	<ul style="list-style-type: none"> ○ 1.2 south of HF Proposed Route 1, HF Hybrid Route, and HF Alternative Routes 2 and 5 	Private Use
LZ Alfa Heliport	<ul style="list-style-type: none"> ○ 2.0 east of Route 	Military Use
Virginia Beach Airport	<ul style="list-style-type: none"> ○ 3.0 east of HF Alternative Route 5 	Private Use
Breeden Company Heliport	<ul style="list-style-type: none"> ○ 3.0 northwest of Route 	Private Use
Virginia Beach General Hospital Heliport	<ul style="list-style-type: none"> ○ 3.0 north of Route 	Private Use
Chesapeake General Hospital Heliport	<ul style="list-style-type: none"> ○ 4.3 northwest of HF Proposed Route 1, HF Hybrid Route, and HF Alternative Routes 2 and 5 	Private Use
Armada/Hoffler Business Center Heliport	<ul style="list-style-type: none"> ○ 4.8 northwest of HF Proposed Route 1 and HF Hybrid Route ○ 5.1 northwest of HF Alternative Route 2 ○ 6.2 north of HF Alternative Route 5 	Private Use
Division Five Heliport	<ul style="list-style-type: none"> ○ 5.5 northwest of HF Proposed Route 1 and HF Hybrid Route ○ 5.7 northwest of HF Alternative Route 2 ○ 6.8 north of HF Alternative Route 5 	Private Use
Chesapeake Regional Airport	<ul style="list-style-type: none"> ○ 6.1 west of HF Proposed Route 1, HF Hybrid Route, and HF Alternative Routes 2 and 5 	Public Use
Sentara Leigh Hospital Heliport	<ul style="list-style-type: none"> ○ 6.6 northwest of HF Proposed Route 1 and HF Hybrid Route ○ 7.2 northwest of HF Alternative Routes 2 and 5 	Private Use
Norfolk International Airport	<ul style="list-style-type: none"> ○ 8.8 northwest of HF Proposed Route 1 and HF Hybrid Route 	Public Use

Table N-1 Virginia Facilities		
FAA Restricted Airports within 10 Miles of the Virginia Facilities		
Airport Name	Approximate Distance and Direction from Proposed Dominion Energy Virginia Facility (nautical miles)	Use
WAVY TV Heliport	<ul style="list-style-type: none"> ○ 9.0 northwest of HF Proposed Route 1 and HF Hybrid Route ○ 9.1 northwest of HF Alternative Route 2 	Private Use

The Company solicited comments from the Virginia Department of Aviation (“DOAv”) regarding the proposed Virginia Facilities. In an email dated September 27, 2021, the DOAv stated that a Form 7460 will need to be submitted to the FAA to initiate an aeronautical study to ensure that the proposed Virginia Facilities will not constitute a hazard to air navigation. The email is included as Attachment 2.N.1.

References:

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Joint Legislative Audit and Review Commission of the Virginia General Assembly (JLARC). 1998. The Feasibility of Converting Camp Pendleton to a State Park, House Document No. 11. Available online at: <http://jlarc.virginia.gov/pdfs/reports/Rpt221.pdf>. Accessed October 1, 2021.

Virginia Department of Environmental Quality (DEQ). 2021. Environmental Data Mapper. Available online at: <https://apps.deq.virginia.gov/EDM/>. Accessed September 24, 2021.

Attachments

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219
DominionEnergy.com



September 22, 2021

BY EMAIL

Mr. Terry Lasher
Forestland Conservation Division
Virginia Department of Forestry
900 Natural Resources Drive, Suite 800
Charlottesville, Virginia 22903

**RE: Dominion Energy Virginia's Proposed CVOW Commercial Project
Cities of Virginia Beach and Chesapeake, Virginia**

Dear Mr. Lasher,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

In order to reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. If approved, the new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500 kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

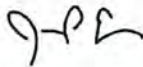
Following extensive study and public engagement, the Company has identified four route options for the new 230 kV lines for notice to the Virginia State Corporation Commission ("SCC"). All routing options share a common underground alignment from the cable landing site location on the State Military Reservation to the proposed Harpers Switching Station, located on Naval Air Station Oceana. From Harpers Switching Station, new transmission lines are proposed to go to, and terminate at, the Fentress Substation. The Company is reviewing four routes proposed for notice from the segment of the new transmission lines from Harpers Switching Station to Fentress Substation, which includes three overhead routes and variations and one hybrid route (underground and overhead). The final decision on which route will be built will be determined by the SCC.

CVOW Project
9/22/2021
Page 2 of 2

The Company is preparing an application for a Certificate of Public Convenience and Necessity (“CPCN”) for the Virginia Facilities from the SCC. At this time, in advance of an SCC filing, the Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter. Enclosed is an overview map of the routes currently under review. If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Rachel Studebaker at (804) 217-1847 or rachel.m.studebaker@dominionenergy.com.

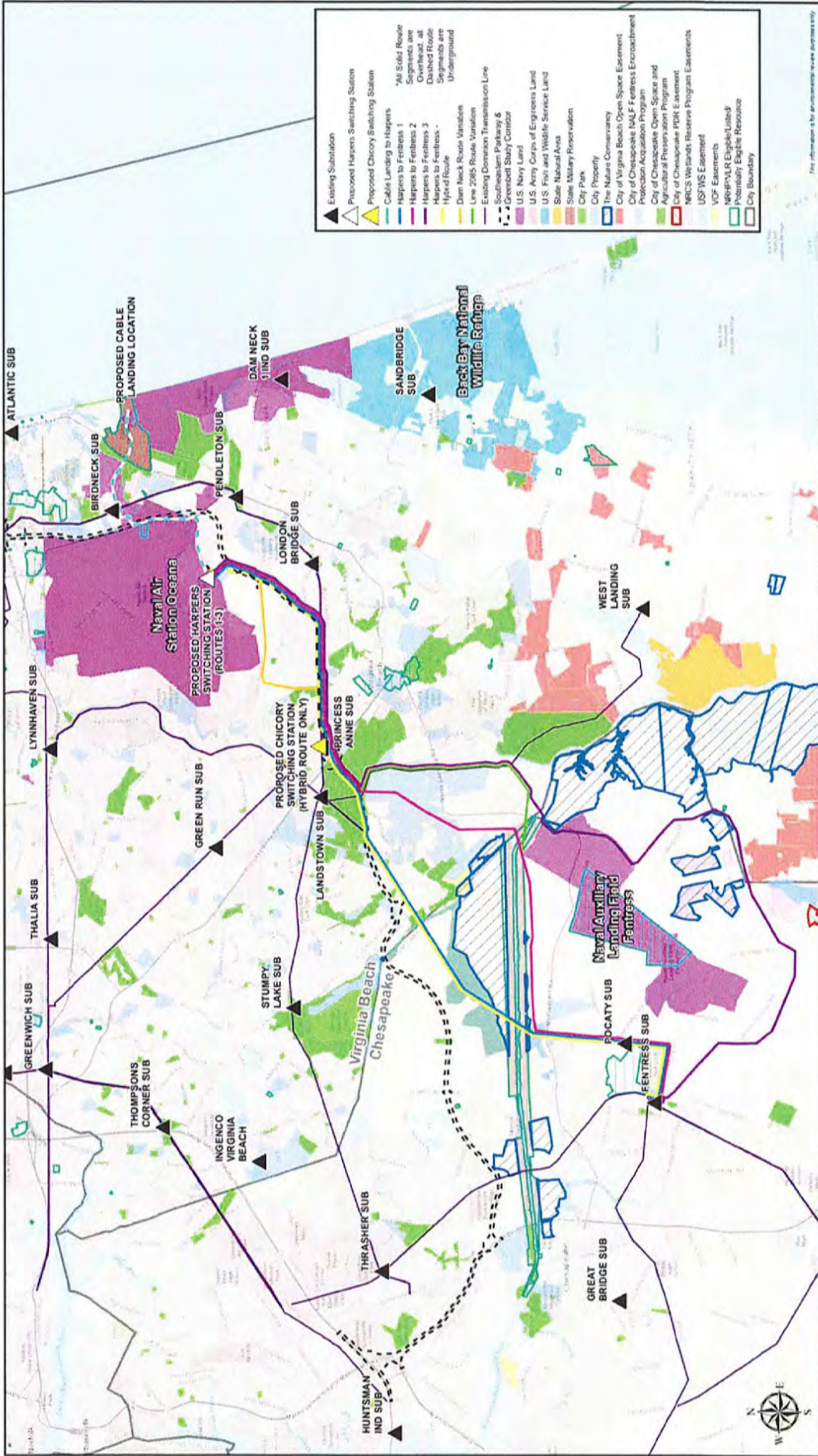
We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,
Dominion Energy Virginia




Jason P. Ericson
Director, Environmental Services

Attachment: Project Overview Map



Coastal Virginia Offshore Wind Commercial Project - Project Overview Map
 Dominion Virginia Power
 Virginia Beach and Chesapeake, VA
 Current Transmission Line Routes


 1:100,000
 0 1 2 Miles
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 W E S

LRS, S.M. Clark/D.F. O'Connell/Chesapeake Wind, At-GS-2021-06-13, CVO2F, Agency Overview Map, DOM, CVO2F, Agency Overview Map, RECORDED: 09/13/2021 | SCALE: 1:100,000 when printed at 11x17
 City information for environmental overlays provided

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219
DominionEnergy.com



September 22, 2021

BY EMAIL

Ms. Bettina Rayfield
Manager Environmental Impact Review and Long Range Priorities Program
Office of Environmental Impact Review
Department of Environmental Quality
PO Box 1105
Richmond, Virginia 23218

**RE: Dominion Energy Virginia's Proposed CVOW Commercial Project
Cities of Virginia Beach and Chesapeake, Virginia**

Dear Ms. Rayfield,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

In order to reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. If approved, the new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500 kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

Following extensive study and public engagement, the Company has identified four route options for the new 230 kV lines for notice to the Virginia State Corporation Commission ("SCC"). All routing options share a common underground alignment from the cable landing site location on the State Military Reservation to the proposed Harpers Switching Station, located on Naval Air Station Oceana. From Harpers Switching Station, new transmission lines are proposed to go to, and terminate at, the Fentress Substation. The Company is reviewing four routes proposed for notice from the segment of the new transmission lines from Harpers Switching Station to Fentress Substation, which includes three overhead routes and variations and one hybrid route (underground and overhead). The final decision on which route will be built will be determined by the SCC.

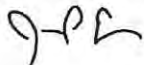
CVOW Project
9/22/2021
Page 2 of 2

The Company is preparing an application for a Certificate of Public Convenience and Necessity ("CPCN") for the Virginia Facilities from the SCC. At this time, in advance of an SCC filing, the Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter. Enclosed is an overview map of the routes currently under review. If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Rachel Studebaker at (804) 217-1847 or rachel.m.studebaker@dominionenergy.com.

We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Dominion Energy Virginia



Jason P. Ericson
Director, Environmental Services

Attachment: Project Overview Map

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219
DominionEnergy.com



September 22, 2021

BY EMAIL

Ms. Robbie Rhur
Planning Bureau
Department of Conservation and Recreation
600 East Main Street, 17th Floor
Richmond, Virginia 23219

**RE: Dominion Energy Virginia's Proposed CVOW Commercial Project
Cities of Virginia Beach and Chesapeake, Virginia**

Dear Ms. Rhur,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

In order to reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. If approved, the new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500 kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

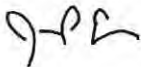
Following extensive study and public engagement, the Company has identified four route options for the new 230 kV lines for notice to the Virginia State Corporation Commission ("SCC"). All routing options share a common underground alignment from the cable landing site location on the State Military Reservation to the proposed Harpers Switching Station, located on Naval Air Station Oceana. From Harpers Switching Station, new transmission lines are proposed to go to, and terminate at, the Fentress Substation. The Company is reviewing four routes proposed for notice from the segment of the new transmission lines from Harpers Switching Station to Fentress Substation, which includes three overhead routes and variations and one hybrid route (underground and overhead). The final decision on which route will be built will be determined by the SCC.

CVOW Project
9/22/2021
Page 2 of 2

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We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,
Dominion Energy Virginia



Jason P. Ericson
Director, Environmental Services

Attachment: Project Overview Map

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219
DominionEnergy.com



September 22, 2021

BY EMAIL

Mr. Keith Tignor
Endangered Plant and Insect Species Program
Virginia Department of Agriculture and Consumer Affairs
102 Governor Street
Richmond, Virginia 23219

**RE: Dominion Energy Virginia's Proposed CVOW Commercial Project
Cities of Virginia Beach and Chesapeake, Virginia**

Dear Mr. Tignor,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

In order to reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. If approved, the new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500 kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

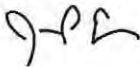
Following extensive study and public engagement, the Company has identified four route options for the new 230 kV lines for notice to the Virginia State Corporation Commission ("SCC"). All routing options share a common underground alignment from the cable landing site location on the State Military Reservation to the proposed Harpers Switching Station, located on Naval Air Station Oceana. From Harpers Switching Station, new transmission lines are proposed to go to, and terminate at, the Fentress Substation. The Company is reviewing four routes proposed for notice from the segment of the new transmission lines from Harpers Switching Station to Fentress Substation, which includes three overhead routes and variations and one hybrid route (underground and overhead). The final decision on which route will be built will be determined by the SCC.

CVOW Project
9/22/2021
Page 2 of 2

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We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,
Dominion Energy Virginia



Jason P. Ericson
Director, Environmental Services

Attachment: Project Overview Map

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219
DominionEnergy.com



September 22, 2021

BY EMAIL

Ms. Locke Ogens
State Director, Virginia
The Nature Conservancy
652 Peter Jefferson Parkway
Suite 190
Charlottesville, Virginia 22911

**RE: Dominion Energy Virginia's Proposed CVOW Commercial Project
Cities of Virginia Beach and Chesapeake, Virginia**

Dear Ms. Ogens,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

In order to reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. If approved, the new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500 kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

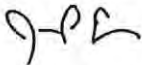
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CVOW Project
9/22/2021
Page 2 of 2

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We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,
Dominion Energy Virginia



Jason P. Ericson
Director, Environmental Services

Attachment: Project Overview Map

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219
DominionEnergy.com



September 22, 2021

BY EMAIL

Regulator of the Day
US Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510

**RE: Dominion Energy Virginia's Proposed CVOW Commercial Project
Cities of Virginia Beach and Chesapeake, Virginia**

Dear Regulator of the Day,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

In order to reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. If approved, the new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500 kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

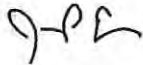
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CVOW Project
9/22/2021
Page 2 of 2

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We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,
Dominion Energy Virginia



Jason P. Ericson
Director, Environmental Services

Attachment: Project Overview Map

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219
DominionEnergy.com



September 22, 2021

BY EMAIL

Mr. Troy Andersen
US Fish and Wildlife Service
Ecological Services Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061

**RE: Dominion Energy Virginia's Proposed CVOW Commercial Project
Cities of Virginia Beach and Chesapeake, Virginia**

Dear Mr. Andersen,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

In order to reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. If approved, the new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500 kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

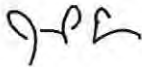
Following extensive study and public engagement, the Company has identified four route options for the new 230 kV lines for notice to the Virginia State Corporation Commission ("SCC"). All routing options share a common underground alignment from the cable landing site location on the State Military Reservation to the proposed Harpers Switching Station, located on Naval Air Station Oceana. From Harpers Switching Station, new transmission lines are proposed to go to, and terminate at, the Fentress Substation. The Company is reviewing four routes proposed for notice from the segment of the new transmission lines from Harpers Switching Station to Fentress Substation, which includes three overhead routes and variations and one hybrid route (underground and overhead). The final decision on which route will be built will be determined by the SCC.

CVOW Project
9/22/2021
Page 2 of 2

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We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,
Dominion Energy Virginia



Jason P. Ericson
Director, Environmental Services

Attachment: Project Overview Map

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219
DominionEnergy.com



September 22, 2021

BY EMAIL

Mr. Mark Eversole
Habitat Management Division
Virginia Marine Resources Commission
Building 96, 380 Fenwick Road
Fort Monroe, Virginia 23651

**RE: Dominion Energy Virginia's Proposed CVOW Commercial Project
Cities of Virginia Beach and Chesapeake, Virginia**

Dear Mr. Eversole,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

In order to reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. If approved, the new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500 kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

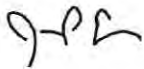
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CVOW Project
9/22/2021
Page 2 of 2

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We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,
Dominion Energy Virginia



Jason P. Ericson
Director, Environmental Services

Attachment: Project Overview Map

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219
DominionEnergy.com



September 22, 2021

BY EMAIL

Ms. Amy M. Ewing
Virginia Department of Wildlife Resources
P.O. Box 90778
Henrico, Virginia 23228

**RE: Dominion Energy Virginia's Proposed CVOW Commercial Project
Cities of Virginia Beach and Chesapeake, Virginia**

Dear Ms. Ewing,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

In order to reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. If approved, the new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500 kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

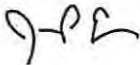
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CVOW Project
9/22/2021
Page 2 of 2

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Sincerely,
Dominion Energy Virginia



Jason P. Ericson
Director, Environmental Services

Attachment: Project Overview Map

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219
DominionEnergy.com



September 22, 2021

BY EMAIL

Ms. Rene Hypes
Virginia Department of Conservation and Recreation
Environmental Review Coordinator, Natural Heritage Program
600 East Main Street, Suite 1400
Richmond, Virginia 23219

**RE: Dominion Energy Virginia's 230 kV Line #293 and 115 kV Line #83 Rebuild Project
City of Staunton and Augusta County, Virginia**

Dear Ms. Hypes,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

In order to reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. If approved, the new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500 kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

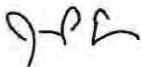
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CVOW Project
9/22/2021
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We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,
Dominion Energy Virginia



Jason P. Ericson
Director, Environmental Services

Attachment: Project Overview Map

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



September 23, 2021, 2021 [BY EMAIL]

Mr. Roger Kirchen
Review and Compliance Division
Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia 2322

Reference: Dominion Energy Virginia's Proposed CVOW Commercial Project, Cities of Virginia Beach and Chesapeake, Virginia

Dear Mr. Kirchen,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

To reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. The new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

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Dominion Energy Virginia

10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



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Enclosed is an overview map of the routes currently under review. If you would like to receive a GIS shapefile of the routes to assist in your review or if you have any questions, please do not hesitate to contact me at (804) 310-9658 or lane.e.carr@dominionenergy.com.

Dominion Energy Virginia appreciates your assistance with this review and looks forward to any additional information you may have to offer.

Regards,

A handwritten signature in black ink that reads "Lane Carr".

Lane Carr
Siting and Permitting Specialist

Attachment: Project Overview Map

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



September 23, 2021 [BY EMAIL]

Mr. Scott Denny
Airport Services Division
Virginia Department of Aviation
5702 Gulfstream Road
Richmond, Virginia 23250

Reference: Dominion Energy Virginia's Proposed CVOW Commercial Project, Cities of Virginia Beach and Chesapeake, Virginia

Dear Mr. Denny,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

To reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. The new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

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Dominion Energy Virginia

10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



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Lane Carr
Siting and Permitting Specialist

Attachment: Project Overview Map

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



September 23, 2021 [BY EMAIL]

Mr. Mike Helvey
Obstruction Evaluation Group Manager
Federal Aviation Administration
FAA Eastern Regional Office
800 Independence Ave, SW
Room 400 East
Washington, D.C. 20591

Reference: Dominion Energy Virginia's Proposed CVOW Commercial Project, Cities of Virginia Beach and Chesapeake, Virginia

Dear Mr. Helvey,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

To reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. The new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

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Dominion Energy Virginia

10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



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Lane Carr
Siting and Permitting Specialist

Attachment: Project Overview Map

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



September 23, 2021 [BY EMAIL]

Mr. Christopher Hall, P.E.
VDOT District Engineer, Hampton Roads District
7511 Burbage Drive
Suffolk, VA 23435

Reference: Dominion Energy Virginia's Proposed CVOW Commercial Project, Cities of Virginia Beach and Chesapeake, Virginia

Dear Mr. Hall,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

To reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. The new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

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Dominion Energy Virginia

10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



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Lane Carr
Siting and Permitting Specialist

Attachment: Project Overview Map

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



September 23, 2021 [BY EMAIL]

Ms. Martha Little
Virginia Outdoors Foundation
600 East Main Street, Suite 402
Richmond, Virginia 23219

Reference: Dominion Energy Virginia's Proposed CVOW Commercial Project, Cities of Virginia Beach and Chesapeake, Virginia

Dear Ms. Little,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

To reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. The new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

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Dominion Energy Virginia

10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



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Lane Carr
Siting and Permitting Specialist

Attachment: Project Overview Map

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



September 30, 2021 [BY EMAIL]

Mr. Robert J. Tajan
Director, City of Virginia Beach Planning Department
2875 Sabre St., Suite 500
Virginia Beach, Virginia 23452

Reference: Dominion Energy Virginia's Proposed CVOW Commercial Project, Cities of Virginia Beach and Chesapeake, Virginia

Dear Mr. Tajan,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

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Dominion Energy Virginia

10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



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Lane Carr
Siting and Permitting Specialist

Attachment: Project Overview Map

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



September 30, 2021 [BY EMAIL]

Mr. Phil D. Pullen, P.E.
City of Virginia Beach, Department of Public Works
Transportation Division Manager
484 Viking Drive, Suite 200
Virginia Beach, VA 23452

Reference: Dominion Energy Virginia's Proposed CVOW Commercial Project, Cities of Virginia Beach and Chesapeake, Virginia

Dear Mr. Pullen,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

To reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. The new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

Following extensive study and outreach, Dominion Energy Virginia has identified four route options for the new 230 kV lines for notice to the Virginia State Corporation Commission ("SCC"). All routing options share a common underground alignment from the cable landing site location on the State Military Reservation to the proposed Harpers Switching Station, located on Naval Air Station Oceana. From Harpers Switching Station, new transmission lines are proposed to go to, and terminate at, the Fentress Substation. The Company is reviewing four routes proposed for notice from the segment of the new transmission lines from Harpers Switching Station to Fentress Substation, which includes three overhead routes and variations and one hybrid route (underground and overhead). The final decision on which route will be built will be determined by the SCC.

Dominion Energy Virginia

10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



The Company is preparing an application for a Certificate of Public Convenience and Necessity ("CPCN") for the Virginia Facilities from the SCC. The Company is writing to notify you of the proposed facilities in advance of the SCC filing. At this time, in advance of the SCC filing, the Company respectfully requests that you submit any comments or additional information you feel would have bearing on the Virginia Facilities within 30 days of the date of this letter. Enclosed is an overview map of the routes currently under review. If you would like to receive a GIS shapefile of the routes to assist in your review or if you have any questions, please do not hesitate to contact me at (804) 310-9658 or lane.e.carr@dominionenergy.com.

Dominion Energy Virginia appreciates your assistance with this review and looks forward to any additional information you may have to offer.

Regards,

A handwritten signature in black ink that reads "Lane Carr".

Lane Carr
Siting and Permitting Specialist

Attachment: Project Overview Map

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



September 30, 2021 [BY EMAIL]

Mr. James McNamera
Acting Director, City of Chesapeake Planning Department
306 Cedar Road, Second Floor
Chesapeake, VA 23322

Reference: Dominion Energy Virginia's Proposed CVOW Commercial Project, Cities of Virginia Beach and Chesapeake, Virginia

Dear Mr. McNamera,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

To reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. The new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

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Dominion Energy Virginia

10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



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Regards,

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Lane Carr
Siting and Permitting Specialist

Attachment: Project Overview Map

Dominion Energy Virginia
10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



September 30, 2021 [BY EMAIL]

Mr. C. Earl Sorey, Jr., P.E.
Director, City of Chesapeake Public Works Department
306 Cedar Road, Third Floor
Chesapeake, VA 23322

Reference: Dominion Energy Virginia's Proposed CVOW Commercial Project, Cities of Virginia Beach and Chesapeake, Virginia

Dear Mr. Sorey,

Dominion Energy Virginia (the "Company") is proposing to build the Coastal Virginia Offshore Wind Commercial Project ("CVOW Project" or "CVOW"). The CVOW Project will begin 27 miles off the coast of Virginia Beach, adjacent to the Company's existing two turbines currently in operation and will extend east an additional 15 miles into the Atlantic. With a combined nameplate capacity of approximately 2.6 gigawatts, CVOW is seen as a critical resource for meeting the Commonwealth's objective of carbon-free energy by 2045.

To reliably interconnect the proposed CVOW Project with the electric transmission system and to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company is proposing to construct certain transmission facilities located within the Commonwealth of Virginia ("Virginia Facilities"), including three, new 230 kV electric transmission lines. The new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500kV Fentress Substation in the City of Chesapeake. The Virginia Facilities will also include expansion of the Fentress Substation and other related transmission facilities.

Following extensive study and outreach, Dominion Energy Virginia has identified four route options for the new 230 kV lines for notice to the Virginia State Corporation Commission ("SCC"). All routing options share a common underground alignment from the cable landing site location on the State Military Reservation to the proposed Harpers Switching Station, located on Naval Air Station Oceana. From Harpers Switching Station, new transmission lines are proposed to go to, and terminate at, the Fentress Substation. The Company is reviewing four routes proposed for notice from the segment of the new transmission lines from Harpers Switching Station to Fentress Substation, which includes three overhead routes and variations and one hybrid route (underground and overhead). The final decision on which route will be built will be determined by the SCC.

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10900 Nuckols Road, 4th Floor, Glen Allen, Virginia 23060



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Dominion Energy Virginia appreciates your assistance with this review and looks forward to any additional information you may have to offer.

Regards,

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Lane Carr
Siting and Permitting Specialist

Attachment: Project Overview Map



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219

P.O. Box 1105, Richmond, Virginia 23218

(800) 592-5482 FAX (804) 698-4178

www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural and Historic Resources

David K. Paylor
Director
(804) 698-4000

September 28, 2021

Rachel Studebaker
Dominion Energy Services
120 Tredegar Street
Richmond, VA 23219

RE: Dominion Energy Virginia's Proposed CVOW Commercial Project Transmission Lines,
Cities of Virginia Beach and Chesapeake, Virginia

Dear Ms. Studebaker:

This letter is in response to the scoping request for the above-referenced project.

As you may know, the Department of Environmental Quality, through its Office of Environmental Impact Review (DEQ-OEIR), is responsible for coordinating Virginia's review of environmental impacts for electric power generating projects and power line projects in conjunction with the licensing process of the State Corporation Commission.

DOCUMENT SUBMISSIONS

In order to ensure an effective coordinated review of the environmental impact analysis may be sent directly to OEIR. We request that you submit one electronic to eir@deq.virginia.gov (25 MB maximum) or make the documents available for download at a website, file transfer protocol (ftp) site or the VITA LFT file share system (Requires an "invitation" for access. An invitation request should be sent to eir@deq.virginia.gov). The required "Wetlands Impact Consultation" can be sent directly to Michelle Henicheck at michelle.henicheck@deq.virginia.gov or at the address above.

ENVIRONMENTAL REVIEW UNDER VIRGINIA CODE 56-46.1

While this Office does not participate in scoping efforts beyond the advice given herein, other agencies are free to provide scoping comments concerning the preparation of the environmental impact analysis document. Accordingly, we have coordinated your request with the following state agencies and those localities and Planning District Commissions, including but not limited to:

Department of Environmental Quality:
o DEQ Regional Office

- Air Division
 - Office of Wetlands and Stream Protection
 - Office of Local Government Programs
 - Division of Land Protection and Revitalization
 - Office of Stormwater Management
- Department of Conservation and Recreation
Department of Health
Department of Agriculture and Consumer Services
Department of Wildlife Resources
Virginia Marine Resources Commission
Department of Historic Resources
Department of Mines, Minerals, and Energy
Department of Forestry
Department of Transportation

DATA BASE ASSISTANCE

Below is a list of databases that may assist you in the preparation of a NEPA document:

- DEQ Online Database: Virginia Environmental Geographic Information Systems

Information on Permitted Solid Waste Management Facilities, Impaired Waters, Petroleum Releases, Registered Petroleum Facilities, Permitted Discharge (Virginia Pollution Discharge Elimination System Permits) Facilities, Resource Conservation and Recovery Act (RCRA) Sites, Water Monitoring Stations, National Wetlands Inventory:

- www.deq.virginia.gov/ConnectWithDEQ/VEGIS.aspx

- DEQ Virginia Coastal Geospatial and Educational Mapping System (GEMS)

Virginia's coastal resource data and maps; coastal laws and policies; facts on coastal resource values; and direct links to collaborating agencies responsible for current data:

- <http://128.172.160.131/gems2/>

- MARCO Mid-Atlantic Ocean Data Portal

The Mid-Atlantic Ocean Data Portal is a publicly available online toolkit and resource center that consolidates available data and enables users to visualize and analyze ocean resources and human use information such as fishing grounds, recreational areas, shipping lanes, habitat areas, and energy sites, among others.

<http://portal.midatlanticocean.org/visualize/#x=-73.24&y=38.93&z=7&logo=true&controls=true&basemap=Ocean&tab=data&legends=false&layers=true>

- DHR Data Sharing System.

Survey records in the DHR inventory:

- www.dhr.virginia.gov/archives/data_sharing_sys.htm

- DCR Natural Heritage Search

Produces lists of resources that occur in specific counties, watersheds or physiographic regions:

- www.dcr.virginia.gov/natural_heritage/dbsearchtool.shtml

- DWR Fish and Wildlife Information Service

Information about Virginia's Wildlife resources:

- <http://vafwis.org/fwis/>

- Total Maximum Daily Loads Approved Reports

- <https://www.deq.virginia.gov/programs/water/waterqualityinformationtmdls/tmdl/tmdldevelopment/approvedtmdlreports.aspx>

- Virginia Outdoors Foundation: Identify VOF-protected land

- <http://vof.maps.arcgis.com/home/index.html>

- Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database: Superfund Information Systems

Information on hazardous waste sites, potentially hazardous waste sites and remedial activities across the nation, including sites that are on the National Priorities List (NPL) or being considered for the NPL:

- www.epa.gov/superfund/sites/cursites/index.htm

- EPA RCRAInfo Search

Information on hazardous waste facilities:

- www.epa.gov/enviro/facts/rcrainfo/search.html

- Total Maximum Daily Loads Approved Reports

- <https://www.deq.virginia.gov/programs/water/waterqualityinformationtmdls/tmdl/tmdldevelopment/approvedtmdlreports.aspx>

- EPA Envirofacts Database

EPA Environmental Information, including EPA-Regulated Facilities and Toxics Release Inventory Reports:

- www.epa.gov/enviro/index.html

- EPA NEPAassist Database

Facilitates the environmental review process and project planning:

- <http://nepaassisttool.epa.gov/nepaassist/entry.aspx>

If you have questions about the environmental review process, please feel free to contact me (telephone (804) 698-4204 or e-mail bettina.rayfield@deq.virginia.gov).

I hope this information is helpful to you.

Sincerely,

A handwritten signature in black ink that reads "Bettina Rayfield". The signature is written in a cursive style with a horizontal line at the end.

Bettina Rayfield, Program Manager
Environmental Impact Review and
Long-Range Priorities



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219

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Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

MEMORANDUM

TO: Rachel Studebaker, Dominion Energy,
rachel.m.studebaker@dominionenergy.com

CC: DEQ Office of Environmental Impact Review, eir@deq.virginia.gov

FROM: Amber Foster, DEQ Principal Environmental Planner

DATE: October 21, 2021

SUBJECT: Request for Scoping Comments – Dominion Energy Virginia’s Proposed CVOW Commercial Project, Cities of Chesapeake and Virginia Beach

We have reviewed the letter dated September 22, 2021 regarding the request for comments for the proposed project and offer the following regarding consistency with the provisions of the *Chesapeake Bay Preservation Area Designation and Management Regulations* (Regulations):

In the City of Virginia Beach, lands protected by the *Chesapeake Bay Preservation Act* require conformance with specific performance criteria. These areas include Resource Protection Areas (RPAs) and Resource Management Areas (RMAs), as designated by the City. RPAs include tidal wetlands, certain non-tidal wetlands, and tidal shores. RPAs also include a 100-foot vegetated buffer area located adjacent to and landward of these features and along both sides of any water body with perennial flow. In the City of Virginia Beach, the RMA includes all remaining land in the Chesapeake Bay watershed not designated as RPA. RMAs require less stringent performance criteria than RPAs. Collectively these lands are referred to as Chesapeake Bay Preservation Areas (CBPA).

In the City of Chesapeake, CBPAs include RPA, RMA, and Intensely Developed Areas (IDA). The RPAs include tidal wetlands, non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow, tidal shores, and other lands determined by City Council to be necessary to protect the quality of state waters. As in all localities subject to the Regulations, the RPA in Chesapeake includes a vegetated buffer area of not less than 100-feet in width located adjacent to and landward of the features listed above and along both sides

of any water body with perennial flow. The RMAs include all lands contiguous to the inland boundary of the RPA and which, if not properly managed, have a potential for degrading water quality or diminishing the functional value of the RPA. RMA lands include, but are not limited to, floodplains, highly erodible soils including steep slopes, highly permeable soils, and non-tidal wetlands not included in the RPA. The RMA is that area of the CBPA not designated as RPA. The IDA is a designated redevelopment area of the City of Chesapeake in which little of the natural environment remains. The IDA may incorporate portions of both the RPA and RMA.

Dominion Energy has proposed to develop wind energy infrastructure both onshore and offshore the coast of Virginia. The project involves the construction of two new substations and three, new 230 kV electric transmission lines. If approved, the new transmission lines will traverse the Cities of Virginia Beach and Chesapeake and will interconnect with the existing 500 kV Fentress Substation in the City of Chesapeake. The project will also include expansion of existing substations and related transmission facilities as well as the construction of two new switching stations.

Based upon a desktop review using [Wetland Condition Assessment Tool](#) (WetCAT), an online mapping tool, it is determined that there is potential for a slight overlap into the CBPA with an underground cable landing leading to the proposed Harpers Switching Station in the City of Virginia Beach. This potential overlap occurs within the Hampton Roads hydrologic unit (HUC 02080208) between the southern terminus of First Colonial Road S and the western edge of South Oceana Boulevard on the Naval Air Station Oceana base.

DEQ recommends a site-specific determination of the location of the cable landing to the proposed Harpers Switching Substation to determine if there is indeed an overlap into the CBPA. Per Section 9 VAC 25-830-150(B) of the Regulations, the construction, installation, operation, and maintenance of public utilities and their appurtenant structures are conditionally exempt from the Regulations provided minimal criteria are met. These exemptions are based on the premise that the agencies responsible for their construction have water quality protection requirements equal in effectiveness to the *Chesapeake Bay Preservation Act* (Bay Act) and Regulations. The installation of these facilities must conform to both the *Erosion and Sediment Control Law* and the *Stormwater Management Act* and must be constructed according to an erosion and sediment control plan and a stormwater management plan approved by the Department of Environmental Quality.

Provided adherence to the above criteria, the proposed activity would be consistent with the Bay Act and Regulations.



COMMONWEALTH of VIRGINIA

Ann F. Jennings
Secretary of Natural and Historic
Resources

Marine Resources Commission
380 Fenwick Road
Bldg 96
Fort Monroe, VA 23651-1064

Steven G. Bowman
Commissioner

October 18, 2021

Dominion Energy Services
Attn: Rachel Studebaker
120 Tredegar Street
Richmond, VA 23219

Re: Dominion Energy's Proposed CVOW Commercial Project
Transmission Lines

Dear Ms. Studebaker,

This will respond to the request for comments regarding the Dominion Energy's Proposed CVOW Commercial Project Transmission Lines Project. Specifically, Dominion Energy has proposed to construct transmission facilities including three new 230 kV electric transmission lines that will traverse the cities of Virginia Beach and Chesapeake. We reviewed the provided documents and found that the proposed project may be within the jurisdictional areas of the Virginia Marine Resources Commission (VMRC) and may require a permit from this agency.

Please be advised that the VMRC pursuant to §28.2-1200 et seq of the Code of Virginia administers permits required for submerged lands, tidal wetlands, and beach and dunes. Any jurisdictional impacts will be reviewed by the VMRC during the Joint Permit Application process. Should the proposed project change, a new review by this agency may be required relative to these jurisdictional areas.

If you have any questions please contact me at (757) 247-8063 or by email at justin.worrell@mrc.virginia.gov. Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in blue ink that reads "Justin Worrell".

Justin Worrell
Environmental Engineer, Habitat Management

JW/cg
HM

An Agency of the Natural Resources Secretariat
www.mrc.virginia.gov

Telephone (757) 247-2200 (757) 247-2292 V/TDD Information and Emergency Hotline 1-800-541-4646 V/TDD



Coastal Virginia Offshore Wind Commercial Project – Onshore Virginia Facilities

Appendix F: Wetland and Waterbody Report

November 2021

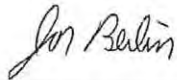
Project No.: 0522898

Signature Page

November 2021

Coastal Virginia Offshore Wind Commercial Project – Onshore Virginia Facilities

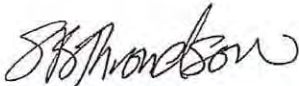
Appendix F: Wetland and Waterbody Report



Jon Berkin
Partner in Charge



Chris Senfield, PWS, PWD
Principal Consultant, Scientist



Sara Thronson
Principal Consultant, Scientist



Mariah Weitzenkamp
Associate Biologist

Environmental Resources Management, Inc.
222 South 9th Street, Suite 2900
Minneapolis Minnesota 55402

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CONTENTS

- 1. INTRODUCTION 1**
- 2. STUDY AREA AND POTENTIAL ROUTES 2**
 - 2.1 Cable Landing to Harpers Road 3
 - 2.1.1 Cable Landing Location 3
 - 2.1.2 Cable Landing to Harpers Route..... 3
 - 2.2 Harpers Road to Fentress Alternatives 3
 - 2.2.1 Harpers to Fentress Route 1..... 4
 - 2.2.2 Harpers to Fentress Route 2..... 5
 - 2.2.3 Harpers to Fentress Route 5..... 5
 - 2.2.4 Harpers to Fentress Hybrid Route 5
 - 2.2.5 Dam Neck Route Variation 6
 - 2.2.6 Line #2085 Route Variation 6
 - 2.3 Switching Stations 6
 - 2.4 Fentress Substation..... 7
- 3. DESKTOP EVALUATION METHODOLOGY 7**
 - 3.1 Data Sources 8
 - 3.2 Mapping Procedure 9
- 4. RESULTS 10**
 - 4.1 Cable Landing to Harpers Route 15
 - 4.2 Harpers to Fentress Route 1..... 15
 - 4.3 Harpers to Fentress Route 2..... 15
 - 4.4 Harpers to Fentress Route 5..... 15
 - 4.5 Harpers to Fentress Hybrid Route 15
 - 4.6 Dam Neck Route Variation 15
 - 4.7 Line #2085 Route Variation 15
- 5. CONCLUSION 16**
 - 5.1 Project Impacts 16
 - 5.2 Summary 16
- 6. REFERENCES 16**

ATTACHMENT A FIGURES

Figure 1: Project Overview Map

Figure 2: Wetland and Waterbody Mapset

List of Tables

- Table 1: Criteria Used to Rank the Probability of Occurrence 9
- Table 2: Probability of Occurrence for Wetland and Waterbody Types per Route..... 12

Acronyms and Abbreviations

Name	Description
CLH	Cable Landing to Harpers
CVOW	Coastal Virginia Offshore Wind Commercial Project
CWA	Clean Water Act
Dominion	Virginia Electric and Power Company
E1UB	Estuarine Subtidal
E2EM	Estuarine Intertidal
ERM	Environmental Resources Management, Inc.
GIS	Geographic Information System
HDD	horizontal directional drill
HF	Harpers to Fentress
ITA	Interfacility Traffic Area
kV	kilovolt
MP	milepost
NA	not applicable
NAIP	National Agricultural Imagery Program
NALF	Naval Auxiliary Landing Field
NAS	Naval Air Station
NERC	North American Electric Reliability Corporation
NHD	National Hydrography Dataset
NWI	National Wetland Inventory
NRCS	Natural Resources Conservation Service
OCS	Outer Continental Shelf
PEM	Palustrine Emergent
PFO	Palustrine Forested
PSS	Palustrine Scrub/Shrub
PUB	Palustrine Unconsolidated Bottom
ROW	right-of-way
RVR	Riverine
SCC	State Corporation Commission
SEPG	Southeastern Parkway and Greenbelt
SMR	State Military Reservation
SSURGO	Soil Survey Geographic
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USN	U.S. Navy
VDEQ	Virginia Department of Environmental Quality

1. INTRODUCTION

Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion) is proposing to construct and operate the Coastal Virginia Offshore Wind (CVOW) Commercial Project (Project), a commercial offshore wind generating facility and associated infrastructure connecting the facility to the electric transmission grid in Tidewater, Virginia. The wind generating facility would be built within the Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS) Offshore Virginia (Lease No. OCS-A-0483), approximately 27 miles east of the City of Virginia Beach, Virginia. An offshore subsea transmission line would be built from the wind generating facility to the shoreline of Virginia Beach, coming ashore east of Lake Christine in the Virginia State Military Reservation (SMR) at the Cable Landing Location, near the U.S. Navy's (USN) Dam Neck Annex. From this location, an onshore underground transmission line would be built to a point near Harpers Road in the City of Virginia Beach. An overhead or a hybrid (i.e., part underground/part overhead) transmission line would then be built from this point to Dominion's existing Fentress Substation in the City of Chesapeake.

Dominion considered multiple alternatives for the onshore portion of the Project (referred to as the onshore Virginia Facilities) that would integrate the energy output of the Project into Dominion's existing transmission system while maintaining the structural integrity and reliability of the system in compliance with mandatory North American Electric Reliability Corporation (NERC) Reliability Standards.

The onshore Virginia Facilities would include:

- Cable Landing Location for Offshore Export Circuits: Nine new 230 kilovolt (kV) submarine export circuits coming ashore at the Cable Landing Location in the SMR in the City of Virginia Beach;
- Onshore Export Circuits: Nine new 230 kV circuits extending underground from the Cable Landing Location to a new switching station in the City of Virginia Beach;
- Switching Station: A new 25-breaker, 230 kV switching station at a site near Harpers Road or an alternate site near Princess Anne Road in the City of Virginia Beach;
- Overhead Transmission Circuits: Three new overhead 230 kV transmission circuits, each with a rating of approximately 1,500 megavolt-amperes, along the same corridor and using a combination of new and expanded rights-of-way (ROWS) from the new switching station in the City of Virginia Beach to the Company's existing Fentress Substation in the City of Chesapeake; and
- Fentress Substation Expansion: Expansion of the Company's existing 500 kV Fentress Substation to accommodate the new transmission circuits.

In developing potential alternatives, Dominion considered the onshore facilities required to construct and operate the Project, the length and width of new and expanded ROWs that would be required, the amount of existing development in the area, the potential for environmental impacts, and the relative cost of each alternative.

The purpose of this desktop analysis is to identify and evaluate potential impacts of the onshore Virginia Facilities on aquatic resources. In accordance with the Virginia Department of Environmental Quality's (VDEQ's) and the State Corporation Commission's (SCC's) Memorandum of Agreement, the evaluation was conducted using various datasets that may indicate wetland and waterbody location and type. In areas where field wetland delineations had previously been approved by the U.S. Army Corps of Engineers (USACE), in accordance with the USACE *Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)* (USACE 2010), the results of those investigations

were also used to inform desktop analysis of wetland and waterbody evaluations. The desktop analysis provides a probability of wetland and waterbody occurrence within each alternative transmission line route and their associated onshore facilities. Field delineations were not performed and would be required to verify the accuracy and extent of aquatic resource boundaries. The information summarized in this report will be submitted to the VDEQ as part of the VDEQ wetland impacts consultation.

2. STUDY AREA AND POTENTIAL ROUTES

As a first step in identifying potential transmission line routes, Environmental Resources Management, Inc. (ERM) defined a study area for the onshore Virginia Facilities based on Dominion's electric transmission and service needs. The study area was identified to encompass areas around and between the Naval Air Station (NAS) Oceana and Dominion's existing Fentress Substation, which would be expanded. The study area encompasses an approximately 170-square-mile area (Figure 1 in Attachment A) generally defined by Dominion's Atlantic and Lynnhaven substations to the north; the Atlantic Ocean coastline to the east; the Green Run, Stumpy Lake, and Thrasher substations to the west; and the Hickory Substation to the south. This study area has an extensive network of existing Dominion transmission line infrastructure and a well-developed road infrastructure, both of which offer potential routing opportunities.

The study area for the onshore Virginia Facilities includes heavily developed portions of Virginia Beach and Chesapeake to the north and west, as well as the extensive Gum Swamp and associated North Landing River wetlands complex and more rural areas to the south. It encompasses very dense residential and commercial developments, large and numerous publicly owned lands, forested wetlands, major watercourses and associated floodplains, the Intracoastal Waterway canal, agricultural fields, military airport facilities, sports complexes, and golf courses.

ERM used a range of data resources to identify and map existing land uses, planned developments, and environmental, visual, and cultural features within the study area. Environmental or other features potentially affecting the constructability of the onshore Virginia Facilities within the study area were defined as routing constraints. ERM also identified existing electric transmission lines, pipelines, roads, and other ROWs within the study area. These existing linear corridor features were defined as potential opportunities for routing/siting transmission infrastructure. ERM layered the routing opportunities over the constraints in the Geographic Information System (GIS) to identify potential routes/sites for the onshore Virginia Facilities.

A single underground route alternative was identified for the proposed transmission lines between the Cable Landing Location and a point near Harpers Road in Virginia Beach, which is one of two potential sites for a proposed new switching station. This segment is referred to as the Cable Landing to Harpers (CLH) Route. ERM identified three overhead route alternatives and one hybrid route alternative for the transmission line between this point in Virginia Beach and Dominion's existing Fentress Substation in Chesapeake; these are referred to as Harpers to Fentress (HF) Routes 1, 2, and 5, and the HF Hybrid Route. HF Routes 1, 2, and 5 would each require a switching station at the point near Harpers Road (Harpers Switching Station), whereas the HF Hybrid Route would require a switching station at an alternate site near Princess Anne Road (Chicory Switching Station). Both potential switching station sites are located in Virginia Beach. The Harpers Switching Station would be located on USN lands at NAS Oceana and the Chicory Switching Station would be located on private lands. ERM additionally identified and evaluated two route variations, the Dam Neck Route Variation and the Line #2085 Route Variation. A description of the proposed onshore Virginia Facilities, including alternative transmission line routes, route variations, and associated facilities is provided below.

2.1 Cable Landing to Harpers Road

2.1.1 Cable Landing Location

The intersection of the proposed Offshore and Onshore Export Circuits would occur at the Cable Landing Location at the SMR. The site would measure approximately 293 feet by 430 feet in size, encompassing approximately 2.8 acres, plus additional temporary workspace that would be used during construction. For the landing design, Dominion proposes to use the horizontal directional drill (HDD) or direct pipeline installation method to excavate nine subsurface holes or tunnels through which the transmission circuits would be installed under the beach and associated dunes to a location approximately 1,800 feet offshore. HDD is a trenchless installation method that uses a steerable drilling machine to drill a hole through the ground along a pre-determined path and then pull steel casing pipelines through the hole. Direct pipe is a trenchless installation method that uses a steerable boring machine to excavate a tunnel through the ground along a pre-determined path, while simultaneously pushing steel casing pipes through the tunnel.

2.1.2 Cable Landing to Harpers Route

The CLH Route for the Onshore Export Circuits would include both HDD and surface trench installation of the proposed underground circuits between the Cable Landing Location and the potential switching station site near Harpers Road. After exiting the tunnels, the nine concrete-encased, underground duct banks would transition to five HDDs for crossing Lake Christine. The HDDs would extend east for approximately 0.3 mile (1,540 feet) passing beneath two branches of the lake separated by a peninsula of USN land at Dam Neck Annex. The HDDs would terminate on the west side of the lake just north of a helicopter landing pad at the north end of Lake Road on the SMR. From here, the underground circuits would be installed by surface trenching in a typical, three-wide, nine-circuit, duct bank configuration. The route would head generally west for about 0.6 mile, mostly crossing parade and training grounds within the SMR.

At a point just east of General Booth Boulevard, the typical, three-wide, duct bank configuration would diverge into five HDDs for crossing Owl Creek and associated wetlands. The HDDs would extend approximately 0.4 mile (2,200 feet) to the northwest, leaving the SMR, crossing a parcel along the creek owned by the City of Virginia Beach, and exiting onto USN land at NAS Oceana near Bells Road. The underground circuits would then converge into the typical, three-wide, duct bank configuration and continue west and south on USN land for about 1.0 mile, paralleling Bells Road for 0.6 mile and crossing Birdneck Road and Dominion's existing ROW for Lines #2118/78. The CLH Route would then turn south to parallel the east side of Oceana Boulevard for about 1.1 miles, all on USN land. At the intersection of Oceana Boulevard and Harpers Road, the route for the underground circuits would head west to parallel the north side of Harpers Road for about 1.0 mile and terminate at the Harpers Switching Station site on the north side of Harpers Road.

The total length of the CLH Route is 4.4 miles; 3.7 miles would be constructed with surface trenching and 0.7 mile would be constructed with HDD.

2.2 Harpers Road to Fentress Alternatives

For each alternative, a switching station would be required to consolidate the nine onshore export circuits down to three transmission circuits and to electrically adjust the facilities to transition from an underground to an overhead transmission configuration. As noted previously, HF Routes 1, 2, and 5 would each require a switching station near Harpers Road (Harpers Switching Station), while the HF Hybrid Route would require a switching station near Princess Anne Road (Chicory Switching Station).

Except as noted in the subsections below, HF Routes 1, 2, and 5 and the overhead segment of the HF Hybrid Route would each require sets of three single-circuit monopole structures to carry the three proposed 230 kV circuits. For the underground segment of the HF Hybrid Route, the typical three-wide, duct bank configuration described above for the CLH Route would continue from the common point north of Harpers Road to the Chicory Switching Station.

2.2.1 Harpers to Fentress Route 1

Harpers to Fentress (HF) Route 1 would be entirely overhead from the Harpers Switching Station to the Fentress Substation. After exiting the Harpers Switching Station, HF Route 1 would proceed generally southwest for about 2.3 miles across both private lands and lands owned by the City of Virginia Beach adjacent to or within the Southeastern Parkway and Greenbelt (SEPG) study corridor. This segment of the route would cross Dam Neck and London Bridge roads and pass between the Prince George Estates, Mayberry, Pine Ridge, and Castleton residential subdivisions. The route would then intersect and parallel Dominion's existing Lines #2118/147 corridor for a distance of approximately 1.8 miles, mostly crossing City-owned lands within or adjacent to the SEPG corridor. This segment would pass south of the Castleton residential subdivision and between the Buyrn Farm North, Holland Pines, and Woods of Piney Grove residential subdivisions near Holland Road.

After leaving Dominion's existing transmission line corridor, HF Route 1 would continue in a southwesterly direction for about 2.1 miles, mostly crossing City-owned lands within the SEPG corridor, including an undeveloped portion of the Princess Anne Athletic Complex. This segment would cross Dominion's existing ROW for Line #2085 just east of Landstown Road and intersect with the existing ROW for Line #271 north of the intersection of Salem and Landstown roads. The existing lattice structures for Line #271 also support the idle Line #I-74, with both lines configured for 230 kV.

At the intersection with Line #271, the three proposed circuits would join and follow the Line #271 corridor for 6.1 miles to the south/southwest to Dominion's existing Pocaty Substation in Chesapeake. This section of the route would require a wreck-and-rebuild of the existing double-circuit lattice structures for Lines #271/I-74 with new double-circuit monopole structures (to carry Line #271 and one CVOW Project circuit), plus the construction of either an additional double-circuit, monopole structure or two additional single-circuit structures (to carry two CVOW Project circuits). The double circuit monopole structures would be installed in the route segment crossing the Highland Meadows/Highland Acres subdivisions from approximate mileposts (MPs) 6.6 to 7.0 and the Indian River Woods/Indian River Farms subdivisions from approximate MPs 7.3 to 7.7 in Virginia Beach where there is limited space to expand the existing ROW. Two new single-circuit monopole structures would be installed elsewhere along this segment (i.e., from approximate MPs 6.2 to 6.7, MPs 7.0 to 7.3, and MPs 7.7 to 12.3).

The route segment along Line #271 would enter the City of Chesapeake southwest of Indian River Farms Park. The Chesapeake portion of the route initially would cross mostly forested lands, including private land, parcels owned by the City of Chesapeake, and two tracts owned by The Nature Conservancy. This segment would also cross USACE-owned lands along the Intracoastal Waterway canal. South of the waterway, the route would mostly cross privately owned agricultural lands in addition to crossing Mt. Pleasant and Blue Ridge roads.

From the Pocaty Substation, HF Route 1 would follow Dominion's existing corridor for Lines #2240/I-74 for 0.7 mile south, crossing Whittamore Road and passing along the east side of the Battlefield Golf Club. The route would then head west for 1.1 miles along the south side of the golf club before entering Fentress Substation. The route segment from the Pocaty to Fentress substations would require a wreck-and-rebuild of Dominion's existing Line #2240 double-circuit lattice structures and their replacement with new double-circuit, monopole structures, plus construction of two additional single-circuit structures. The new double-circuit structures would carry Line #2240 and one CVOW Project circuit, and the new single-

circuit, monopole structures would each carry one CVOW Project circuit. The total length of HF Route 1 is 14.2 miles.

2.2.2 Harpers to Fentress Route 2

HF Route 2 would follow the same alignment as HF Route 1 for approximately 5.5 miles from the Harpers Switching Station to a point just east of Landstown Road in the Princess Anne Athletic Complex. The route would then head south/southwest for about 1.8 miles across sparsely developed forested and agricultural lands primarily owned by the City of Virginia Beach and managed as part of the City's Interfacility Traffic Area (ITA). After crossing Indian River Road, the route would continue about 1.0 mile to the south across mostly forested private lands to the boundary between Virginia Beach and Chesapeake.

Once in Chesapeake, HF Route 2 would head southwest for approximately 0.9 mile, crossing the Intracoastal Waterway canal and adjacent federal lands managed by the USACE at a point about 0.6 mile northwest of the North Landing River Bridge. It would then proceed west for 2.6 miles across privately owned forested and agricultural parcels along the south side of the Intracoastal Waterway canal to an intersection with Dominion's existing ROW for Lines #271/I-74. From here, the route would follow the same alignment as HF Route 1 for about 3.5 miles to the Fentress Substation. The total length of HF Route 2 is 15.2 miles.

2.2.3 Harpers to Fentress Route 5

HF Route 5 would follow the same alignment as HF Routes 1 and 2 for approximately 5.5 miles from the Harpers Switching Station site to Dominion's existing ROW for Line #2085 near Landstown Road at the Princess Anne Athletic Complex. It would then follow the west side of Line #2085 for approximately 2.8 miles to the south. About 2.5 miles of this route segment would cross primarily undeveloped (agricultural) lands owned by the City of Virginia Beach adjacent to (but on the opposite side of the existing transmission line from) the Courthouse Woods and Courthouse Estates residential subdivisions. The remainder of this segment, about 0.3 mile on the south side of Indian River Road, would continue along Line #2085 across mostly forested, privately owned parcels. The route would then head southwest away from Line #2085 for about 1.0 mile, where it would cross the Intracoastal Waterway canal about 0.1 mile downstream of the North Landing River Bridge and enter the City of Chesapeake.

South of the river, HF Route 5 would cross Mt. Pleasant Road and a short segment (about 320 feet) of USACE land before heading generally south for about 3.9 miles, crossing 1.9 miles of undeveloped USN land along the edge of Naval Auxiliary Landing Field (NALF) Fentress and agricultural and forested private lands further south. This segment of the route would cross Mt. Pleasant, Blackwater, and Fentress Airfield roads, pass to the west of North Landing Farms, and parallel Blackwater Road for about 0.8 mile. HF Route 5 would then cross the state-designated scenic Pocatoy River, turn southwest, and generally parallel the river through forested private lands for about 2.2 miles. It would then head west/northwest for about 4.6 miles across sparsely populated, privately owned, agricultural lands. HF Route 5 would then follow Dominion's existing ROW for Line #2240 for about 0.1 mile east to Fentress Substation. The total length of HF Route 5 is 20.2 miles.

2.2.4 Harpers to Fentress Hybrid Route

The HF Hybrid Route would not have a switching station at Harpers Road. Instead, the HF Hybrid Route would continue underground in a typical, three-wide, nine-circuit, duct bank configuration following, with one minor exception, the same alignment as HF Routes 1, 2, and 5 to the Chicory Switching Station site near Princess Anne Road in Virginia Beach, a distance of about 4.5 miles. The exception would be an approximately 0.25-mile deviation, starting at a point about 0.3 mile southeast of Harpers Road, where the underground alignment would follow the edge of an agricultural field.

While the majority of the underground segment of the HF Hybrid Route would be installed by surface trenching, this alternative would also require two microtunnels to install the transmission line beneath Dam Neck and London Bridge roads and an HDD to install the transmission line beneath a large wetland complex east of Chestwood Drive. For each of the trenchless installations, the three-wide, nine-circuit, duct bank configuration would diverge into six HDDs/microtunnels to complete the crossing, then converge back to the standard underground configuration.

At the Chicory Switching Station, the HF Hybrid Route would transition to a typical, three-circuit, overhead configuration and follow the same path as HF Route 1 to Fentress Substation in Chesapeake.

The total length of the HF Hybrid Route is 14.2 miles; 9.7 miles would be constructed as overhead transmission, 3.9 miles would be constructed underground using surface trenching, and 0.6 miles would be constructed underground using HDD or microtunnel installation.

2.2.5 Dam Neck Route Variation

The Dam Neck Route Variation provides an alternative to the alignment of HF Routes 1, 2, and 5 where they pass between the residential developments of Prince George Estates, Mayberry, Castleton, and Pine Ridge (within the SEPG study corridor and/or adjacent to Dominion's existing ROW for Lines #2118/147) in Virginia Beach. This route variation was considered because it would collocate part of the route with Dam Neck Road and avoid passing between the residential developments. Rather than continuing to the southwest after crossing Dam Neck Road, the route variation would instead turn west to parallel the south side of Dam Neck Road for approximately 1.8 miles, primarily crossing privately owned agricultural and forested lands. At a point about 0.4 mile west of the crossing of London Bridge Road, the route would turn south and continue for approximately 1.0 mile across private and forested lands owned by the City of Virginia Beach, including an approximately 0.5-mile-long crossing of City-owned undeveloped parkland at Holland Pines Park and a crossing of West Neck Creek. The route variation would end at its intersection with Dominion's existing ROW for Lines #2118/147, where it would rejoin the alignment of HF Routes 1, 2, and 5. The total length of the Dam Neck Route Variation is 2.8 miles.

2.2.6 Line #2085 Route Variation

The Line #2085 Route Variation provides an alternative to HF Route 2 in the area between the Princess Anne Athletic Complex and the crossing of the Intracoastal Waterway canal. This route variation was considered because it would utilize the Line #2085 corridor as a routing opportunity. The route variation would deviate from HF Route 2 near Landstown Road on the south side of the Princess Anne Athletic Complex and the U.S. Field Hockey Complex. It would then follow the west side of Line #2085 for approximately 2.8 miles to the south following the same alignment as HF Route 5 across agricultural and forested lands on the west side of the Courthouse Woods and Courthouse Estates subdivisions. At a point about 0.3 mile south of Indian River Road, the route variation would turn away from the Line #2085 corridor and continue west for approximately 1.6 miles, crossing North Landing Road, North Landing River, and the Intracoastal Waterway canal before rejoining HF Route 2 on the west side of the waterway. The total length of the Line #2085 Route Variation is 4.4 miles.

2.3 Switching Stations

The switching station required for the onshore Virginia Facilities would be an electric transmission system asset comprising circuit breakers, gas-insulated switchgear, shunt reactors, and static synchronous compensators. The primary purpose of the switching station would be to consolidate the nine Onshore Export Circuits down to three transmission circuits that would then connect to the existing transmission grid. The transition from an underground to an overhead transmission configuration would also occur at the switching station. The facility would generally have the appearance of a typical Dominion substation.

For HF Routes 1, 2 and 5, the Harpers Switching Station would be built on USN lands at NAS Oceana north of Harpers Road. The northeast corner of the site includes portions of two fairways within the Aeropines Golf Course and the central portion of the site includes maintenance structures associated with the golf course, which would be removed from the site during construction of the switching station. The site would encompass approximately 21.0 acres, all of which would be fenced and maintained for operations. Locations of stormwater management facilities have not yet been determined.

For the HF Hybrid Route, the Chicory Switching Station would be built at an alternate site on mostly private lands on the north side of Princess Anne Road adjacent to Dominion's existing ROW for Lines #2118/I-47, just south of the existing Princess Anne Substation. The alternate site encompasses a mix of city and privately owned lands, all currently forested. The site would encompass approximately 31.5 acres, of which approximately 17.1 acres would be fenced and maintained for operations. The remainder of the site would be used for stormwater management and temporary construction workspace.

2.4 Fentress Substation

Dominion's existing 500 kV Fentress Substation is situated on a parcel it owns in Chesapeake east of the Fentress Loop Road, south of the Fentress Lakes subdivision, north of the Carriage House Commons subdivision, and west of the Chesapeake & Albemarle Railroad. The facility measures approximately 705 feet by 755 feet, encompassing about 11.7 acres. Surrounding lands are predominantly forested (and mostly wetland) with the exception of existing transmission ROWs entering and exiting the facility.

For the CVOW Project, Dominion proposes to expand the existing facility footprint on Company-owned land, convert the 500 kV portion of the substation into a 10-breaker, gas insulated station, and install three 500-230 kV transformer banks and associated equipment to interconnect each of the proposed 230 kV circuits. The expansion would extend the boundary of the existing station about 490 feet to the north, encompassing an additional approximately 8.9 acres for a total (post-Project) station footprint of about 20.6 acres.

3. DESKTOP EVALUATION METHODOLOGY

The area of effect considered for this study consists of the alternative transmission line routes and associated facilities identified above. Data sources used for this review include the following, each of which is described briefly below:

- National Agricultural Imagery Program (NAIP) Digital Ortho-Rectified Images:
 - NAIP Digital Ortho-Rectified Natural Color Images, Virginia, 1-meter pixel resolution, photo date January 2021 (NAIP 2019)
 - NAIP Digital Ortho-Rectified Infrared Images, Virginia, 1-meter pixel resolution, photo date November 2020 (NAIP 2019)
- U.S. Geological Survey (USGS) Topographic Mapping (USGS 2021a)
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping (USFWS 2021)
- U.S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) Soil Survey Geographic (SSURGO) database (USDA 2021)
- USGS National Hydrography Dataset (NHD; USGS 2021b)
- City of Chesapeake Geospatial Data (City of Chesapeake 2018)
- City of Virginia Beach Mapping and Spatial Analysis (City of Virginia Beach 2019)

3.1 Data Sources

Natural Color and Infrared Aerial Photography

Recent (2010 to 2019) natural color aerial photography was used to provide a visual overview of the study area and to assist in evaluating current conditions. Recent (2010 to 2019) infrared aerial photography was used to identify the potential presence of wetlands based on signatures associated with the levels of reflectance. For example, areas inundated with water appear very dark (almost black) due to the low level of reflectance in the infrared spectrum. The presence of these dark colors can be used as a potential indicator of hydric or inundated soils likely associated with wetlands (NAIP 2019).

USGS Topographic Mapping

The recent (2014 to 2017) USGS topographic maps show the topography of the area. The USGS topographic maps also depict other important landscape features such as forest cover, development, buildings, agricultural areas, streams, lakes, and wetlands. Historic topographic mapping (1988 to 2012) was used to identify potential changes in stream locations and topography due to the high level of urban disturbance in a portion of the study area (USGS 2021a).

USFWS National Wetland Inventory Mapping

The NWI maps provide the boundaries and classifications of potential wetland areas as mapped by the USFWS (USFWS 2021). NWI data are based primarily on aerial photo interpretations with limited ground-truthing and may represent incorrect boundaries or wetland cover types. NWI data can be unreliable in some areas, especially in forested landscapes, when aerial photography is used as the major data source. The classifications of the majority of the NWI polygons in the study area appear to be accurate based on a review of the cover types observed in the aerial photography. However, in areas where there was an obvious discrepancy between the NWI classification and the aerial photography, ERM modified the classification to more accurately reflect current conditions. For example, an area mapped by NWI data as riverine may be adjusted to an emergent wetland type. In order to acknowledge ERM's adjustment of NWI classifications where appropriate, the wetland types referenced in this assessment are referred to as "assigned wetland cover types" regardless of whether the cover type was actually modified from the NWI classification.

USDA-NRCS Soils Data

The soils in the study area were identified and assessed using the SSURGO database, which is a digital version of the original county soil surveys (USDA 2021). The attribute data within the SSURGO database provides the proportionate extent of the component soils and their properties (e.g., hydric rating) for each soil map unit. The soils in the study area were grouped into three categories based on the hydric rating of the component soils within each map unit: hydric, partially hydric, and non-hydric. Hydric soils were defined as those where the major component soils, and minor components in some cases, are designated as hydric. Hydric components in these map units account for more than 80 percent of the map unit, and for the purposes of this analysis, the soil survey map unit for water was also considered as hydric. Partially hydric soils include map units that only contain minor component soils that are designated as hydric. The partially hydric map units in the study area contain 10 percent or less hydric soils. The remaining map units do not contain any component soils designated as hydric. Areas mapped as hydric or partially hydric have a higher probability of containing wetlands than areas with no hydric soils.

USGS National Hydrography Dataset

The NHD contains waterbody features such as lakes, ponds, streams, rivers, canals, dams and stream gages (USGS 2021b). The waterbodies mapped by the NHD appeared consistent with those visible on the USGS maps, aerial photography, and topography of the area.

3.2 Mapping Procedure

ERM used a stepwise process to identify probable wetland and waterbody areas along the alternative transmission line routes and associated onshore facilities, as follows:

1. Infrared and natural color aerial photography was used in conjunction with USGS topographic maps, soils maps, and other data sources to identify potential wetland areas. Boundaries were assigned to the areas that appeared to exhibit wetland signatures based on this review and a cover type was determined based on aerial photo interpretation. For the purpose of the study, these areas are referred to as Interpreted Wetlands.
2. To further determine the probability of a wetland occurring within a given location, the Interpreted Wetland polygon shape files were digitally layered with the NWI and NHD mapping and hydric soils information from the SSURGO database.
3. The probability of a wetland occurring was assigned based on the number of overlapping data layers (i.e., indicators of potential wetland presence) that occurred in a particular area.

The criteria assigned to each probability class are outlined in Table 1.

Table 1: Criteria Used to Rank the Probability of Occurrence

Probability Class	Criteria
High	Areas where layers of hydric soils, Interpreted Wetlands, and NWI data overlap
Medium/High	NWI data overlaps hydric soils; or NWI data overlaps Interpreted Wetlands with or without partially hydric soils; or hydric soils overlap Interpreted Wetlands
Medium	Interpreted Wetlands with or without overlap by partially hydric soils
Medium/Low	Hydric soils only; or NWI data with or without overlap by partially hydric soils
Low	Partially hydric soils only
Very Low	Non-hydric soils only

Using the above criteria, a range of wetland and waterbody occurrence probabilities were identified from very low to high for each alternative route, with acreages of each probable type of wetland according to probability class. The probability of wetland and waterbody occurrence increases as multiple indicators begin to overlap toward the "high" end of the spectrum. The medium-high and high probability category are the most reliable representation of in-situ conditions, due to overlapping data sets, and these categories are carried through in the summary below as a percentage of the total acreage of each alternative route. Figure 2 in Attachment A depicts the interpreted wetlands displayed on color base map images.

4. RESULTS

Multiple wetlands and waterbodies with a high to medium probability of occurrence were identified within the study area for each of the alternative transmission line routes and their associated onshore facilities. Based on the presence of multiple indicators, high and medium/high categories are considered the most reliable probability classes for determining wetland and waterbody location and size. A summary of the probability of occurrence for wetland and waterbody types by acreage within the route ROW and associated facility footprint for each route is presented in Table 2. Figure 2 in Attachment A depicts wetland and waterbody locations along each route according to probability of occurrence

The majority of the wetlands in the study area are adjacent to, or contiguous with, rivers, streams, and associated tributaries regulated by the USACE and VDEQ under Sections 404 and 401 of the Clean Water Act (CWA), respectively. Based on the wetland classification system defined by Cowardin et al. (1979), wetlands in the study area primarily are palustrine emergent (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO) wetlands. PEM wetlands are characterized by erect, rooted, herbaceous hydrophytes (i.e., aquatic plants), excluding mosses and lichens. PSS wetlands are characterized by woody vegetation less than 20 feet tall. PFO wetlands are characterized by woody vegetation that is at least 20 feet tall.

The CLH Route would cross wetlands surrounding Lake Christine between Regulus Avenue and Lake Road. The CLH Route would also cross several PFO wetland complexes within the SMR and NAS Oceana in the Owl Creek watershed between General Booth Boulevard and Birdneck Road.

HF Routes 1, 2, and 5, the HF Hybrid Route, and the Dam Neck Route Variation would all cross PFO wetland complexes associated with West Neck Creek, with smaller areas of PEM wetlands found in existing ROWs and in agricultural lands. The PFO wetland complexes are located between London Bridge Road and Holland Road.

HF Routes 1, 2, and 5, the HF Hybrid Route, and the Line #2085 Route Variation would cross extensive PFO wetlands in floodplains adjacent to the North Landing River, Intracoastal Waterway canal, and/or Pocomoke River, many of which are collectively known as Gum Swamp. In much of this area, HF Route 1 and the HF Hybrid Route would be located along Dominion's existing Lines #271/I-74 corridor. The wetlands within Gum Swamp and the area surrounding the Intracoastal Waterway canal and North Landing River are located south of the boundary between Chesapeake and Virginia Beach, southwest of Indian River Road and north of Mt Pleasant Road.

ERM identified and mapped waterbodies in the study area using similar publicly available GIS databases as those used to identify and map wetlands. Waterbodies in the study area are primarily palustrine unconsolidated bottom (PUB) open waters and riverine (RVR) features such as intermittent and perennial streams. All of the alternative transmission line routes would cross perennial and intermittent waterbodies (rivers, streams, tributaries), including the Intracoastal Waterway canal and/or North Landing River, which are both considered navigable waterbodies by the USACE, regulated under Section 10 of the Rivers and Harbors Act.

The CLH Route would cross Owl Creek, an estuary connected to Rudee Inlet, between General Booth Boulevard and Bells Road, and Lake Christine, located between Owl Creek and the Atlantic Ocean. Small PUB waterbodies would be crossed by or adjacent to each alternative route in various locations. HF Routes 1, 2, and 5, the HF Hybrid Route, and the Line #2085 Route Variation would each cross North Landing River and/or the Intracoastal Waterway canal. HF Routes 1, 2, and 5, the HF Hybrid Route, and the Dam Neck Route Variation would each cross West Neck Creek, a tributary of the North Landing River. The West Neck Creek crossings would be east of the Holland Pines subdivision along Holland Road in Virginia Beach. The routes would cross the North Landing River and/or Intracoastal Waterway canal at various locations, all south of Indian River Road and along or near the boundary between Chesapeake

and Virginia Beach. HF Route 1 and the HF Hybrid Route would cross the Intracoastal Waterway canal along Dominion's existing Lines #271/I-74 corridor, while HF Routes 2 and 5 would cross North Landing River farther east near the North Landing River Bridge (State Road 165). HF Route 5 also would cross Pocatay River, another tributary to the North Landing River, east of NALF Fentress.

Table 2: Probability of Occurrence for Wetland and Waterbody Types per Route

Probability	Total Acres ^a	Wetland and Waterbody Type (Acres)									
		Palustrine Emergent (PEM)	Scrub/Shrub (PSS)	Forested (PFO)	Unconsolidated Bottom (PUB)	Riverine (RVR)	Lacustrine (Lake)	Estuarine Subtidal (E1UB)	Estuarine Intertidal (E2EM)	Marine Intertidal (M2US)	
CLH Route ^b											
High	2.53	0.19	NA	1.10	NA	NA	NA	0.09	1.15	NA	NA
Medium/High	16.67	2.97	NA	10.22	NA	0.15	2.52	0.32	0.50	NA	NA
Medium	6.75	NA	NA	6.15	NA	0.04	0.23	NA	0.33	NA	NA
Medium/Low	17.16	NA	NA	0.15	NA	0.03	NA	NA	0.32	NA	NA
Low	3.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Very low	22.53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HF Route 1 ^c											
High	65.44	6.64	29.87	26.43	0.28	2.22	NA	NA	NA	NA	NA
Medium/High	83.75	18.85	15.55	42.37	1.17	5.81	NA	NA	NA	NA	NA
Medium	17.96	0.17	3.71	14.17	NA	NA	NA	NA	NA	NA	NA
Medium/Low	113.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Low	14.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Very low	0.98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HF Route 2 ^c											
High	70.89	3.32	0.20	65.34	0.28	1.76	NA	NA	NA	NA	NA
Medium/High	88.91	14.86	9.62	56.93	1.17	6.33	NA	NA	NA	NA	NA
Medium	18.39	0.14	2.19	15.83	NA	0.24	NA	NA	NA	NA	NA
Medium/Low	112.25	NA	NA	2.99	NA	0.07	NA	NA	NA	NA	NA
Low	14.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Very low	2.33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Probability	Total Acres ^a	Wetland and Waterbody Type (Acres)									
		Palustrine Emergent (PEM)	Scrub/Shrub (PSS)	Forested (PFO)	Unconsolidated Bottom (PUB)	Riverine (RVR)	Lacustrine (Lake)	Estuarine Subtidal (E1UB)	Estuarine Intertidal (E2EM)	Marine Intertidal (M2US)	
HF Route 5^c											
High	112.20	3.91	0.26	105.59	NA	2.45	NA	NA	NA	NA	NA
Medium/High	73.56	13.61	4.66	46.38	0.68	8.23	NA	NA	NA	NA	NA
Medium	19.10	1.22	NA	17.50	0.02	0.37	NA	NA	NA	NA	NA
Medium/Low	151.91	NA	NA	0.07	NA	0.24	NA	NA	NA	NA	NA
Low	13.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Very low	14.43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HF Hybrid Route^d											
High	68.78	6.86	29.87	29.41	0.28	2.35	NA	NA	NA	NA	NA
Medium/High	105.15	20.00	15.47	62.94	1.17	5.58	NA	NA	NA	NA	NA
Medium	5.78	0.17	3.71	1.90	NA	NA	NA	NA	NA	NA	NA
Medium/Low	105.57	NA	NA	NA	NA	0.07	NA	NA	NA	NA	NA
Low	7.34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Very low	0.98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Damn Neck Route Variation											
High	17.71	0.28	NA	16.88	NA	0.55	NA	NA	NA	NA	NA
Medium/High	9.72	0.70	NA	8.63	0.03	0.36	NA	NA	NA	NA	NA
Medium	1.79	NA	NA	1.66	NA	0.12	NA	NA	NA	NA	NA
Medium/Low	18.23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Low	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Very low	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Line #2085 Route Variation											
High	22.57	0.19	0.26	20.99	NA	1.14	NA	NA	NA	NA	NA
Medium/High	21.81	1.91	4.54	8.09	0.27	6.99	NA	NA	NA	NA	NA

Probability	Total Acres ^a	Wetland and Waterbody Type (Acres)									
		Palustrine Emergent (PEM)	Scrub/Shrub (PSS)	Forested (PFO)	Unconsolidated Bottom (PUB)	Riverine (RVR)	Lacustrine (Lake)	Estuarine Subtidal (E1UB)	Estuarine Intertidal (E2EM)	Marine Intertidal (M2US)	
Medium	4.02	0.77	NA	3.09	0.02	0.14	NA	NA	NA	NA	NA
Medium/Low	32.85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Low	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Very low	1.09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not applicable due to absence of wetland or waterbody type within the alternative route.

^a The numbers in this table have been rounded for presentation purposes. Sums do not always equal the total of addends due to rounding error or spatial discrepancies in data sets used to identify constraints.

^b The acreage presented for the CLH Route includes the Cable Landing Location.

^c The acreage presented for HF Routes 1, 2, and 5 includes the Harpers Switching Station and the Fentress Substation expansion.

^d The acreage presented for the HF Hybrid Route includes the Chicory Switching Station and the Fentress Substation expansion.

4.1 Cable Landing to Harpers Route

The CLH Route is approximately 4.4 miles long; the ROW width varies along this route. The route in total encompasses approximately 68.9 acres. Based on the methodology discussed above, the ROW would encompass approximately 28 percent (19.20 acres) of land with a medium/high and high probability of containing wetlands and waterbodies.

4.2 Harpers to Fentress Route 1

HF Route 1 is approximately 14.2 miles long; the general ROW width is 140 feet wide except where collocated with Dominion's existing infrastructure where the amount of new ROW required for the onshore Virginia Facilities varies. A total of approximately 295.5 acres are encompassed by this route. Based on the methodology discussed above, the ROW would encompass approximately 50 percent (149.2 acres) of land with a medium/high or higher probability of containing wetlands and waterbodies.

4.3 Harpers to Fentress Route 2

HF Route 2 is approximately 15.2 miles long; the ROW is generally 140 feet wide along this route, which encompasses a total of approximately 306.9 acres. Based on the methodology discussed above, the ROW would encompass approximately 52 percent (159.8 acres) of land with a medium/high or higher probability of containing wetlands and waterbodies.

4.4 Harpers to Fentress Route 5

HF Route 5 is approximately 20.2 miles long; the ROW is generally 140 feet wide along this route, which encompasses a total of approximately 384.3 acres. Based on the methodology discussed above, the ROW would encompass approximately 48 percent (185.8 acres) of land with a medium/high or higher probability of containing wetlands and waterbodies.

4.5 Harpers to Fentress Hybrid Route

The HF Hybrid Route is approximately 14.2 miles long; the ROW width varies along this route, which encompasses a total of approximately 293.6 acres. Based on the methodology discussed above, the ROW would encompass approximately 59 percent (173.9 acres) of land with a medium/high or higher probability of containing wetlands and waterbodies.

4.6 Dam Neck Route Variation

The Dam Neck Route Variation is approximately 2.8 miles long; the 140-foot-wide ROW along this route encompasses a total of approximately 47.5 acres. Based on the methodology discussed above, the ROW would encompass approximately 58 percent (27.4 acres) of land with a medium/high or higher probability of containing wetlands and waterbodies.

4.7 Line #2085 Route Variation

The Line #2085 Route Variation is approximately 4.4 miles long; the ROW width varies along this route, which encompasses approximately 82.3 acres. Based on the methodology discussed above, the ROW would encompass approximately 54 percent (44.4 acres) of land with a medium/high or higher probability of containing wetlands and waterbodies.

5. CONCLUSION

5.1 Project Impacts

Avoiding or minimizing impacts on wetlands and waterbodies was among the criteria Dominion used in developing the alternative transmission line routes.

To minimize impacts on aquatic resource areas, the transmission line would be designed to span or avoid these resources where possible. Where the removal of woody or shrubby vegetation occurs within wetlands, Dominion would use the least intrusive method reasonably possible to clear the corridor. Hand-cutting of vegetation would be conducted, where needed, to avoid and minimize impacts on waterbodies and/or wetlands. Excess soil in wetlands resulting from foundation installation for overhead transmission structures or surface trenching for underground installations would be spread across the ROW and/or removed for disposal at an appropriate site. Mats would be used for construction equipment to travel over wetlands, as needed. Access to the ROW for each alternative route generally would be from existing public roads or access roads where available; however, in some areas new temporary access roads would likely need to be constructed. Where warranted, Dominion would install a culvert, ford, or temporary bridge along the ROW or approved access roads to cross small streams. In such cases, some temporary fill material could be placed in wetlands adjacent to these crossings. Where needed, this fill would be placed on erosion-control fabric and removed when work is completed, returning ground elevations to original contours. Potential direct impacts on wetlands would be temporary in nature, but a reduction in wetland functions and values would occur where tree clearing within wetlands is necessary.

5.2 Summary

This Wetland and Waterbody Report was prepared in accordance with the Memorandum of Agreement between the VDEQ and the SCC for purposes of initiating a Wetlands Impact Consultation. A formal on-site wetland delineation was not conducted as part of this review. Upon SCC approval of a route and final line engineering, Dominion will obtain the appropriate permits from the USACE for work within wetlands to ensure full compliance with Section 404 of the CWA and to minimize potential impacts on wetlands within the transmission line corridor.

6. REFERENCES

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ATTACHMENT A FIGURES

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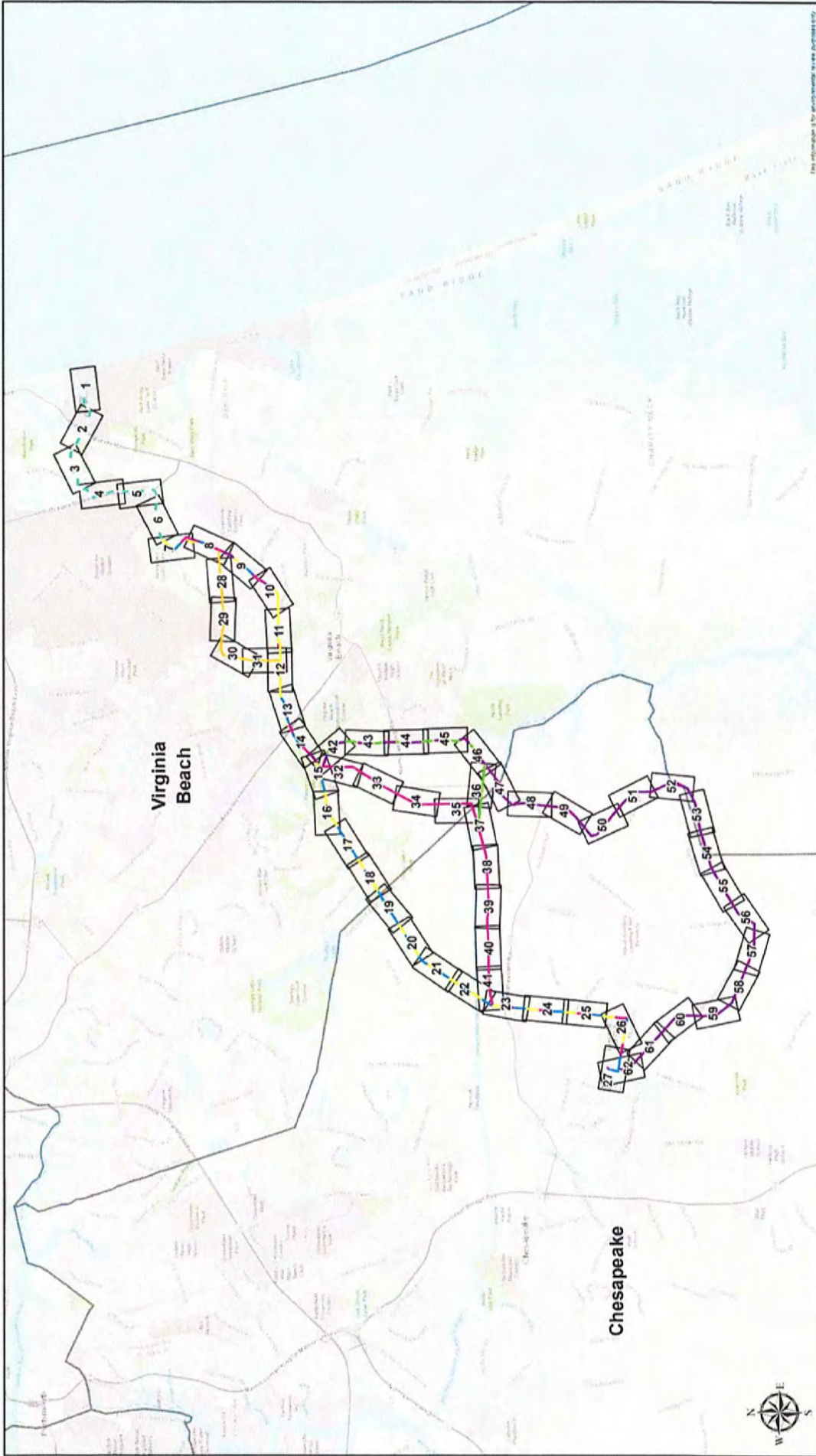


Figure 2
Wetland and Waterbody Index Map
Coastal Virginia Offshore Wind Project
Virginia Beach and Chesapeake, Virginia



The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.

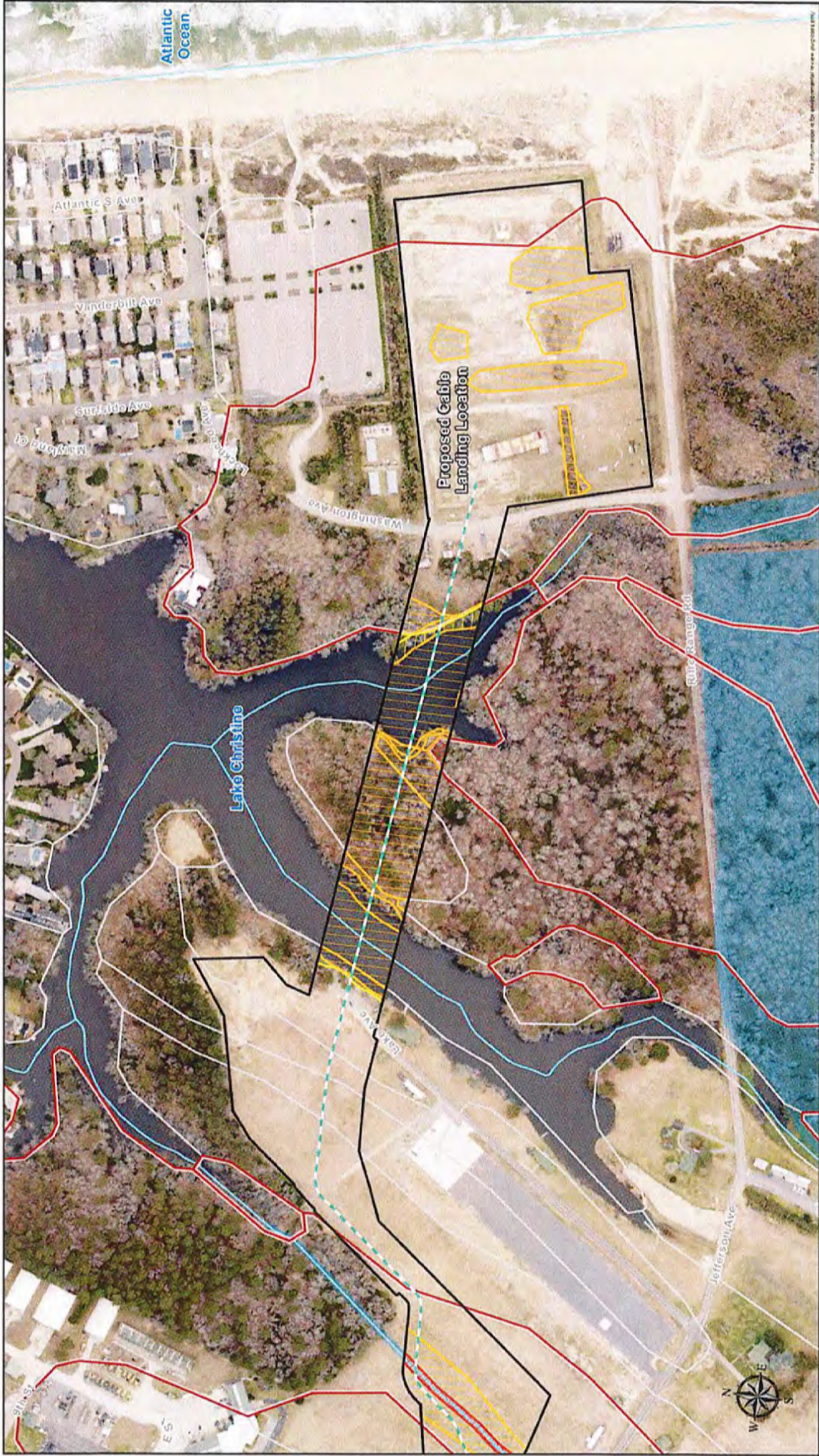


Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
Virginia Beach and Chesapeake, Virginia
Page 1 of 62

Domination Energy

Not Hydric Soil
Hydric Soil

Medium/High
High
NHD Waterbody
NWI Wetland

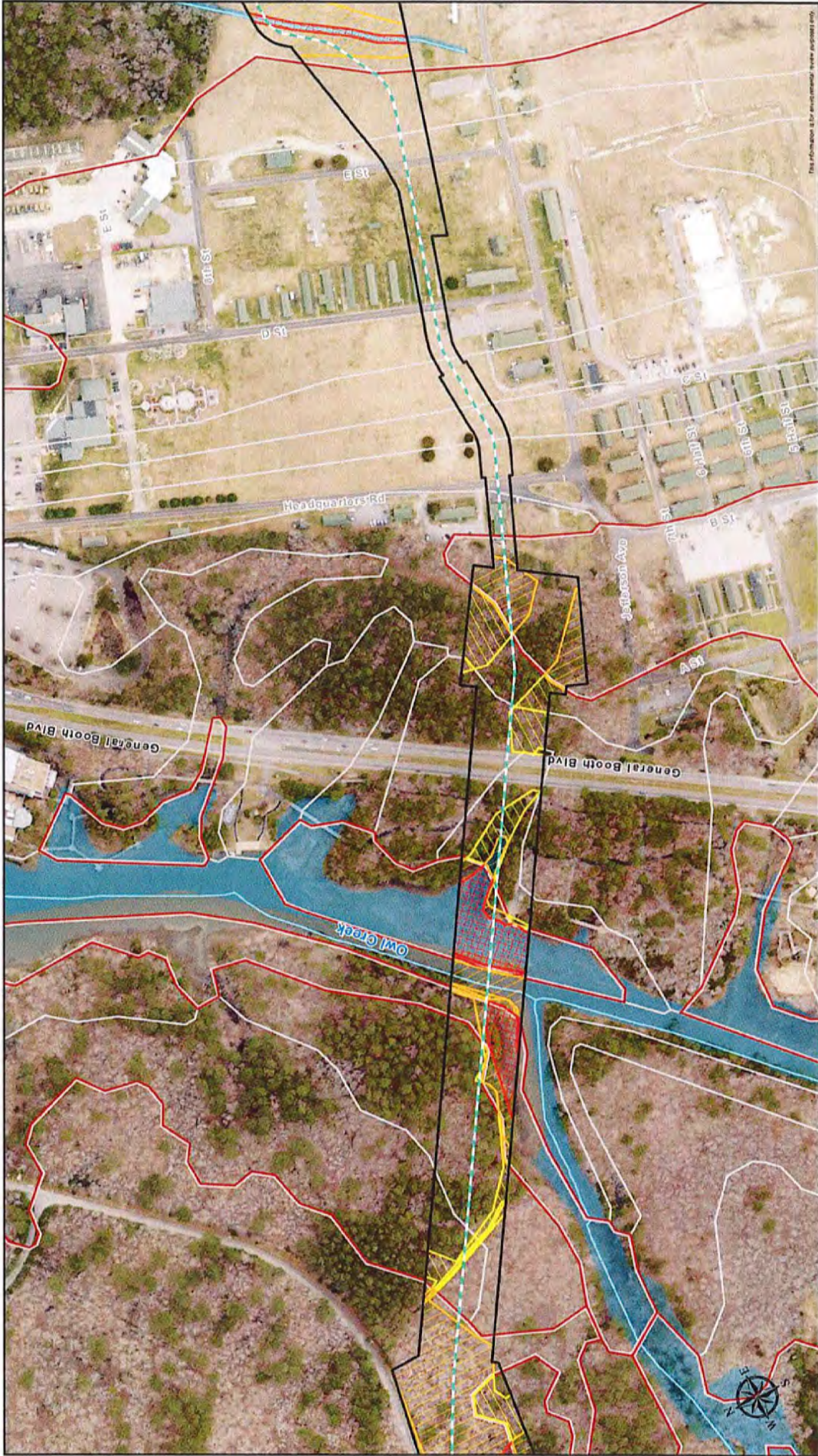
Cable Landing to Harpers
Project Limits
Wetland Probability
Medium

0 200 400 Feet

MP, S.M. Client: D.F. DOM Offshore Wind, At: 05/20/2021, 04:18. Wetland Probability: C:\000\W\ Data\Bids_Eng_Mapset_October2021.mxd | REVISED: 10/14/2021 | SCALE: 1:3,000, where printed at 11x17

DRAWN BY: JPB

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



This information is for informational use only and does not constitute a contract.

Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 2 of 62

FRKI
 DRAWN BY: JPB

0 200 400 Feet

North Arrow

Cable Landing to Harpers
 Project Limits
Wetland Probability
 Medium
 High
 NHD Waterbody
 NWI Wetland
 Medium/High
 High
 NHD Waterbody
 NWI Wetland
 Not Hydraulic Soil
 Hydraulic Soil

MPA, S.M. Chenier, D.F. DOM Offshore Wind, ArcGIS 2021 04 19, Wetland Probability, C:\000\W\ Probabilty, Exp. Mapset, October 2021.mxd | REVISED: 10/19/2021 | SCALE: 1:3,006 when printed at 11x17

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Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 3 of 62

Cable Landing to Harpers
 Project Limits
 Wetland Probability
 Medium
 High
 NHD Waterbody
 NWI Wetland
 Medium/High
 Not Hydric Soil
 Hydric Soil

0
 200
 400
 Feet

URS | M. C. O'Brien, Inc. | DOM Offshore Wind | Wetland Probability, C:\000\001_Potentiality_Fig2_Mapset_October-2021.mxd | REVISED: 10/16/2021 | SCALE: 1:3,000, view oriented at 114.17

Dominion Energy
 ERDM

09/20/2021 10:00 AM
 09/20/2021 10:00 AM

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



0 200 400
Feet

--- Cable Landing to Harpers
--- Project Limits
Wetland Probability
Medium

Medium/High
NHD Waterbody
Not Hydric Soil
Hydric Soil



Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
Virginia Beach and Chesapeake, Virginia
Page 4 of 62



The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



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Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 6 of 62

Wetland Probability

- Not Hydric Soil
- Partially Hydric Soil
- Hydric Soil

Waterbody

- NHD Waterbody
- NWI Wetland

Project Limits

- Cable Landing to Harpers
- Harpers to Fentress - Hybrid Route
- Project Limits

0 200 400 Feet

North Arrow

DOMINION ENERGY

FICM

DRAWN BY: JPB

MPS, S.M. (Drawn) / FICM (Offshore Wind) / ArcGIS/2016-16: Wetland Probability: C:\OWW_WL_Protability_Fig2_Mapset_October2021.mxd | REVISED: 10/16/2021 | SCALE: 1:3,000, when printed at 11x17

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 7 of 62

MAPS.M.CHESTERFIELD.COM/Viewer_Wind_ArcGIS/2017/04/06_Wetland_Probability_CVW05.WI_Protability_Fig2_Mapset_Driver-2017.rvt | SCALE: 1:1000 when printed at 11x17 | REVISED: 10/04/2017 | DATE: 10/04/2017

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 8 of 62

Dominion Energy

0 200 400 Feet

Project Limits
 Wetland Probability
 Wetland
 NWI Wetland
 Net Hydric Soil
 Hydric Soil

Harpers to Fentress Route 1
 Harpers to Fentress Route 2
 Harpers to Fentress Route 5
 Harpers to Fentress - Hybrid Route
 Dam Neck Route Variation

High
 Medium-High
 NHD Waterbody

Scale: 1:3186, as printed at 11x17
 Revised: 10/24/2021
 Date: 10/24/2021
 Author: EAD, Masek, Drake-2021.mxd
 Project: CVOWS
 Title: Wetland Probability

FRM
 08/20/2019, JPB

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 9 of 62

Legend:

- Harpers to Fentress Route 1
- Harpers to Fentress Route 2
- Harpers to Fentress Route 5
- Harpers to Fentress - Hybrid Route
- Dam Neck Route Variation
- Project Limits
- Wetland Probability
 - Medium
 - High
- NHD Waterbody
- NMI Wetland
- Hydric Soil

0 200 400 Feet

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DOMINION ENERGY
 FCAI
 DRAWN BY: JFB

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 10 of 62

Legend:

- Project Limits:**
 - Harpers to Fentress Route 1 (Blue line)
 - Harpers to Fentress Route 2 (Pink line)
 - Harpers to Fentress Route 5 (Purple line)
 - Harpers to Fentress - Hybrid Route (Yellow line)
- Wetland Probability:**
 - Medium/High (Yellow hatched area)
 - High (Red hatched area)
- Wetland and Waterbody:**
 - NHD Waterbody (Blue area)
 - NWI Wetland (Light Green area)
 - Not Hydric Soil (Light Yellow area)
 - Hydric Soil (Red outline area)

Scale: 0, 200, 400 Feet
 North Arrow

Logos: Dominion Energy, FKMI
 Date: 08/20/2021
 Scale: 1:5,000, also printed at 1:15,177

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.

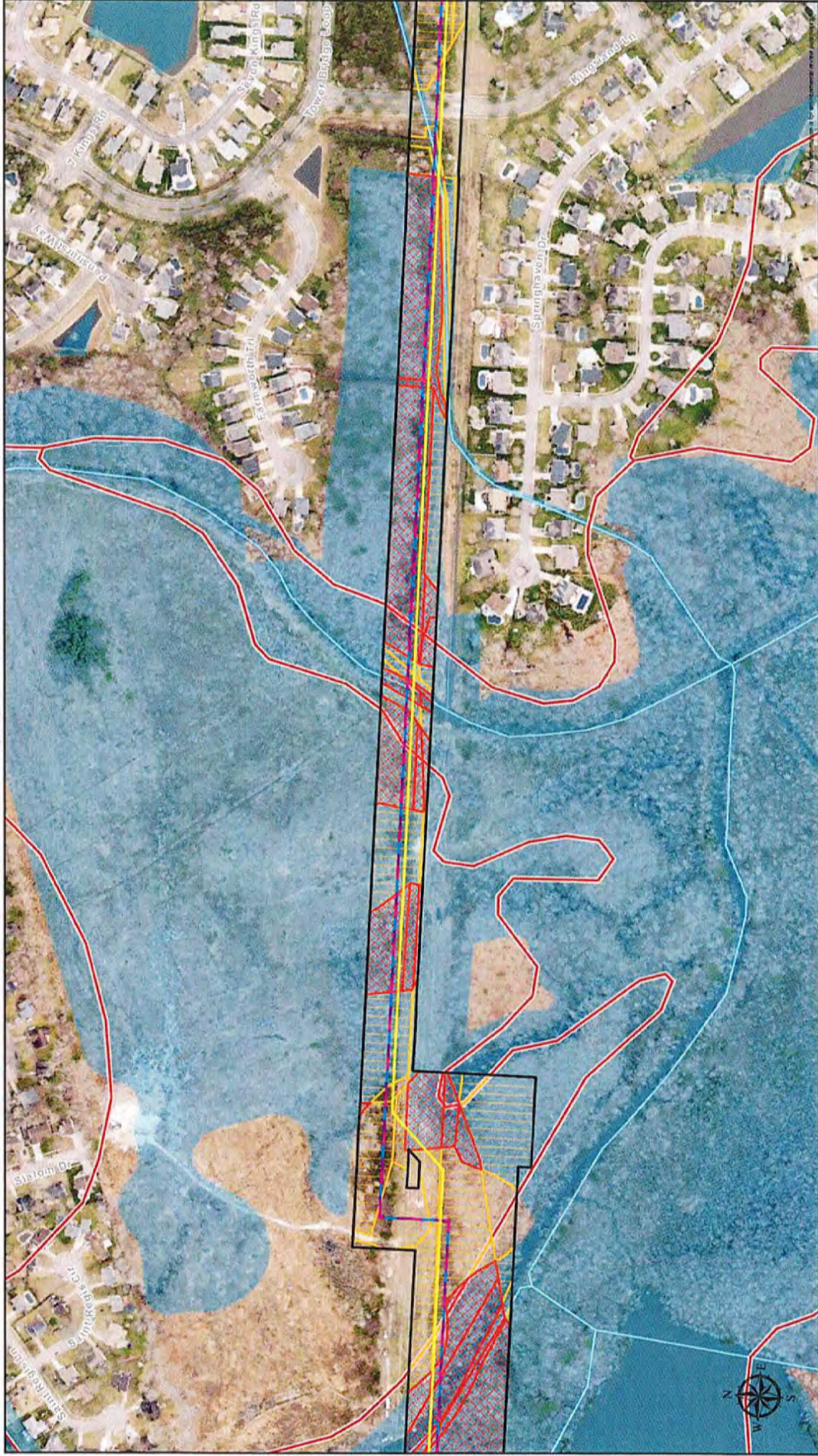


Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 11 of 62

Dominion Energy

FRKI
DRAWN BY: JPB

Project Limits

- Project Limits

Wetland Probability

- Medium/High
- High

Waterbody

- NHD Waterbody
- NMI Wetland
- Not Hydric Soil
- Hydric Soil

Harpers to Fentress Route 1

-
-
-
-

Harpers to Fentress Route 2

-
-
-

Harpers to Fentress Route 5

-
-
-

Harpers to Fentress - Hybrid Route

-
-
-

0 200 400 Feet

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Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 12 of 62

0 200 400 Feet

	Harpers to Fentress Route 1		Project Limits		NHW Wetland
	Harpers to Fentress Route 2		Wetland Probability		Net Hydric Soil
	Harpers to Fentress Route 5		High		Hydric Soil
	Harpers to Fentress - Hybrid Route		Medium/High		
	Dam Neck Route Variation		Low		
			NHD Waterbody		

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 DRAWN BY: JPB

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Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 13 of 62


Harpers to Fentress Route 1
 Harpers to Fentress Route 2
 Harpers to Fentress Route 5
 Harpers to Fentress - Hybrid Route
 Project Limits
 Wetland Probability
 Medium/High
 Medium/Low
 High
 Waterbody
 NHD Waterbody
 NMI Wetland
 Hydric Soil

0 200 400
 Feet
 N
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 E
 W

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 DRAWN BY: JRB


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 DRAWN BY: JFB

Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 14 of 62







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The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 15 of 62

Project Limits
 Harpers to Femtress Route 1
 Harpers to Femtress Route 2
 Harpers to Femtress Route 5
 Harpers to Femtress - Hybrid Route
 Line 42085 Route Vinalton

Wetland Probability
 Medium
 Medium/High
 High

Waterbody
 NHD Waterbody
 NWI Wetland
 Not Hydric Soil
 Hydric Soil

0 200 400 Feet
 N
 W E S

MPA, S.M.C. Chem/D.F. DOM/Offshore, W. Off. A-052021-04-16, Wetland Probability, CVOO, WI, Probability, F-02, M-001, October-2021 final | REVISED: 10/14/2021 | SCALE: 1:3,200, when printed at 11x17
 DRAWING: #B

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



0 200 400 Feet

North Arrow

Harpers to Fentress Route 1
Harpers to Fentress - Hybrid Route
Project Limits

Wetland Probability
Medium
Medium/High
High

NHD Waterbody
NWI Wetland
Not Hydric Soil
Hydric Soil

Dominion Energy

Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
Virginia Beach and Chesapeake, Virginia

Page 16 of 62

DRUMBY, JB

MP, S. M. C. Wetlands Offshore Wind, ArcGIS 2021-04-16, Wetland Probability, C:\000\W\Probability_Fig2_Mapset, October 2021 final | REVISED: 10/16/2021 | SCALE: 1:3,000 when printed at 11x17

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Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 17 of 62

Legend:

- Harpers to Fentress Route 1
- Harpers to Fentress - Hybrid Route
- Project Limits
- Wetland Probability
 - Medium/High
 - High
 - NHD Waterbody
- NWI Wetland
- Not Hydric Soil
- Hydric Soil

DOMINION ENERGY

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SCALE: 1:3,000, view printed at 11x17

DATE: 10/14/2021, REVISED: 10/14/2021

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The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 18 of 62

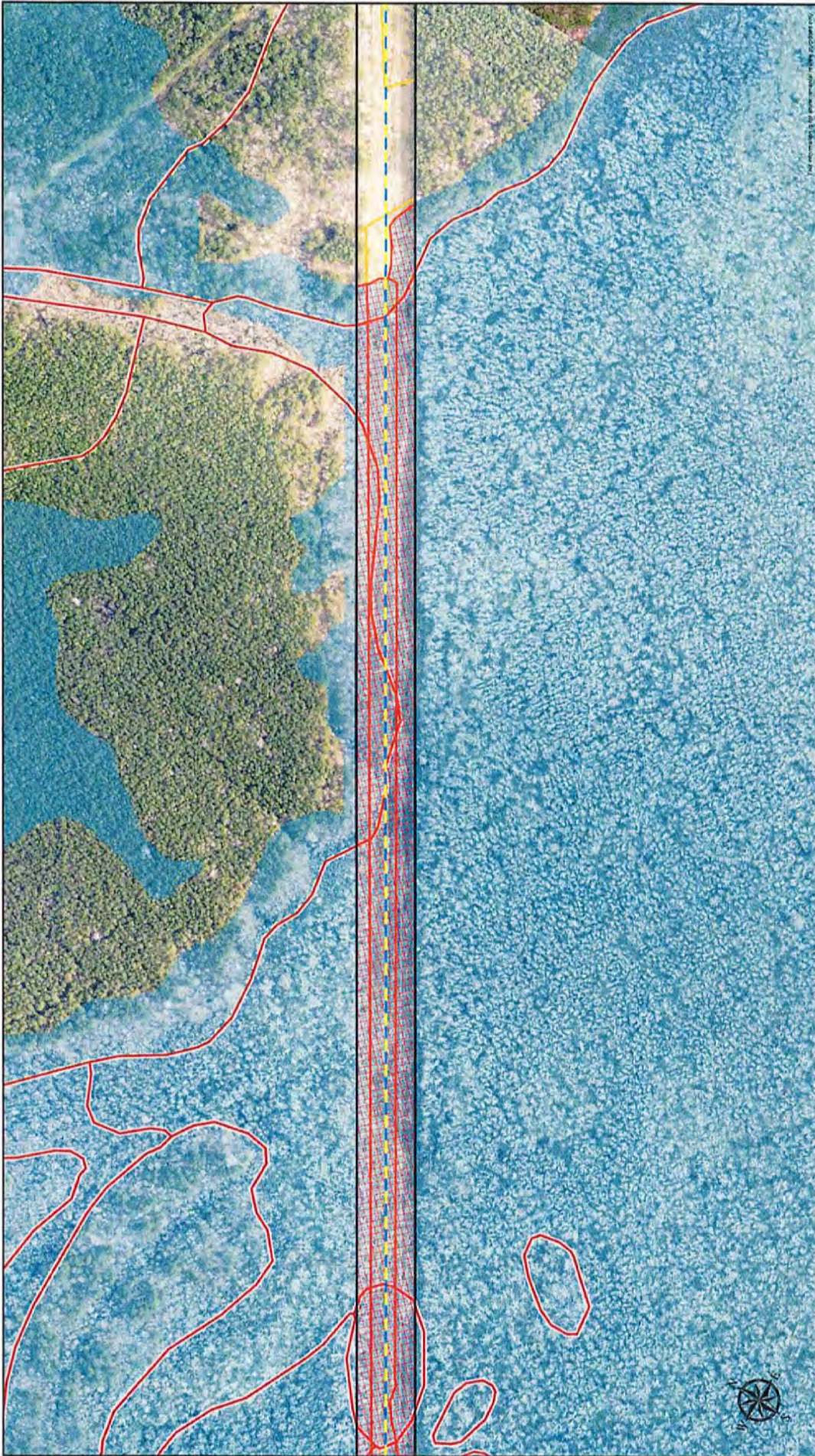
Wetland Probability
 Hammers to Fentress Route 1
 Hammers to Fentress - Hybrid Route
 Project Limits
 NHD Waterbody
 High
 Medium/High
 NHD Wetland
 Not Hydric Soil
 Partly Hydric Soil
 Hydric Soil

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 DRAWN BY: JPB

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



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0 200 400
Feet

North Arrow

Wetland Probability

- Partially Hydric Soil
- Hydric Soil
- Medium/High
- High
- NWI Wetland

Project Limits

- Harpers to Fentress Route 1
- Harpers to Fentress - Hynd Route
- Project Limits

Domination Energy

Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
Virginia Beach and Chesapeake, Virginia
Page 20 of 62



FRVI

DRAWN BY: JPB

MD, S.M. Edwards/DJDC/CR/above, Wadell, AUC/CR/2021/04/16, Wetland, Probability, CONW06, WI, Probability, FgD, Mapset, 03/16/2021/04/16, REVISED: 10/05/2021 | SCALE: 1:3,000, when printed at 11x17



The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



Wetland Probability
 High
 NW1 Wetland
 Partially Hydric Soil
 Hydric Soil

Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 21 of 62

MAPS.MI.Clients\DJ.FDOM\Offshore_Wind_ArcGIS\20140416_Wetland_Probability_CNDW_WI_Probability_FcM_Mapset_Outside2014.mxd | REVISED 10/10/2017 | SCALE 1:3,000 view printed at 11x17
 DRAWN BY: JRB

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.

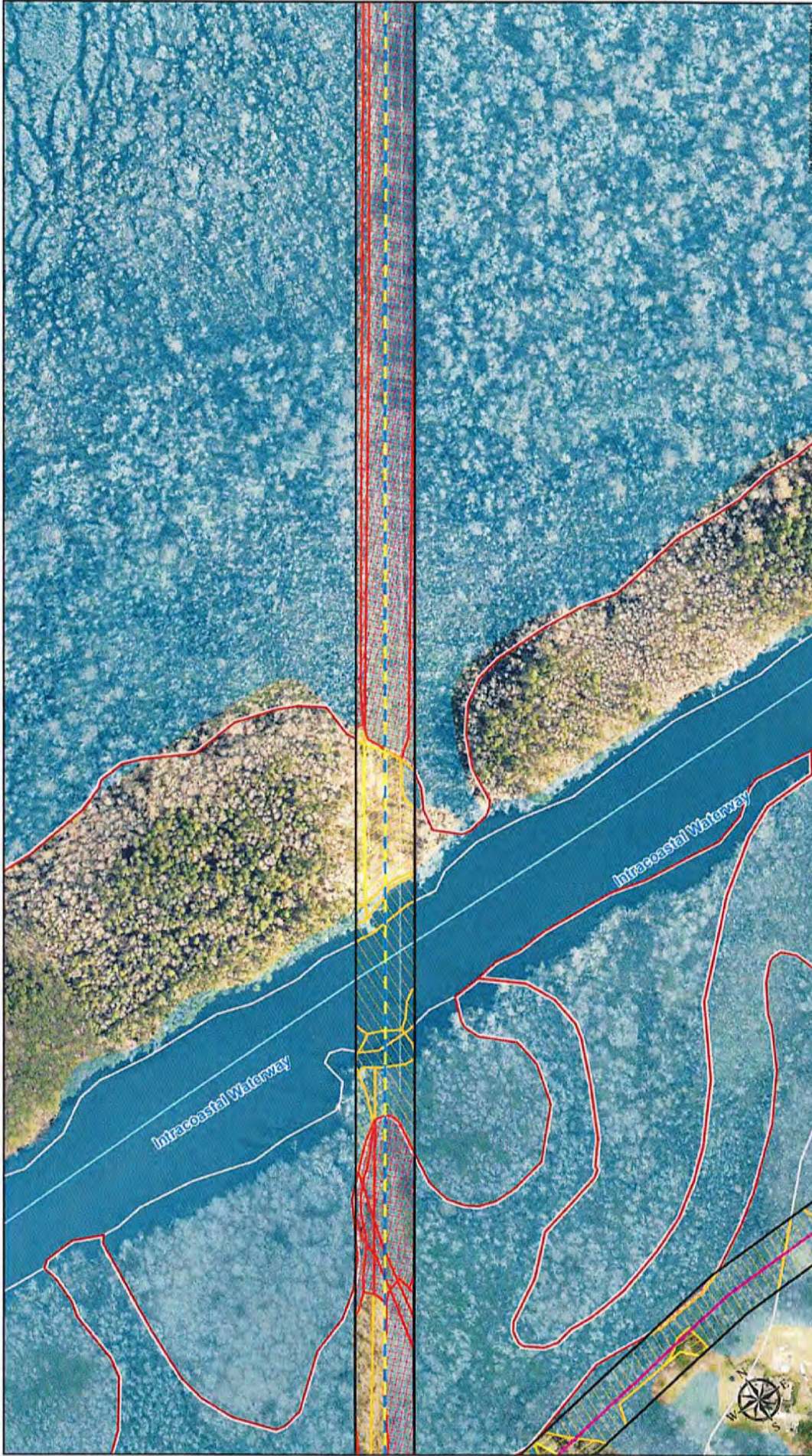


Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia

DOMINION ENERGY

FCVI

0 200 400 Feet

Wetland Probability
 Medium
 Medium-High
 High

Waterbody
 NHD Waterbody
 NMI Wetland
 Not Hydric Soil
 Hydric Soil

Harpers to Fentress Route 1
 Harpers to Fentress Route 2
 Harpers to Fentress - Hybrid Route
 Project Limits

MFLS M. Clemons/D.F. EDM/Alvarez, West, An. CS-2021-04-16, Wetland Probability, CVOV, WI, Probability, FgP, Mapset, October 2021.mxd, I, REVISED: 10/16/2021, I, SCALE: 1:3,000 when printed at 11x17
 DRAWN BY: JPB

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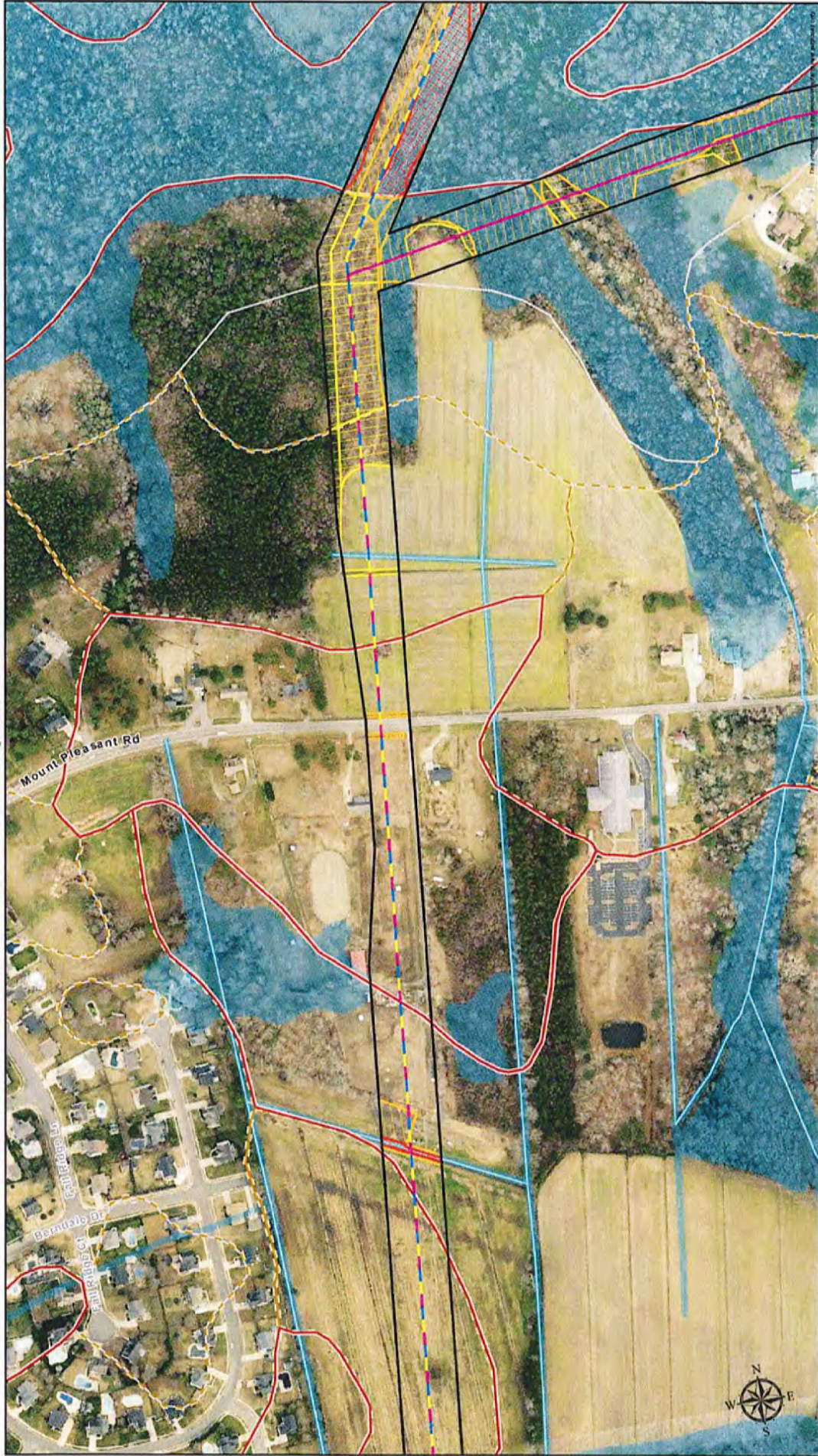


Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 23 of 62

DOMINION ENERGY

FRM

DRAWN BY: JRS

0 200 400 Feet

Wetland Probability

- Medium
- Medium-High
- High

NHD Waterbody

- NWI Wetland
- Not Hydric Soil
- Partially Hydric Soil

Hydric Soil

Harpers to Fentress Route 1

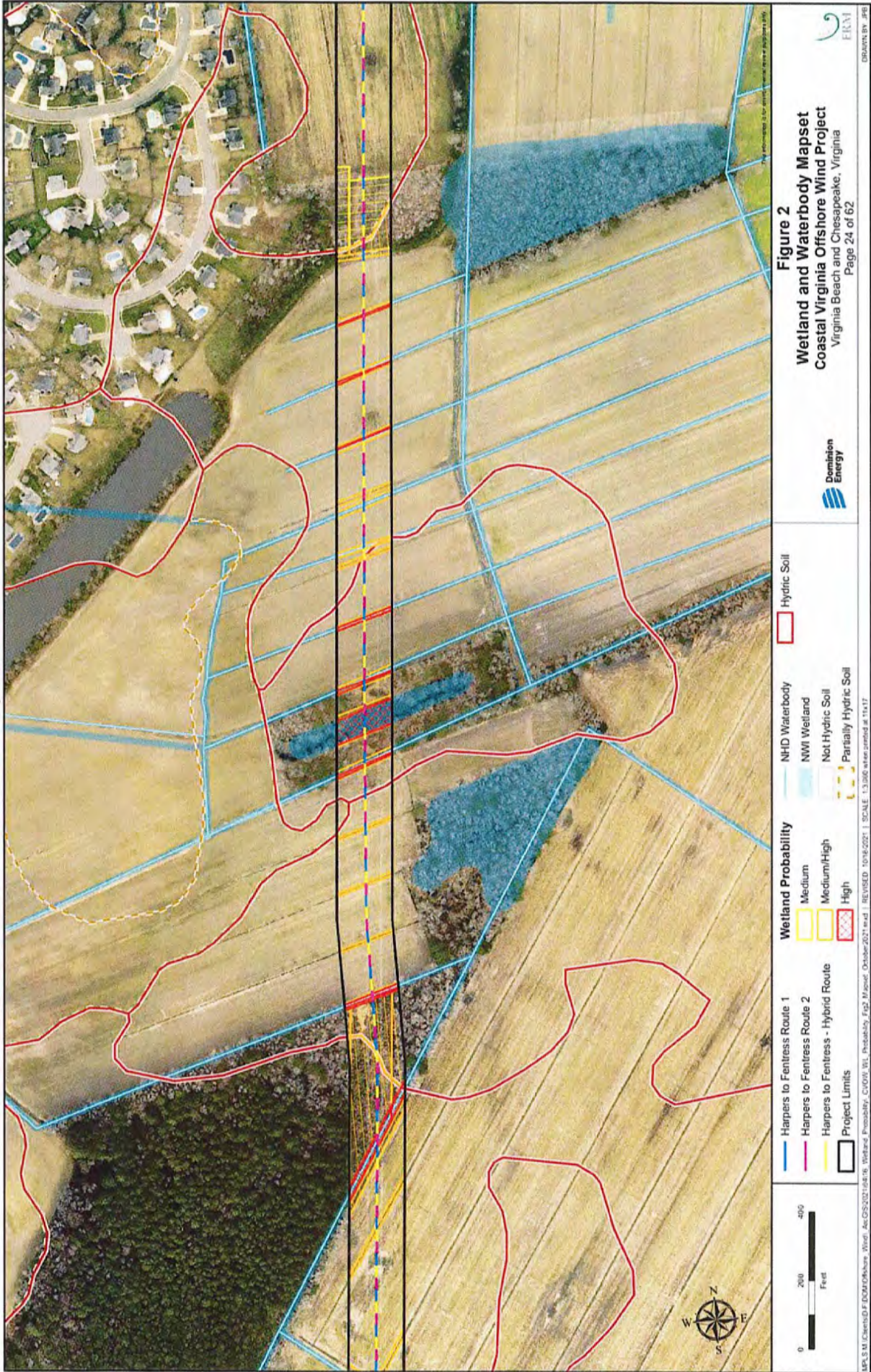
Harpers to Fentress Route 2

Harpers to Fentress - Hybrid Route

Project Limits

MAPS.MICHAELBAKERCORPORATION, WIND_AUGUST2021/18.16, Wetland Probability, C:\WORK\W1, Probability, 10/14/2021, SCALE: 1:3,180, when printed at 11x17

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Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 25 of 62

Wetland Probability

- NWI Wetland
- Partly Hydric Soil
- Hydric Soil

Wetland Probability

- Medium/High
- High
- NHD Waterbody

Project Limits

- Harpers to Fentress Route 1
- Harpers to Fentress Route 2
- Harpers to Fentress - Hybrid Route
- Project Limits

Scale: 0, 200, 400 Feet

Logos: Dominion Energy, FRVI

Text: This information is for informational purposes only. It is not intended to be used for any other purpose.

Metadata: MPLS M:\Clients\EDF\DOM\Knox Wind\ArcGIS\2018\18-16_Wetland_Probability_CV005_WI_Probability_Fig2_Mapset_October2017.mxd | REVISED: 10/16/2017 | SCALE: 1:5,000 when printed at 11x17

Drawn by: JPB

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



Wetland Probability

- Medium
- Medium/High
- High

Waterbody

- NHD Waterbody
- NMI Wetland
- Partially Hydric Soil
- Hydric Soil

Project Limits

- Harpers to Fentress Route 1
- Harpers to Fentress Route 2
- Harpers to Fentress - Hybrid Route
- Project Limits

Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 26 of 62

DOMINION ENERGY
 ERMI
 DRAWN BY: JPB

0 200 400 Feet
 N
 W E S

MDLS M Clients/DJF/DMC/Whom, Word, ArcGIS/2021-04-16, Wetland, Probability, CVO/W, W, Probability, FdP, Manual, October 2021 rev. 1, REVISED: 10/16/2021 | SCALE: 1:3100, view printed at 11x17

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Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 28 of 62

Legend

- Dam Neck Route Variation: Yellow outline
- Project Limits: Red outline
- Wetland Probability:
 - Medium: Blue outline
- Waterbodies:
 - NHD Waterbody: Cyan fill
 - NHM Wetland: Light blue fill
- Soils:
 - Not Hydric Soil: White fill
 - Hydric Soil: Red fill

Scale: 0 200 400 Feet

Scale: 1:3,000 when printed at 11x17

MP&S M. Edwards/FDDM/Johnson, 05/07; ArcGIS/2018/18; Wetland Probability; CVO/W. WI, Probability; 10/16/2021; REVISED: 10/16/2021; SCALE: 1:3,000 when printed at 11x17

DOMINION ENERGY

FCRM

DRAWN BY: JPB

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This information is for informational purposes only.

Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 29 of 62




<p>Dam Neck Route Variation</p> <ul style="list-style-type: none"> Dam Neck Route Variation Project Limits <p>Wetland Probability</p> <ul style="list-style-type: none"> Medium High NHD Waterbody NWI Wetland 	<ul style="list-style-type: none"> Medium/High High NHD Waterbody NWI Wetland <ul style="list-style-type: none"> Not Hydric Soil Hydric Soil 	<p>0 200 400 Feet</p> 
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MPLS M:\Clients\DF\DOM\Offshore Wind\ArcGIS\2021\4-16_Wetland_Probability_Fig2_Mapset_October2021.mxd | REVISED: 10/16/2021 | SCALE: 1:3,000 when printed at 11x17
 DRAWN BY: JPB

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Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 30 of 62

Dam Neck Route Variation
 Project Limits
 Wetland Probability
 Medium
 High
 Medium/High
 Not Hydric Soil
 Hydric Soil
 NHD Waterbody
 NWI Wetland

0
 200
 400
 Feet

UPLS M Clients/DJ DOM/Offshore Wind_ArcGIS20160416_Wetland_Probability_CVOW_WI_Probability_Fc2_Mapsel_Drctsr-2017.mxd | REVISED: 10/16/2021 | SCALE: 1:3106, view printed at 11x17
 DRAWN BY: JRB
 FICM

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.

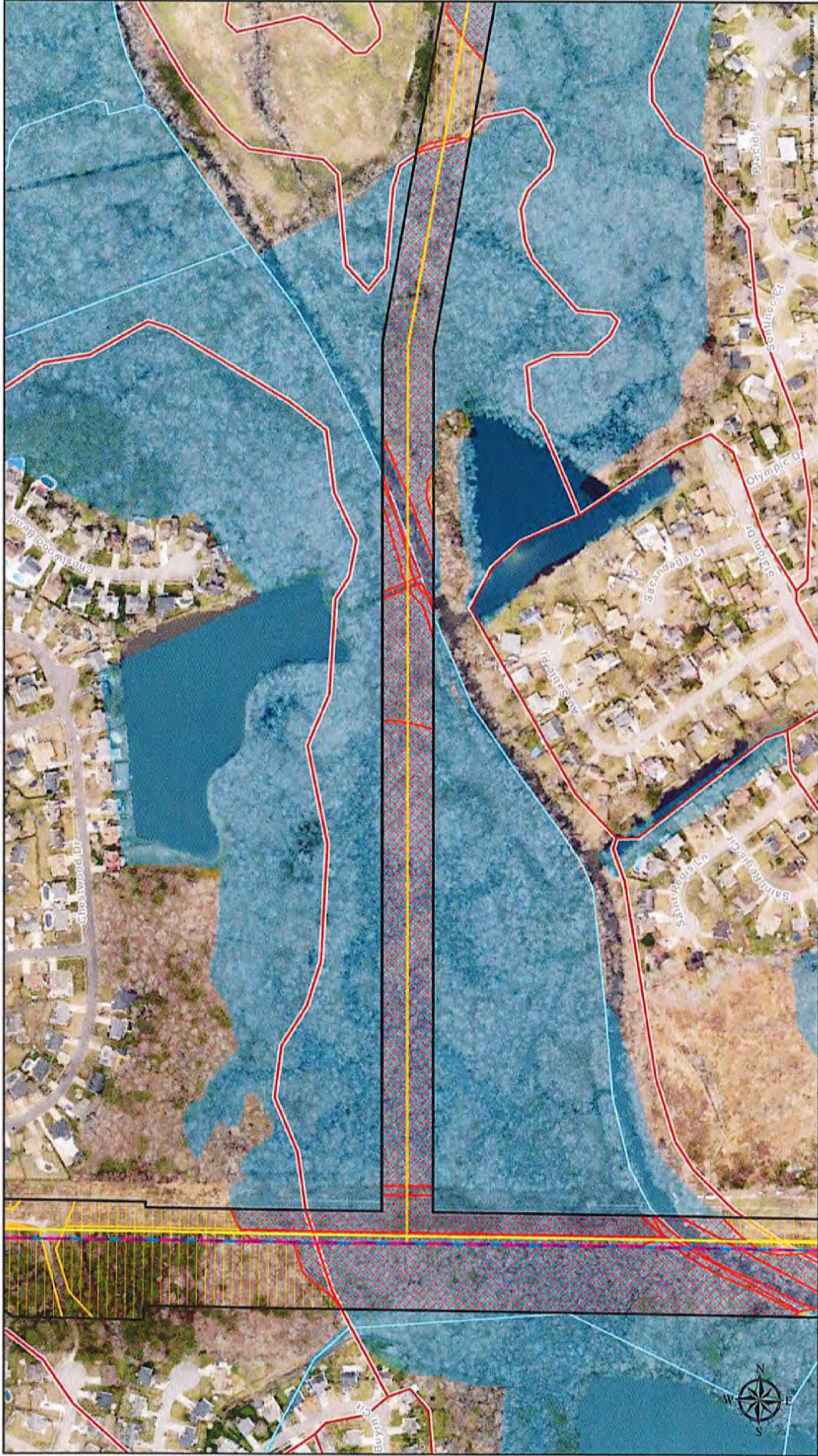


Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia



The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia

DOMINION ENERGY

0 200 400 Feet

— Harpers to Fentress Route 1
— Harpers to Fentress Route 2
— Harpers to Fentress Route 5
— Harpers to Fentress - Hybrid Route
— Line #2085 Route Variation
 Project Limits
 Wetland Probability
 Medium/High
 High
 NHD Waterbody
 NWI Wetland
 Hydric Soil

MAPS M. Clients/DJF/DOA/Offshore Wind, ArcGIS/0210418, Wetland Probability, C:\DWG, W\, Probability, Fig2_Mapset, October 2021.mxd | REVISED: 10/16/2021 | SCALE: 1:3,000 when printed at 11x17
 DRAWN BY: JPB

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



0 200 400 Feet

North Arrow

Harpers to Fentress Route 2
 Project Limits
 Wetland Probability
 Medium/High
 High
 NHD Waterbody
 NMI Wetland
 Not Hydric Soil
 Hydric Soil

Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 33 of 62

Dominion Energy
 FIRM
 DRAWN BY: JPB

MAPS M. Clients.D\FDM\Offshore Wind_ArcGIS2017\48.16_Wetland_Probability_CV006.WI_Probability_Fig2_Mapset_Drwnr-2017.mxd | REVISED: 10/16/2017 | SCALE: 1:3,000 when printed at 11x17

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Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 34 of 62

Legend

- Harpers to Fenitress Route 2
- Project Limits
- Wetland Probability
 - Medium/High
- High
- NHD Waterbody
- NWI Wetland
- Not Hydric Soil
- Hydric Soil

0 200 400 Feet

MAPS.U. Clients/D.F./DOM/Offshore Wind_ArcGIS20210416_Wetland_Probability_CVOW_WI_Probability_Fig2_Mapset_October2021.mxd | REVISED 10/16/2021 | SCALE 1:5,000 when printed at 11x17

DOMINION ENERGY

FRM

DRAWN BY JPB

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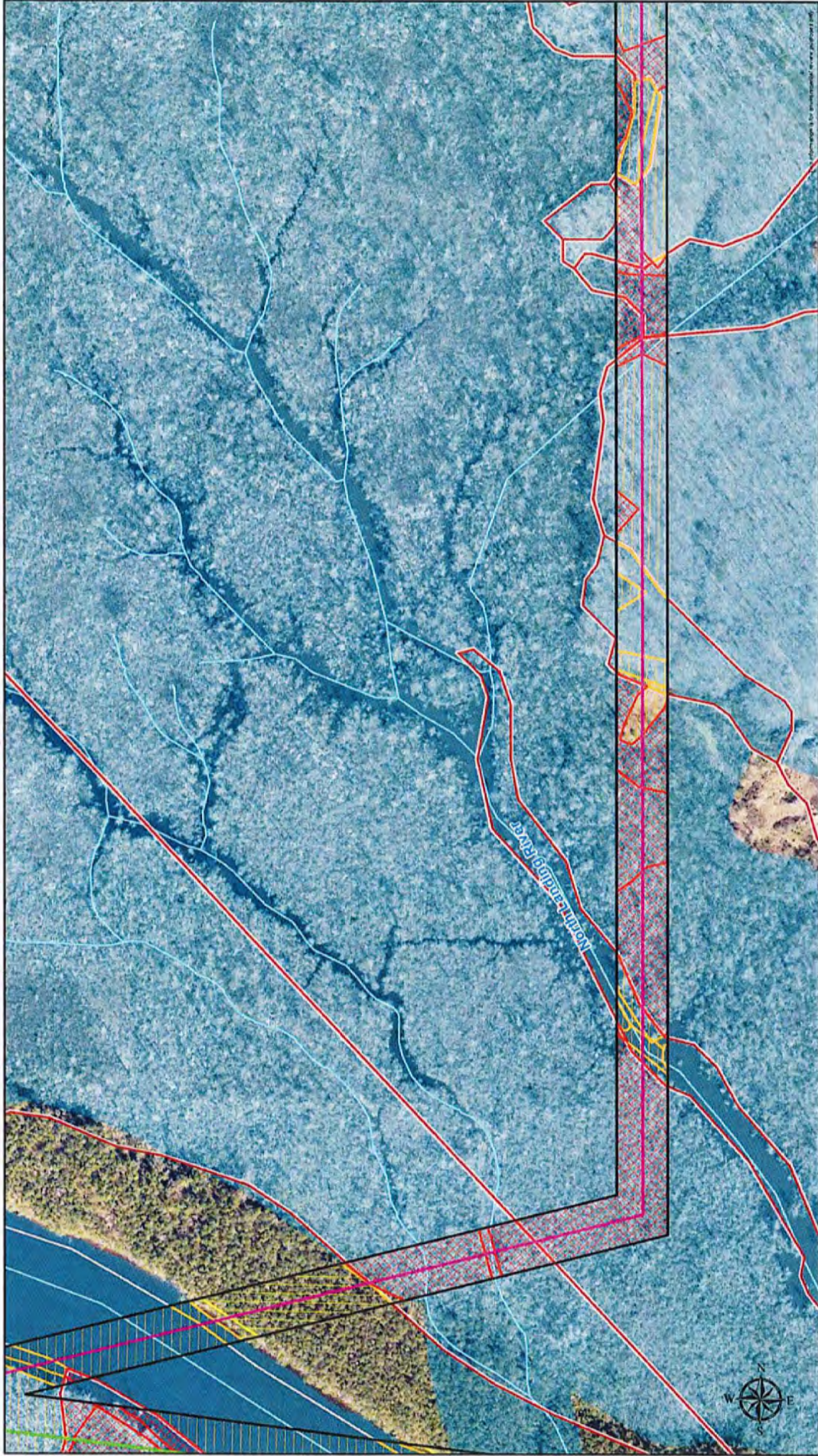


Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 35 of 62

Legend

Hampers to Fortress Route 2	Wetland Probability	NHD Waterbody
Line #2085 Route Variation	Medium	NMI Wetland
Project Limits	Medium/High	Not Hydric Soil
	High	Hydric Soil

Scale: 1:3,000
 Date: 10/16/2021
 Revised: 10/16/2021
 Author: [unreadable]
 Scale: 1:3,000 when printed at 11x17

Domination Energy

ECVI

Drawn by: JRB

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.

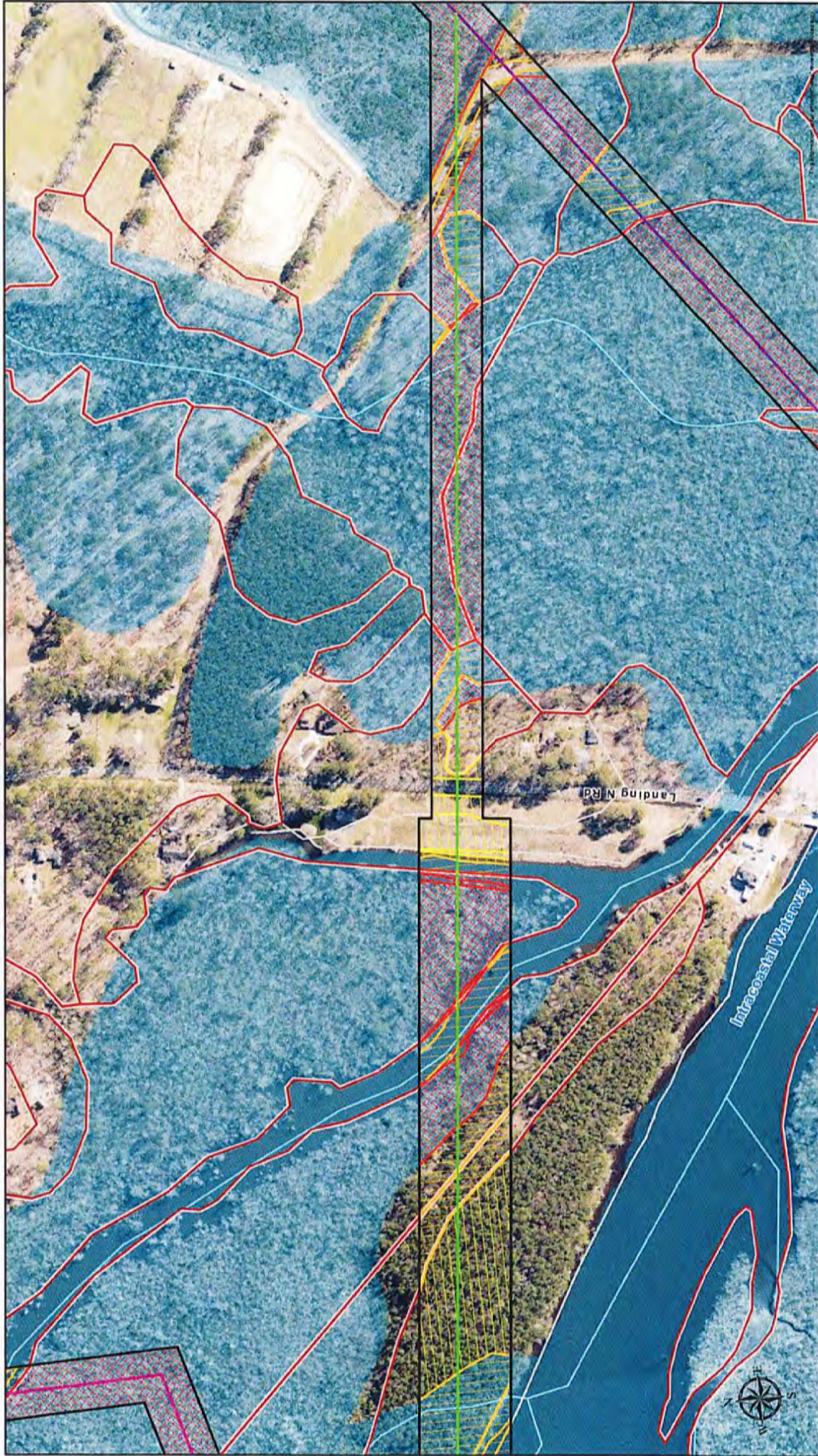


Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 36 of 62

Domination Energy

Wetland Probability

- Medium
- Medium-High
- High

Waterbody

- NHD Waterbody
- NWI Wetland
- Not Hydric Soil
- Hydric Soil

Route Variations

- Harpers to Fentress Route 2
- Harpers to Fentress Route 5
- Line #2085 Route Variation

Project Limits

0 200 400 Feet

MAPS M:\Clients\EDF\DOM\Offshore_Wind_ArcGIS\20210416_Wetland_Probability_C000_WI_Protability_10/14/2021 | REVISED 10/14/2021 | SCALE 1:3,000 when printed at 11x17

DRAWN BY: JRB

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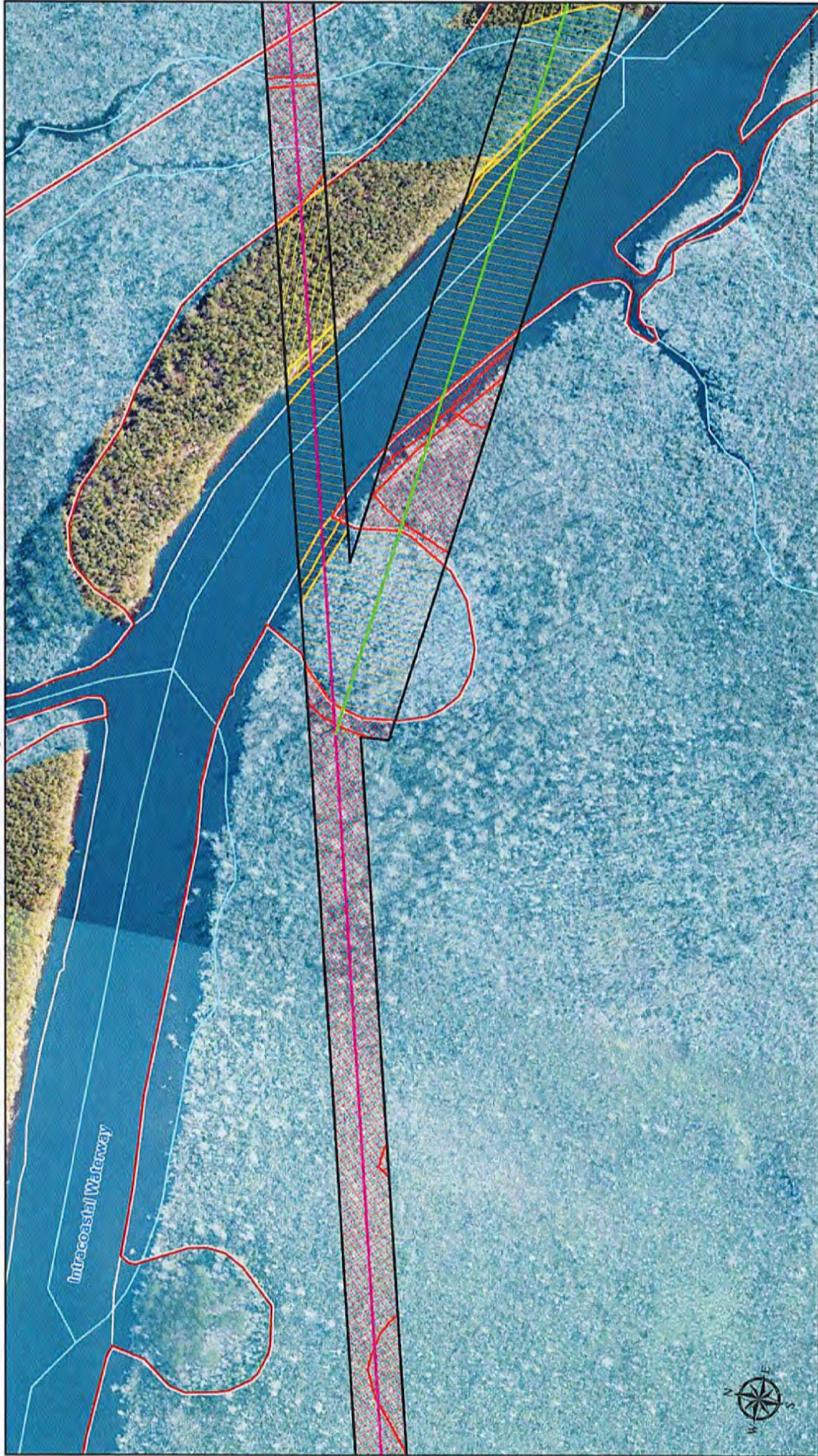


Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 37 of 62

Legend

Hampers to Fentress Route 2	Wetland Probability	NHD Waterbody
Line #2085 Route Variation	Medium	NMI Wetland
Project Limits	Medium/High	Not Hydric Soil
	High	Hydric Soil

Scale: 0 200 400 Feet

Scale: 1:3,000 when printed at 11x17

Revised: 10/16/2021 | Date: 04/26/2021

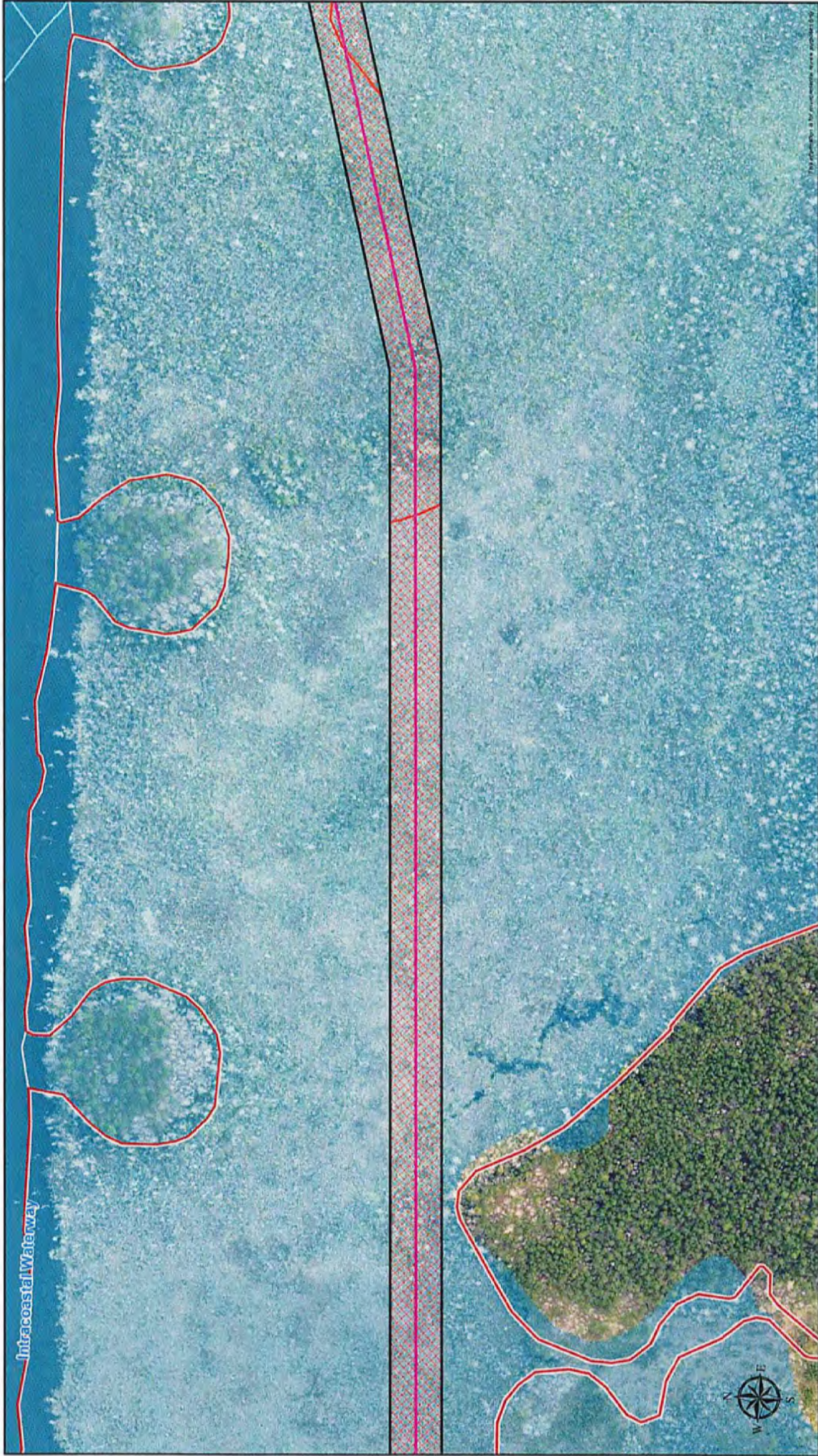
Author: CVDW, WL, Probability, F&G, Mapping

Drawn by: JRE

FKVI

Domination Energy

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0 200 400 Feet

North Arrow

— Hampers to Fentress Route 2
 — Project Limits
 Wetland Probability
 High

NHD Waterbody
 NMI Wetland
 Not Hydric Soil
 Hydric Soil

Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 38 of 62

Dominion Energy
 ERMI
 DRAWN BY: JPB

MAPS M (C:\GIS\SD\F\DOM\WORK\00007_AUG252021\08-16_Wetland_Probability_C0009_WL_Protability_Fig2_Mapset_October2021.mxd | REVISED: 10/04/2021 | SCALE: 1:3,000 when printed at 11x17

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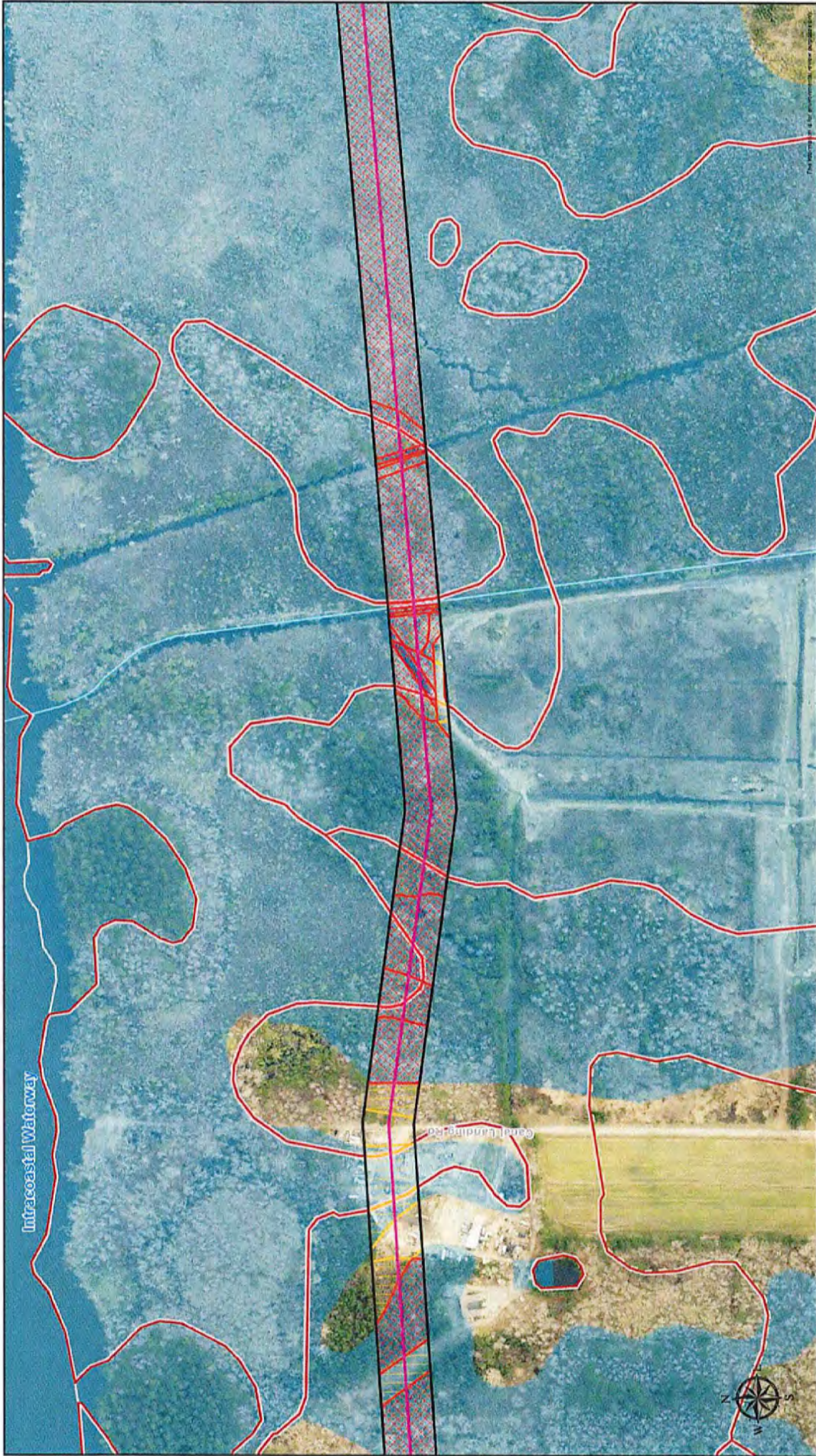


Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 39 of 62

Harpers to Fenitress Route 2
 Project Limits
 Wetland Probability
 Medium/High

High
 NHD Waterbody
 NWI Wetland
 Not Hydric Soil

Partially Hydric Soil
 Hydric Soil

MP, S. M. Chen and J. F. EDMONDSON, Waco, TX; GSD-2021-04-16; Wetland Probability; CVOW; WI; Probability; FqD; Mapset; October 2021; rev. 10/16/2021; | SCALE: 1:3,100; was printed at 11x17
 DOMINION ENERGY
 FRM
 DRAWN BY: JPB

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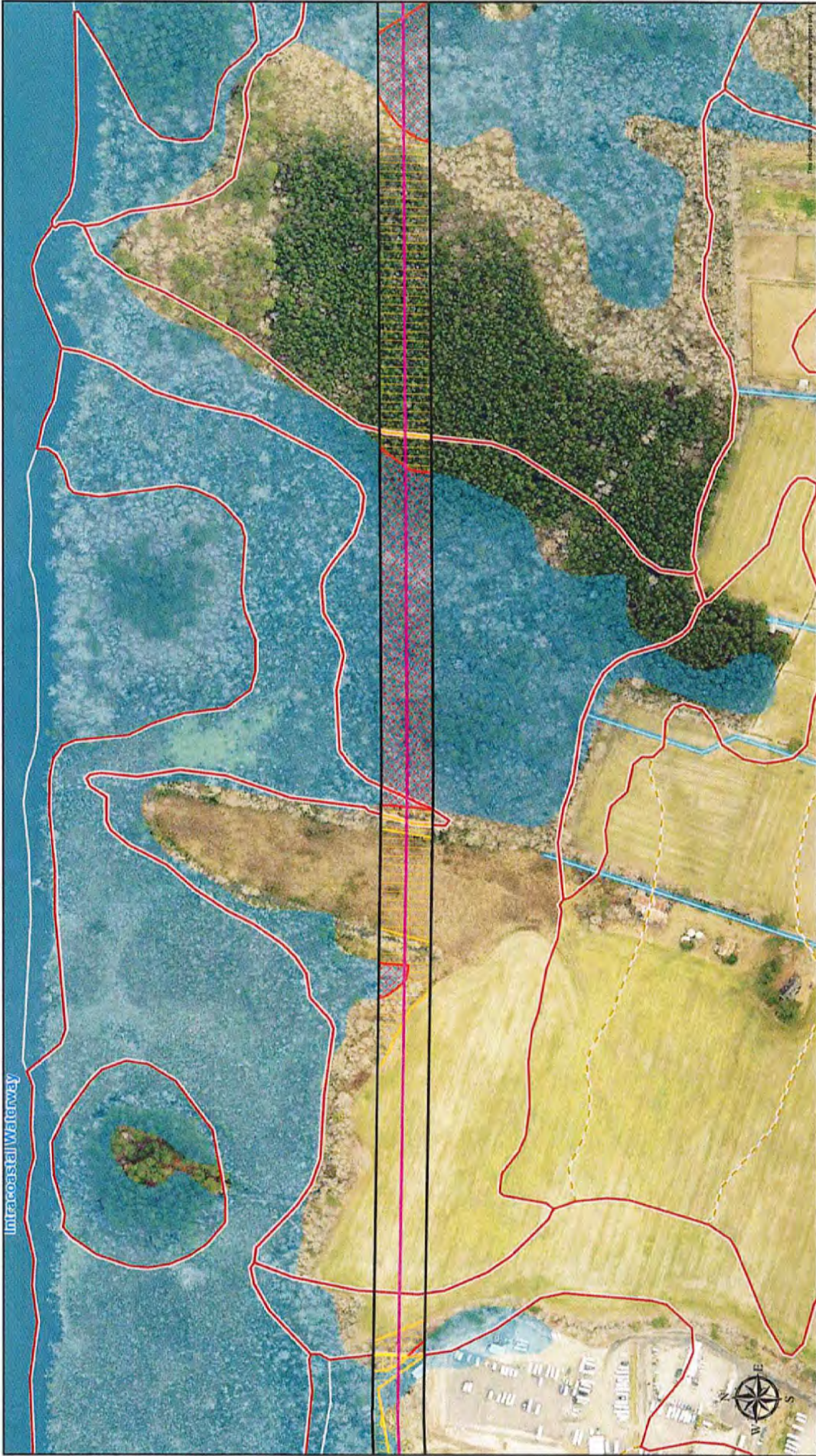


Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 40 of 62

Legend

- Harpers to Fortress Route 2
- Project Limits
- Wetland Probability
 - High
 - Medium
- Waterbody
 - NHD Waterbody
 - NWI Wetland
- Soil
 - Not Hydric Soil
 - Partially Hydric Soil
 - Hydric Soil

0 200 400 Feet

DOMINION ENERGY

FCM

DATE: 11/17/2021

MAPS M. Chen, D. F. DOM, M. Moore, W. Wood, AcGIS/2021/04/16, Wetland Probability, CV000, WI, Potomac, FgP, Mason, October 2021.mxd | REVISED: 10/16/2021 | SCALE: 1:3000, esee printed at 11x17

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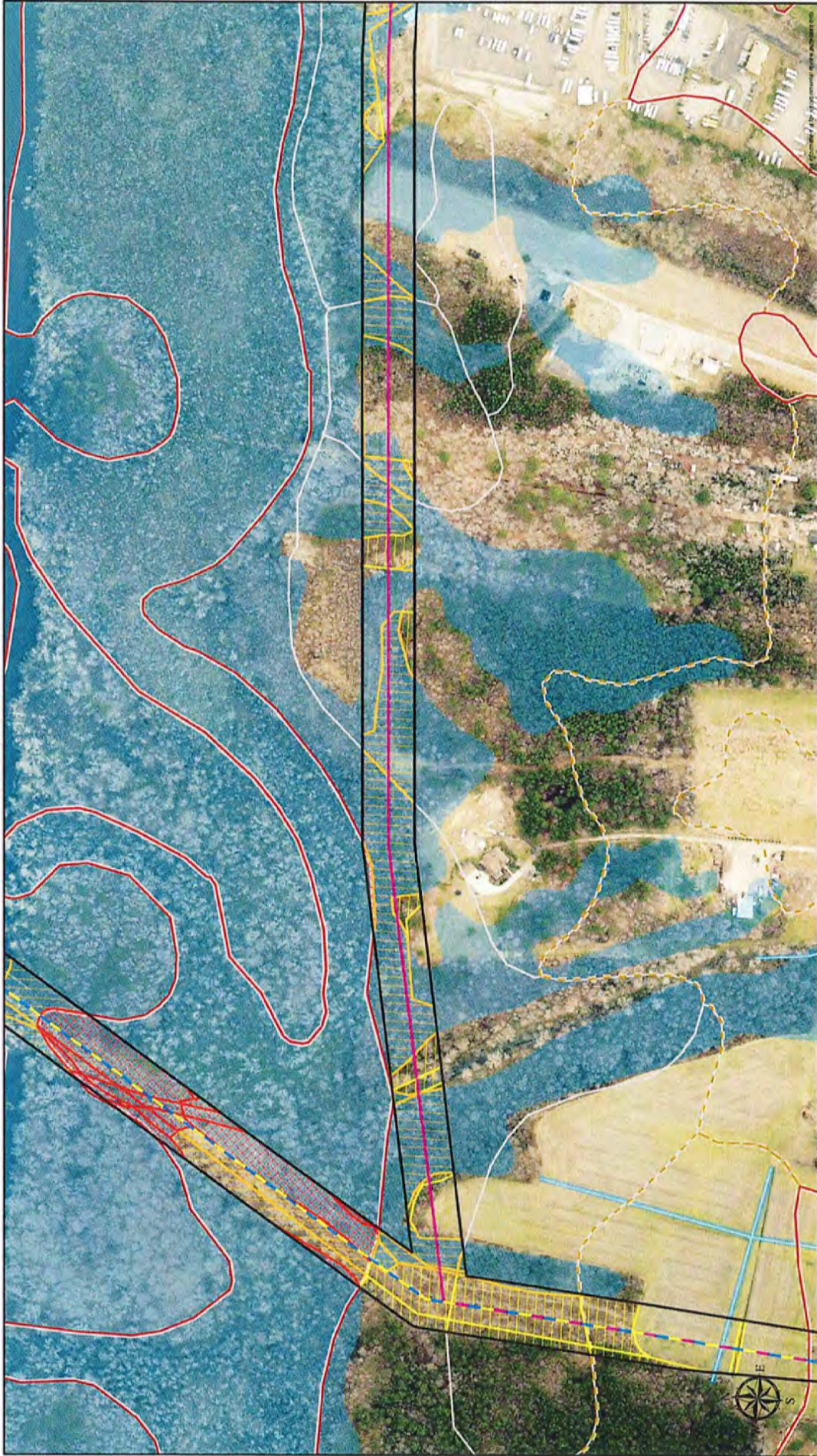


Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 41 of 62

DOMINION ENERGY

— Harpers to Fentress Route 1
— Harpers to Fentress Route 2
— Harpers to Fentress - Hybrid Route
 Project Limits

Medium
 Medium-High
 High

NHD Waterbody
 NMI Wetland
 Not Hydric Soil
 Partially Hydric Soil
 Hydric Soil

0 200 400
 Feet

EPA, S.M. Clements, D.P. DOM/Offshore Wind, ArcGIS/2021/06/16, Wetland Probability, C:\000\W\I\I\Intakality, Esri, Masset, October 2021, red, REVISED: 10/16/2021, SCALE: 1:3,000, when printed at 11x17
 DRAWN BY: JFB

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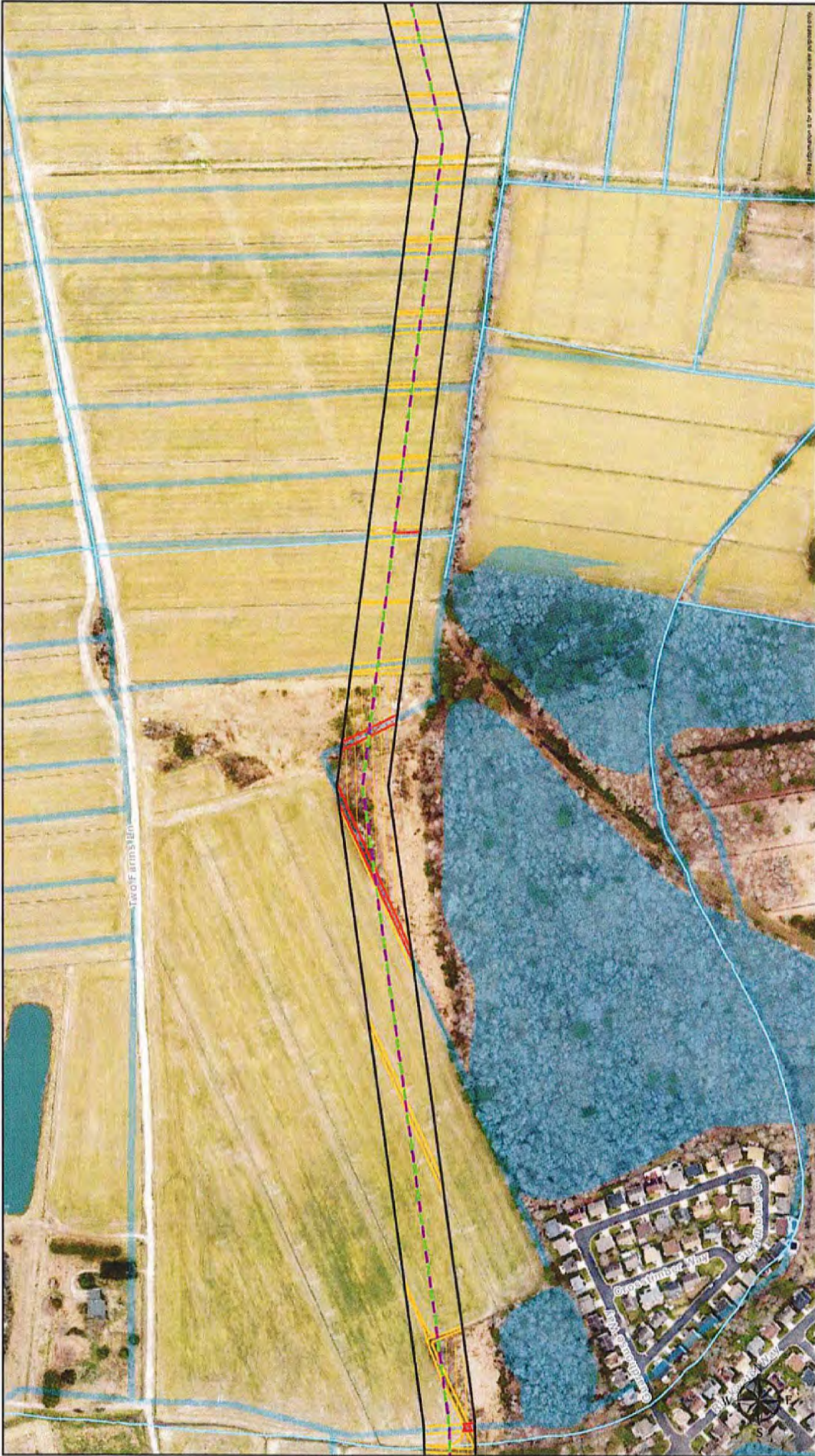
Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 42 of 62

— Harpers to Fentress Route 1
— Harpers to Fentress Route 2
— Harpers to Fentress Route 5
— Harpers to Fentress - Hybrid Route
— Line #2085 Route Variation
 Project Limits
— Wetland Probability Medium/High
— High
 NHD Waterbody
 NWI Wetland
 Hydraulic Soil

— Dominion Energy
 FRVI
 DRAWN BY: JPB

MFS M. C. Wrenshaw, DCM Offshore, Wind, ArcGIS 2021-04-16, Wetland Probability, C:\065, W.L. Probability, Fig2 Mapset, October 2021.mxd | REVISED: 10/14/2021 | SCALE: 1:3,000, when printed at 11x17

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This information is for informational purposes only.
Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 43 of 62

Dominion Energy

ECRI

MPLS:M Clients:DJF,DOM:Offshore Wind, ArcGIS:2021:08:16, Wetland Probability, C:\009, W\, Potentially, Fig2, Mapset, October-2021:read | REVISED: 10/14/2021 | SCALE: 1:3,000, view printed at 11x17
 DRAWN BY: JPB

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Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 44 of 62

Wetland Probability
 High: Medium: Low:
 NHD Waterbody: NWI Wetland: Not Hydric Soil: Hydric Soil:

Project Limits
 Harpers to Fentress Route 5: Line #2085 Route Variation: Project Limits:

LPA,S,M,Chester/DJ,F,DOM/Robins, Wind, At-GSS/2021/04/16, Wetland Probability, CVO/W, 9/11, Probability, Exp. Manual, October-2021, rev.1 | REVISED: 10/16/2021 | SCALE: 1:3,200 when printed at 11x17
 DRAWN BY: JFB

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Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 45 of 62

Legend

- Harpers to Fenitress Route 5
- Line #2065 Route Variation
- Project Limits
- NWI Wetland
- Not Hydric Soil
- Hydric Soil
- Wetland Probability
 - Medium-High
 - High
- NHD Waterbody

Scale: 0 200 400 Feet

Logos: Dominion Energy, FICV

MPA, S.M. Clients/D.F.COM Offshore Wind, As of 2021-04-16, Wetland Probability, CVOA, WI, Probability, Exp. Mapset, October 2021, end | REVISED 10/18/2021 | SCALE 1:3000 when printed at 11x17

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Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 46 of 62



- Harpers to Fentress Route 5
- Line #2085 Route Variation
- Project Limits
- Medium/High
- High
- NHD Waterbody
- NHD Wetland
- Not Hydric Soil
- Hydric Soil



The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.

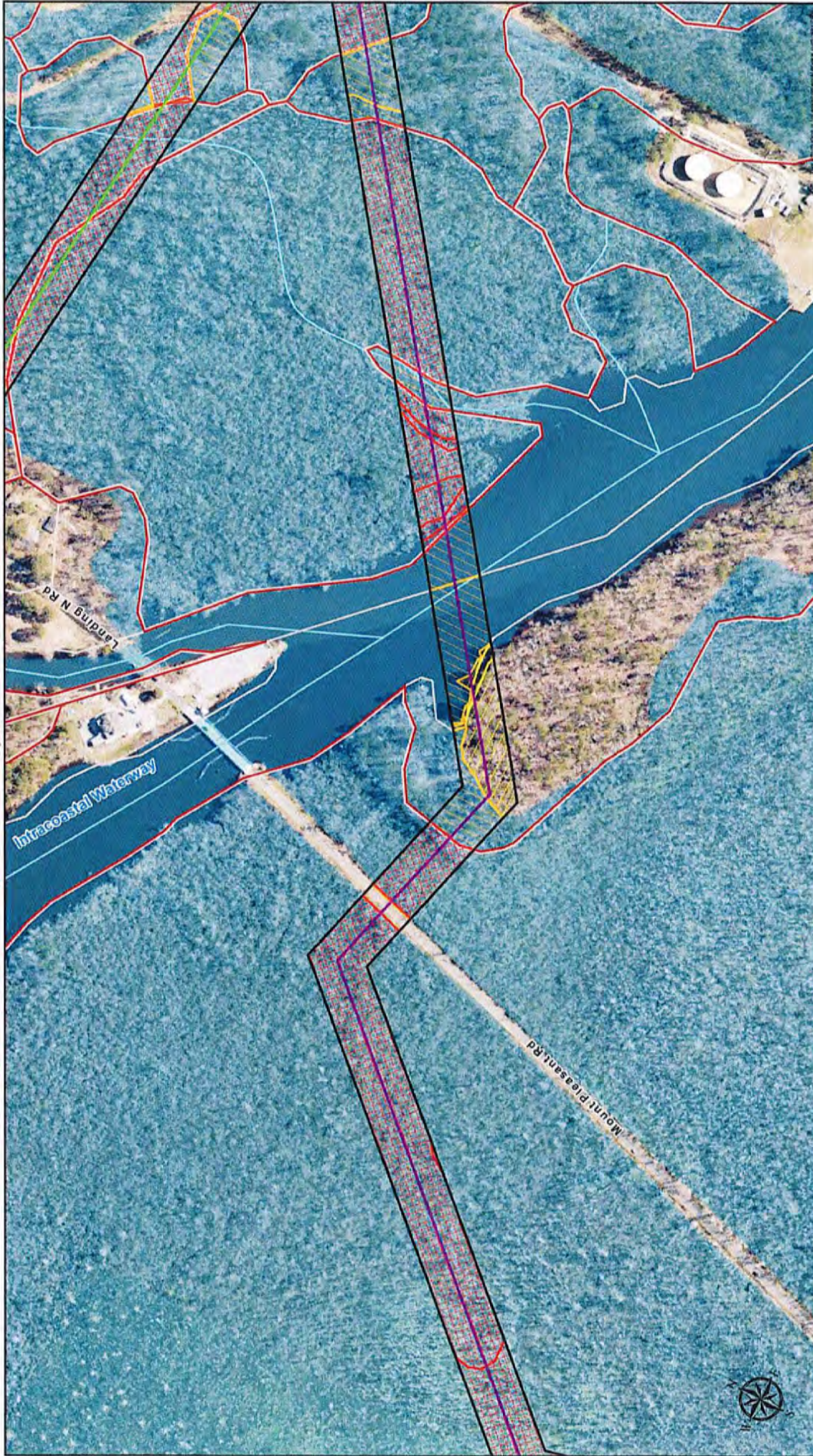


Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 47 of 62

Legend

Harpers to Fortress Route 5	High	NHD Waterbody
Line #2065 Route Variation	Medium/High	NWI Wetland
Project Limits	Medium	Not Hydric Soil
	High	Hydric Soil

0 200 400 Feet

U.S. S.M. Charts/D.T. DOM/Offshore Wind, An GIS/2011/4/16, Wetland Probability, C:\008, W1, Data\ch05, Exp, Mapset, Dmbr-2011.mxd | REVISED: 10/14/2011 | SCALE: 1:31000, www.jmcc.com, 11x17

DOMINION ENERGY

FRV

DEVELOPED BY: JPB

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Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 48 of 62

Legend

- Harpers to Fentress Route 5
- Project Limits
- Wetland Probability
 - Medium
- Waterbody
 - NHD Waterbody
 - NWI Wetland
- Soil
 - Not Hydric Soil
 - Partially Hydric Soil
 - Hydric Soil
- Wetland/Waterbody
 - Medium/High
 - High

Scale: 1:30,000
 Date: 10/16/2021
 Revised: October 2021
 Author: M.S.M., Client: D.F. DOM Offshore Wind, Inc.

Logos: Dominion Energy, FRCVI

Metadata: DRAWN BY: JFB

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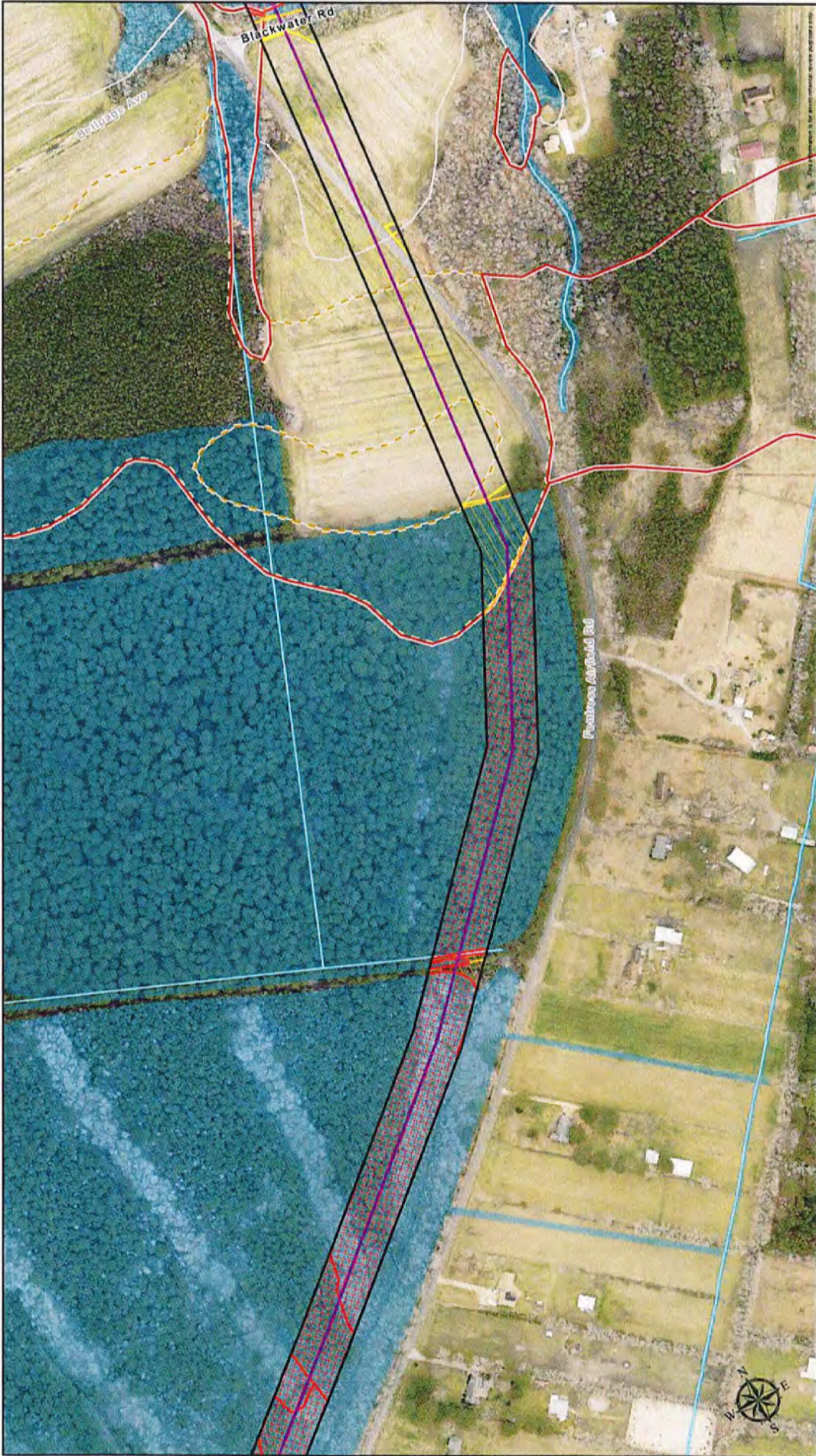


Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 49 of 62

Legend

- Harpers to Fentress Route 5
- Project Limits
- Wetland Probability
 - Medium
 - High
 - NHD Waterbody
 - NWI Wetland
- Soil Types
 - Not Hydric Soil
 - Partially Hydric Soil
 - Hydric Soil

Scale: 0, 200, 400 Feet

Logos: Dominion Energy, FIRM

Metadata: MFLS M Clients\DJF\DCM\Offshore Wind_ArcGIS\2021\04-16_Wetland Probability_C0000_WL_Probability_Fig2_Mapset_October-2021.mxd | REVISED: 10/16/2021 | SCALE: 1:3,300. Also printed at 1:1.17

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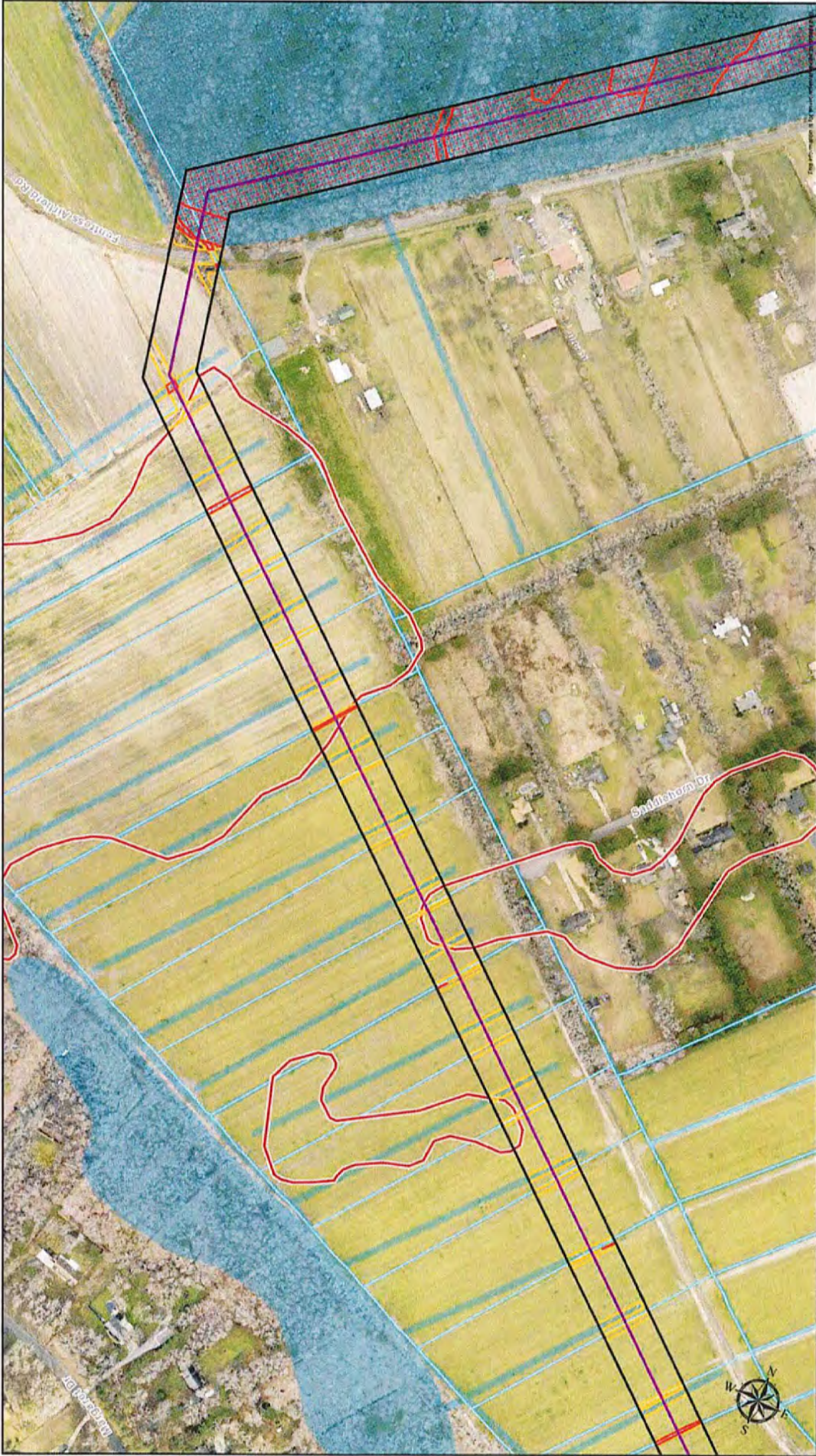


Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 50 of 62






0 200 400 Feet
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MPA, S.M. Client: DJF-DCOM/Offshore Wind, ArcGIS/2021/04/18 Wetland Probability, C:\0091_Wil_Predictability_Fig2_Mapset_October_2021.mxd | REVISION: 10/18/2021 | SCALE: 1:3,000 when printed at 11x17
 DRAWN BY: JPB

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Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 51 of 62

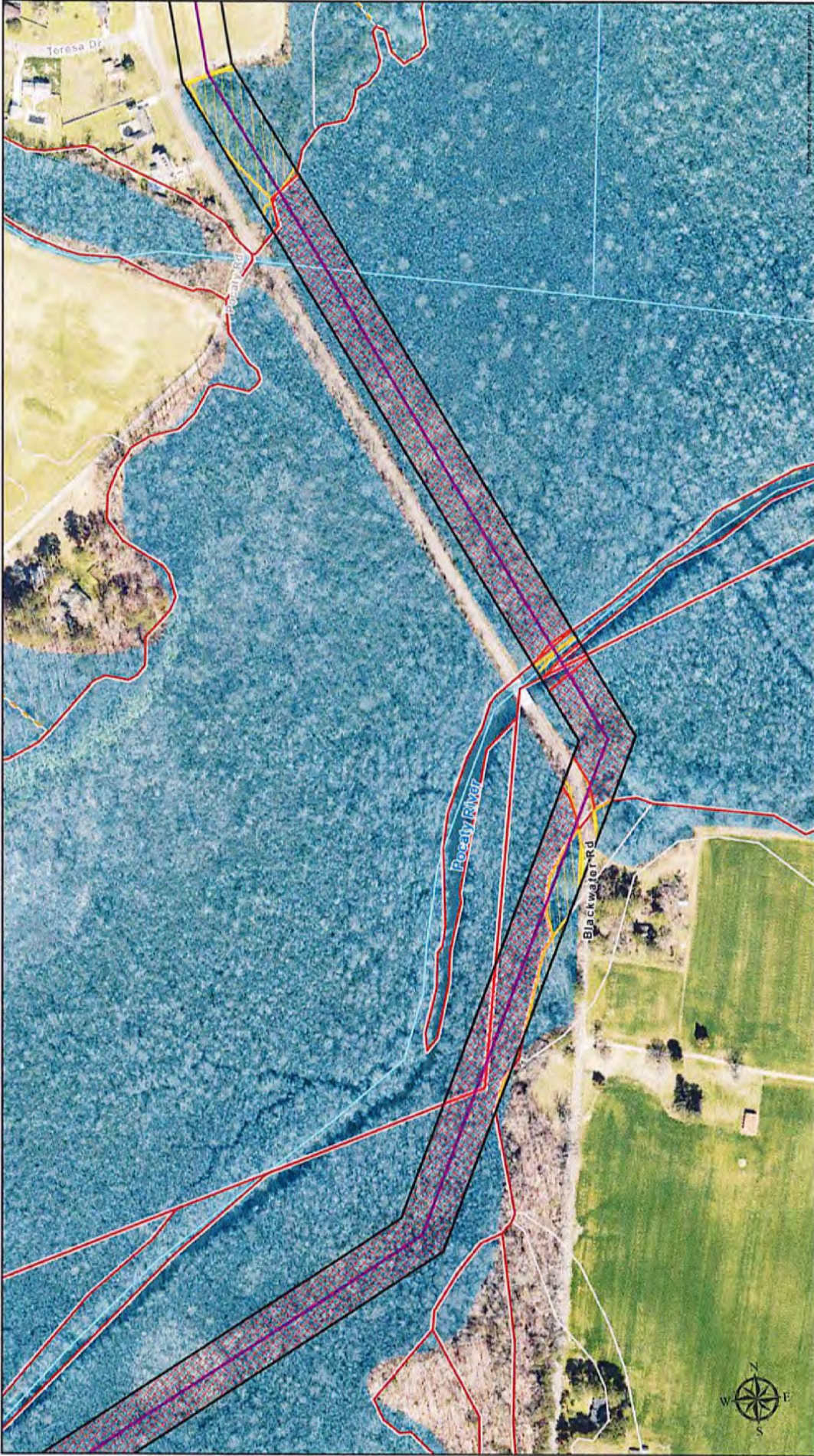
Legend

- Harpers to Fentress Route 5
- Project Limits
- Wetland Probability
 - Medium
- Medium/High
- High
- NHD Waterbody
- NWI Wetland
- Not Hydric Soil
- Partially Hydric Soil
- Hydric Soil

Scale: 1:3,000 when printed at 11x17
 Revised: 10/16/2021
 MFLS M. Chen/DJT/DCM/Offshore Wind, ArcGIS/2021/04/16, Wetland Probability, CVO/W, WI, Probability, Fig2, Mapset, October 2021/rev 1

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0 200 400 Feet

North Arrow

 Harpers to Fenitress Route 5
 Project Limits
 Wetland Probability
 Medium
 High
 NHD Waterbody
 NMI Wetland
 Medium/High
 High
 NHD Waterbody
 NMI Wetland
 Not Hydric Soil
 Partially Hydric Soil
 Hydric Soil

Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 52 of 62

DRAWN BY: JPB

M:\S\1\Client\50\DCM\Offshore_Wind_Au\GIS\2021\04\16_Wetland_Probability_C\000_WL_Probability_Fig_Mapset_October-2021.mxd | REVISED: 10/16/2021 | SCALE: 1:3,000 when printed at 11x17

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— Harpers to Fentress Route 5
 — Project Limits
 Wetland Probability
 High

— NHD Waterbody
 — NWI Wetland
 — Not Hydric Soil
 — Hydric Soil

Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 53 of 62

MFS M. Clements/D.F. DOM Offshore Wind, Inc./2021/04/16, Wetland Probability, C:\000\Wetland Probability, October 2021.mxd | REVISED: 10/16/2021 | SCALE: 1:3,000 view oriented at 11.17
 DRAWN BY: JPB

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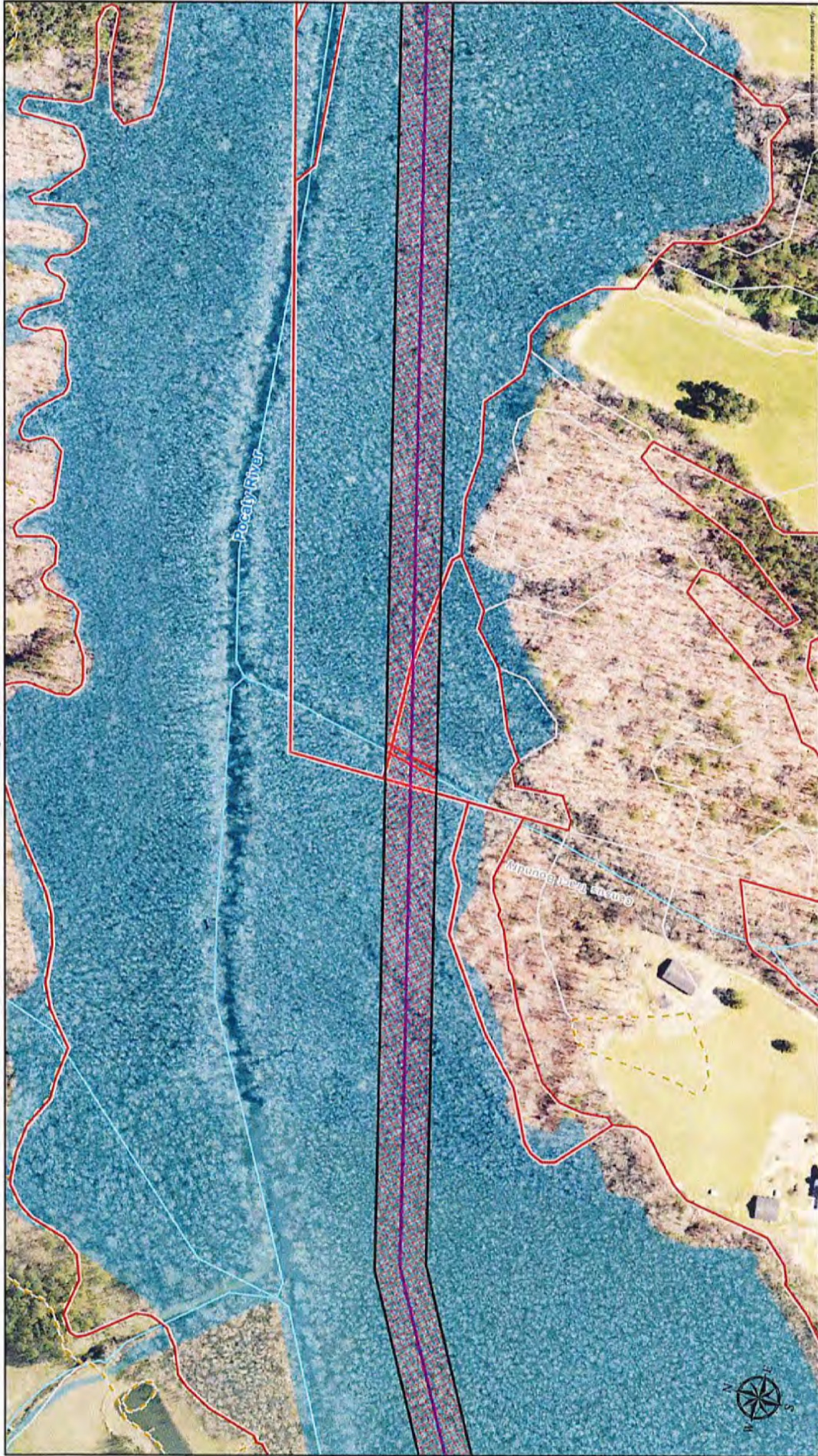


Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 54 of 62

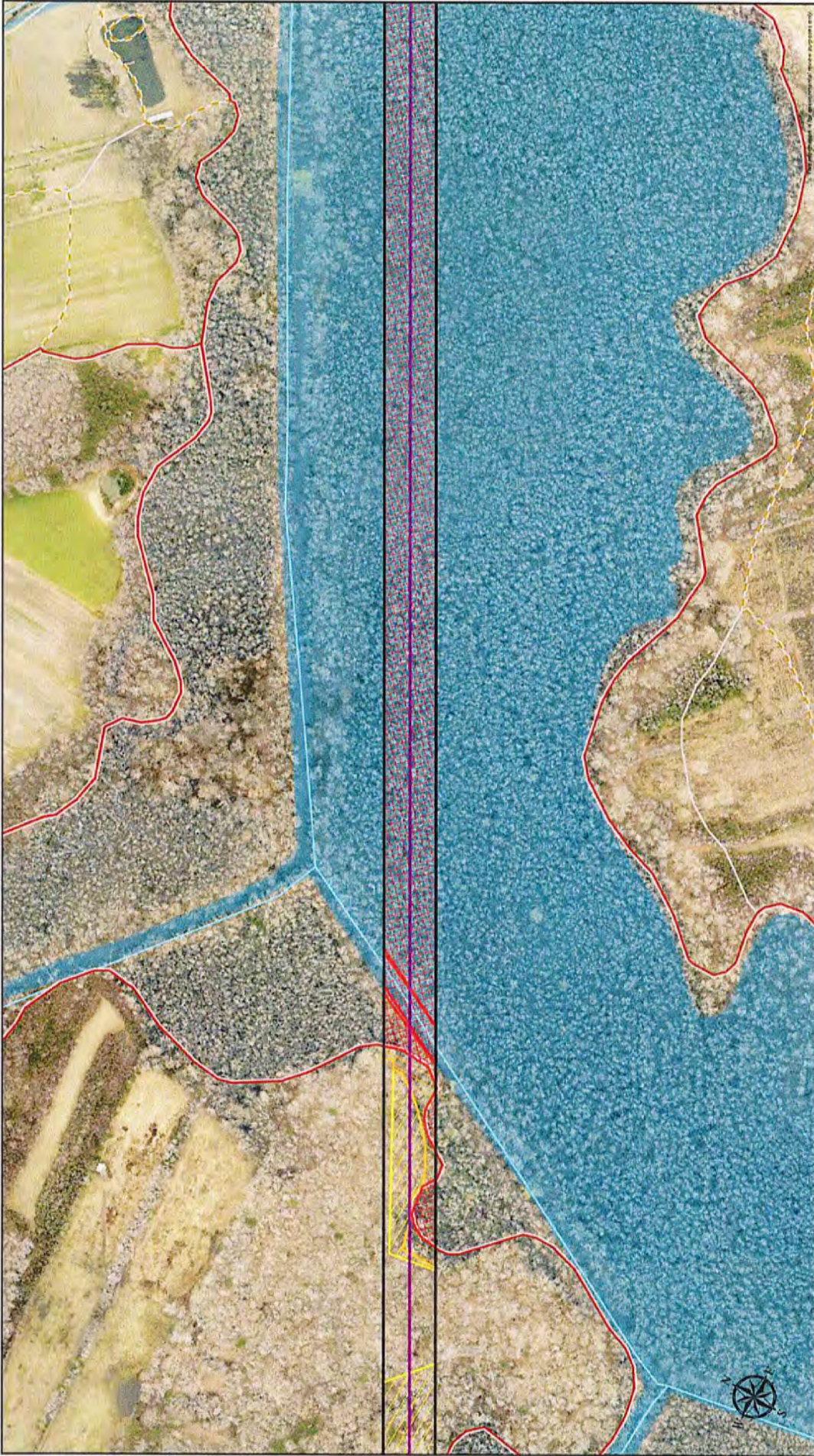
Legend:

- Harpers to Fentress Route 5
- Project Limits
- Wetland Probability
 - High
- NHD Waterbody
- NWI Wetland
- Not Hydric Soil
- Partially Hydric Soil
- Hydric Soil

DOMINION ENERGY
 DCRAINBY_PB

MAPS.M.C. Church/D.F. DeMott/Offshore Wind, ArcGIS/2021/04/16, Wetland Probability, COOW, WI, Suitability, Fg, Mass, Date:2021/04/16, REVISED: 10/28/2021 | SCALE: 1:3300, when printed at 11x17

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0 200 400 Feet

— Harpers to Fentress Route 5
 Project Limits
 Wetland Probability
 Medium

 Medium/High
 High
 NHD Waterbody
 NWI Wetland

 Not Hydric Soil
 Partially Hydric Soil
 Hydric Soil

Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 55 of 62

Dominion Energy
 ERVI
 DRAWN BY: JFB

MPS, S.M. Chesapeake Offshore Wind, ArcGIS 2021/04/16, Wetland Probability, COOW, WIL, Probability, Fig 2, Mapset, October 2021, rev 1 | REVISED: 10/16/2021 | SCALE: 1:3,000 when printed at 11x17

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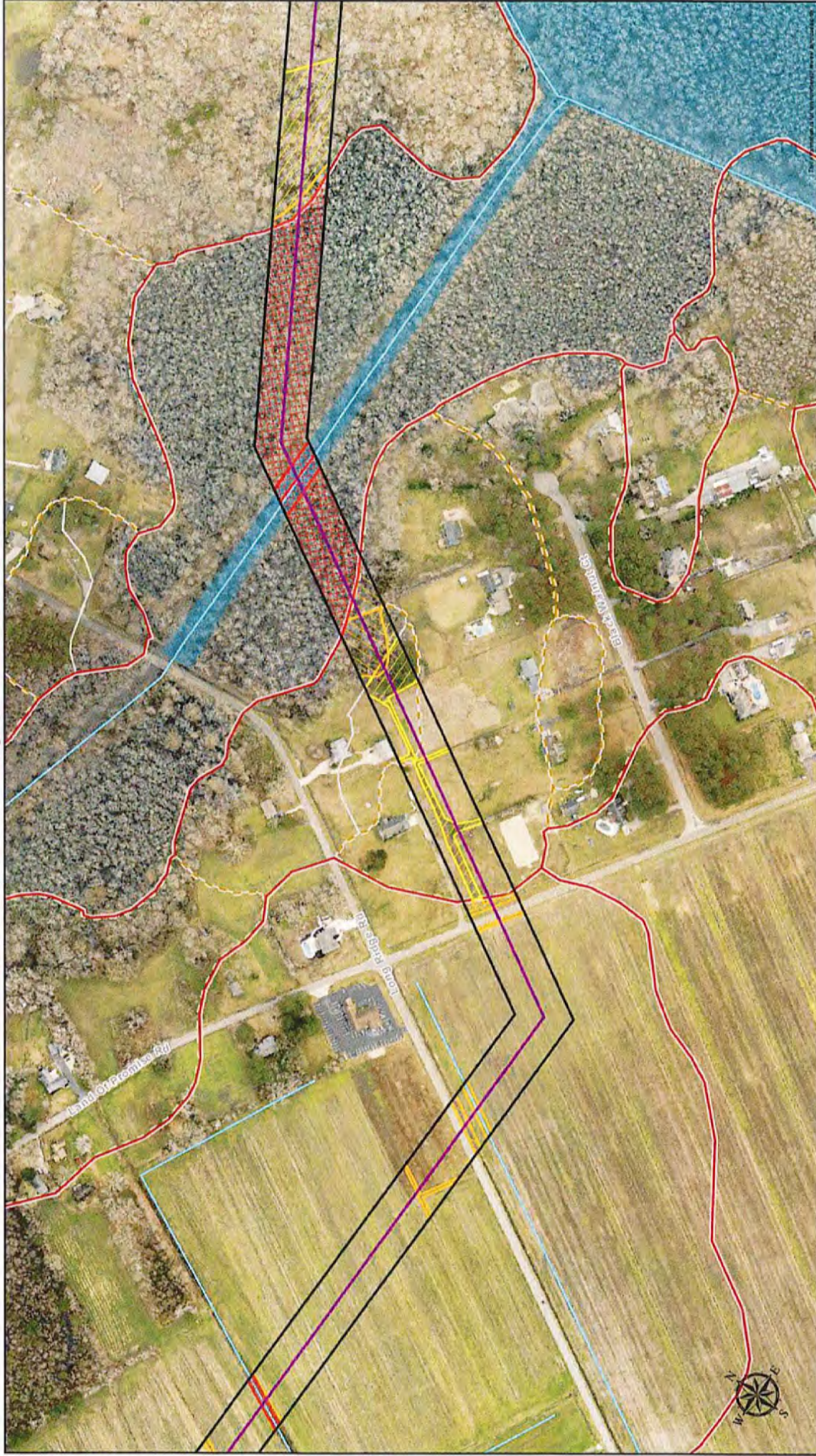


Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 56 of 62

Legend

- Harpers to Fentress Route 5
- Project Limits
- Wetland Probability
 - Medium
- NHD Waterbody
- NWI Wetland
- Not Hydric Soil
- Partially Hydric Soil
- Hydric Soil

Scale: 1:3000, as noted at 11x17

DOMINION ENERGY

FRM

DATE: 01/16/2021

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0 200 400 Feet

North Arrow

Hampers to Fentress Route 5
 Project Limits
 Wetland Probability
 Medium/High

High
 NHD Waterbody
 Not Hydric Soil
 Partially Hydric Soil

Hydric Soil

Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 57 of 62

DOMINION ENERGY

FKM

DRAWN BY: JPB

MPS, M. Clients/D.F. DOM Offshore Wind, Ac:CS-2021-04-16, Wetland Probability, C:\009, Wet, Probability, 10/16/2021, 1, SCALE: 1:3,000, when printed at 11x17

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Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 58 of 62




Not Hydric Soil
 Partially Hydric Soil
 Hydric Soil

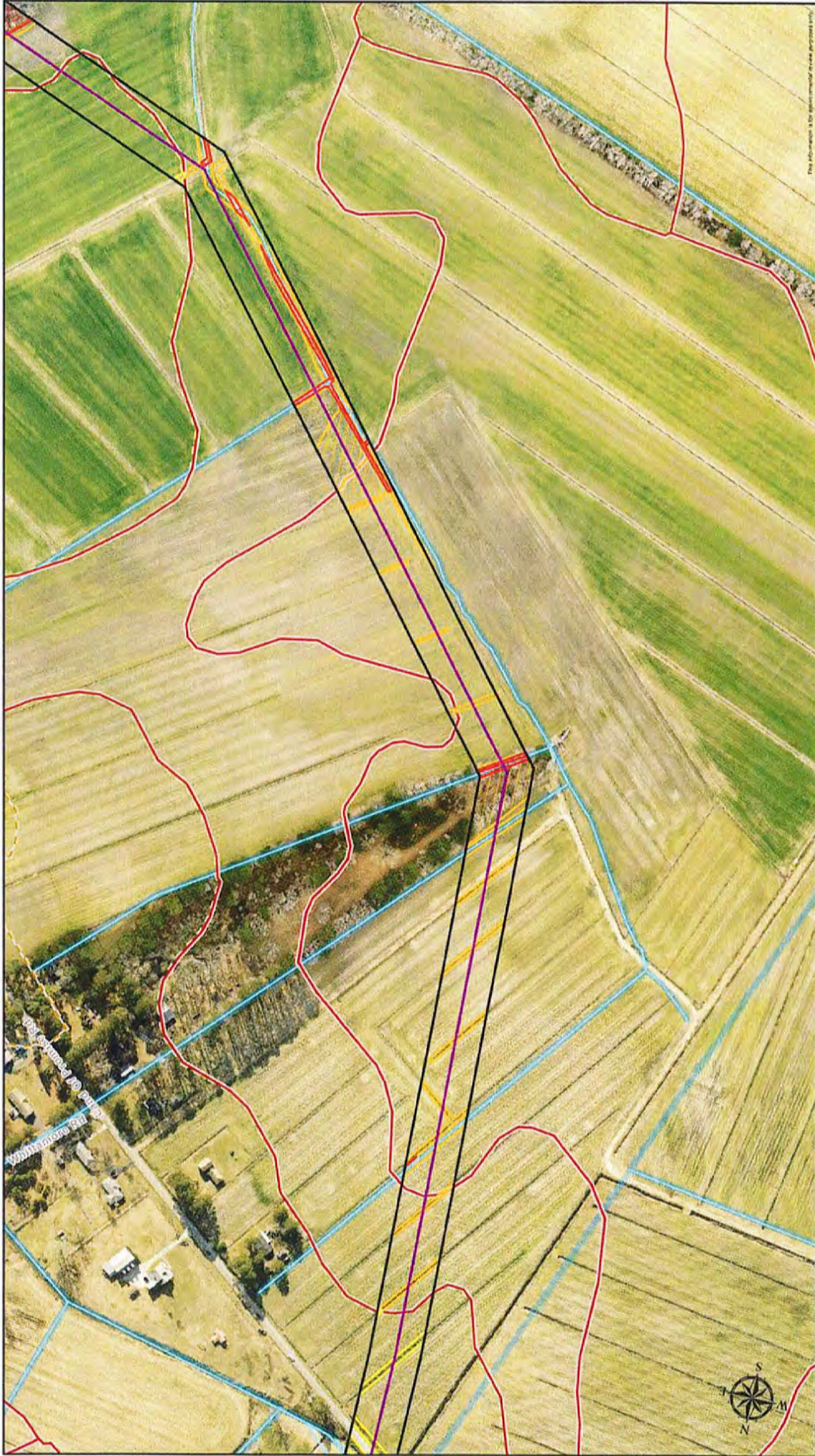
Medium/High
 High
 NHD Waterbody
 NWI Wetland

Harpers to Fenitress Route 5
 Project Limits
 Wetland Probability
 Medium

0 200 400
 Feet


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 DRAWN BY: JPB

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Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 59 of 62




DRAWN BY: JRB

Legend

- Harpers to Fentress Route 5
- Project Limits
- Wetland Probability
 - High
 - Medium
 - Low
- NHD Waterbody
- NWI Wetland
- Not Hydric Soil
- Partially Hydric Soil
- Hydric Soil

0 200 400
Feet



MPS M. Clients: D.F. DOM Offshore Wind, ArcGIS 10.4.1.6, Wetland Probability, C:\OWM\ITL\Probability_Fig2_Mapset_October2021.mxd | REVISED: 10/16/2021 | SCALE: 1:3,000 when printed at 11x17

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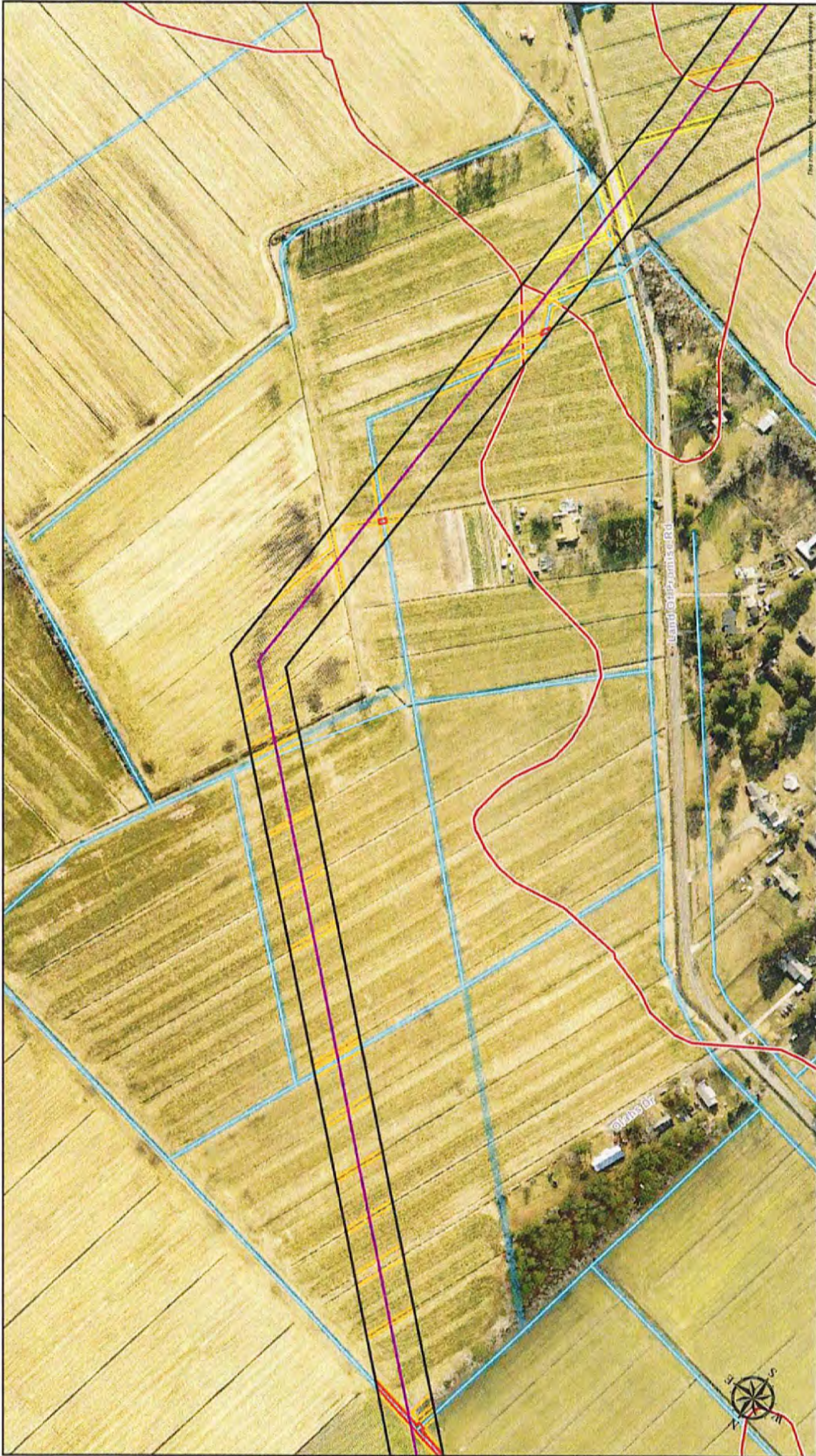


Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 60 of 62

LPA, S.M. Client: D.F. DOM Offshore, 8/20/21, Ac: 05/2021/04/16, Wetland, Probability, CV009, WI, Potentially, Exp. Mapset, October 2021 and 1, REVISED, 10/14/2021, SCALE: 1:3,300, were printed at 11x17.

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Figure 2
Wetland and Waterbody Mapset
Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 61 of 62

DOMINION ENERGY

FKVI

DRAWN BY: JRB

0 200 400 Feet

Centerville

Legend:

- Hampers to Fentress Route 5
- Project Limits
- Wetland Probability
 - Medium/High
 - High
- NHD Waterbody
- NWI Wetland
- Not Hydric Soil
- Partially Hydric Soil
- Hydric Soil

MAPS M: C:\p\B\DF\DOMCO\shore Wind\ ArcGIS\2021\44-16_Wetland_Probability_CVOWV.WL; Probability: CVOWV.WL; Probability: October 2021 end; I: REVISED: 10/16/2021; I: SCALE: 1:3,000 when saved at 11x17

The wetlands and waterbodies depicted on this map are an estimate of possible wetland and waterbody extent based on desktop data review only, and are subject to change in extent and location based on actual field delineation of wetlands and waterbodies.



Figure 2
Wetland and Waterbody Mapset
 Coastal Virginia Offshore Wind Project
 Virginia Beach and Chesapeake, Virginia
 Page 62 of 62

Harpers to Fentress Route 1	Project Limits	High	Partially Hydric Soil
Harpers to Fentress Route 2	Wetland Probability	NHD Waterbody	Hydric Soil
Harpers to Fentress Route 5	Medium	NHI Wetland	Not Hydric Soil
Harpers to Fentress - Hybrid Route	Medium/High	Not Hydric Soil	

0 200 400 Feet

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Kazakhstan	Tanzania
Kenya	Thailand
Malaysia	UAE
Mexico	UK
Mozambique	US
Myanmar	Vietnam

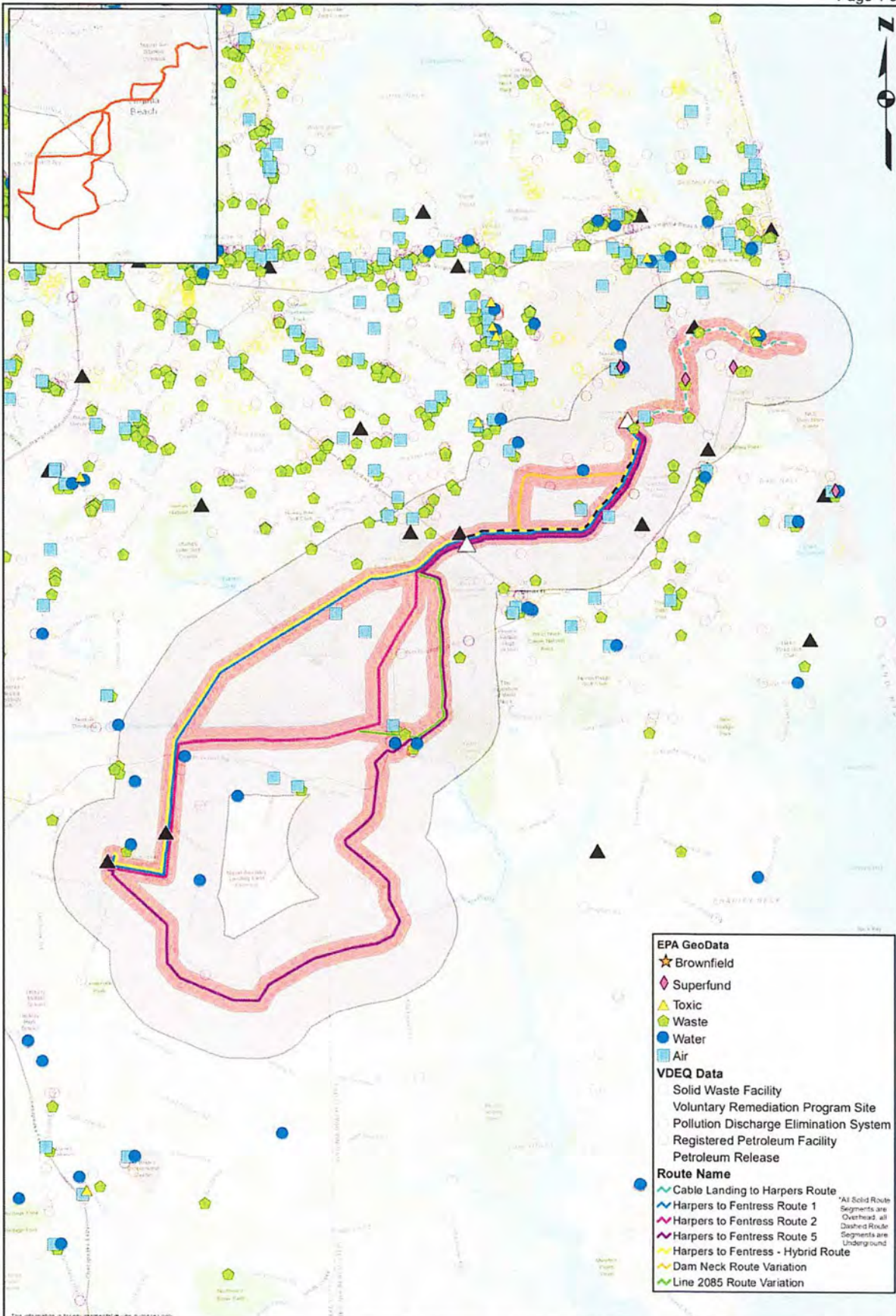
ERM's Minneapolis Office

Environmental Resources
Management, Inc.
222 South 9th Street, Suite 2900
Minneapolis Minnesota 55402

T: +1 612 347 6789

F: +1 612 347 6780

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This information is for environmental review purposes only.

- Route Buffer - 1000 Feet
- Route Buffer - 1 Mile
- Proposed Switching Station
- Existing Substation



Attachment 2.E.1
Solid and Hazardous Waste Sites
Coastal Virginia Offshore Wind Commercial Project
Virginia Facilities
 Dominion Energy Virginia
 Virginia Beach and Chesapeake, VA



Table F-1 Virginia Facilities							
Rare and Protected Species Occurrence in the Project Vicinity							
Common Name	Scientific Name	Federal Status	State Status	Global Rank	Habitat	Counties/City Documented	Source
FEDERALLY LISTED SPECIES							
Mammals							
Northern long-eared bat	<i>Myotis septentrionalis</i>	LT	LT	G1	Old growth or late successional interior forests. Partially dead or decaying trees are used for breeding, summer day roosting, and foraging. Hibernation occurs primarily in caves, mines, and tunnels.	Chesapeake	IPaC WERMS
West Indian manatee	<i>Trichechus manatus</i>	LT	LE	G2	Marine, brackish, and freshwater systems in coastal and riverine areas throughout their range.	Chesapeake Virginia Beach	VaFWIS WERMS
Birds							
Roseate Tern	<i>Sterna dougallii dougallii</i>	LE	LE	G4	Salt marsh islands and beaches with sparse vegetation. Nests are set among rocks, shells, or vegetation in concealed spots such as clumps of beach grass or goldenrod.	Virginia Beach	IPaC VaFWIS WERMS
Eastern Black Rail	<i>Laterallus jamaicensis jamaicensis</i>	LT	LE	G3	Salt and brackish marshes with dense cover. May use impounded and unimpounded wetland habitats with sufficient vegetative cover.	Chesapeake Virginia Beach	VaFWIS
Piping Plover	<i>Charadrius melodus</i>	LT	LT	G3	Wide, flat, open sandy beaches with little vegetation. Nests occur on open ground some distance away from water, often with large rock or clump of grass nearby, but no direct shelter or shade.	Virginia Beach	VaFWIS
Red-cockaded Woodpecker	<i>Dryobates borealis</i>	LE	LE	G3	Mature pine forests, especially longleaf pine and other southern pine forests. Roosts and nests are located in live pines, specifically those infected with red heart fungus.	Chesapeake	NHDE
Reptiles							
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	LE	LE	G1	Nearshore and inshore waters of the northern Gulf of Mexico. Nests on beaches.	Virginia Beach	VaFWIS WERMS
Loggerhead sea turtle	<i>Caretta caretta</i>	LT	LT	G3	Subtropical and temperate oceans, including the Atlantic. Nesting occurs on beaches.	Virginia Beach	NHDE VaFWIS WERMS

Table F-1 Virginia Facilities							
Rare and Protected Species Occurrence in the Project Vicinity							
Common Name	Scientific Name	Federal Status	State Status	Global Rank	Habitat	Counties/City Documented	Source
Green sea turtle	<i>Chelonia mydas</i>	LT	LT	G3	Tropical and subtropical waters, including reefs, bays, and inlets. Nests on beaches.	Virginia Beach	VaFWIS WERMS
COMMONWEALTH-LISTED SPECIES							
Mammals							
Rafineque's big-eared bat	<i>Corynorhinus rafinesquii macrotis</i>	None	LE	G3	Caves year-round, especially those in karst regions dominated by oak-hickory or beech-maple-hemlock forest.	Chesapeake Virginia Beach	NHDE VaFWIS WERMS
Tri-colored bat	<i>Perimyotis subflavus</i>	SOC	LE	G3	Roost in trees near forest edges during summer. Hibernates deep in caves or mines in areas with warm, stable temperatures during winter.	Chesapeake Virginia Beach	NHDE VaFWIS VDNH WERMS
Birds							
Henslow's Sparrow	<i>Ammodramus henslowii</i>	None	LT	G4	Open grasslands with few or no woody plants and tall dense grasses and litter layer.	Virginia Beach	VaFWIS
Peregrine Falcon	<i>Falco peregrinus</i>	None	LT	G4	Tall structures, such as powerline poles, buildings, and rock ledges, in generally open landscapes.	Chesapeake Virginia Beach	VaFWIS WERMS
Gull-billed Tern	<i>Gelochelidon nilotica</i>	None	LT	G5	Found along coastlines, salt marshes, estuaries, lagoons, and plowed fields in all seasons. Nest along sandy barrier islands along the coast of New Jersey.	Virginia Beach	VaFWIS
Amphibians							
Barking treefrog	<i>Hyla gratiosa</i>	None	LT	G5	Generally found in sandy areas in pinelands or swampy woods, most often near standing water.	Virginia Beach	NHDE
Reptiles							
Eastern chicken turtle	<i>Deirochelys reticularia reticularia</i>	None	LE	G5	Heavily-vegetated aquatic habitats, especially quiet bodies of water such as ponds, lakes, ditches, marshes, and cypress swamps.	Virginia Beach	NHDE
Canebrake rattlesnake	<i>Crotalus horridus</i>	None	LE	G4	Lowland cane thickets, high areas around swamps and river floodplains, hardwood and pine forests, mountainous areas, and rural habitats near agriculture.	Chesapeake Virginia Beach	NHDE VaFWIS VDNH WERMS
Eastern glass lizard	<i>Ophisaurus ventralis</i>	None	LT	G5	Pine flatwoods, mesic hammocks, wet meadows,	Virginia Beach	NHDE VaFWIS

Table F-1 Virginia Facilities							
Rare and Protected Species Occurrence in the Project Vicinity							
Common Name	Scientific Name	Federal Status	State Status	Global Rank	Habitat	Counties/City Documented	Source
					maritime forests, and damp grassy areas in sandy environments.		
Plants							
Raven's seedbox	<i>Ludwigia ravenii</i>	SOC	LE	G1	Boggy clearings and ditches in wet flatwoods, probably former savannas.	Chesapeake	NHDE
SPECIES OF CONCERN AND NON-LISTED RARE AND CANDIDATE SPECIES							
Invertebrates							
Dusky roadside skipper	<i>Amblyscirtes alternata</i>	SOC	None	G2	Open grassy pine woods, but may range from moist to dry habitats, including moist flatwoods, savannas, and sandhill ridges	Chesapeake	NHDE
Noctuid moth	<i>Protodeltote sp. 1</i>	SOC	None	G2	Swamp forest with patches of cane along ditches and ditch roads	Chesapeake	NHDE
Brimley's assassin bug	<i>Phirontis brimleyi</i>	SOC	None	G2	No information available	Virginia Beach	NHDE
Monarch butterfly	<i>Danaus plexippus</i>	C	None	G4	Open fields and meadows, or anywhere where there is access to larval host plants, milkweed (<i>Asclepias</i> spp.)	Chesapeake Virginia Beach	IPaC
Duke's skipper	<i>Euphyes dukesi</i>	None	None	G3	Wet, marshy areas including swamps, open marshes, and wet roadside ditches	Chesapeake Virginia Beach	VDNH
Plants							
Blue panic grass	<i>Dichanthelium caeruleum</i>	SOC	None	G2	Certain dune swales and moist power lines of the Coastal Plain	Chesapeake Virginia Beach	NHDE
Riverbank evening-primrose	<i>Oenothera riparia</i>	SOC	None	G2	Herbaceous wetlands, especially tidal marshes	Chesapeake	NHDE
Virginia least trillium	<i>Trillium pusillum var. virginianum</i>	SOC	None	G3	Forested wetlands, especially low, alluvial woodlands	Chesapeake Virginia Beach	NHDE VDNH
Maritime thoroughwort	<i>Eupatorium maritimum</i>	SOC	None	G2	Palustrine habitats and interdunal swales in coastal Virginia and the Outer Banks region of North Carolina	Virginia Beach	NHDE
Long beach seedbox	<i>Ludwigia brevipes</i>	SOC	None	G2	Shallow water, pond shores, blackwater rivers, interdunal swales, marshes, shores of impoundments, and ditches	Virginia Beach	NHDE VDNH
OTHER PROTECTED RESOURCES							
Resource		Description				Source	
Critical Habitat		None present in the study area.				IPaC	
Colonial Water Bird Habitat		None present in the study area.				CCB-CW	

Table F-1 Virginia Facilities							
Rare and Protected Species Occurrence in the Project Vicinity							
Common Name	Scientific Name	Federal Status	State Status	Global Rank	Habitat	Counties/City Documented	Source
Bald Eagle Concentration Areas		None present in the study area.				FWS-BEC	
Bald Eagle Nests		There are 15 nests in the Project vicinity. The closet Bald eagle nest (VB1901) is located approximately 800 feet north from the Dam Neck Route Variation.				CCB-BE	
Coastal Avian Protection Zones		There are five CAPZs within the study area; however, none would be crossed by the alternative transmission line routes.				GEMS	
Northern Long-eared Bat Roosts		There are six known occupied maternity roosts (summer habitat) in Chesapeake, but no known roosts or hibernaculum in Virginia Beach. The six identified roost trees, which are located along Mount Pleasant Road in Chesapeake, would not be directly impacted by the alternative transmission line routes.				VDWR-NLEB	
Little Brown Bat and Tri-colored Bat Habitat and Roosts		None present in the study area.				VDWR-TCB	
<p><u>Notes:</u></p> <p>CCB-BE The Center for Conservation Biology Virginia Bald Eagle Nest Locator CCB-CW The Center for Conservation Biology Colonial Waterbirds 2018 Map FWS-BEC U.S. Fish and Wildlife Bald Eagle Concentration Areas – Virginia IPaC U.S. Fish and Wildlife Service Information for Planning and Consultation NHDE Virginia Department of Conservation and Recreation Natural Heritage Data Explorer VaFWIS Virginia Department of Game and Inland Fisheries Virginia Fish and Wildlife Information System <i>Only species demarcated by the VaFWIS as 'confirmed' or 'potential' within a 10-mile radius of the Project center point have been included in the table above.</i></p> <p>VDEQ Virginia Department of Environmental Quality Coastal Geospatial and Educational Mapping System VDNH Virginia Department of Conservation and Recreation Division of Natural Heritage Environmental Review VDWR-NLEB Virginia Department of Wildlife Resources Northern Long-eared Bat Habitat & Roost Trees VDWR-TCB Virginia Department of Wildlife Resources Little Brown Bat and Tri-colored Bat Habitat & Roosts WERMS Virginia Department of Wildlife Resources Wildlife Environmental Review Map Service</p> <p><u>Federal/State Status:</u></p> <p>LE Listed as endangered LT Listed as threatened PE Proposed as endangered PT Proposed as threatened SOC Species of concern C Candidate species</p> <p><u>Global Rank (NatureServe 2021):</u></p> <p>G1 Critically Imperiled: At very high risk of extinction due to extreme rarity (often five or fewer populations), very steep declines, or other factor G2 Imperiled: At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors G3 Vulnerable: At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors G4 Apparently Secure: Uncommon but not rare; some cause for long-term concern due to declines or other factors G5 Secure: Common, widespread, and abundant</p>							

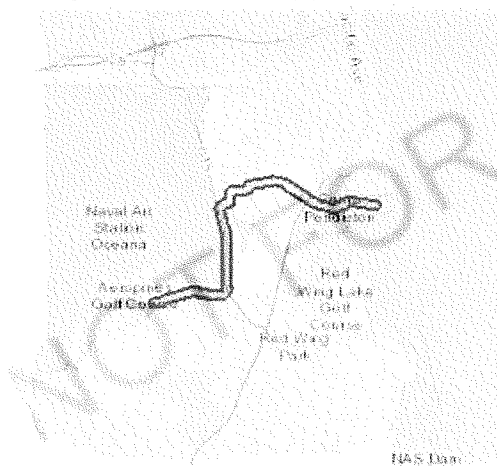
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Virginia Beach County, Virginia



Local office

Virginia Ecological Services Field Office

(804) 693-6694

(804) 693-9032

6669 Short Lane

Gloucester, VA 23061-4410

<http://www.fws.gov/northeast/virginiafield/>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9045>

Birds

NAME

STATUS

Roseate Tern *Sterna dougallii dougallii*

Endangered

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/2083>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>

- Measures for avoiding and minimizing impacts to birds
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds
<http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the **PROBABILITY OF PRESENCE SUMMARY** at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

American Kestrel *Falco sparverius paulus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<http://ecos.fws.gov/ecp/species/9587>

Breeds Apr 1 to Aug 31

American Oystercatcher *Haematopus palliatus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<http://ecos.fws.gov/ecp/species/8935>

Breeds Apr 15 to Aug 31

Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. http://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Aug 31
Black Skimmer <i>Rynchops niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. http://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Blue-winged Warbler <i>Vermivora pinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jun 30
Gull-billed Tern <i>Gelochelidon nilotica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. http://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. http://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Purple Sandpiper <i>Calidris maritima</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere

Rusty Blackbird *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds elsewhere

Short-billed Dowitcher *Limnodromus griseus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<http://ecos.fws.gov/ecp/species/9480>

Breeds elsewhere

Willet *Tringa semipalmata*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 20 to Aug 5

Wood Thrush *Holocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

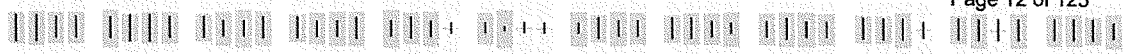
Probability of Presence (●)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

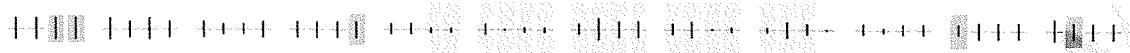
How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Bald Eagle
Non-BCC
Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Black Skimmer
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



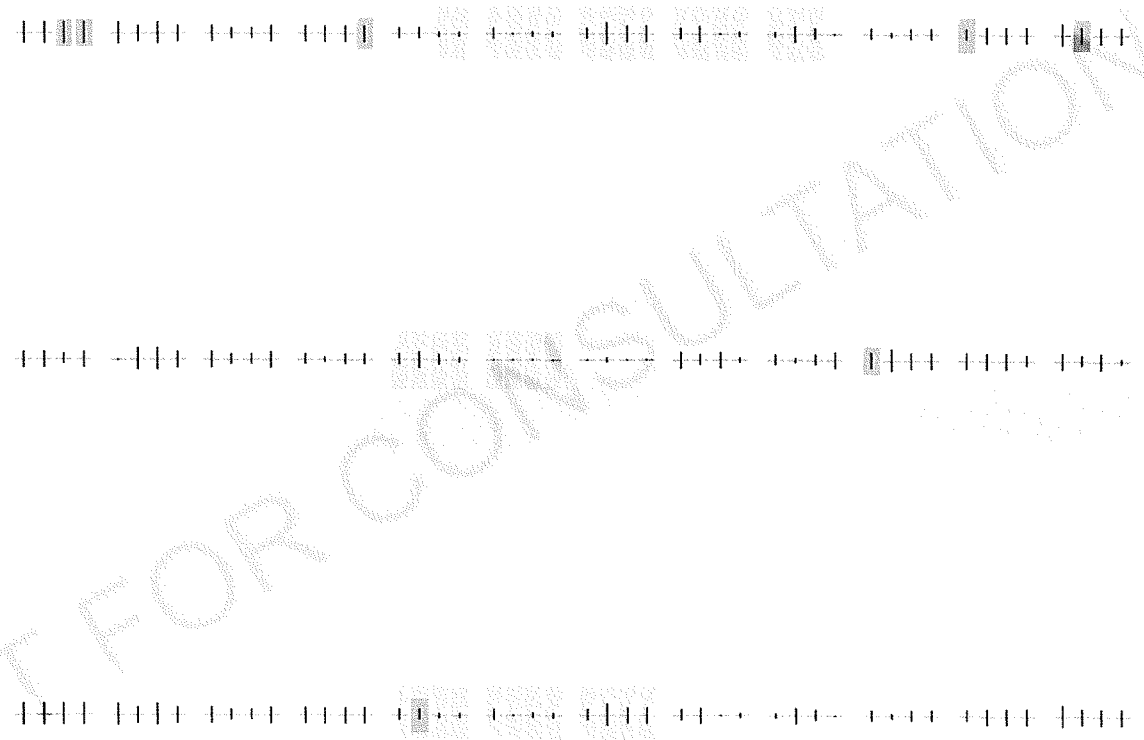
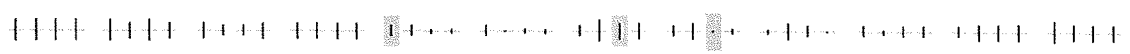
Blue-winged Warbler
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



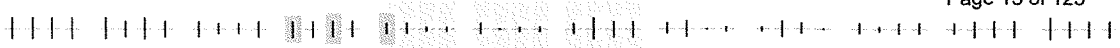
Gull-billed Tern
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Lesser Yellowlegs
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



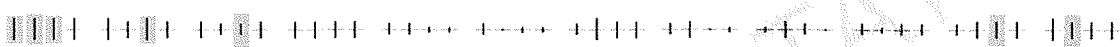
Prairie Warbler
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



Prothonotary Warbler
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



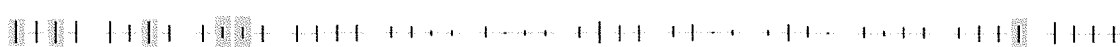
Purple Sandpiper
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



Red-headed Woodpecker
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



Ruddy Turnstone
BCC - BCR (This is
a Bird of
Conservation
Concern (BCC)
only in particular
Bird Conservation
Regions (BCRs) in
the continental
USA)



SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Rusty Blackbird
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Short-billed Dowitcher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Willet
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Wood Thrush
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the [Probability of Presence Summary](#) and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern \(BCC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

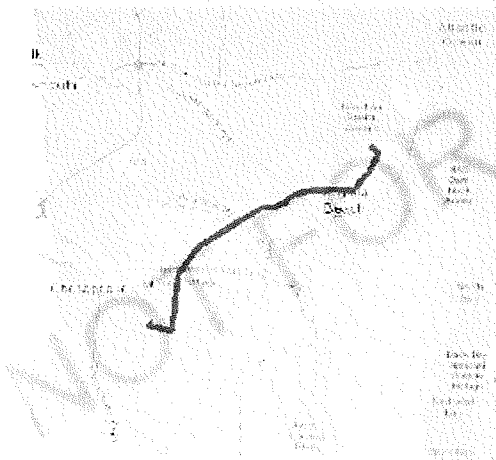
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Chesapeake and Virginia Beach counties, Virginia



Local office

Virginia Ecological Services Field Office

☎ (804) 693-6694

📠 (804) 693-9032

6669 Short Lane
Gloucester, VA 23061-4410

<http://www.fws.gov/northeast/virginiafield/>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
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Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9045>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

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FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

American Kestrel *Falco sparverius paulus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<http://ecos.fws.gov/ecp/species/9587>

Breeds Apr 1 to Aug 31

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<http://ecos.fws.gov/ecp/species/1626>

Breeds Sep 1 to Jul 31

Black Skimmer *Rynchops niger*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<http://ecos.fws.gov/ecp/species/5234>

Breeds May 20 to Sep 15

King Rail *Rallus elegans*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<http://ecos.fws.gov/ecp/species/8936>

Breeds May 1 to Sep 5

Prairie Warbler *Dendroica discolor*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Jul 31

Prothonotary Warbler *Protonotaria citrea*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 1 to Jul 31

Red-headed Woodpecker *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

Rusty Blackbird *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds elsewhere

Willet *Tringa semipalmata*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 20 to Aug 5

Wood Thrush *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (●)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of

presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

- 3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

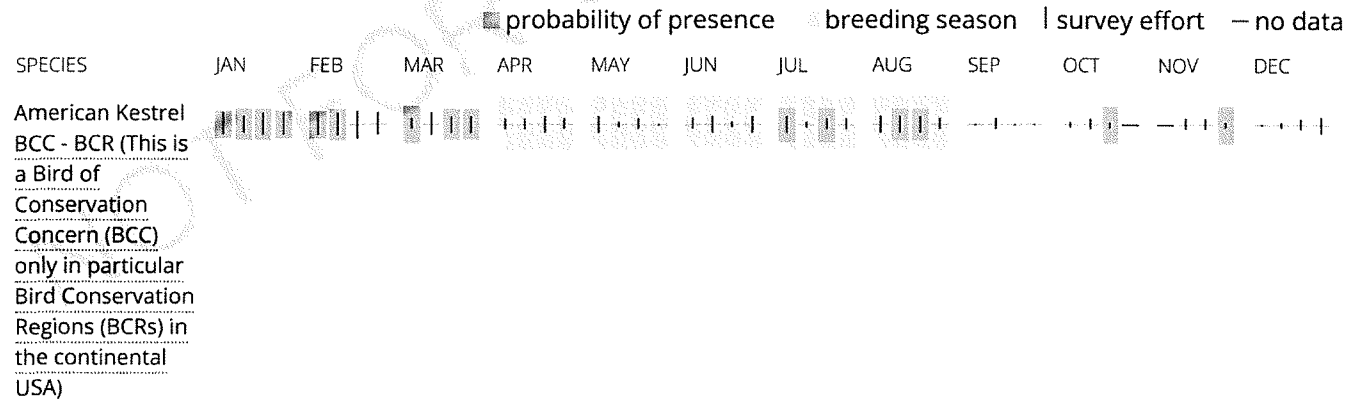
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

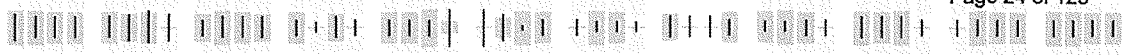
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald Eagle
Non-BCC
Vulnerable (This is
not a Bird of
Conservation
Concern (BCC) in
this area, but
warrants attention
because of the
Eagle Act or for
potential
susceptibilities in
offshore areas
from certain types
of development or
activities.)



Black Skimmer
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



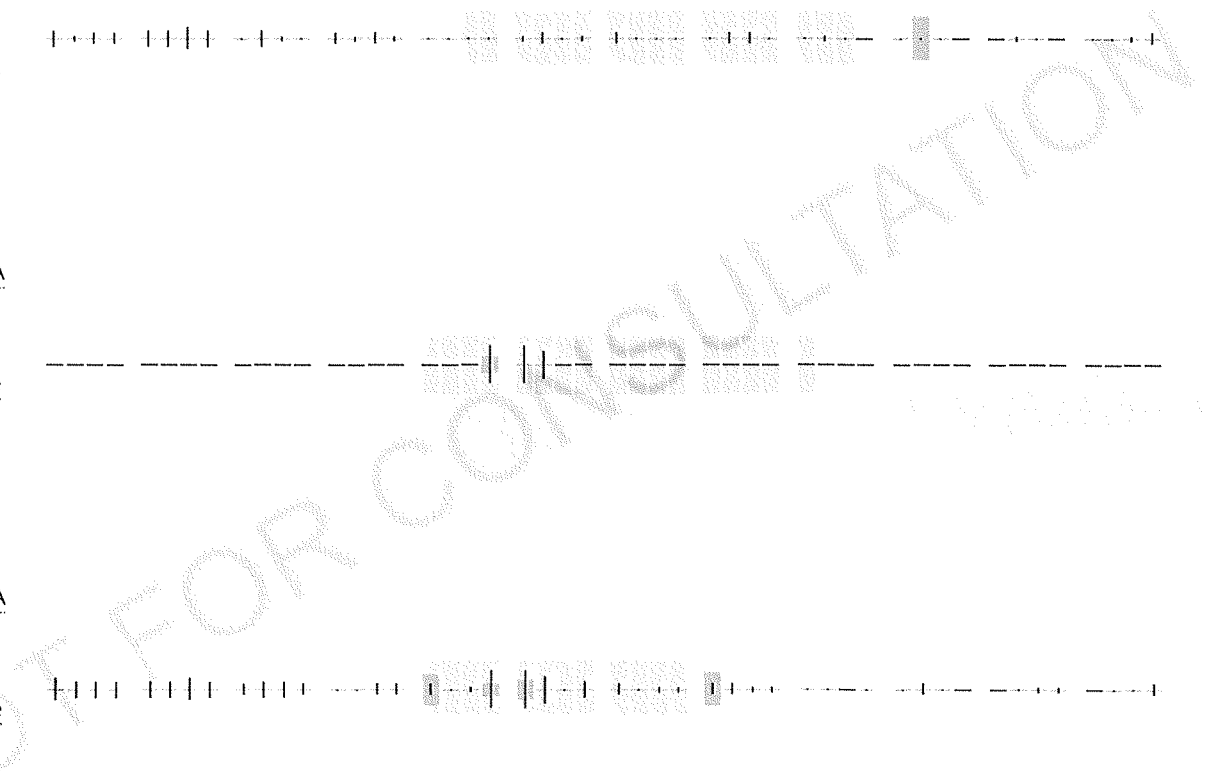
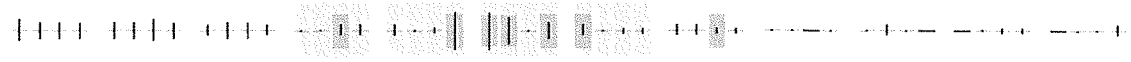
King Rail
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



Prairie Warbler
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
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and Alaska.)



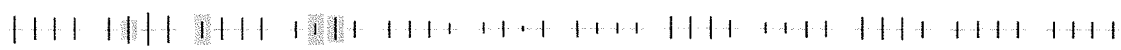
Prothonotary
Warbler
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



Red-headed
Woodpecker
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



Rusty Blackbird
BCC - BCR (This is
a Bird of
Conservation
Concern (BCC)
only in particular
Bird Conservation
Regions (BCRs) in
the continental
USA)



Willet
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



Wood Thrush
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the [Probability of Presence Summary](#) and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

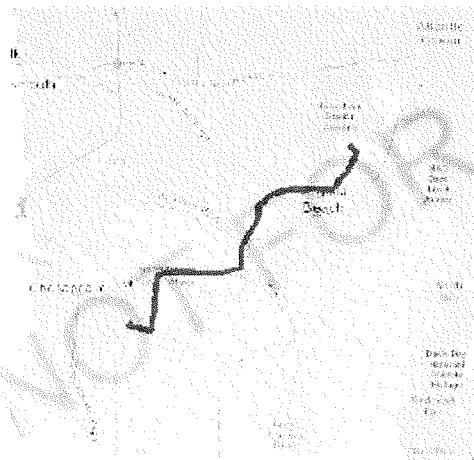
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Chesapeake and Virginia Beach counties, Virginia



Local office

Virginia Ecological Services Field Office

(804) 693-6694

(804) 693-9032

6669 Short Lane
Gloucester, VA 23061-4410

<http://www.fws.gov/northeast/virginiafield/>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9045>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the

FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

American Kestrel *Falco sparverius paulus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<http://ecos.fws.gov/ecp/species/9587>

Breeds Apr 1 to Aug 31

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
<http://ecos.fws.gov/ecp/species/1626>

Breeds Sep 1 to Jul 31

Black Skimmer *Rynchops niger*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<http://ecos.fws.gov/ecp/species/5234>

Breeds May 20 to Sep 15

King Rail *Rallus elegans*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<http://ecos.fws.gov/ecp/species/8936>

Breeds May 1 to Sep 5

Prairie Warbler *Dendroica discolor*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Jul 31

Prothonotary Warbler *Protonotaria citrea*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 1 to Jul 31

Red-headed Woodpecker *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

Rusty Blackbird *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds elsewhere

Willet *Tringa semipalmata*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 20 to Aug 5

Wood Thrush *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

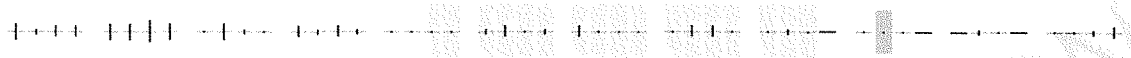
How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of

Bald Eagle
Non-BCC
Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Black Skimmer
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



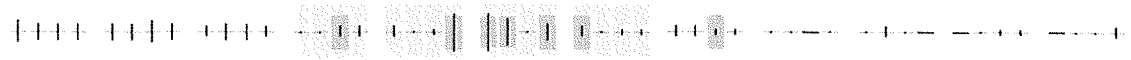
King Rail
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Prairie Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

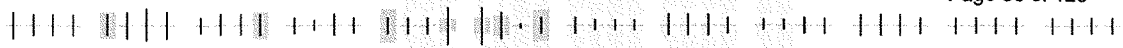


Prothonotary Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

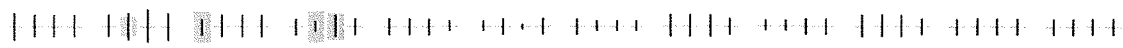


NOT FOR CONSULTATION

Red-headed
Woodpecker
BCC Rangewide
(CON) (This is a
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Rusty Blackbird
BCC - BCR (This is
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the continental
USA)



Willet
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
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Wood Thrush
BCC Rangewide
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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

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Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

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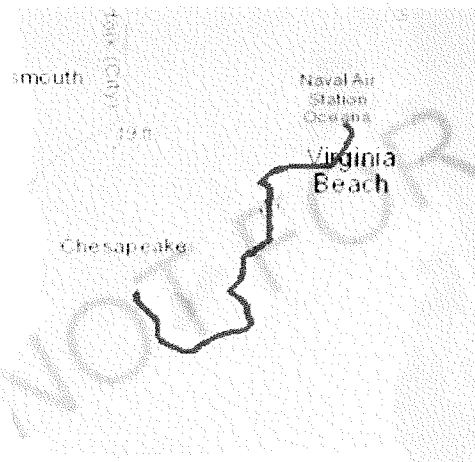
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Chesapeake and Virginia Beach counties, Virginia



Local office

Virginia Ecological Services Field Office

☎ (804) 693-6694

📠 (804) 693-9032

6669 Short Lane

Gloucester, VA 23061-4410

<http://www.fws.gov/northeast/virginiafield/>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9045>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the

FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

American Kestrel *Falco sparverius paulus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<http://ecos.fws.gov/ecp/species/9587>

Breeds Apr 1 to Aug 31

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
<http://ecos.fws.gov/ecp/species/1626>

Breeds Sep 1 to Jul 31

Black Skimmer *Rynchops niger*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<http://ecos.fws.gov/ecp/species/5234>

Breeds May 20 to Sep 15

King Rail *Rallus elegans*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<http://ecos.fws.gov/ecp/species/8936>

Breeds May 1 to Sep 5

Prairie Warbler *Dendroica discolor*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Jul 31

Prothonotary Warbler *Protonotaria citrea*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 1 to Jul 31

Purple Sandpiper *Calidris maritima*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

Red-headed Woodpecker *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

Rusty Blackbird *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds elsewhere

Willet *Tringa semipalmata*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 20 to Aug 5

Wood Thrush *Hylocichla mustelina*

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Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (●)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

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Non-BCC
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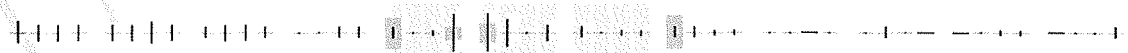
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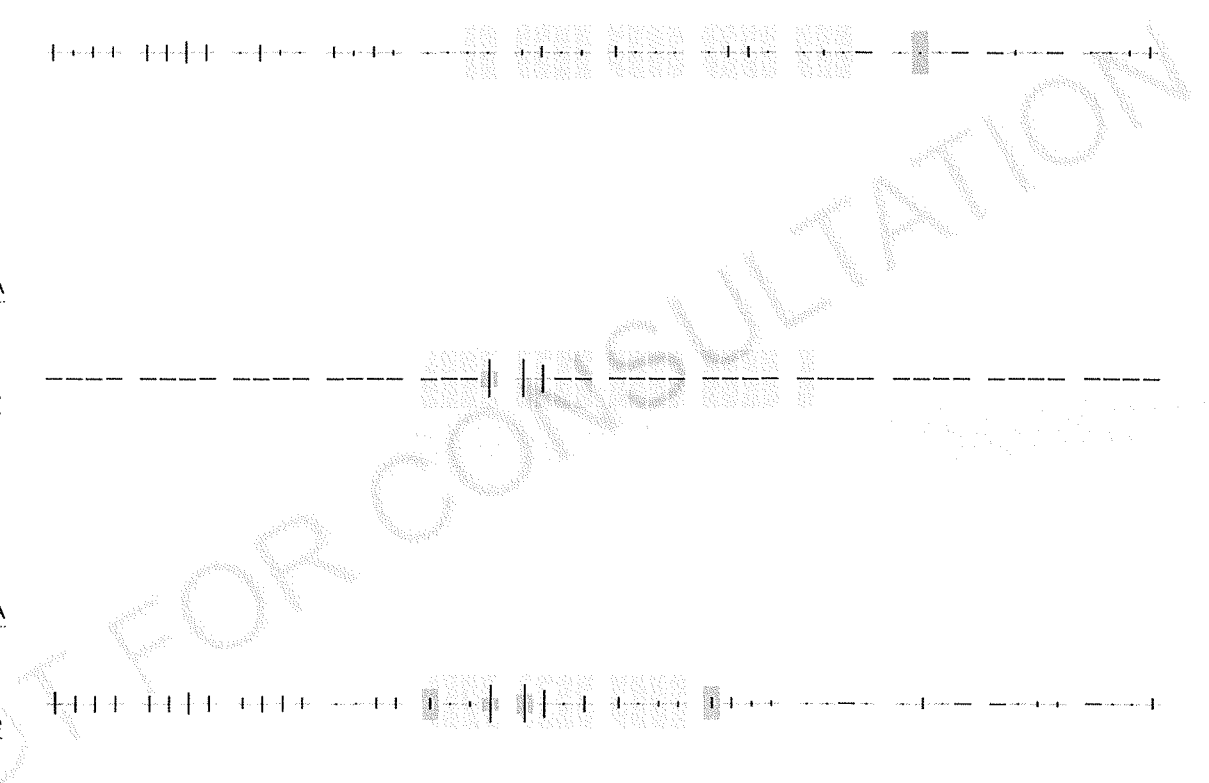
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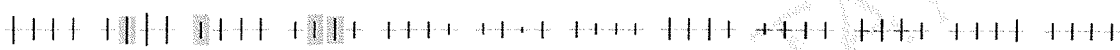
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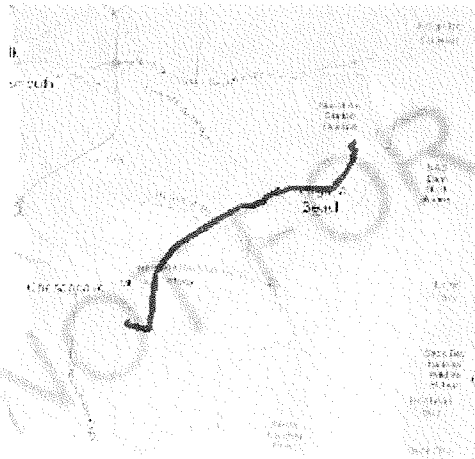
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Chesapeake and Virginia Beach counties, Virginia



Local office

Virginia Ecological Services Field Office

(804) 693-6694

(804) 693-9032

6669 Short Lane

Gloucester, VA 23061-4410

<http://www.fws.gov/northeast/virginiafield/>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9045>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the

FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

American Kestrel *Falco sparverius paulus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<http://ecos.fws.gov/ecp/species/9587>

Breeds Apr 1 to Aug 31

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
<http://ecos.fws.gov/ecp/species/1626>

Breeds Sep 1 to Jul 31

Black Skimmer *Rynchops niger*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<http://ecos.fws.gov/ecp/species/5234>

Breeds May 20 to Sep 15

King Rail *Rallus elegans*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<http://ecos.fws.gov/ecp/species/8936>

Breeds May 1 to Sep 5

Prairie Warbler *Dendroica discolor*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Jul 31

Prothonotary Warbler *Protonotaria citrea*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 1 to Jul 31

Red-headed Woodpecker *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

Rusty Blackbird *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds elsewhere

Willet *Tringa semipalmata*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 20 to Aug 5

Wood Thrush *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of

presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

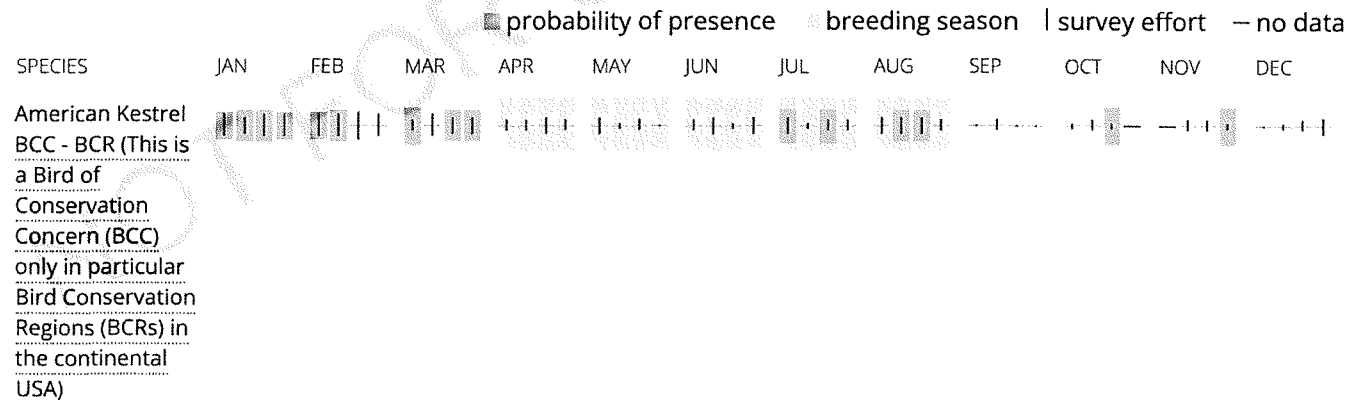
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

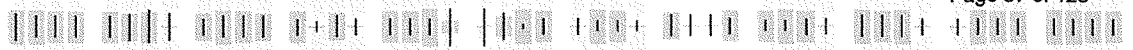
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald Eagle
Non-BCC
Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Black Skimmer
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



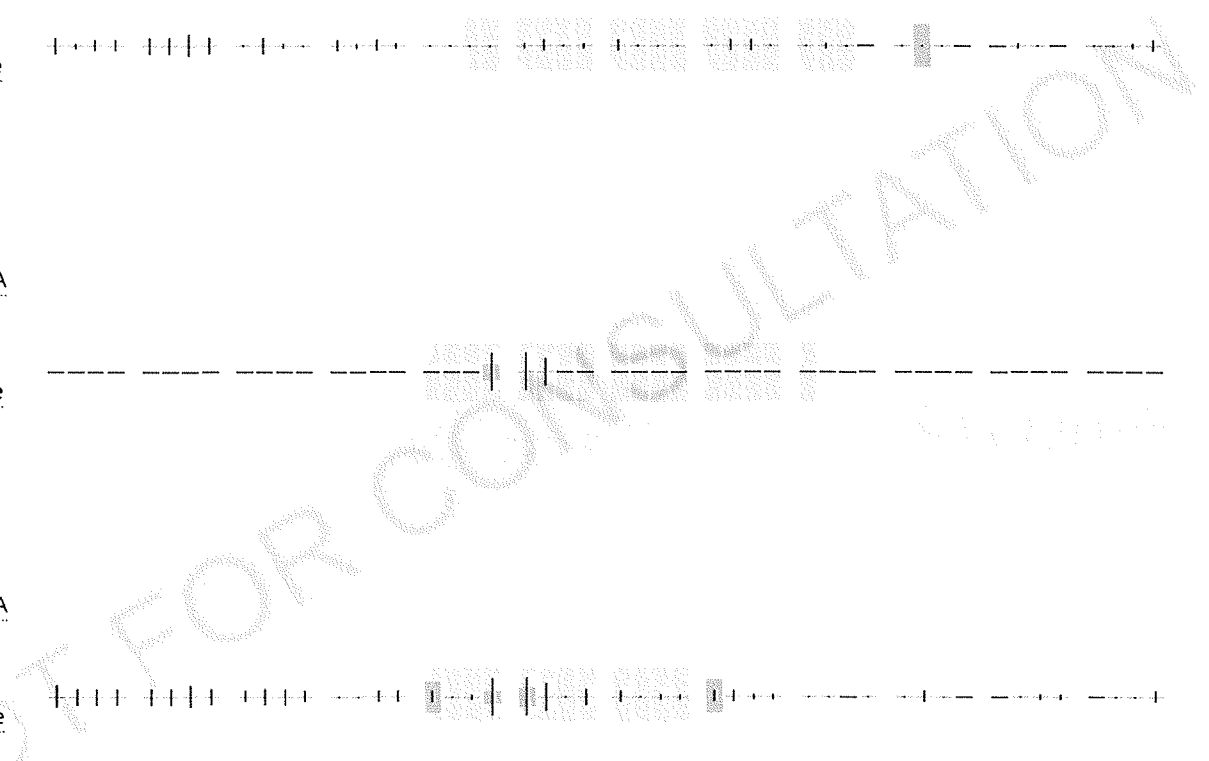
King Rail
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Prairie Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



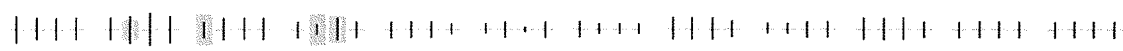
Prothonotary Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Red-headed
Woodpecker
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



Rusty Blackbird
BCC - BCR (This is
a Bird of
Conservation
Concern (BCC)
only in particular
Bird Conservation
Regions (BCRs) in
the continental
USA)



Willet
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



Wood Thrush
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
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continental USA
and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

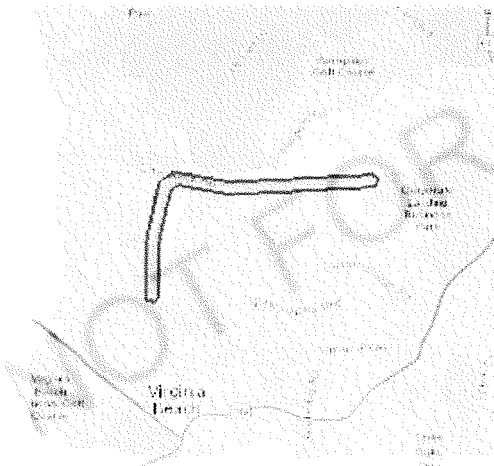
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Virginia Beach County, Virginia



Local office

Virginia Ecological Services Field Office

☎ (804) 693-6694

📠 (804) 693-9032

6669 Short Lane
Gloucester, VA 23061-4410

<http://www.fws.gov/northeast/virginiafield/>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
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Listed species¹ and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9045>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the

FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

American Kestrel *Falco sparverius paulus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<http://ecos.fws.gov/ecp/species/9587>

Breeds Apr 1 to Aug 31

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
<http://ecos.fws.gov/ecp/species/1626>

Breeds Sep 1 to Jul 31

King Rail *Rallus elegans*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<http://ecos.fws.gov/ecp/species/8936>

Breeds May 1 to Sep 5

Prairie Warbler *Dendroica discolor*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Jul 31

Prothonotary Warbler *Protonotaria citrea*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 1 to Jul 31

Red-headed Woodpecker *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

Rusty Blackbird *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds elsewhere

Willet *Tringa semipalmata*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 20 to Aug 5

Wood Thrush *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence ()

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

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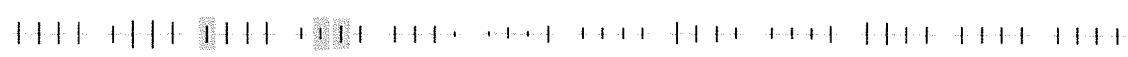
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Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

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What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
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Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

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What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a

starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged

aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

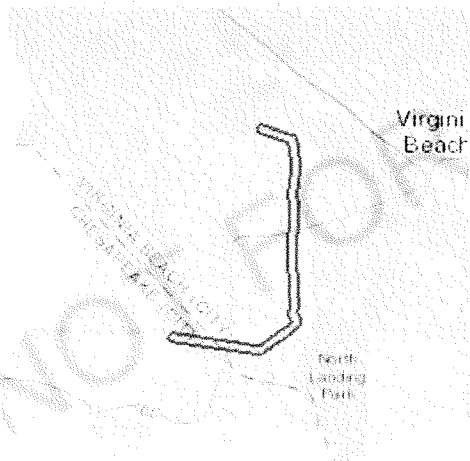
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Chesapeake and Virginia Beach counties, Virginia



Local office

Virginia Ecological Services Field Office

☎ (804) 693-6694

📠 (804) 693-9032

6669 Short Lane

Gloucester, VA 23061-4410

<http://www.fws.gov/northeast/virginiafield/>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9045>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the

FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

American Kestrel *Falco sparverius paulus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<http://ecos.fws.gov/ecp/species/9587>

Breeds Apr 1 to Aug 31

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
<http://ecos.fws.gov/ecp/species/1626>

Breeds Sep 1 to Jul 31

King Rail *Rallus elegans*

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<http://ecos.fws.gov/ecp/species/8936>

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Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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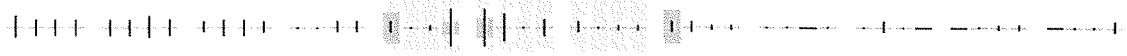
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To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

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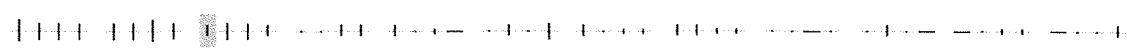
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If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION



Virginia Department of Game and Inland Fisheries

10/29/2021 9:46:52 AM

Fish and Wildlife Information Service

VaFWIS Search Report Compiled on 10/29/2021, 9:46:52 AM

[Help](#)

Known or likely to occur within a 10 mile radius around point 36,42,35.8 -76,02,06.3
in 550 Chesapeake City, 810 Virginia Beach City, VA

[View Map of Site Location](#)

667 Known or Likely Species ordered by Status Concern for Conservation

<u>BOVA Code</u>	<u>Status*</u>	<u>Tier**</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>Confirmed</u>	<u>Database(s)</u>
010031	FESE	Ia	<u>Sturgeon, shortnose</u>	Acipenser brevirostrum		BOVA
030074	FESE	Ia	<u>Turtle, Kemp's ridley sea</u>	Lepidochelys kempii	<u>Yes</u>	BOVA,SppObs,HU6
010032	FESE	Ib	<u>Sturgeon, Atlantic</u>	Acipenser oxyrinchus		BOVA
030075	FESE	Ic	<u>Turtle, leatherback sea</u>	Dermochelys coriacea		BOVA
030073	FESE		<u>Turtle, hawksbill sea</u>	Eretmochelys imbricata		BOVA
040183	FESE		<u>Tern, roseate</u>	Sterna dougallii dougallii	<u>Yes</u>	BOVA,Habitat,SppObs,HU6
030071	FTST	Ia	<u>Turtle, loggerhead sea</u>	Caretta caretta	<u>Yes</u>	BOVA,Habitat,SppObs,HU6
040144	FTST	Ia	<u>Knot, red</u>	Calidris canutus rufa		BOVA,HU6
040110	FTSE	Ia	<u>Rail, eastern black</u>	Laterallus jamaicensis jamaicensis	<u>Potential</u>	BOVA,Habitat,BBA,HU6
050022	FTST	Ia	<u>Bat, northern long-eared</u>	Myotis septentrionalis		BOVA
030072	FTST	Ib	<u>Turtle, green sea</u>	Chelonia mydas	<u>Yes</u>	BOVA,SppObs,HU6
040120	FTST	IIa	<u>Plover, piping</u>	Charadrius melodus	<u>Yes</u>	BOVA,SppObs
120030	FTSE	IVb	<u>Manatee, West Indian</u>	Trichechus manatus	<u>Yes</u>	BOVA,SppObs,HU6
030064	SE	Ia	<u>Turtle, eastern chicken</u>	Deirochelys reticularia reticularia		BOVA,HU6
040118	SE	Ia	<u>Plover, Wilson's</u>	Charadrius wilsonia		BOVA
050034	SE	Ia	<u>Bat, Rafinesque's eastern big-eared</u>	Corynorhinus rafinesquii macrotis	<u>Yes</u>	BOVA,SppObs,HU6

050027	SE	Ia	<u>Bat, tri-colored</u>	Perimyotis subflavus	<u>Yes</u>	BOVA,SppObs
030013	SE	IIa	<u>Rattlesnake, canebrake</u>	Crotalus horridus	<u>Yes</u>	BOVA,Habitat,SppObs,HU6
040096	ST	Ia	<u>Falcon, peregrine</u>	Falco peregrinus	<u>Yes</u>	BOVA,SppObs
040293	ST	Ia	<u>Shrike, loggerhead</u>	Lanius ludovicianus		BOVA
040379	ST	Ia	<u>Sparrow, Henslow's</u>	Centronyx henslowii	<u>Potential</u>	BOVA,Habitat,HU6
040179	ST	Ia	<u>Tern, gull-billed</u>	Gelochelidon nilotica	<u>Yes</u>	BOVA,BBA,SppObs,HU6
030010	ST	IIa	<u>Lizard, eastern glass</u>	Ophisaurus ventralis	<u>Yes</u>	BOVA,Habitat,SppObs,HU6
040403	ST		<u>Falcon, Arctic peregrine</u>	Falco peregrinus tundrius		BOVA
040292	ST		<u>Shrike, migrant loggerhead</u>	Lanius ludovicianus migrans		BOVA
030067	CC	IIa	<u>Terrapin, northern diamond-backed</u>	Malaclemys terrapin terrapin	<u>Potential</u>	BOVA,Habitat,HU6
030063	CC	IIIa	<u>Turtle, spotted</u>	Clemmys guttata	<u>Yes</u>	BOVA,SppObs,HU6
030031	CC	IIIc	<u>Kingsnake, scarlet</u>	Lampropeltis elapsoides	<u>Yes</u>	BOVA,SppObs
040092		Ia	<u>Eagle, golden</u>	Aquila chrysaetos		BOVA
040040		Ia	<u>Ibis, glossy</u>	Plegadis falcinellus	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040213		Ic	<u>Owl, northern saw-whet</u>	Aegolius acadicus		BOVA,HU6
040422		Ic	<u>Warbler, Wayne's</u>	Setophaga virens waynei	<u>Potential</u>	Habitat,HU6
020063		IIa	<u>Toad, oak</u>	Anaxyrus quercicus		BOVA,HU6
020002		IIa	<u>Treefrog, barking</u>	Hyla gratiosa		BOVA,HU6
040052		IIa	<u>Duck, American black</u>	Anas rubripes	<u>Potential</u>	BOVA,BBA,HU6
040033		IIa	<u>Egret, snowy</u>	Egretta thula	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040029		IIa	<u>Heron, little blue</u>	Egretta caerulea caerulea	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040036		IIa	<u>Night-heron, yellow-crowned</u>	Nyctanassa violacea violacea	<u>Yes</u>	BOVA,BBA,SppObs,CWB
040114		IIa	<u>Oystercatcher, American</u>	Haematopus palliatus		BOVA
040192		IIa	<u>Skimmer, black</u>	Rynchops niger	<u>Potential</u>	BOVA,BBA
040181		IIa	<u>Tern, common</u>	Sterna hirundo	<u>Potential</u>	BOVA,BBA,HU6

040320	IIa	<u>Warbler, cerulean</u>	Setophaga cerulea	<u>Yes</u>	BOVA,SppObs,HU6
040140	IIa	<u>Woodcock, American</u>	Scolopax minor	<u>Potential</u>	BOVA,BBA,HU6
040203	IIb	<u>Cuckoo, black-billed</u>	Coccyzus erythrophthalmus		BOVA
040105	IIb	<u>Rail, king</u>	Rallus elegans	<u>Yes</u>	BOVA,Habitat,BBA,SppObs,HU6
040304	IIc	<u>Warbler, Swainson's</u>	Limnothlypis swainsonii		BOVA,HU6
110353	IIc	<u>SPIDER, FUNNEL-WEB</u>	Barronopsis jeffersi		HU6
010131	IIIa	<u>Eel, American</u>	Anguilla rostrata	<u>Yes</u>	BOVA,SppObs,HU6
020005	IIIa	<u>Frog, carpenter</u>	Lithobates virgatipes		BOVA,HU6
030068	IIIa	<u>Turtle, woodland box</u>	Terrapene carolina carolina	<u>Yes</u>	BOVA,SppObs,HU6
040037	IIIa	<u>Bittern, least</u>	Ixobrychus exilis exilis	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040100	IIIa	<u>Bobwhite, northern</u>	Colinus virginianus	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040046	IIIa	<u>Brant</u>	Branta bernicla brota		BOVA,HU6
040202	IIIa	<u>Cuckoo, yellow-billed</u>	Coccyzus americanus	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040094	IIIa	<u>Harrier, northern</u>	Circus hudsonius		BOVA,HU6
040035	IIIa	<u>Night-heron, black-crowned</u>	Nycticorax nycticorax hoactii	<u>Potential</u>	BOVA,BBA,HU6
040204	IIIa	<u>Owl, barn</u>	Tyto alba pratincola	<u>Potential</u>	BOVA,BBA,HU6
040418	IIIa	<u>Sparrow, Nelson's</u>	Ammospiza nelsoni		BOVA,HU6
040381	IIIa	<u>Sparrow, saltmarsh</u>	Ammodramus caudacutus		BOVA
040180	IIIa	<u>Tern, Forster's</u>	Sterna forsteri	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040186	IIIa	<u>Tern, least</u>	Sternula antillarum	<u>Yes</u>	BOVA,BBA,SppObs,CWB,HU6
040333	IIIa	<u>Warbler, Kentucky</u>	Geothlypis formosa	<u>Potential</u>	BOVA,BBA,HU6
040215	IIIa	<u>Whip-poor-will, Eastern</u>	Antrostomus vociferus	<u>Potential</u>	BOVA,BBA,HU6
040133	IIIa	<u>Willet</u>	Catoptrophorus semipalmatus semipalmatus		BOVA
100079	IIIa	<u>Butterfly, monarch</u>	Danaus plexippus		BOVA
040220	IIIb	<u>Kingfisher, belted</u>	Megaceryle alcyon	<u>Potential</u>	BOVA,BBA,HU6
120026	IIIb	<u>Dolphin, bottlenose</u>	Tursiops truncatus		BOVA,HU6
030056	IIIc	<u>Slider,</u>	Trachemys scripta troostii	<u>Yes</u>	SppObs

		<u>Cumberland</u>			
050128	IIIc	<u>Mouse, Pungo white-footed</u>	Peromyscus leucopus easti	<u>Yes</u>	BOVA,SppObs,HU6
100237	IIIc	<u>Butterfly, Hessel's hairstreak</u>	Callophrys hesseli		BOVA
100244	IIIc	<u>Butterfly, little metalmark</u>	Calephelis virginiensis		BOVA
100150	IIIc	<u>Butterfly, mottled duskywing</u>	Erynnis martialis		BOVA
100183	IIIc	<u>Butterfly, Palatka skipper</u>	Euphyes pilatka		BOVA
100002	IIIc	<u>Skipper, Duke's (or scarce swamp)</u>	Euphyes dukesi		BOVA
010038	IVa	<u>Herring, alewife</u>	Alosa pseudoharengus	<u>Yes</u>	BOVA,SppObs,HU6
010045	IVa	<u>Herring, blueback</u>	Alosa aestivalis		BOVA
010040	IVa	<u>Shad, American</u>	Alosa sapidissima	<u>Yes</u>	BOVA,SppObs,HU6
020010	IVa	<u>Frog, little grass</u>	Pseudacris ocularis		BOVA,HU6
020069	IVa	<u>Salamander, eastern mud</u>	Pseudotriton montanus montanus		BOVA
020034	IVa	<u>Salamander, many-lined</u>	Stereochilus marginatus		BOVA,HU6
020058	IVa	<u>Siren, greater</u>	Siren lacertina	<u>Yes</u>	BOVA,SppObs,HU6
030009	IVa	<u>Lizard, eastern slender glass</u>	Ophisaurus attenuatus longicaudus		BOVA
030025	IVa	<u>Mudsnake, eastern</u>	Farancia abacura abacura	<u>Yes</u>	BOVA,SppObs,HU6
030045	IVa	<u>Ribbonsnake, common</u>	Thamnophis saurita saurita	<u>Yes</u>	BOVA,SppObs,HU6
030017	IVa	<u>Scarletsnake, northern</u>	Cemophora coccinea copei		BOVA,HU6
030046	IVa	<u>Snake, common rainbow</u>	Farancia erytrogramma erytrogramma	<u>Yes</u>	BOVA,SppObs,HU6
040272	IVa	<u>Catbird, gray</u>	Dumetella carolinensis	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040337	IVa	<u>Chat, yellow-breasted</u>	Icteria virens virens	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040142	IVa	<u>Dowitcher, short-billed</u>	Limnodromus griseus	<u>Yes</u>	BOVA,SppObs,HU6
040154	IVa	<u>Dunlin</u>	Calidris alpina hudsonia		HU6
040126	IVa	<u>Godwit,</u>	Limosa fedoa		BOVA,HU6

			<u>marbled</u>			
040173	IVa	<u>Gull, laughing.</u>	Leucophaeus atricilla	<u>Potential</u>	BOVA,BBA	
040229	IVa	<u>Kingbird, eastern</u>	Tyrannus tyrannus	<u>Yes</u>	BOVA,BBA,SppObs,HU6	
040003	IVa	<u>Loon, red-throated</u>	Gavia stellata		BOVA	
040344	IVa	<u>Meadowlark, eastern</u>	Sturnella magna	<u>Potential</u>	BOVA,BBA,HU6	
040054	IVa	<u>Pintail, northern</u>	Anas acuta		BOVA	
040123	IVa	<u>Plover, black-bellied</u>	Pluvialis squatarola		HU6	
040106	IVa	<u>Rail, clapper</u>	Rallus crepitans	<u>Potential</u>	BOVA,BBA,HU6	
040107	IVa	<u>Rail, Virginia</u>	Rallus limicola	<u>Potential</u>	BOVA,BBA,HU6	
040145	IVa	<u>Sanderling.</u>	Calidris alba		BOVA	
040065	IVa	<u>Scaup, greater</u>	Aythya marila		BOVA,HU6	
040391	IVa	<u>Sparrow, field</u>	Spizella pusilla	<u>Yes</u>	BOVA,BBA,SppObs,HU6	
040378	IVa	<u>Sparrow, grasshopper</u>	Ammodramus savannarum pratensis		BOVA,HU6	
040382	IVa	<u>Sparrow, seaside</u>	Ammodramus maritimus	<u>Yes</u>	BOVA,SppObs,HU6	
040187	IVa	<u>Tern, royal</u>	Sterna maxima maximus	<u>Potential</u>	BOVA,BBA	
040273	IVa	<u>Thrasher, brown</u>	Toxostoma rufum	<u>Yes</u>	BOVA,BBA,SppObs,HU6	
040417	IVa	<u>Thrush, Bicknell's</u>	Catharus bicknelli		BOVA,HU6	
040375	IVa	<u>Towhee, eastern</u>	Pipilo erythrophthalmus	<u>Yes</u>	BOVA,BBA,SppObs,HU6	
040302	IVa	<u>Warbler, black-and-white</u>	Mniotilta varia	<u>Yes</u>	BOVA,BBA,SppObs,HU6	
040127	IVa	<u>Whimbrel</u>	Numenius phaeopus		HU6	
040269	IVa	<u>Wren, marsh</u>	Cistothorus palustris	<u>Yes</u>	BOVA,BBA,SppObs,HU6	
050029	IVa	<u>Bat, eastern red</u>	Lasiurus borealis	<u>Yes</u>	BOVA,SppObs,HU6	
050030	IVa	<u>Bat, hoary</u>	Lasiurus cinereus		BOVA	
050025	IVa	<u>Bat, silver-haired</u>	Lasionycteris noctivagans		BOVA	
050075	IVa	<u>Mouse, cotton</u>	Peromyscus gossypinus gossypinus	<u>Yes</u>	BOVA,SppObs,HU6	
050131	IVa	<u>Myotis, southeastern</u>	Myotis austroriparius	<u>Yes</u>	BOVA,SppObs,HU6	
050107	IVa	<u>Rabbit, marsh</u>	Sylvilagus palustris palustris		BOVA,HU6	
030058	IVb	<u>Slider, yellow-bellied</u>	Trachemys scripta scripta	<u>Yes</u>	BOVA,SppObs,HU6	
030050	IVb	<u>Turtle, snapping.</u>	Chelydra serpentina	<u>Yes</u>	BOVA,SppObs,HU6	

040349	IVb	<u>Blackbird, rusty</u>	Euphagus carolinus		BOVA,HU6
040221	IVb	<u>Flicker, northern</u>	Colaptes auratus	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040028	IVb	<u>Heron, green</u>	Butorides virescens	<u>Potential</u>	BOVA,BBA,HU6
040217	IVb	<u>Swift, chimney</u>	Chaetura pelagica	<u>Potential</u>	BOVA,BBA,HU6
040277	IVb	<u>Thrush, wood</u>	Hylocichla mustelina	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040340	IVb	<u>Warbler, Canada</u>	Cardellina canadensis	<u>Yes</u>	BOVA,SppObs,HU6
040243	IVb	<u>Wood-Pewee, Eastern</u>	Contopus virens	<u>Yes</u>	BOVA,BBA,SppObs,HU6
010107	IVc	<u>Chubsucker, lake</u>	Erimyzon sucetta		BOVA
010128	IVc	<u>Madtom, tadpole</u>	Noturus gyrinus		BOVA
010071	IVc	<u>Shiner, highfin</u>	Notropis altipinnis		BOVA
010179	IVc	<u>Sunfish, banded</u>	Enneacanthus obesus		BOVA,HU6
010173	IVc	<u>Sunfish, mud</u>	Acantharchus pomotis		BOVA,HU6
020061	IVc	<u>Spadefoot, eastern</u>	Scaphiopus holbrookii		BOVA,HU6
030024	IVc	<u>Snake, eastern hog-nosed</u>	Heterodon platirhinus	<u>Yes</u>	BOVA,SppObs,HU6
040153	IVc	<u>Sandpiper, purple</u>	Calidris maritima		BOVA,HU6
040248	IVc	<u>Swallow, northern rough-winged</u>	Stelgidopteryx serripennis	<u>Potential</u>	BOVA,BBA,HU6
100004	IVc	<u>Butterfly, King's hairstreak</u>	Satyrium kingi		BOVA
100199	IVc	<u>Butterfly, yucca giant-skipper</u>	Megathymus yuccae		BOVA
120027	IVc	<u>Porpoise, harbor</u>	Phocoena phocoena	<u>Yes</u>	BOVA,SppObs,HU6
010049		<u>Anchovy, bay</u>	Anchoa mitchilli		BOVA
010048		<u>Anchovy, striped</u>	Anchoa hepsetus		BOVA
010188		<u>Bass, largemouth</u>	Micropterus salmoides	<u>Yes</u>	BOVA,SppObs
010186		<u>Bass, smallmouth</u>	Micropterus dolomieu		BOVA
010168		<u>Bass, striped</u>	Morone saxatilis	<u>Yes</u>	BOVA,SppObs
010167		<u>Bass, white</u>	Morone chrysops		BOVA
010183		<u>Bluegill</u>	Lepomis macrochirus	<u>Yes</u>	BOVA,SppObs

010034		<u>Bowfin</u>	Amia calva	<u>Yes</u>	BOVA,SppObs
010123		<u>Bullhead, brown</u>	Ameiurus nebulosus	<u>Yes</u>	BOVA,SppObs
010122		<u>Bullhead, yellow</u>	Ameiurus natalis	<u>Yes</u>	BOVA,SppObs
010062		<u>Carp, common</u>	Cyprinus carpio	<u>Yes</u>	BOVA,SppObs
010125		<u>Catfish, channel</u>	Ictalurus punctatus	<u>Yes</u>	BOVA,SppObs
010120		<u>Catfish, white</u>	Ameiurus catus	<u>Yes</u>	BOVA,SppObs
010066		<u>Chub, bluehead</u>	Nocomis leptocephalus		BOVA
010103		<u>Chub, creek</u>	Semotilus atromaculatus		BOVA
010106		<u>Chubsucker, creek</u>	Erimyzon oblongus		BOVA
010190		<u>Crappie, black</u>	Pomoxis nigromaculatus	<u>Yes</u>	BOVA,SppObs
010250		<u>Croaker, Atlantic</u>	Micropogonias undulatus	<u>Yes</u>	BOVA,SppObs
010366		<u>Dace, rosyside</u>	Clinostomus funduloides		BOVA
010198		<u>Darter, johnny</u>	Etheostoma nigrum		BOVA
010398		<u>Darter, sawcheek</u>	Etheostoma serrifer		BOVA
010194		<u>Darter, swamp</u>	Etheostoma fusiforme		BOVA
010397		<u>Darter, tessellated</u>	Etheostoma olmstedi	<u>Yes</u>	BOVA,SppObs
010176		<u>Flier</u>	Centrarchus macropterus	<u>Yes</u>	BOVA,SppObs
010033		<u>Gar, longnose</u>	Lepisosteus osseus	<u>Yes</u>	BOVA,SppObs
010312		<u>Hogchoker</u>	Trinectes maculatus		BOVA
010143		<u>Killifish, banded</u>	Fundulus diaphanus	<u>Yes</u>	BOVA,SppObs
010142		<u>Killifish, marsh</u>	Fundulus confluentus		BOVA
010146		<u>Killifish, striped</u>	Fundulus majalis		BOVA
010247		<u>Kingfish, southern</u>	Menticirrhus americanus		BOVA
010002		<u>Lamprey, sea</u>	Petromyzon marinus		BOVA
010129		<u>Madtom, margined</u>	Noturus insignis		BOVA
010043		<u>Menhaden, Atlantic</u>	Brevoortia tyrannus	<u>Yes</u>	BOVA,SppObs
010408		<u>Minnow, eastern silvery</u>	Hybognathus regius		BOVA
010140		<u>Minnow, sheepshead</u>	Cyprinodon variegatus		BOVA
010148		<u>Mosquitofish, eastern</u>	Gambusia holbrooki	<u>Yes</u>	BOVA,SppObs

010054		<u>Mudminnow, eastern</u>	Umbra pygmaea	<u>Yes</u>	BOVA,SppObs
010299		<u>Mullet, striped</u>	Mugil cephalus	<u>Yes</u>	BOVA,SppObs
010144		<u>Mummichog</u>	Fundulus heteroclitus	<u>Yes</u>	BOVA,SppObs
010365		<u>Muskellunge</u>	Esox masquinongy		BOVA
010163		<u>Perch, pirate</u>	Aphredoderus sayanus sayanus		BOVA
010241		<u>Perch, silver</u>	Bairdiella chrysoura		BOVA
010166		<u>Perch, white</u>	Morone americana	<u>Yes</u>	BOVA,SppObs
010206		<u>Perch, yellow</u>	Perca flavescens	<u>Yes</u>	BOVA,SppObs
010056		<u>Pickrel, chain</u>	Esox niger	<u>Yes</u>	BOVA,SppObs
010055		<u>Pickrel, redfin</u>	Esox americanus americanus	<u>Yes</u>	BOVA,SppObs
010182		<u>Pumpkinseed</u>	Lepomis gibbosus	<u>Yes</u>	BOVA,SppObs
010243		<u>Seatrout, spotted</u>	Cynoscion nebulosus		BOVA
010041		<u>Shad, gizzard</u>	Dorosoma cepedianum	<u>Yes</u>	BOVA,SppObs
010042		<u>Shad, threadfin</u>	Dorosoma petenense	<u>Yes</u>	BOVA,SppObs
010453		<u>Shiner, Genus = Cyprinella</u>	Cyprinella sp.	<u>Yes</u>	BOVA,SppObs
010068		<u>Shiner, golden</u>	Notemigonus crysoleucas	<u>Yes</u>	BOVA,SppObs
010303		<u>Silverside, Atlantic</u>	Menidia menidia		BOVA
010302		<u>Silverside, inland</u>	Menidia beryllina	<u>Yes</u>	BOVA,SppObs
010246		<u>Spot</u>	Leiostomus xanthurus	<u>Yes</u>	BOVA,SppObs
010156		<u>Stickleback, fourspine</u>	Apeltes quadracus	<u>Yes</u>	BOVA,SppObs
010178		<u>Sunfish, bluespotted</u>	Enneacanthus gloriosus	<u>Yes</u>	BOVA,SppObs
010454		<u>Sunfish, Genus = Lepomis</u>	Lepomis sp.		BOVA
010181		<u>Sunfish, green</u>	Lepomis cyanellus	<u>Yes</u>	BOVA,SppObs
010180		<u>Sunfish, redbreast</u>	Lepomis auritus		BOVA
010185		<u>Sunfish, redear</u>	Lepomis microlophus	<u>Yes</u>	BOVA,SppObs
010149		<u>Swampfish</u>	Chologaster cornuta		BOVA
010216		<u>Walleye</u>	Sander vitreus vitreus	<u>Yes</u>	BOVA,SppObs
010177		<u>Warmouth</u>	Lepomis gulosus	<u>Yes</u>	BOVA,SppObs
010245		<u>Weakfish</u>	Cynoscion regalis	<u>Yes</u>	BOVA,SppObs
020001		<u>Amphiuma, two-toed</u>	Amphiuma means	<u>Yes</u>	BOVA,SppObs
020004		<u>Bullfrog</u>	Lithobates catesbeianus	<u>Yes</u>	BOVA,SppObs

		<u>American</u>			
020003		<u>Frog, Brimley's chorus</u>	Pseudacris brimleyi	<u>Yes</u>	BOVA,SppObs
020016		<u>Frog, Coastal Plains leopard</u>	Lithobates sphenoccephalus utricularius	<u>Yes</u>	BOVA,SppObs
020008		<u>Frog, green</u>	Lithobates clamitans	<u>Yes</u>	BOVA,SppObs
020015		<u>Frog, southern cricket</u>	Acris gryllus	<u>Yes</u>	BOVA,SppObs
020065		<u>Newt, red-spotted</u>	Notophthalmus viridescens viridescens		BOVA
020071		<u>Peeper, spring</u>	Pseudacris crucifer	<u>Yes</u>	BOVA,SppObs
020084		<u>Salamander, Atlantic Coast Slimy</u>	Plethodon chlorobryonis	<u>Yes</u>	BOVA,SppObs
020043		<u>Salamander, eastern red-backed</u>	Plethodon cinereus	<u>Yes</u>	BOVA,SppObs
020029		<u>Salamander, four-toed</u>	Hemidactylum scutatum		BOVA
020035		<u>Salamander, marbled</u>	Ambystoma opacum	<u>Yes</u>	BOVA,SppObs
020038		<u>Salamander, northern dusky</u>	Desmognathus fuscus	<u>Yes</u>	BOVA,SppObs
020047		<u>Salamander, northern slimy</u>	Plethodon glutinosus		BOVA
020048		<u>Salamander, southern dusky</u>	Desmognathus auriculatus		BOVA
020050		<u>Salamander, southern two-lined</u>	Eurycea cirrigera	<u>Yes</u>	BOVA,SppObs
020051		<u>Salamander, three-lined</u>	Eurycea guttolineata		BOVA
020059		<u>Toad, eastern American</u>	Anaxyrus americanus americanus		BOVA
020060		<u>Toad, eastern narrow-mouthed</u>	Gastrophryne carolinensis	<u>Yes</u>	BOVA,SppObs
020062		<u>Toad, Fowler's</u>	Anaxyrus fowleri	<u>Yes</u>	BOVA,SppObs
020064		<u>Toad, southern</u>	Anaxyrus terrestris	<u>Yes</u>	BOVA,SppObs
020006		<u>Treefrog, Cope's gray</u>	Hyla chrysoscelis	<u>Yes</u>	BOVA,SppObs
020007		<u>Treefrog, gray</u>	Hyla versicolor	<u>Yes</u>	BOVA,SppObs
020009		<u>Treefrog, green</u>	Hyla cinerea	<u>Yes</u>	BOVA,SppObs

020014		<u>Treefrog, pine woods</u>	Hyla femoralis	<u>Yes</u>	BOVA,SppObs
020017		<u>Treefrog, squirrel</u>	Hyla squirella	<u>Yes</u>	BOVA,SppObs
030084		<u>Anole, Green</u>	Anolis carolinensis		BOVA
030041		<u>Brownsnake, Dekay's</u>	Storeria dekayi	<u>Yes</u>	BOVA,SppObs
030055		<u>Cooter, Coastal Plain</u>	Pseudemys concinna floridana		BOVA
030057		<u>Cooter, northern red-bellied</u>	Pseudemys rubriventris	<u>Yes</u>	BOVA,SppObs
030016		<u>Copperhead, eastern</u>	Agkistrodon contortrix	<u>Yes</u>	BOVA,SppObs
030015		<u>Cottonmouth, northern</u>	Agkistrodon piscivorus	<u>Yes</u>	BOVA,SppObs
030049		<u>Earthsake, eastern smooth</u>	Virginia valeriae valeriae	<u>Yes</u>	BOVA,SppObs
030047		<u>Earthsake, rough</u>	Haldea striatula		BOVA
030044		<u>Gartersnake, eastern</u>	Thamnophis sirtalis sirtalis	<u>Yes</u>	BOVA,SppObs
030078		<u>Gecko, Mediterranean</u>	Hemidactylus turcicus		BOVA
030038		<u>Greensnake, northern rough</u>	Opheodrys aestivus aestivus	<u>Yes</u>	BOVA,SppObs
030026		<u>Kingsnake, eastern</u>	Lampropeltis getula	<u>Yes</u>	BOVA,SppObs
030002		<u>Lizard, eastern fence</u>	Sceloporus undulatus	<u>Yes</u>	BOVA,SppObs
030029		<u>Milksnake, eastern</u>	Lampropeltis triangulum		BOVA
030018		<u>Racer, northern black</u>	Coluber constrictor constrictor	<u>Yes</u>	BOVA,SppObs
030008		<u>Racerunner, eastern six-lined</u>	Aspidoscelis sexlineata sexlineata	<u>Yes</u>	BOVA,SppObs
030023		<u>Ratsnake, eastern</u>	Pantherophis alleghaniensis	<u>Yes</u>	BOVA,SppObs
030006		<u>Skink, broad-headed</u>	Plestiodon laticeps	<u>Yes</u>	BOVA,SppObs
030004		<u>Skink, common five-lined</u>	Plestiodon fasciatus	<u>Yes</u>	BOVA,SppObs
030007		<u>Skink, little brown</u>	Scincella lateralis	<u>Yes</u>	BOVA,SppObs
030005		<u>Skink, southeastern</u>	Plestiodon inexpectatus	<u>Yes</u>	BOVA,SppObs

		<u>five-lined</u>			
030077		<u>Slider, red-eared</u>	Trachemys scripta elegans	<u>Yes</u>	BOVA,SppObs
030042		<u>Snake, northern red-bellied</u>	Storeria occipitomaculata occipitomaculata	<u>Yes</u>	BOVA,SppObs
030020		<u>Snake, northern ring-necked</u>	Diadophis punctatus edwardsii		BOVA
030021		<u>Snake, southern ring-necked</u>	Diadophis punctatus punctatus	<u>Yes</u>	BOVA,SppObs
030052		<u>Turtle, eastern musk</u>	Sternotherus odoratus	<u>Yes</u>	BOVA,SppObs
030060		<u>Turtle, eastern painted</u>	Chrysemys picta picta	<u>Yes</u>	BOVA,SppObs
030051		<u>Turtle, southeastern mud</u>	Kinosternon subrubrum subrubrum	<u>Yes</u>	BOVA,SppObs
030076		<u>Turtle, striped mud</u>	Kinosternon bairii	<u>Yes</u>	BOVA,SppObs
030037		<u>Watersnake, brown</u>	Nerodia taxispilota	<u>Yes</u>	BOVA,SppObs
030034		<u>Watersnake, northern</u>	Nerodia sipedon sipedon	<u>Yes</u>	BOVA,SppObs
030036		<u>Watersnake, plain-bellied</u>	Nerodia erythrogaster	<u>Yes</u>	BOVA,SppObs
030019		<u>Wormsnake, eastern</u>	Carphophis amoenus amoenus	<u>Yes</u>	BOVA,SppObs
040025		<u>Anhinga</u>	Anhinga anhinga		BOVA
040038		<u>Bittern, American</u>	Botaurus lentiginosus		BOVA
040350		<u>Blackbird, Brewer's</u>	Euphagus cyanocephalus		BOVA
040346		<u>Blackbird, red-winged</u>	Agelaius phoeniceus	<u>Yes</u>	BOVA,BBA,SppObs
040282		<u>Bluebird, eastern</u>	Sialia sialis	<u>Potential</u>	BOVA,BBA
040343		<u>Bobolink</u>	Dolichonyx oryzivorus		BOVA
040068		<u>Bufflehead</u>	Bucephala albeola		BOVA
040361		<u>Bunting, indigo</u>	Passerina cyanea	<u>Yes</u>	BOVA,BBA,SppObs
040376		<u>Bunting, lark</u>	Calamospiza melanocorys		BOVA
040363		<u>Bunting, painted</u>	Passerina ciris ciris		BOVA
040064		<u>Canvasback</u>	Aythya valisineria		BOVA
040357		<u>Cardinal, northern</u>	Cardinalis cardinalis	<u>Yes</u>	BOVA,BBA,SppObs
040258		<u>Chickadee,</u>	Poecile carolinensis	<u>Yes</u>	BOVA,BBA,SppObs

		<u>Carolina</u>			
040214		<u>Chuck-will's-widow</u>	Antrostomus carolinensis	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040113		<u>Coot, American</u>	Fulica americana		BOVA
040024		<u>Cormorant, double-crested</u>	Phalacrocorax auritus	<u>Potential</u>	BOVA,BBA
040023		<u>Cormorant, great</u>	Phalacrocorax carbo		BOVA
040353		<u>Cowbird, brown-headed</u>	Molothrus ater	<u>Yes</u>	BOVA,BBA,SppObs
040264		<u>Creep, brown</u>	Certhia americana		BOVA,HU6
040373		<u>Crossbill, white-winged</u>	Loxia leucoptera		BOVA
040255		<u>Crow, American</u>	Corvus brachyrhynchos	<u>Potential</u>	BOVA,BBA
040256		<u>Crow, fish</u>	Corvus ossifragus	<u>Potential</u>	BOVA,BBA
040128		<u>Curlew, long-billed</u>	Numenius americanus		BOVA
040364		<u>Dickcissel</u>	Spiza americana		BOVA
040200		<u>Dove, Common Ground</u>	Columbina passerina		BOVA
040198		<u>Dove, mourning</u>	Zenaida macroura carolinensis	<u>Potential</u>	BOVA,BBA
040143		<u>Dowitcher, long-billed</u>	Limnodromus scolopaceus		BOVA
040070		<u>Duck, Harlequin</u>	Histrionicus histrionicus		BOVA
040069		<u>Duck, long-tailed</u>	Clangula hyemalis		BOVA
040063		<u>Duck, ring-necked</u>	Aythya collaris		BOVA
040076		<u>Duck, ruddy</u>	Oxyura jamaicensis		BOVA
040061		<u>Duck, wood</u>	Aix sponsa	<u>Potential</u>	BOVA,BBA
040093		<u>Eagle, bald</u>	Haliaeetus leucocephalus	<u>Yes</u>	BOVA,BBA,BAEANests,HU6
040030		<u>Egret, cattle</u>	Bubulcus ibis	<u>Yes</u>	BOVA,BBA,SppObs
040032		<u>Egret, great</u>	Ardea alba egretta	<u>Yes</u>	BOVA,BBA,SppObs,CWB
040072		<u>Eider, king</u>	Somateria spectabilis		BOVA
040367		<u>Finch, house</u>	Haemorhous mexicanus	<u>Potential</u>	BOVA,BBA
040366		<u>Finch, purple</u>	Haemorhous purpureus		BOVA
040042		<u>Flamingo, American</u>	Phoenicopterus ruber		BOVA
040239		<u>Flycatcher, Acadian</u>	Empidonax virescens	<u>Yes</u>	BOVA,BBA,SppObs
040241		<u>Flycatcher,</u>	Empidonax alnorum		BOVA

		<u>alder</u>			
040235		<u>Flycatcher, ash-throated</u>	Myiarchus cinerascens		BOVA
040234		<u>Flycatcher, great crested</u>	Myiarchus crinitus	<u>Yes</u>	BOVA,BBA,SppObs
040242		<u>Flycatcher, least</u>	Empidonax minimus		BOVA
040233		<u>Flycatcher, scissor-tailed</u>	Tyrannus forficatus		BOVA
040240		<u>Flycatcher, willow</u>	Empidonax traillii		BOVA,HU6
040026		<u>Frigatebird, magnificent</u>	Fregata magnificens		BOVA
040009		<u>Fulmar, northern</u>	Fulmarus glacialis		BOVA
040053		<u>Gadwall</u>	Mareca strepera	<u>Potential</u>	BOVA,BBA
040111		<u>Gallinule, purple</u>	Porphyryla martinica		BOVA
040284		<u>Gnatcatcher, blue-gray</u>	Polioptila caerulea	<u>Yes</u>	BOVA,BBA,SppObs
040124		<u>Godwit, Hudsonian</u>	Limosa haemastica		BOVA,HU6
040067		<u>Goldeneye, common</u>	Bucephala clangula americana		BOVA
040371		<u>Goldfinch, American</u>	Spinus tristis	<u>Potential</u>	BOVA,BBA
040045		<u>Goose, Canada</u>	Branta canadensis	<u>Potential</u>	BOVA,BBA
040048		<u>Goose, greater white-fronted</u>	Anser albifrons flavirostris		BOVA
040049		<u>Goose, lesser snow</u>	Chen caerulescens caerulescens		BOVA
040410		<u>Goose, snow</u>	Chen caerulescens		BOVA
040351		<u>Grackle, boat-tailed</u>	Quiscalus major	<u>Yes</u>	BOVA,BBA,SppObs
040352		<u>Grackle, common</u>	Quiscalus quiscula	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040005		<u>Grebe, horned</u>	Podiceps auritus		BOVA,HU6
040008		<u>Grebe, pied-billed</u>	Podilymbus podiceps	<u>Potential</u>	BOVA,BBA
040004		<u>Grebe, red-necked</u>	Podiceps grisegena		BOVA
040360		<u>Grosbeak, blue</u>	Passerina caerulea	<u>Yes</u>	BOVA,BBA,SppObs
040365		<u>Grosbeak, evening</u>	Coccothraustes vespertinus		BOVA
040358		<u>Grosbeak, rose-breasted</u>	Pheucticus ludovicianus	<u>Yes</u>	BOVA,SppObs,HU6

040175		<u>Gull, Bonaparte's</u>	Chroicocephalus philadelphia		BOVA
040174		<u>Gull, Franklin's</u>	Leucophaeus pipixcan		BOVA
040163		<u>Gull, glaucous</u>	Larus hyperboreus		BOVA
040165		<u>Gull, great black-backed</u>	Larus marinus	<u>Potential</u>	BOVA,BBA
040167		<u>Gull, herring</u>	Larus argentatus	<u>Potential</u>	BOVA,BBA
040166		<u>Gull, lesser black-backed</u>	Larus fuscus		BOVA
040176		<u>Gull, little</u>	Hydrocoloeus minutus		BOVA
040170		<u>Gull, ring-billed</u>	Larus delawarensis		BOVA
040178		<u>Gull, Sabine's</u>	Xema sabini		BOVA
040086		<u>Hawk, Cooper's</u>	Accipiter cooperii	<u>Yes</u>	BOVA,SppObs
040088		<u>Hawk, red-shouldered</u>	Buteo lineatus lineatus	<u>Potential</u>	BOVA,BBA
040087		<u>Hawk, red-tailed</u>	Buteo jamaicensis	<u>Potential</u>	BOVA,BBA
040090		<u>Hawk, rough-legged</u>	Buteo lagopus johannis		BOVA
040085		<u>Hawk, sharp-shinned</u>	Accipiter striatus velox	<u>Yes</u>	BOVA,BBA,SppObs
040027		<u>Heron, great blue</u>	Ardea herodias herodias	<u>Yes</u>	BOVA,BBA,SppObs,CWB
040034		<u>Heron, tricolored</u>	Egretta tricolor	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040218		<u>Hummingbird, ruby-throated</u>	Archilochus colubris	<u>Yes</u>	BOVA,BBA,SppObs
040219		<u>Hummingbird, rufous</u>	Selasphorus rufus		BOVA
040041		<u>Ibis, white</u>	Eudocimus albus	<u>Yes</u>	BOVA,SppObs
040160		<u>Jaeger, parasitic</u>	Stercorarius parasiticus		BOVA
040159		<u>Jaeger, pomarine</u>	Stercorarius pomarinus		BOVA
040252		<u>Jay, blue</u>	Cyanocitta cristata	<u>Yes</u>	BOVA,BBA,SppObs
040387		<u>Junco, dark-eyed</u>	Junco hyemalis		BOVA
040098		<u>Kestrel, American</u>	Falco sparverius sparverius	<u>Potential</u>	BOVA,BBA
040119		<u>Killdeer</u>	Charadrius vociferus	<u>Yes</u>	BOVA,BBA,SppObs
040230		<u>Kingbird, gray</u>	Tyrannus dominicensis		BOVA
040231		<u>Kingbird, western</u>	Tyrannus verticalis		BOVA
040285		<u>Kinglet,</u>	Regulus satrapa		BOVA

		<u>golden-crowned</u>			
040286		<u>Kinglet, ruby-crowned</u>	Regulus calendula	<u>Yes</u>	BOVA,SppObs
040083		<u>Kite, Mississippi</u>	Ictinia mississippiensis		BOVA
040082		<u>Kite, swallow-tailed</u>	Elanoides forficatus forficatus		BOVA
040177		<u>Kittiwake, black-legged</u>	Rissa tridactyla		BOVA
040245		<u>Lark, horned</u>	Eremophila alpestris		BOVA
040399		<u>Longspur, Lapland</u>	Calcarius lapponicus		BOVA
040001		<u>Loon, common</u>	Gavia immer	<u>Yes</u>	BOVA,SppObs
040051		<u>Mallard</u>	Anas platyrhynchos	<u>Potential</u>	BOVA,BBA
040251		<u>Martin, purple</u>	Progne subis	<u>Yes</u>	BOVA,BBA,SppObs
040078		<u>Merganser, common</u>	Mergus merganser americanus		BOVA
040077		<u>Merganser, hooded</u>	Lophodytes cucullatus		BOVA
040079		<u>Merganser, red-breasted</u>	Mergus serrator serrator	<u>Potential</u>	BOVA,BBA
040097		<u>Merlin</u>	Falco columbarius	<u>Yes</u>	BOVA,SppObs
040271		<u>Mockingbird, northern</u>	Mimus polyglottos	<u>Yes</u>	BOVA,BBA,SppObs
040112		<u>Moorhen, common</u>	Gallinula chloropus cachinnans	<u>Yes</u>	BOVA,SppObs
040194		<u>Murre, thick-billed</u>	Uria lomvia		BOVA
040216		<u>Nighthawk, common</u>	Chordeiles minor	<u>Potential</u>	BOVA,BBA
040263		<u>Nuthatch, brown-headed</u>	Sitta pusilla	<u>Potential</u>	BOVA,BBA,HU6
040262		<u>Nuthatch, red-breasted</u>	Sitta canadensis		BOVA
040261		<u>Nuthatch, white-breasted</u>	Sitta carolinensis	<u>Yes</u>	BOVA,BBA,SppObs
040348		<u>Oriole, Baltimore</u>	Icterus galbula	<u>Yes</u>	BOVA,BBA,SppObs
040347		<u>Oriole, orchard</u>	Icterus spurius	<u>Yes</u>	BOVA,BBA,SppObs
040095		<u>Osprey</u>	Pandion haliaetus carolinensis	<u>Potential</u>	BOVA,BBA
040330		<u>Ovenbird</u>	Seiurus aurocapilla	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040209		<u>Owl, barred</u>	Strix varia	<u>Yes</u>	BOVA,BBA,SppObs
040206		<u>Owl, great</u>	Bubo virginianus	<u>Yes</u>	BOVA,BBA,SppObs

		<u>horned</u>			
040210		<u>Owl, long-eared</u>	Asio otus	<u>Yes</u>	BOVA,SppObs
040211		<u>Owl, short-eared</u>	Asio flammeus		BOVA
040312		<u>Parula, northern</u>	Setophaga americana	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040020		<u>Pelican, brown</u>	Pelecanus occidentalis carolinensis	<u>Yes</u>	BOVA,BBA,SppObs
040138		<u>Phalarope, red</u>	Phalaropus fulicarius		BOVA
040137		<u>Phalarope, red-necked</u>	Phalaropus lobatus		BOVA
040136		<u>Phalarope, Wilson's</u>	Phalaropus tricolor		BOVA
040236		<u>Phoebe, eastern</u>	Sayornis phoebe	<u>Potential</u>	BOVA,BBA
040237		<u>Phoebe, Say's</u>	Sayornis saya	<u>Yes</u>	BOVA,SppObs
040197		<u>Pigeon, rock</u>	Columba livia	<u>Potential</u>	BOVA,BBA
040055		<u>Pintail, white-cheeked</u>	Anas bahamensis		BOVA
040287		<u>Pipit, American</u>	Anthus rubescens	<u>Yes</u>	BOVA,SppObs
040117		<u>Plover, semipalmated</u>	Charadrius semipalmatus	<u>Yes</u>	BOVA,SppObs
040196		<u>Puffin, Atlantic</u>	Fratercula arctica		BOVA
040062		<u>Redhead</u>	Aythya americana		BOVA,HU6
040341		<u>Redstart, American</u>	Setophaga ruticilla	<u>Yes</u>	BOVA,BBA,SppObs
040275		<u>Robin, American</u>	Turdus migratorius	<u>Yes</u>	BOVA,BBA,SppObs
040158		<u>Ruff</u>	Philomachus pugnax		BOVA
040149		<u>Sandpiper, least</u>	Calidris minutilla	<u>Yes</u>	BOVA,SppObs
040146		<u>Sandpiper, semipalmated</u>	Calidris pusilla	<u>Yes</u>	BOVA,SppObs
040134		<u>Sandpiper, spotted</u>	Actitis macularia	<u>Yes</u>	BOVA,BBA,SppObs
040156		<u>Sandpiper, stilt</u>	Calidris himantopus		BOVA
040129		<u>Sandpiper, upland</u>	Bartramia longicauda		BOVA
040147		<u>Sandpiper, western</u>	Calidris mauri		BOVA
040225		<u>Sapsucker, yellow-bellied</u>	Sphyrapicus varius		BOVA
040066		<u>Scaup, lesser</u>	Aythya affinis		BOVA
040075		<u>Scoter, black</u>	Melanitta americana		BOVA

040074		<u>Scoter, surf</u>	Melanitta perspicillata		BOVA
040073		<u>Scoter, white-winged</u>	Melanitta fusca deglandi		BOVA
040205		<u>Screech-owl, eastern</u>	Megascops asio	<u>Yes</u>	BOVA,BBA,SppObs
040014		<u>Shearwater, Audubon's</u>	Puffinus lherminieri lherminieri		BOVA
040010		<u>Shearwater, Cory's</u>	Calonectris diomedea borealis		BOVA
040011		<u>Shearwater, Great</u>	Ardenna gravis		BOVA
040012		<u>Shearwater, sooty</u>	Puffinus griseus		BOVA
040060		<u>Shoveler, northern</u>	Anas clypeata		BOVA
040370		<u>Siskin, pine</u>	Spinus pinus		BOVA
040141		<u>Snipe, Wilson's</u>	Gallinago delicata		BOVA
040108		<u>Sora</u>	Porzana carolina	<u>Yes</u>	BOVA,SppObs
040389		<u>Sparrow, chipping</u>	Spizella passerina	<u>Potential</u>	BOVA,BBA
040390		<u>Sparrow, clay-colored</u>	Spizella pallida		BOVA
040395		<u>Sparrow, fox</u>	Passerella iliaca		BOVA
040342		<u>Sparrow, house</u>	Passer domesticus	<u>Potential</u>	BOVA,BBA
040396		<u>Sparrow, Lincoln's</u>	Melospiza lincolnii		BOVA
040377		<u>Sparrow, savannah</u>	Passerculus sandwichensis	<u>Yes</u>	BOVA,SppObs
040398		<u>Sparrow, song</u>	Melospiza melodia	<u>Yes</u>	BOVA,BBA,SppObs
040397		<u>Sparrow, swamp</u>	Melospiza georgiana	<u>Yes</u>	BOVA,SppObs
040383		<u>Sparrow, vesper</u>	Poocetes gramineus		BOVA
040393		<u>Sparrow, white-crowned</u>	Zonotrichia leucophrys		BOVA
040394		<u>Sparrow, white-throated</u>	Zonotrichia albicollis	<u>Yes</u>	BOVA,SppObs
040294		<u>Starling, European</u>	Sturnus vulgaris	<u>Yes</u>	BOVA,BBA,SppObs
040115		<u>Stilt, black-necked</u>	Himantopus mexicanus		BOVA
040148		<u>Stint, Temminck's</u>	Calidris temminckii		BOVA
040039		<u>Stork, wood</u>	Mycteria americana		BOVA
040249		<u>Swallow, barn</u>	Hirundo rustica	<u>Yes</u>	BOVA,BBA,SppObs

040250		<u>Swallow, cliff</u>	Petrochelidon pyrrhonota pyrrhonota		BOVA
040246		<u>Swallow, tree</u>	Tachycineta bicolor	<u>Potential</u>	BOVA,BBA
040044		<u>Swan, tundra</u>	Cygnus columbianus columbianus		BOVA
040355		<u>Tanager, scarlet</u>	Piranga olivacea	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040356		<u>Tanager, summer</u>	Piranga rubra	<u>Yes</u>	BOVA,BBA,SppObs
040354		<u>Tanager, western</u>	Piranga ludoviciana		BOVA
040057		<u>Teal, blue-winged</u>	Spatula discors	<u>Potential</u>	BOVA,BBA
040056		<u>Teal, green-winged</u>	Anas crecca carolinensis		BOVA
040182		<u>Tern, Arctic</u>	Sterna paradisaea		BOVA
040185		<u>Tern, bridled</u>	Onychoprion anaethetus		BOVA
040189		<u>Tern, Caspian</u>	Hydroprogne caspia	<u>Potential</u>	BOVA,BBA
040188		<u>Tern, sandwich</u>	Sterna sandvicensis acuflavidus	<u>Potential</u>	BOVA,BBA
040280		<u>Thrush, gray-cheeked</u>	Catharus minimus	<u>Yes</u>	BOVA,SppObs
040278		<u>Thrush, hermit</u>	Catharus guttatus	<u>Yes</u>	BOVA,SppObs
040279		<u>Thrush, Swainson's</u>	Catharus ustulatus	<u>Yes</u>	BOVA,SppObs
040260		<u>Titmouse, tufted</u>	Baeolophus bicolor	<u>Yes</u>	BOVA,BBA,SppObs
040374		<u>Towhee, green-tailed</u>	Pipilo chlorurus		BOVA
040102		<u>Turkey, wild</u>	Meleagris gallopavo silvestris		BOVA
040135		<u>Turnstone, ruddy</u>	Arenaria interpres morinella	<u>Yes</u>	BOVA,SppObs
040281		<u>Veery</u>	Catharus fuscescens	<u>Yes</u>	BOVA,SppObs
040298		<u>Vireo, blue-headed</u>	Vireo solitarius	<u>Yes</u>	BOVA,SppObs
040299		<u>Vireo, red-eyed</u>	Vireo olivaceus	<u>Yes</u>	BOVA,BBA,SppObs
040295		<u>Vireo, white-eyed</u>	Vireo griseus	<u>Yes</u>	BOVA,BBA,SppObs
040297		<u>Vireo, yellow-throated</u>	Vireo flavifrons	<u>Potential</u>	BOVA,BBA,HU6
040081		<u>Vulture, black</u>	Coragyps atratus	<u>Potential</u>	BOVA,BBA
040080		<u>Vulture, turkey</u>	Cathartes aura	<u>Potential</u>	BOVA,BBA
040324		<u>Warbler, bay-breasted</u>	Setophaga castanea		BOVA

040316		<u>Warbler, black-throated blue</u>	Setophaga caeruleus	<u>Yes</u>	BOVA,SppObs
040319		<u>Warbler, black-throated green</u>	Setophaga virens		BOVA
040321		<u>Warbler, blackburnian</u>	Setophaga fusca		BOVA
040325		<u>Warbler, blackpoll</u>	Setophaga striata	<u>Yes</u>	BOVA,SppObs
040307		<u>Warbler, blue-winged</u>	Vermivora cyanoptera		BOVA
040315		<u>Warbler, Cape May</u>	Setophaga tigrina		BOVA
040323		<u>Warbler, chestnut-sided</u>	Setophaga pensylvanica		BOVA
040338		<u>Warbler, hooded</u>	Setophaga citrina	<u>Yes</u>	BOVA,BBA,SppObs
040314		<u>Warbler, magnolia</u>	Setophaga magnolia	<u>Yes</u>	BOVA,SppObs
040335		<u>Warbler, mourning</u>	Geothlypis philadelphia		BOVA
040311		<u>Warbler, Nashville</u>	Leiothlypis ruficapilla		BOVA
040310		<u>Warbler, orange-crowned</u>	Oreothlypis celata	<u>Yes</u>	BOVA,SppObs
040329		<u>Warbler, palm</u>	Setophaga palmarum	<u>Yes</u>	BOVA,SppObs
040326		<u>Warbler, pine</u>	Setophaga pinus	<u>Yes</u>	BOVA,BBA,SppObs
040328		<u>Warbler, prairie</u>	Setophaga discolor	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040303		<u>Warbler, prothonotary</u>	Protonotaria citrea	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040309		<u>Warbler, Tennessee</u>	Oreothlypis peregrina	<u>Yes</u>	BOVA,SppObs
040339		<u>Warbler, Wilson's</u>	Cardellina pusilla		BOVA
040305		<u>Warbler, worm-eating</u>	Helminthos vermivorus	<u>Yes</u>	BOVA,SppObs,HU6
040313		<u>Warbler, yellow</u>	Setophaga petechia	<u>Yes</u>	BOVA,BBA,SppObs,HU6
040317		<u>Warbler, yellow-rumped</u>	Setophaga coronata	<u>Yes</u>	BOVA,SppObs
040322		<u>Warbler, yellow-throated</u>	Setophaga dominica	<u>Yes</u>	BOVA,BBA,SppObs
040332		<u>Waterthrush, Louisiana</u>	Parkesia motacilla	<u>Yes</u>	BOVA,BBA,SppObs,HU6

040331		<u>Waterthrush, northern</u>	Parkesia noveboracensis	<u>Yes</u>	BOVA,SppObs
040290		<u>Waxwing, cedar</u>	Bombycilla cedrorum	<u>Yes</u>	BOVA,BBA,SppObs
040059		<u>Wigeon, American</u>	Mareca americana		BOVA
040058		<u>Wigeon, Eurasian</u>	Mareca penelope		BOVA
040227		<u>Woodpecker, downy</u>	Dryobates pubescens	<u>Yes</u>	BOVA,BBA,SppObs
040226		<u>Woodpecker, hairy</u>	Dryobates villosus	<u>Yes</u>	BOVA,BBA,SppObs
040222		<u>Woodpecker, pileated</u>	Dryocopus pileatus	<u>Yes</u>	BOVA,BBA,SppObs
040223		<u>Woodpecker, red-bellied</u>	Melanerpes carolinus	<u>Yes</u>	BOVA,BBA,SppObs
040224		<u>Woodpecker, red-headed</u>	Melanerpes erythrocephalus	<u>Potential</u>	BOVA,BBA
040268		<u>Wren, Carolina</u>	Thryothorus ludovicianus	<u>Yes</u>	BOVA,BBA,SppObs
040265		<u>Wren, house</u>	Troglodytes aedon	<u>Yes</u>	BOVA,BBA,SppObs
040270		<u>Wren, sedge</u>	Cistothorus platensis		BOVA,HU6
040266		<u>Wren, winter</u>	Troglodytes troglodytes		BOVA
040130		<u>Yellowlegs, greater</u>	Tringa melanoleuca	<u>Yes</u>	BOVA,SppObs
040131		<u>Yellowlegs, lesser</u>	Tringa flavipes		BOVA
040336		<u>Yellowthroat, common</u>	Geothlypis trichas	<u>Yes</u>	BOVA,BBA,SppObs
050028		<u>Bat, big brown</u>	Eptesicus fuscus	<u>Yes</u>	BOVA,SppObs
050033		<u>Bat, evening</u>	Nycticeius humeralis	<u>Yes</u>	BOVA,SppObs
050109		<u>Bat, northern yellow</u>	Lasiurus intermedius floridanus		BOVA
050130		<u>Bat, Rafinesque's big-eared</u>	Corynorhinus rafinesquii rafinesquii		BOVA
050031		<u>Bat, seminole</u>	Lasiurus seminolus		BOVA
050037		<u>Bear, American black</u>	Ursus americanus	<u>Yes</u>	BOVA,SppObs
050069		<u>Beaver, American</u>	Castor canadensis		BOVA
050052		<u>Bobcat, Florida</u>	Lynx rufus floridanus		BOVA
050055		<u>Chipmunk, Fisher's eastern</u>	Tamias striatus fisheri		BOVA
050103		<u>Cottontail,</u>	Sylvilagus floridanus	<u>Yes</u>	BOVA,SppObs

		<u>eastern</u>	<u>mallurus</u>		
050125		<u>Coyote</u>	Canis latrans		BOVA
050108		<u>Deer, white-tailed</u>	Odocoileus virginianus	<u>Yes</u>	BOVA,SppObs
050050		<u>Fox, common gray</u>	Urocyon cinereoargenteus cinereoargenteus		BOVA
050049		<u>Fox, red</u>	Vulpes vulpes fulva		BOVA
050086		<u>Lemming, southern bog</u>	Synaptomys cooperi helaletes	<u>Yes</u>	BOVA,SppObs,HU6
050042		<u>Mink, common</u>	Neovison vison mink		BOVA
050017		<u>Mole, eastern</u>	Scalopus aquaticus aquaticus		BOVA
050110		<u>Mole, star-nosed</u>	Condylura cristata parva		BOVA
050077		<u>Mouse, common golden</u>	Ochrotomys nuttalli aureolus		BOVA
050074		<u>Mouse, common white-footed</u>	Peromyscus leucopus leucopus	<u>Yes</u>	BOVA,SppObs
050070		<u>Mouse, eastern harvest</u>	Reithrodontomys humulis humulis	<u>Yes</u>	BOVA,SppObs
050071		<u>Mouse, eastern harvest</u>	Reithrodontomys humulis virginianus		BOVA
050098		<u>Mouse, house</u>	Mus musculus musculus	<u>Yes</u>	BOVA,SppObs
050076		<u>Mouse, Lewis' golden</u>	Ochrotomys nuttalli nuttalli		BOVA
050099		<u>Mouse, meadow jumping</u>	Zapus hudsonius americanus		BOVA
050093		<u>Muskrat, large-toothed</u>	Ondatra zibethicus macrodon		BOVA
050053		<u>Nutria</u>	Myocastor coypus	<u>Yes</u>	BOVA,SppObs
050001		<u>Opossum, Virginia</u>	Didelphis virginiana virginiana	<u>Yes</u>	BOVA,SppObs
050045		<u>Otter, northern river</u>	Lontra canadensis lataxina	<u>Yes</u>	BOVA,SppObs
050038		<u>Raccoon</u>	Procyon lotor lotor		BOVA
050094		<u>Rat, black</u>	Rattus rattus rattus		BOVA
050079		<u>Rat, hispid cotton</u>	Sigmodon hispidus virginianus	<u>Yes</u>	BOVA,SppObs
050078		<u>Rat, marsh rice</u>	Oryzomys palustris palustris		BOVA
050095		<u>Rat, Norway</u>	Rattus norvegicus norvegicus		BOVA
050010		<u>Shrew, American pygmy</u>	Sorex hoyi		BOVA

050014		<u>Shrew, Dismal Swamp short- tailed</u>	Blarina brevicauda telmalestes		BOVA
050008		<u>Shrew, Dismal Swamp southeastern</u>	Sorex longirostris fisheri	<u>Yes</u>	BOVA,Habitat,SppObs,HU6
050015		<u>Shrew, least</u>	Cryptotis parva	<u>Yes</u>	BOVA,SppObs
050007		<u>Shrew, southeastern</u>	Sorex longirostris longirostris	<u>Yes</u>	BOVA,SppObs
050011		<u>Shrew, southern short- tailed</u>	Blarina carolinensis	<u>Yes</u>	BOVA,SppObs
050047		<u>Skunk, striped</u>	Mephitis mephitis nigra		BOVA
050048		<u>Skunk, striped</u>	Mephitis mephitis mephitis		BOVA
050057		<u>Squirrel, eastern gray</u>	Sciurus carolinensis carolinensis		BOVA
050065		<u>Squirrel, southern flying</u>	Glaucomys volans volans		BOVA
050059		<u>Squirrel, talkative red</u>	Tamiasciurus hudsonicus loquax	<u>Yes</u>	SppObs
050083		<u>Vole, dark meadow</u>	Microtus pennsylvanicus nigrans	<u>Yes</u>	BOVA,SppObs
050091		<u>Vole, pine</u>	Microtus pinetorum scalopsoides	<u>Yes</u>	BOVA,SppObs
050087		<u>Vole, southern red-backed</u>	Myodes gapperi		BOVA
050041		<u>Weasel, long- tailed</u>	Mustela frenata noveboracensis		BOVA
060025		<u>Mussel, eastern elliptio</u>	Elliptio complanata		BOVA
070063		<u>AMPHIPOD</u>	ACANTHOHAUSTORIUS INTERMEDIUS		BOVA
070077		<u>Crab, Atlantic ghost</u>	Ocypode quadrata		BOVA
070073		<u>Crab, flatback mud</u>	Eurypanopeus depressus		BOVA
070095		<u>Crawfish, Devil</u>	Lacunicambarus diogenes		BOVA
070099		<u>Crayfish</u>	Fallicambarus uhleri		BOVA
070094		<u>Crayfish, no common name</u>	Cambarus acuminatus		BOVA
070120		<u>Crayfish, White River</u>	Procambarus acutus		BOVA
070071		<u>HERMIT, LONG- WRISTED</u>	PAGURUS LONGICARPUS		BOVA

070070		<u>SHRIMP, EELGRASS</u>	HIPPOLYTE PLEURACENTHA		BOVA
080067		<u>Midge, phantom</u>	Chaoborus punctipennis		BOVA
100043		<u>Armyworm</u>	Pseudaletia unipuncta		BOVA
100041		<u>Borer, European corn</u>	Ostrinia nubilatis		BOVA
100181		<u>Butterfly, Aaron's skipper</u>	Poanes aaroni		BOVA
100220		<u>Butterfly, American copper</u>	Lycaena phlaeas		BOVA
100262		<u>Butterfly, American lady</u>	Vanessa virginiensis		BOVA
100245		<u>Butterfly, American snout</u>	Libytheana carinenta		BOVA
100232		<u>Butterfly, banded hairstreak</u>	Satyrrium calanus		BOVA
100092		<u>Butterfly, black swallowtail</u>	Papilio polyxenes asterius		BOVA
100196		<u>Butterfly, Brazilian skipper</u>	Calpododes ethlius		BOVA
100179		<u>Butterfly, broad-winged skipper</u>	Poanes viator		BOVA
100137		<u>Butterfly, brown elfin</u>	Callophrys augustinus		BOVA
100205		<u>Butterfly, cabbage white</u>	Pieris rapae		BOVA
100189		<u>Butterfly, Carolina road- skipper</u>	Amblyscirtes carolina		BOVA
100278		<u>Butterfly, Carolina satyr</u>	Hermeuptychia sosybius		BOVA
100206		<u>Butterfly, checkered white</u>	Pontia protodice		BOVA
100159		<u>Butterfly, clouded skipper</u>	Lerema accius		BOVA
100094		<u>Butterfly, clouded sulphur</u>	Colias philodice		BOVA
100213		<u>Butterfly, cloudless</u>	Phoebis sennae eubule		BOVA

		<u>sulphur</u>		
100265		<u>Butterfly, common buckeye</u>	Junonia coenia	BOVA
100156		<u>Butterfly, common checkered-skipper</u>	Pyrgus communis	BOVA
100157		<u>Butterfly, common sootywing</u>	Pholisora catullus	BOVA
100277		<u>Butterfly, common wood-nymph</u>	Cercyonis pegala	BOVA
100144		<u>Butterfly, confused cloudywing</u>	Thorybes confusus	BOVA
100271		<u>Butterfly, creole pearly-eye</u>	Enodia creola	BOVA
100168		<u>Butterfly, crossline skipper</u>	Polites origenes	BOVA
100177		<u>Butterfly, Delaware skipper</u>	Anatrytone logan	BOVA
100184		<u>Butterfly, Dion skipper</u>	Euphyes dion	BOVA
100185		<u>Butterfly, Dun skipper</u>	Euphyes vestris	BOVA
100188		<u>Butterfly, dusted skipper</u>	Atrytonopsis hianna	BOVA
100258		<u>Butterfly, eastern comma</u>	Polygonia comma	BOVA
100225		<u>Butterfly, eastern pine elfin</u>	Callophrys niphon	BOVA
100238		<u>Butterfly, eastern tailed-blue</u>	Everes comyntas	BOVA
100093		<u>Butterfly, eastern tiger swallowtail</u>	Papilio glaucus	BOVA
100195		<u>Butterfly, Eufala skipper</u>	Lerodea eufala	BOVA
100209		<u>Butterfly, falcate orangetip</u>	Anthocharis midea	BOVA
100162		<u>Butterfly, fiery skipper</u>	Hylephila phyleus	BOVA

100276		<u>Butterfly, gemmed satyr</u>	Cyllopsis gemma		BOVA
100201		<u>Butterfly, giant swallowtail</u>	Papilio cresphontes		BOVA
100228		<u>Butterfly, gray hairstreak</u>	Strymon melinus		BOVA
100222		<u>Butterfly, great purple hairstreak</u>	Atlides halesus		BOVA
100249		<u>Butterfly, great spangled fritillary</u>	Speyeria cybele		BOVA
100246		<u>Butterfly, gulf fritillary</u>	Agraulis vanillae nigrior		BOVA
100270		<u>Butterfly, hackberry emperor</u>	Asterocampa celtis	<u>Yes</u>	BOVA, SppObs
100145		<u>Butterfly, Hayhurst's scallopwing</u>	Staphylus hayhurstii		BOVA
100224		<u>Butterfly, Henry's elfin</u>	Callophrys henrici		BOVA
100141		<u>Butterfly, hoary edge</u>	Achalarus lyciades		BOVA
100178		<u>Butterfly, Hobomok skipper</u>	Poanes hobomok		BOVA
100149		<u>Butterfly, Horace's duskywing</u>	Erynnis horatius		BOVA
100148		<u>Butterfly, Juvenal's duskywing</u>	Erynnis juvenalis		BOVA
100191		<u>Butterfly, lace-winged road-skipper</u>	Amblyscirtes aesculapius		BOVA
100160		<u>Butterfly, least skipper</u>	Ancyloxypha numitor		BOVA
100175		<u>Butterfly, little glassywing</u>	Pompeius verna		BOVA
100279		<u>Butterfly, little wood-satyr</u>	Megisto cymela		BOVA
100217		<u>Butterfly, little yellow</u>	Eurema lisa		BOVA
100140		<u>Butterfly, long-tailed skipper</u>	Urbanus proteus		BOVA
100090		<u>Butterfly, mourning cloak</u>	Nymphalis antiopa		BOVA

100173		<u>Butterfly, northern broken dash</u>	Wallengrenia egeremet		BOVA
100143		<u>Butterfly, northern cloudywing</u>	Thorybes pylades		BOVA
100197		<u>Butterfly, Ocola skipper</u>	Panoquina ocola		BOVA
100236		<u>Butterfly, olive juniper hairstreak</u>	Callophrys gryneus gryneus		BOVA
100211		<u>Butterfly, orange sulphur</u>	Colias eurytheme		BOVA
100263		<u>Butterfly, painted lady</u>	Vanessa cardui		BOVA
100203		<u>Butterfly, Palamedes swallowtail</u>	Papilio palamedes		BOVA
100257		<u>Butterfly, pearl crescent</u>	Phyciodes tharos		BOVA
100200		<u>Butterfly, pipevine swallowtail</u>	Battus philenor		BOVA
100259		<u>Butterfly, question mark</u>	Polygonia interrogationis		BOVA
100264		<u>Butterfly, red admiral</u>	Vanessa atalanta		BOVA
100235		<u>Butterfly, red-banded hairstreak</u>	Calycopis cecrops		BOVA
100268		<u>Butterfly, red-spotted purple</u>	Limenitis arthemis astyanax		BOVA
100190		<u>Butterfly, reversed road-skipper</u>	Amblyscirtes reversa		BOVA
100174		<u>Butterfly, sachem</u>	Atalopedes campestris		BOVA
100198		<u>Butterfly, salt marsh skipper</u>	Panoquina panoquin		BOVA
100082		<u>Butterfly, silver-spotted skipper</u>	Epargyreus clarus		BOVA
100146		<u>Butterfly, sleepy duskywing</u>	Erynnis brizo		BOVA
100216		<u>Butterfly, sleepy orange</u>	Eurema nicippe		BOVA
100172		<u>Butterfly, southern broken dash</u>	Wallengrenia otho		BOVA

100142		<u>Butterfly, southern cloudywing.</u>	Thorybes bathyllus		BOVA
100226		<u>Butterfly, southern hairstreak</u>	Satyrium favonius		BOVA
100273		<u>Butterfly, southern pearly-eye</u>	Enodia portlandia		BOVA
100202		<u>Butterfly, spicebush swallowtail</u>	Papilio troilus		BOVA
100239		<u>Butterfly, spring azure</u>	Celastrina ladon		BOVA
100234		<u>Butterfly, striped hairstreak</u>	Satyrium liparops		BOVA
100158		<u>Butterfly, swarthy skipper</u>	Nastra lherminier		BOVA
100269		<u>Butterfly, tawny emperor</u>	Asterocampa clyton		BOVA
100169		<u>Butterfly, tawny-edged skipper</u>	Polites themistocles		BOVA
100247		<u>Butterfly, variegated fritillary</u>	Euptoieta claudia		BOVA
100266		<u>Butterfly, viceroy</u>	Limenitis archippus		BOVA
100227		<u>Butterfly, white M hairstreak</u>	Parrhasius m-album		BOVA
100182		<u>Butterfly, Yehl skipper</u>	Poanes yehl		BOVA
100180		<u>Butterfly, Zabulon skipper</u>	Poanes zabulon		BOVA
100151		<u>Butterfly, Zarucco duskywing.</u>	Erynnis zarucco		BOVA
100204		<u>Butterfly, zebra swallowtail</u>	Eurytides marcellus		BOVA
100026		<u>Deerfly</u>	Chrysops vittatus vittatus		BOVA
100042		<u>Earworm, corn</u>	Heliathis zea		BOVA
100035		<u>Gnat</u>	Culicoides debipalpis		BOVA
100016		<u>Gnat</u>	Culicoides stellifer		BOVA

100040		<u>Moth, codling</u>	Cydia pomonella		BOVA
100047		<u>Moth, gypsy</u>	Lymantria dispar		BOVA
100289		<u>Moth, pinkstriped oakworm</u>	Anisota virginensis		BOVA
100291		<u>Moth, sweetbay silk</u>	Callosamia securifera		BOVA
110230		<u>Tick, American dog</u>	Dermacentor variabilis		BOVA
110232		<u>Tick, brown dog</u>	Rhipicephalus sanguineus		BOVA
110228		<u>Tick, lone star</u>	Amblyomma americanum		BOVA
110231		<u>Tick, rabbit</u>	Haemaphysalis leporispalustris		BOVA
110229		<u>Tick, winter</u>	Dermacentor albipictus		BOVA

*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed;
FC=Federal Candidate; CC=Collection Concern

**I=VA Wildlife Action Plan - Tier I - Critical Conservation Need;
II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;
III=VA Wildlife Action Plan - Tier III - High Conservation Need;
IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need
Virginia Wildlife Action Plan Conservation Opportunity Ranking:
a - On the ground management strategies/actions exist and can be feasibly implemented.;
b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;
c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

Compiled on 10/29/2021, 9:46:52 AM 11145851.0 report=1 searchType= R dist= 16093.44 poi= 36,42.35.8 -76.02.06.3
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Trout=0.027744; huva=0.047519

Natural Heritage Resources

Your Criteria

County: Chesapeake (City), Virginia Beach (City)

Search Run: 10/29/2021 10:17:44 AM

Result Summary

Total Species returned: 163

Total Communities returned: 37

Click scientific names below to go to NatureServe report.

Click column headings for an explanation of species and community ranks.

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Chesapeake (City)								
AMPHIBIANS								
Oak Toad	Anaxyrus quercicus	Anaxyrus quercicus	G5	S2	None	None	10	Y
BIRDS								
Great Egret	Ardea alba	Ardea alba	G5	S2S3B, S3N	None	None	12	Y
Red-cockaded Woodpecker	Dryobates borealis	Dryobates borealis	G3	S1	LE	LE	8	Y
Swainson's Warbler	Limnothlypis swainsonii	Limnothlypis swainsonii	G4	S2B	None	None	17	Y
INVERTEBRATE								
Southern Plains bumble bee	Bombus fraternus	Bombus fraternus	G2G4	S1S2	None	None	6	Y
LEPIDOPTERA (BUTTERFLIES & MOTHS)								
Cane Boring Moth	Acrapex relicta	Acrapex relicta	G4	S2S3	None	None	1	Y
Dusky Roadside Skipper	Amblyscirtes alternata	Amblyscirtes alternata	G2G3	SH	SOC	None	1	Y
A Cane Moth	Argilophora furcilla	Argilophora furcilla	G3G4	S1S3	None	None	2	Y
Little Metalmark	Calephelis virginiensis	Calephelis virginiensis	G4	SH	None	None	10	Y
Black Dash	Euphyes conspicua	Euphyes conspicua	G4G5	SH	None	None	3	Y
Dukes' Skipper	Euphyes dukesi	Euphyes dukesi	G3G4	S2	None	None	13	Y
Palatka Skipper	Euphyes pilatka	Euphyes pilatka	G3	S1	None	None	2	Y
Yucca Giant Skipper	Megathymus yuccae	Megathymus yuccae	G5	SH	None	None	2	Y
A Noctuid Moth	Protodeltote sp. 1	Protodeltote sp. 1	G1G3	S1S2	SOC	None	1	Y

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Conservation Zone
King's Hairstreak	Satyrion kingi	Satyrion kingi	G3G4	S2S3	None	None	8	Y
MAMMALS								
Eastern Big-eared Bat	Corynorhinus rafinesquii macrootis	Corynorhinus rafinesquii macrootis	G3G4T3	S2	None	LE	44	Y
Southeastern Myotis	Myotis austroriparius	Myotis austroriparius	G4	S2	None	None	13	Y
Tricolored bat (=Eastern pipistrelle)	Perimyotis subflavus	Perimyotis subflavus	G2G3	S1S3	SOC	LE	40	Y
NON-VASCULAR PLANTS								
A liverwort	Frullania caulisequa	Frullania caulisequa	G5	SH	None	None	2	Y
Large-leaf Peatmoss	Sphagnum macrophyllum var. macrophyllum	Sphagnum macrophyllum var. macrophyllum	G5T3?	S2	None	None	6	Y
A Moss	Syrrophodon incompletus	Syrrophodon incompletus	G5	SH	None	None	1	Y
ODONATA (DRAGONFLIES & DAMSELFLIES)								
Pale Bluet	Enallagma pallidum	Enallagma pallidum	G4	S1S2	None	None	2	Y
REPTILES								
Canebrake	Crotalus horridus	Crotalus horridus	G4T4	S1	None	LE	18	Y
Rattlesnake	[Coastal Plain population]	[Coastal Plain population]						
TERRESTRIAL NATURAL COMMUNITY								
Peatland Atlantic White-Cedar Forest	Chamaecyparis thuyoides / Persea palustris / Lyonia lucida - Ilex coriacea / Osmundastrum cinnamomeum Forest	Chamaecyparis thuyoides / Persea palustris / Lyonia lucida - Ilex coriacea / Osmundastrum cinnamomeum Forest	G2	S1	None	None	2	Y
Wind-Tidal Oligohaline Marsh (Creeping Spikerush - Bull-Tongue Arrowhead Type)	Eleocharis fallax - Sagittaria lancifolia - Hibiscus moscheutos - (Schoenoplectus americanus, Eleocharis rostellata)	Eleocharis fallax - Sagittaria lancifolia - Hibiscus moscheutos - (Schoenoplectus americanus, Eleocharis rostellata)	G1G2	S1	None	None	6	Y
Southern Coastal Plain Mesic Mixed Hardwood Forest	Vegetation Fagus grandifolia - Quercus (alba, nigra, michauxii) / Symplocos tinctoria - (Stewartia malacodendron) Forest	Vegetation Fagus grandifolia - Quercus (alba, nigra, michauxii) / Symplocos tinctoria - (Stewartia malacodendron) Forest	G3	S2S3	None	None	11	Y
Wind-Tidal Oligohaline Marsh (Black Needlerush Type)	Juncus roemerianus - Eleocharis fallax Tidal Herbaceous Vegetation	Juncus roemerianus - Eleocharis fallax Tidal Herbaceous Vegetation	G2G3	S2S3	None	None	3	Y
Oligohaline Tidal Shrub Swamp	Morella cerifera - Rosa palustris /	Morella cerifera - Rosa palustris /	G4	S3	None	None	3	Y

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Conservation Zone
Large spreading pogonia	Cleistesopsis divaricata	Cleistesopsis divaricata	G4	S1	None	None	17	Y
Pool Coreopsis	Coreopsis faicala	Coreopsis faicala	G4G5	S1	None	None	1	Y
Big-seed Alfalfa dodder	Cuscuta indecora	Cuscuta indecora	G5	S1	None	None	16	Y
Blue Panic Grass	Dichanthellum caerulescens	Dichanthellum caerulescens	G2G3	S1	SOC	None	6	Y
Blood panic grass	Dichanthellum consanguineum	Dichanthellum consanguineum	G5	S1S2	None	None	15	Y
White-top Fleabane	Erigeron vernus	Erigeron vernus	G5	S2	None	None	14	Y
Ten-angled pipewort	Eriocaulon decangulare var. decangulare	Eriocaulon decangulare var. decangulare	G5T5?	S2	None	None	19	Y
Maidencane	Hymenachne hemitomon	Hymenachne hemitomon	G5?	S2	None	None	7	Y
Big gallberry	Ilex coriacea	Ilex coriacea	G5	S1	None	None	10	Y
Carolina laurel	Kalmia carolina	Kalmia carolina	G4	S2	None	None	12	Y
Redroot	Lachnanthes caroliniana	Lachnanthes caroliniana	G4	SH	None	None	2	Y
Long-leaf lobelia	Lobelia elongata	Lobelia elongata	G4G5	S1	None	None	7	Y
Winged Seedbox	Ludwigia alata	Ludwigia alata	G3G5	S1	None	None	7	Y
Hairy Seedbox	Ludwigia pilosa	Ludwigia pilosa	G5	S1	None	None	7	Y
Raven's Seedbox	Ludwigia ravenii	Ludwigia ravenii	G1G2	S1	SOC	PE	7	Y
Lax Hornpod	Mitreola petiolata	Mitreola petiolata	G5	S1	None	None	10	Y
Riverbank evening-primrose	Oenothera riparia	Oenothera riparia	G2G3	S1S2	SOC	None	1	Y
Walter's paspalum	Paspalum dissectum	Paspalum dissectum	G4?	S2	None	None	14	Y
Awmed Mountain-mint	Pycnanthemum setosum	Pycnanthemum setosum	G4	S1	None	None	4	Y
Long-beaked beaksedge	Rhynchospora scirpoides	Rhynchospora scirpoides	G4	S1	None	None	5	Y
Engelmann's arrowhead	Sagittaria engelmanniana	Sagittaria engelmanniana	G5?	SH	None	None	1	Y
One-flowered sclerolepis	Sclerolepis uniflora	Sclerolepis uniflora	G4	S1	None	None	2	Y
Elliott's goldenrod	Solidago latissimifolia	Solidago latissimifolia	G5	S2	None	None	13	Y
Twisted-leaf goldenrod	Solidago tortifolia	Solidago tortifolia	G4G5	S1	None	None	10	Y
Rough Hedge-nettle	Stachys aspera	Stachys aspera	G4?	S2	None	None	5	Y
Elliott's Aster	Symphotrichum elliotii	Symphotrichum elliotii	G4	S1	None	None	4	Y
Spanish-moss	Tillandsia usneoides	Tillandsia usneoides	G5	S1S2	None	None	19	Y
Virginia Least Trillium	Trillium pusillum var. virginianum	Trillium pusillum var. virginianum	G4 T3	S2	None	None	35	Y
Purple Bladderwort	Utricularia purpurea	Utricularia purpurea	G5	S2	None	None	15	Y
Fringed yellow-eyed grass	Xyris fimbriata	Xyris fimbriata	G5	S1	None	None	6	Y
Iris-leaf yellow-eyed	Xyris iridifolia	Xyris iridifolia	G4G5T4T5	S1	None	None	5	Y

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Tall yellow-eyed grass	<i>Xyris platylepis</i>	Xyris platylepis	G5	S2	None	None	15	Y
Virginia Beach (City)								
AMPHIBIANS								
Barking Treefrog	<i>Hyla gratiosa</i>	Hyla gratiosa	G5	S2S3	None	LT	27	Y
BIRDS								
Great Egret	<i>Ardea alba</i>	Ardea alba	G5	S2S3B,S3N	None	None	12	Y
Yellow-crowned Night-heron	<i>Nyctanassa violacea</i>	Nyctanassa violacea	G5	S2S3B,S3N	None	None	10	Y
King Rail	<i>Rallus elegans</i>	Rallus elegans	G4	S2B,S3N	None	None	12	Y
Virginia Rail	<i>Rallus limicola</i>	Rallus limicola	G5	S2B,S3N	None	None	10	Y
Least Tern	<i>Sterna antillarum</i>	Sterna antillarum	G4	S2B	None	None	18	Y
COLEOPTERA (BEETLES)								
A Tiger Beetle	<i>Cicindela trifasciata</i>	Cicindela trifasciata	G5	S1	None	None	6	Y
HETEROPTERA (TRUE BUGS)								
A Mirid Bug	<i>Bothynotus johnstoni</i>	Bothynotus johnstoni	G3	S1S3	None	None	1	Y
Carolina Thread-legged Bug	<i>Ploiaria carolina</i>	Ploiaria carolina	G4?	S1S3	None	None	1	Y
Brimley's Assassin Bug	<i>Phorontis brimleyi</i>	Phorontis brimleyi	G2	S1S3	SOC	None	1	Y
Seashore Mirid Bug	<i>Pycnoderiella virginiana</i>	Pycnoderiella virginiana	GU	SU	None	None	1	Y
INVERTEBRATE								
Southern Plains bumble bee	<i>Bombus fraternus</i>	Bombus fraternus	G2G4	S1S2	None	None	6	Y
LEPIDOPTERA (BUTTERFLIES & MOTHS)								
Little Metalmark	<i>Calephelis virginiensis</i>	Calephelis virginiensis	G4	SH	None	None	10	Y
Giant gray Moth	<i>Cymatophora approximaria</i>	Cymatophora approximaria	G4G5	S1S3	None	None	1	Y
Dukes' Skipper	<i>Euphyes dukesi</i>	Euphyes dukesi	G3G4	S2	None	None	13	Y
Palatka Skipper	<i>Euphyes pilatka</i>	Euphyes pilatka	G3	S1	None	None	2	Y
A Cane Moth	<i>Franclemontia interrogans</i>	Franclemontia interrogans	G3G4	S1S3	None	None	1	Y
A Prominent Moth	<i>Heterocampa astarte</i>	Heterocampa astarte	G4?	S1S2	None	None	1	Y
Yucca Giant Skipper	<i>Megathymus yuccae</i>	Megathymus yuccae	G5	SH	None	None	2	Y
A Noctuid Moth	<i>Metria amella</i>	Metria amella	G5	S1S2	None	None	1	Y
Southeastern Cane Borer Moth	<i>Papaipema sp. 3</i>	Papaipema sp. 3	G4	S2S3	None	None	4	Y
Rare Skipper	<i>Problema bulentia</i>	Problema bulentia	G3	S1S2	None	None	7	Y
King's Hairstreak	<i>Satyrium kingi</i>	Satyrium kingi	G3G4	S2S3	None	None	8	Y
MAMMALS								
Eastern Big-eared Bat	<i>Corynorhinus rafinesquii macrotis</i>	Corynorhinus rafinesquii macrotis	G3G4T3	S2	None	LE	44	Y
Southeastern Myotis	<i>Myotis austroriparius</i>	Myotis austroriparius	G4	S2	None	None	13	Y
Tricolored bat	<i>Perimyotis subflavus</i>	Perimyotis subflavus	G2G3	S1S3	SOC	LE	40	Y

(=Eastern pipistrelle)

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
NON-VASCULAR PLANTS								
A liverwort	<i>Frullania caulisequa</i>	Frullania caulisequa	G5	SH	None	None	2	Y
Lurking Leskea	<i>Plagiothecium latebricola</i>	Plagiothecium latebricola	G3G4	SH	None	None	1	Y
ODONATA (DRAGONFLIES & DAMSELFLIES)								
Fine-lined Emerald	<i>Somatochlora filosa</i>	Somatochlora filosa	G5	S2	None	None	13	Y
OTHER								
Colonial Wading Bird Colony	<i>Colonial Wading Bird Colony</i>	Colonial Wading Bird Colony	G5	S2	None	None	11	Y
REPTILES								
Loggerhead (Sea Turtle)	<i>Caretta caretta</i>	Caretta caretta	G3	S1B,S1N	LT	LT	4	Y
Canebrake	<i>Crotalus horridus</i>	Crotalus horridus	G4T4	S1	None	LE	18	Y
Rattlesnake	[Coastal Plain population]	[Coastal Plain population]						
Chicken Turtle	<i>Deirochelys reticularia</i>	Deirochelys reticularia	G5	S1	None	LE	2	Y
Glossy Swampsnake	<i>Liodytes rigida</i>	Liodytes rigida	G5	S1	None	None	2	Y
Eastern Glass Lizard	<i>Ophisaurus ventralis</i>	Ophisaurus ventralis	G5	S1	None	LT	3	Y
TERRESTRIAL NATURAL COMMUNITY								
Maritime Swamp Forest (Red Maple - Tupelo Type)	<i>Acer rubrum - Nyssa (biflora, sylvatica) / Morella cerifera / Lorinseria areolata</i>	Acer rubrum - Nyssa (biflora, sylvatica) / Morella cerifera / Lorinseria areolata	G2	S2	None	None	2	Y
Peatland Atlantic White-Cedar Forest	<i>Chamaecyparis thyoides / Persea palustris / Lyonia lucida - Ilex coriacea / Osmundastrum cinnamomeum</i>	Chamaecyparis thyoides / Persea palustris / Lyonia lucida - Ilex coriacea / Osmundastrum cinnamomeum	G2	S1	None	None	2	Y
Wind-Tidal Oligohaline Marsh (Creeping Spikerush - Bull-Tongue Arrowhead Type)	<i>Eleocharis fallax - Sagittaria lancifolia - Hibiscus moscheutos - (Schoenoplectus americanus, Eleocharis rostellata)</i>	Eleocharis fallax - Sagittaria lancifolia - Hibiscus moscheutos - (Schoenoplectus americanus, Eleocharis rostellata)	G1G2	S1	None	None	6	Y
Southern Coastal Plain Mesic Mixed Hardwood Forest	<i>Fagus grandifolia - Quercus (alba, nigra, michauxii) / Symplocos tinctoria - (Stewartia malacodendron)</i>	Fagus grandifolia - Quercus (alba, nigra, michauxii) / Symplocos tinctoria - (Stewartia malacodendron)	G3	S2S3	None	None	11	Y
Interdune Swale / Pond	<i>Interdune Swale / Pond</i>	Interdune Swale / Pond	G2	S2	None	None	5	Y

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone	Attachment 2.F.1 Page 118 of 125
Wind-Tidal Oligohaline Marsh (Black Needlerush Type)	Juncus roemerianus - Eleocharis fallax Tidal Herbaceous Vegetation	Juncus roemerianus - Eleocharis fallax Tidal Herbaceous Vegetation	G2G3	S2S3	None	None	3	Y	
Interdune Swale (Mixed Rush Type)	Juncus scirpoides - Eupatorium - hyssopifolium - Euthamia caroliniana - Xyris lupical Herbaceous Vegetation	Juncus scirpoides - Eupatorium - hyssopifolium - Euthamia caroliniana - Xyris lupical Herbaceous Vegetation	G2G3	S1?	None	None	1	Y	
Oligohaline Tidal Shrub Swamp	Morella cerifera - Rosa palustris / Osmunda spectabilis - Thelypteris palustris Tidal Shrubland	Morella cerifera - Rosa palustris / Osmunda spectabilis - Thelypteris palustris Tidal Shrubland	G4	S3	None	None	3	Y	
Wind-Tidal Tupelo - Bald Cypress Swamp	Nyssa biflora - Taxodium distichum, Pinus taeda) / Morella cerifera / Osmunda spectabilis Tidal Forest	Nyssa biflora - Taxodium distichum, Pinus taeda) / Morella cerifera / Osmunda spectabilis Tidal Forest	G2?	S2	None	None	2	Y	
Non-Riverine Swamp Forest (Tupelo - Bald Cypress Type)	Nyssa biflora - Taxodium distichum - Acer rubrum / (Persea palustris) / Clethra alnifolia / Anchestea virginica Forest	Nyssa biflora - Taxodium distichum - Acer rubrum / (Persea palustris) / Clethra alnifolia / Anchestea virginica Forest	G2G3	S1S2	None	None	3	Y	
Interdune Swale / Pond (Switchgrass Type)	Panicum virgatum - Schoenoplectus pungens Herbaceous Vegetation	Panicum virgatum - Schoenoplectus pungens Herbaceous Vegetation	G2G4	S2?	None	None	3	Y	
Pond Pine Woodland / Pocosin	Pinus serotina / Smilax laurifolia - Ilex glabra / Anchestea virginica Woodland	Pinus serotina / Smilax laurifolia - Ilex glabra / Anchestea virginica Woodland	G2?	S1	None	None	4	Y	
Loblolly Pine / Sand Heather Dune Woodland	Pinus taeda / Hudsonia tomentosa Woodland	Pinus taeda / Hudsonia tomentosa Woodland	G1G2	S1S2	None	None	9	Y	
Non-Riverine Wet Hardwood Forest (Southern Coastal Plain Type)	Quercus (michauxii, pagoda, laurifolia) / Carpinus caroliniana / (Leucothoe axillaris) - Arundinaria tecta	Quercus (michauxii, pagoda, laurifolia) / Carpinus caroliniana / (Leucothoe axillaris) - Arundinaria tecta	G2	S1	None	None	6	Y	

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone	Attachment 2.F.1 Page 119 of 125
Maritime Mixed Deciduous Forest	Forest								
	Quercus nigra - Pinus taeda - <u>Carya pallida</u> / <u>Persea palustris</u> / <u>Symplocos tinctoria</u> / <u>Gelsemium sempervirens</u> Forest	Forest Quercus nigra - Pinus taeda - <u>Carya pallida</u> / <u>Persea palustris</u> / <u>Symplocos tinctoria</u> / <u>Gelsemium sempervirens</u> Forest	G1	S1	None	None	1	Y	
Live Oak Dune Scrub	Quercus virginiana - (Morella pensylvanica) Shrubland	Quercus virginiana - Pinus taeda Forest	G3	S1	None	None	2	Y	
	Quercus virginiana - Quercus incana Woodland	Quercus virginiana - Pinus taeda Forest Quercus virginiana - Quercus incana Woodland	G1	S1	None	None	1	Y	
Tidal Oligohaline Marsh (Saltmeadow Cordgrass - Olney Threesquare Low Interior Marsh Type)	Schoenoplectus americanus - Spartina patens Tidal Herbaceous Vegetation	Schoenoplectus americanus - Spartina patens Tidal Herbaceous Vegetation	G3	S37	None	None	2	Y	
	Wind-Tidal Oligohaline Marsh (Big Cordgrass Type)	Spartina cynosuroides - Schoenoplectus americanus - Sagittaria lancifolia Tidal Herbaceous Vegetation	G2G3	S2	None	None	2	Y	
Interdune Swale (Southern Mixed Grassland Type)	Spartina patens - Schoenoplectus pungens - Thelypteris palustris - Centella asiatica Herbaceous Vegetation	Spartina patens - Schoenoplectus pungens - Thelypteris palustris - Centella asiatica Herbaceous Vegetation	G2	S2	None	None	1	Y	
	Bald Cypress - Mixed Tupelo Intermediate Swamp	Taxodium distichum - Nyssa (biflora, aquatica) / Itea virginica / Saururus cernuus Forest	G3G4	S3S4	None	None	4	Y	
Maritime Swamp Forest (Bald Cypress Type)	Cephalanthus occidentalis / Boehmeria cylindrica - Ceratophyllum echinatum Forest	Taxodium distichum / Cephalanthus occidentalis / Boehmeria cylindrica - Ceratophyllum echinatum Forest	G1	S1	None	None	1	Y	
	Tidal Swamp Forest / Woodland	Tidal Swamp Forest / Woodland	G3	SNR	None	None	1	Y	
South Atlantic Mixed	Uniola paniculata -	Uniola paniculata -	G3	S2	None	None	2	Y	

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Dune Grassland	Calamagrostis breviligulata	Calamagrostis breviligulata						
	Herbaceous Vegetation	Herbaceous Vegetation						
VASCULAR PLANTS								
Spreading sandwort	Arenaria lanuginosa var. lanuginosa	Arenaria lanuginosa var. lanuginosa	G5T5	SH	None	None	1	Y
Spring Bartonia	Bartonia verna	Bartonia verna	G5?	S1	None	None	1	Y
Tuberosus Grass-pink	Calopogon tuberosus var. tuberosus	Calopogon tuberosus var. tuberosus	G5T5	S1S2	None	None	17	Y
Cypruss-knee sedge	Carex decomposita	Carex decomposita	G3G4	S1	None	None	13	Y
Kidney sedge	Carex reniformis	Carex reniformis	G4?	S1	None	None	6	Y
Wild Olive	Cartrema americanum	Cartrema americanum	G5	S1	None	None	4	Y
Cottony Golden-aster	Chrysopsis gossypina	Chrysopsis gossypina	G5	S1	None	None	4	Y
Sandhill thistle	Cirsium repandum	Cirsium repandum	G5	SH	None	None	2	Y
Sawgrass	Cladium jamaicense	Cladium jamaicense	G5T5	S1S2	None	None	4	Y
Large spreading pogonia	Cleistesopsis divaricata	Cleistesopsis divaricata	G4	S1	None	None	17	Y
Buttonbush dodder	Cuscuta cephalanthi	Cuscuta cephalanthi	G5	S1	None	None	8	Y
Big-seed Alfalfa dodder	Cuscuta indecora	Cuscuta indecora	G5	S1	None	None	16	Y
Smartweed Dodder	Cuscuta polygonorum	Cuscuta polygonorum	G5	S1	None	None	9	Y
American halfchaff sedge	Cyperus neotropicalis	Cyperus neotropicalis	G5	S1	None	None	9	Y
Slender sand sedge	Cyperus odoratus var. engelmannii	Cyperus odoratus var. engelmannii	G4Q	S1	None	None	2	Y
Plukenet's flatsedge	Cyperus plukenetii	Cyperus plukenetii	G5	S2	None	None	13	Y
Pineland Tick-trefoil	Desmodium strictum	Desmodium strictum	G4	S2	None	None	14	Y
Blue Panic Grass	Dichantherium caerulescens	Dichantherium caerulescens	G2G3	S1	SOC	None	6	Y
Baldwin's spikerush	Eleocharis baldwinii	Eleocharis baldwinii	G4G5	S1	None	None	10	Y
Rooted Spikerush	Eleocharis radicans	Eleocharis radicans	G5	SH	None	None	1	Y
One-scale Spikerush	Eleocharis uniglumis	Eleocharis uniglumis	G5	S1	None	None	2	Y
Viviparous Spikerush	Eleocharis vivipara	Eleocharis vivipara	G5	S1	None	None	5	Y
White-top Fleabane Seaside	Erigeron vernus	Erigeron vernus	G5	S2	None	None	14	Y
Thoroughwort	Eupatorium maritimum	Eupatorium maritimum	G2?	S1	SOC	None	4	Y
Southern seaside spurge	Euphorbia bombensis	Euphorbia bombensis	G4G5	S2	None	None	20	Y
Seaside Heliotrope	Heliotropium curassavicum var. curassavicum	Heliotropium curassavicum var. curassavicum	G5T5	S1	None	None	8	Y
Sea-beach Sandwort	Honckenya peploides ssp. robusta	Honckenya peploides ssp. robusta	G5T5	SH	None	None	1	Y

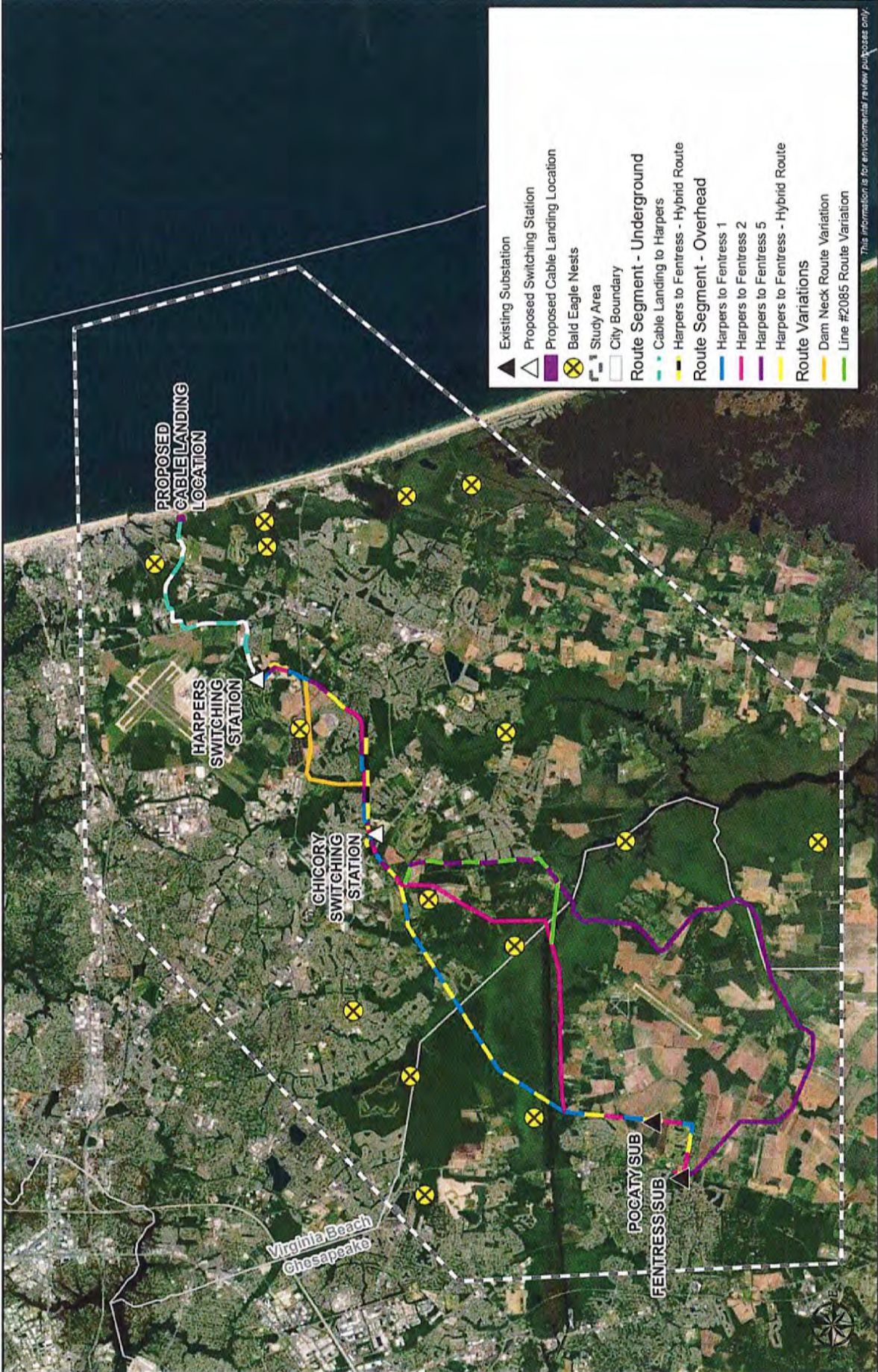
Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Conservation Zone
Coastal water-pennywort	Hydrocotyle bonariensis	<u>Hydrocotyle bonariensis</u>	G5	S2	None	None	5	Y
Glossy-seed yellow stargrass	Hypoxis sessilis	<u>Hypoxis sessilis</u>	G4	SH	None	None	1	Y
Big galberry	Ilex coriacea	<u>Ilex coriacea</u>	G5	S1	None	None	10	Y
Dune marsh-elder	Iva imbricata	<u>Iva imbricata</u>	G5?	S1	None	None	9	Y
Bog Rush	Juncus elliotii	<u>Juncus elliotii</u>	G4G5	S1	None	None	7	Y
Big-headed rush	Juncus megacephalus	<u>Juncus megacephalus</u>	G4G5	S2	None	None	10	Y
Carolina laurel	Kalmia carolina	<u>Kalmia carolina</u>	G4	S2	None	None	12	Y
Carolina Lilaeopsis	Lilaeopsis carolinensis	<u>Lilaeopsis carolinensis</u>	G3G5	S1	None	None	13	Y
Mudwort	Limosella australis	<u>Limosella australis</u>	G5	SH	None	None	1	Y
Long-leaf lobelia	Lobelia elongata	<u>Lobelia elongata</u>	G4G5	S1	None	None	7	Y
Winged Seedbox	Ludwigia alata	<u>Ludwigia alata</u>	G3G5	S1	None	None	7	Y
Long Beach Seedbox	Ludwigia brevipes	<u>Ludwigia brevipes</u>	G2	S2	SOC	None	15	Y
Loose water-milfoil	Myriophyllum laxum	<u>Myriophyllum laxum</u>	G3	SH	None	None	1	Y
Long-stem adder's-tongue	Ophioglossum petiolatum	<u>Ophioglossum petiolatum</u>	G5	S1	None	None	3	Y
Walter's paspalum	Paspalum dissectum	<u>Paspalum dissectum</u>	G4?	S2	None	None	14	Y
Joint Paspalum	Paspalum distichum	<u>Paspalum distichum</u>	G5	S1	None	None	6	Y
Downy Phlox	Phlox pilosa	<u>Phlox pilosa</u>	G5	S1	None	None	11	Y
Sawtooth frogfruit	Phylla nodiflora var. nodiflora	<u>Phylla nodiflora var. nodiflora</u>	G5TNR	S1	None	None	4	Y
Longleaf pine	Pinus palustris	<u>Pinus palustris</u>	G5	S1	None	None	9	Y
Sand laurel oak	Quercus hemisphaerica	<u>Quercus hemisphaerica</u>	G5	S1	None	None	6	Y
Bluejack oak	Quercus incana	<u>Quercus incana</u>	G5	S2	None	None	16	Y
Ivy-leaved water crowfoot	Ranunculus hederaceus	<u>Ranunculus hederaceus</u>	G5	SH	None	None	8	Y
Narrow-leaf whitetop sedge	Rhynchospora colorata	<u>Rhynchospora colorata</u>	G5	S1	None	None	3	Y
Savanna beaksedge	Rhynchospora debilis	<u>Rhynchospora debilis</u>	G4?	S1	None	None	11	Y
Fasciculate Beaksedge	Rhynchospora fascicularis	<u>Rhynchospora fascicularis</u>	G5	S2	None	None	8	Y
Long-beaked beaksedge	Rhynchospora scirpoides	<u>Rhynchospora scirpoides</u>	G4	S1	None	None	5	Y
Tidal arrowhead	Sagittaria spatulata	<u>Sagittaria spatulata</u>	G5T4	S1	None	None	1	Y
Whorled Nutrush	Scleria verticillata	<u>Scleria verticillata</u>	G5	S2	None	None	8	Y
Twisted-leaf goldenrod	Solidago tortifolia	<u>Solidago tortifolia</u>	G4G5	S1	None	None	10	Y
Freshwater Cordgrass	Spartina pectinata	<u>Spartina pectinata</u>	G5	S2	None	None	20	Y
Eaton's Ladies-tresses	Spiranthes eatonii	<u>Spiranthes eatonii</u>	G3Q	S1	None	None	3	Y
Rough Hedge-nettle	Stachys aspera	<u>Stachys aspera</u>	G4?	S2	None	None	5	Y
Pineland scalypink	Stipulicida setacea	<u>Stipulicida setacea</u>	G4G5	S1	None	None	5	Y

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Conservation Zone
Elliott's Aster	Symphotrichum elliotii	<u>Symphotrichum elliotii</u>	G4	S1	None	None	4	Y
Spanish-moss	Tillandsia usneoides	<u>Tillandsia usneoides</u>	G5	S1S2	None	None	19	Y
Chapman's purpletop	Tridens chapmanii	<u>Tridens chapmanii</u>	G5T3	S1	None	None	7	Y
Virginia Least Trillium	Trillium pusillum var. virginianum	<u>Trillium pusillum var. virginianum</u>	G4T3	S2	None	None	35	Y
Purple Bladderwort	Utricularia purpurea	<u>Utricularia purpurea</u>	G5	S2	None	None	15	Y
Fibrous Bladderwort	Utricularia striata	<u>Utricularia striata</u>	G4G5	S1	None	None	4	Y
Large Cranberry	Vaccinium macrocarpon	<u>Vaccinium macrocarpon</u>	G5	S2	None	None	17	Y
Rough vervain	Verbena scabra	<u>Verbena scabra</u>	G5	S1	None	None	13	Y
American Wisteria	Wisteria frutescens var. frutescens	<u>Wisteria frutescens var. frutescens</u>	G5TNR	S1	None	None	7	Y
Carolina yellow-eyed grass	Xyris caroliniana	<u>Xyris caroliniana</u>	G4G5	S1	None	None	6	Y

Note: On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

For Additional Information on locations of Natural Heritage Resources please submit an [information request](#).

To Contribute information on locations of natural heritage resources, please fill out and submit a [rare species sighting form](#).

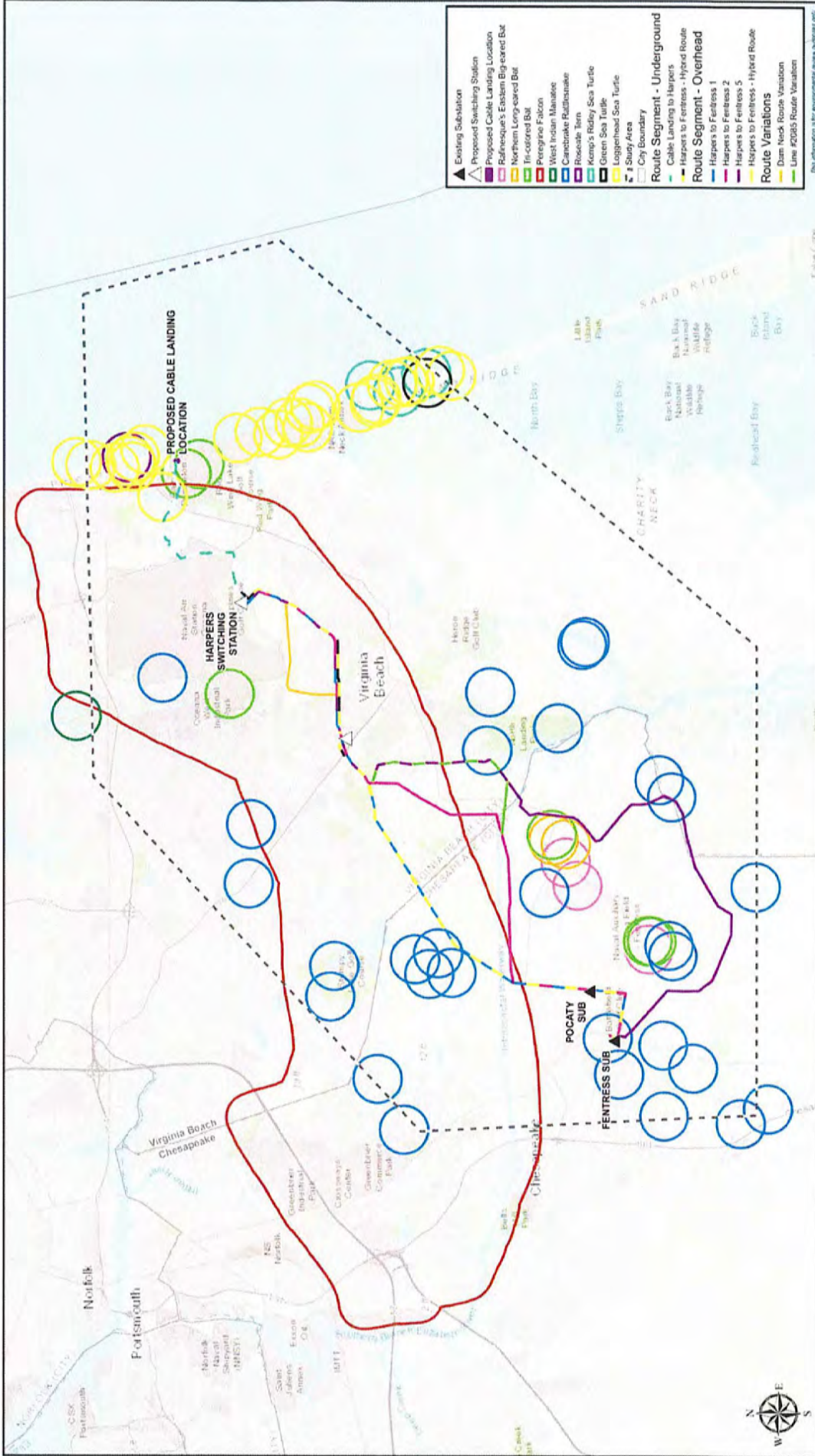


This information is for environmental review purposes only.



Attachment 2.F.1
Coastal Virginia Offshore Wind Commercial Project
 Dominion Virginia Power
Virginia Beach and Chesapeake, VA
Bald Eagle Nests



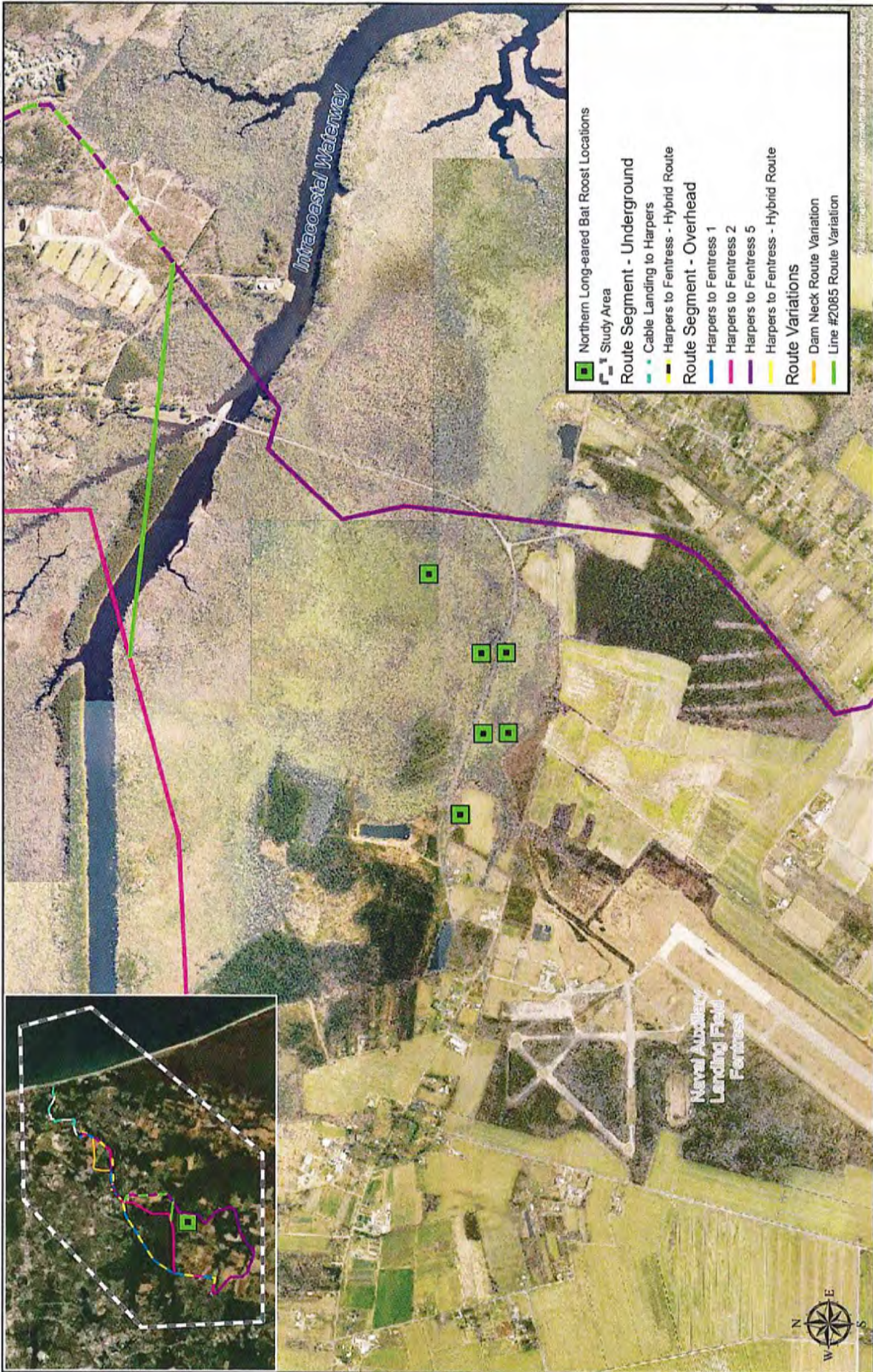
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Attachment 2.F.1
Coastal Virginia Offshore Wind Commercial Project
Dominion Virginia Power
Virginia Beach and Chesapeake, VA
Documented Locations of Protected Species

DRAWN BY: MRS.S.GS



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Attachment 2.F.1
Coastal Virginia Offshore Wind Commercial Project
Dominion Virginia Power
Virginia Beach and Chesapeake, VA
Northern Long-eared Bat Known Roost Tree Locations



Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director



Rochelle Altholz
Deputy Director of
Administration and Finance

Russell W. Baxter
Deputy Director of
Dam Safety & Floodplain
Management and Soil & Water
Conservation

Nathan Burrell
Deputy Director of
Government and Community Relations

Thomas L. Smith
Deputy Director of
Operations

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

July 13, 2021

Sara Thronsdon
Environmental Resources Management, Inc.
222 South 9th Street, Suite 2900
Minneapolis, MN 55402

Re: Dominion CVOW Transmission Routing PN0522898

Dear Ms. Thronsdon:

The Department of Conservation and Recreation's Division of Natural Heritage (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.

Cable Landing to Harpers Road Route 1, Cable Landing to Harpers Road Route 2

According to the information currently in our files, the Oceana Ponds and Forest 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. Oceana Ponds and Forest Conservation Site has been given a biodiversity significance ranking of B2, which represents a site of very high significance and is considered as an irreplaceable conservation site. The natural heritage resources of concern for this route at this site are:

<i>Ludwigia brevipes</i>	Long beach seedbox	G2G3/S2/NL/NL
<i>Perimyotis subflavus</i>	Tri-colored bat	G2G3/S1S3/SOC/LE

Long beach seedbox is a state rare herb in the evening-primrose family that inhabits interdunal swales, low wet places, pond shores, gravel pits and wetlands underlain by sand. It has fleshy leaves and four-part yellow flowers (Ludwig, 1996) that bloom from June to September (Radford et. al, 1968). Long beach seedbox is found in the coastal plain of Virginia, particularly in the southern coastal plain. Surveys for this species should be conducted during the flowering /fruiting period from June to September.

The Tri-colored bat is a very small bat distinguished from other Myotis species by tricolored individual back hairs and inhabits open woods near water, rock cliffs, buildings and caves in the summer. Since 2008 there has been a

significant decline in population numbers (greater than 90%) for this bat species due to white nose syndrome. The Tri-colored bat were state listed as “endangered” on April 1, 2016 by the Virginia Department of Wildlife Resources (VDWR).

DCR recommends an inventory for the Long beach seedbox within the Oceana Ponds and Forest Conservation Site to confirm the presence and extent of the documented occurrence. With the survey results we can more accurately evaluate potential impacts to the natural heritage resource and offer specific protection recommendations for minimizing impacts to the documented resources, including adjusting the proposed route to avoid rare plant populations on the western side of the conservation site. DCR-Division of Natural Heritage biologists are qualified to conduct inventories for rare, threatened, and endangered species. Please contact Anne Chazal, Natural Heritage Chief Biologist, at anne.chazal@dcr.virginia.gov or 804-786-9014 to discuss availability and rates for field work.

Due to the legal status of the Tri-colored bat, DCR also recommends coordination with the VDWR, Virginia's regulatory authority for the management and protection of this species to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

In addition, the proposed project will fragment Ecological Cores (C4, C5) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. 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 unfragmented natural cover with at least 100 acres of interior 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. Cores also provide benefits in terms of open space, recreation, water quality (including drinking water protection and erosion prevention), and air quality (including carbon sequestration and oxygen production), along with the many associated economic benefits of these functions. The cores are ranked from C1 to C5 (C5 being the least ecologically relevant) using many prioritization criteria, such as the proportions of sensitive habitats of natural heritage resources they contain.

Fragmentation occurs when a large, contiguous block of natural cover is dissected by development, and other forms of permanent conversion, into one or more smaller patches. Habitat fragmentation results in biogeographic changes that disrupt species interactions and ecosystem processes, reducing biodiversity and habitat quality due to limited recolonization, increased predation and egg parasitism, and increased invasion by weedy species.

Therefore minimizing fragmentation is a key mitigation measure that will reduce deleterious effects and preserve the natural patterns and connectivity of habitats that are key components of biodiversity. DCR recommends efforts to minimize edge in remaining fragments, retain natural corridors that allow movement between fragments and designing the intervening landscape to minimize its hostility to native wildlife (natural cover versus lawns).

Harpers Road to Fentress Route 1, Harpers Road to Fentress Hybrid Route

According to the information currently in our files, the West Neck Conservation Site and the North Landing River Conservation Site are located within the proposed route. West Neck Conservation Site has been given a biodiversity significance ranking of B4, which represents a site of moderate significance. The natural heritage resource of concern for this route at this site is:

Trillium pusillum var. *virginianum* Virginia least trillium G3T2/S2/SOC/NL

Virginia least trillium is a state rare perennial herb that primarily inhabits somewhat acidic, moist to saturated soils, although it does not grow in standing water. The plant is most often found on the margins of swamps, on high spots within swamps or in ground-water seepage areas. Direct destruction of individuals, loss of habitat, and alterations of water quality are the primary threats to this species (Clark and Potter, 1995). This herb species

blooms from late March to May (Radford et. al., 1968). Surveys should be conducted during the earlier stages of the flowering period from late March to late April. Please note that this species is currently tracked as a species of concern by the United States Fish and Wildlife Service (USFWS), however this designation has no official legal status.

DCR recommends an inventory for Virginia least trillium within the West Neck Creek Conservation Site to confirm the presence and extent of the documented occurrence. With the survey results we can more accurately evaluate potential impacts to the natural heritage resource and offer specific protection recommendations for minimizing impacts to the documented resources.

Please note, the above comments for West Neck Conservation Site and the survey recommendation for Virginia least trillium also apply to the other proposed routes that cross West Neck Conservation Site in the same alignment: **Harpers Road to Fentress Route 2, Harpers Road to Fentress Route 4, Harpers Road to Fentress Route 5.**

North Landing River Conservation Site has been given a biodiversity significance ranking of B1, which represents a site of outstanding significance. The natural heritage resources of concern for this route at this site are:

<i>Euphyes dukesi</i>	Duke's skipper	G3/S2/NL/NL
<i>Trillium pusillum</i> var. <i>virginianum</i>	Virginia least trillium	G3T2/S2/SOC/NL
	Non-riverine Swamp Forest (Tupelo – Bald Cypress Type)	G2G3/S1S2/NL/NL
	Bald Cypress – Mixed Tupelo Swamp	G3G4/S3S4/NL/NL

In addition, the proposed project will fragment Ecological Cores (C5) and dependent on the width of the right-of-way or crossing method within Gum Swamp, may fragment Ecological Cores (C2, C3) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

Harpers Road to Fentress Route 2

According to the information currently in our files, the North Landing River Conservation Site is located within the project area. North Landing River Conservation Site has been given a biodiversity significance ranking of B1, which represents a site of outstanding significance. The natural heritage resources of concern for this route at this site are:

<i>Euphyes dukesi</i>	Duke's skipper	G3/S2/NL/NL
	Bald Cypress – Mixed Tupelo Swamp	G3G4/S3S4/NL/NL

In addition, the proposed project will fragment Ecological Cores (C2, C4, C5) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

The proposed route will cause significant fragmentation of one or more highly significant cores with very high to outstanding ecological integrity. Further investigation of these fragmentation impacts is warranted and DCR-DNH can conduct a formal fragmentation 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, please contact Joe Weber, DCR Information Manager at Joseph.Weber@dcr.virginia.gov.

Harpers Road to Fentress Route 3

According to the information currently in our files, the West Neck Conservation Site and the North Landing River Conservation Site are located within the proposed route.

West Neck Conservation Site has been given a biodiversity significance ranking of B4, which represents a site of moderate significance. The natural heritage resource of concern for this route at this site is:

Southern Coastal Plain Mesic Mixed Hardwood Forest G3/S2S3/NL/NL

The Southern Coastal Plain Mesic Mixed Hardwood Forest is dominated by American beech (*Fagus grandifolia*) and various oaks, most commonly white oak (*Quercus alba*), water oak (*Quercus nigra*), and swamp chestnut oak (*Quercus michauxii*). This community type occupies mesic uplands, ravines, lower slopes, swamp "islands," and well-drained "flatwoods" on deep acidic, relatively nutrient-poor soils of the Coastal Plain from southeastern Virginia to South Carolina. It grades into drier forests in which Southern red oak (*Quercus falcata*), Shortleaf pine (*Pinus echinata*), and Loblolly pine (*Pinus taeda*) are common. In the southeastern Virginia Coastal Plain, American hornbeam (*Carpinus caroliniana*), American holly (*Ilex opaca*), flowering dogwood (*Cornus florida*), sourwood (*Oxydendrum arboreum*), silky camellia (*Stewartia malacodendron*), and big-leaf snowbell (*Styrax grandifolius*) are characteristic small trees. The herb layer is usually open or sparse, but contains scattered individuals and patches of Christmas fern (*Polystichum acrostichoides*), New York fern (*Thelypteris noveboracensis*), slender spikegrass (*Chasmanthium laxum*), partridge-berry (*Mitchella repens*), and other species. The Southern Coastal Plain Mesic Mixed Hardwood Forest has been greatly reduced in Virginia by agriculture and development, and many of the remaining stands have been degraded by repeated logging. (Fleming, 2012, NatureServe, 2011)

North Landing River Conservation Site has been given a biodiversity significance ranking of B1, which represents a site of outstanding significance. The natural heritage resources of concern for this route at this site are:

Euphyes dukesi Duke's skipper G3/S2/NL/NL
Bald Cypress – Mixed Tupelo Swamp G3G4/S3S4/NL/NL

In addition, the proposed project will fragment Ecological Cores (C2, C4, C5) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

Harpers Road to Fentress Route 4

According to the information currently in our files, the North Landing River Conservation Site is located within the proposed route. North Landing River Conservation Site has been given a biodiversity significance ranking of B1, which represents a site of outstanding significance. The natural heritage resources of concern for this route at this site are:

Euphyes dukesi Duke's skipper G3/S2/NL/NL
Bald Cypress – Mixed Tupelo Swamp G3G4/S3S4/NL/NL

In addition, the proposed project will fragment Ecological Cores (C1, C2, C5) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

Harpers Road to Fentress Route 5

According to the information currently in our files, the North Landing River Conservation Site is located within the proposed route. North Landing River Conservation Site has been given a biodiversity significance ranking of B1, which represents a site of outstanding significance. The natural heritage resources of concern for this route at this site are:

<i>Euphyes dukesi</i>	Duke's skipper	G3/S2/NL/NL
<i>Crotalus horridus</i>	Canebrake rattlesnake	G4/S1/NL/LE

In addition, the proposed project will fragment Ecological Cores (C1, C2, C3, C5) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

Due to the legal status of the Canebrake rattlesnake, DCR recommends coordination with the VDWR, Virginia's regulatory authority for the management and protection of this species to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

All Routes

Due to the potential for these project areas to support populations of rare bats, DCR recommends a habitat assessment if proposed tree clearing includes the removal or disturbance of large Bald cypress, Water tupelo, or Swamp tupelo trees to identify any potential roost sites. With the habitat assessment results, we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

In addition, according to a DCR zoologist, there is a potential for Little Metalmark (*Calephelis virginiensis*, G4/SH/NL/NL) and additional populations of Duke's skipper (*Euphyes dukesi*, G3/S2/NL/NL) to occur within the proposed routes if suitable habitat exists on site. The Little Metalmark is a butterfly of the southeastern United States, from Virginia to Florida and west to Texas (Cech and Tudor, 2005). In Virginia, it is documented only in three southeastern counties (VDCR-DNH and VDGIF, 2013). It is a very small butterfly, which almost resembles a moth by resting with its wings open pressed against the underside of leaves thus revealing its orange, black, and metallic markings. The Little Metalmark prefers open areas with its host plants, usually pine flatwoods, savannas and roadsides. Yellow Thistle (*Cirsium horridulum*) was considered the sole host plant, but others have more recently been cited (VDCR-DNH and VDGIF, 2013). Where found, the Little Metalmark can be quite common although it may be much less common at the periphery of its range. The loss of habitat through succession or development is likely the main threat to this species (VDCR-DNH and VDGIF, 2013).

The Duke's skipper is a small, orange-brown and yellow butterfly species which ranges along coastal areas from southeastern Virginia to central Florida, and up the Mississippi River valley from Louisiana to Illinois, and with a pocket in northwestern Ohio and northeastern Indiana (Glassberg, 1999). Dukes' Skippers prefer wet, marshy areas. They are found in swamps, open marshes, and wet roadside ditches, while expansive estuarine or coastal marshes are preferred. Dukes' skippers prefer broad-leaved sedges such as Shoreline sedge (*Carex hyalinolepis*) (VDCR, 2015). In Virginia, it is only recorded from the southeastern outer coastal plain. Females lay their eggs on the undersides of leaves of specific sedge (*Carex*) species; the larvae are dependent on these host sedges. The Duke's skipper is primarily threatened by habitat destruction and fragmentation, especially the elimination of the host sedge species (Clark and Potter, 1995; NatureServe, 2009). Mosquito spraying may be a threat if Dibrome is used (NatureServe, 2009).

Due to the potential for all routes to support populations of Little metalmark and additional populations of Duke's skipper, DCR recommends an inventory for the resources in the study area. DCR recommends surveying for Duke's skipper in wetlands associated with West Neck Creek, North Landing River, Pocaty River and the Intracoastal Waterway where the larval food plant Shoreline sedge (*Carex hyalinolepis*) is found. DCR

recommends surveying for Little metalmark in upland areas containing Yellow thistle (*Cirsium horridulum*). With the survey results we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

DCR-Division of Natural Heritage biologists are qualified to conduct inventories for rare, threatened, and endangered species. Please contact Anne Chazal, Natural Heritage Chief Biologist, at anne.chazal@dcr.virginia.gov or 804-786-9014 to discuss availability and rates for field work.

Furthermore, if **Harpers Road to Fentress Route 1**, **Harpers Road to Fentress Route Hybrid Route**, or **Harpers Road to Fentress Route 3** are selected, DCR recommends an inventory of the documented significant natural communities (e.g., Bald Cypress-Mixed Tupelo swamp) within those proposed routes to determine the condition and extent of the significant natural communities.

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.

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

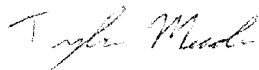
New and updated information is continually added to Biotics. Please re-submit a completed order form and project map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

A fee of \$780.00 has been assessed for the service of providing this information. Please find attached an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, DCR Finance, 600 East Main Street, 24th Floor, Richmond, VA 23219. Payment is due within thirty days of the invoice date. Please note late payment may result in the suspension of project review service for future projects.

The 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 <https://vafwis.dgif.virginia.gov/fwis/> or contact Ernie Aschenbach at 804-367-2733 or Ernie.Aschenbach@dwr.virginia.gov. According to the information currently in our files, there is potential for the northern long-eared bat (*Myotis septentrionalis*) to occur within the project area. Due to the legal status of the northern long-eared bat and the associated final 4(d) rule effective February 16, 2016, if tree removal is proposed for the project DCR recommends coordination with the USFWS and the VDWR to ensure compliance with protected species legislation.

Should you have any questions or concerns, please contact me at 804-225-2429. Thank you for the opportunity to comment on this project.

Sincerely,



Tyler Meader
Natural Heritage Locality Liaison

CC: Troy Andersen, USFWS
Amy Ewing, VDWR

Literature Cited

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Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of
Administration and Finance

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Conservation

Nathan Burrell
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Government and Community Relations

Thomas L. Smith
Deputy Director of
Operations

October 28, 2021

Rachel Studebaker
Dominion Energy Services
120 Tredegar Street
Richmond, VA 23219

Re: Coastal Virginia Offshore Wind Commercial Project

Dear Ms. Studebaker:

The Department of Conservation and Recreation's Division of Natural Heritage (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.

Cable Landing to Harpers

According to the information currently in our files, the Oceana Ponds and Forest 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. Oceana Ponds and Forest Conservation Site has been given a biodiversity significance ranking of B2, which represents a site of very high significance and is considered as an irreplaceable conservation site. The natural heritage resources of concern for this route at this site are:

<i>Ludwigia brevipes</i>	Long beach seedbox	G2G3/S2/NL/NL
<i>Perimyotis subflavus</i>	Tri-colored bat	G2G3/S1S3/SOC/LE

Long beach seedbox is a state rare herb in the evening-primrose family that inhabits interdunal swales, low wet places, pond shores, gravel pits and wetlands underlain by sand. It has fleshy leaves and four-part yellow flowers (Ludwig, 1996) that bloom from June to September (Radford et. al, 1968). Long beach seedbox is found in the coastal plain of Virginia, particularly in the southern coastal plain. Surveys for this species should be conducted during the flowering /fruiting period from June to September.

The Tri-colored bat is a very small bat distinguished from other Myotis species by tricolored individual back hairs and inhabits open woods near water, rock cliffs, buildings and caves in the summer. Since 2008 there has been a

significant decline in population numbers (greater than 90%) for this bat species due to white nose syndrome. The Tri-colored bat were state listed as “endangered” on April 1, 2016 by the Virginia Department of Wildlife Resources (VDWR).

DCR recommends an inventory for the Long beach seedbox within the Oceana Ponds and Forest Conservation Site to confirm the presence and extent of the documented occurrence. With the survey results we can more accurately evaluate potential impacts to the natural heritage resource and offer specific protection recommendations for minimizing impacts to the documented resources, including adjusting the proposed route to avoid rare plant populations on the western side of the conservation site.

DCR-Division of Natural Heritage biologists are qualified to conduct inventories for rare, threatened, and endangered species. Please contact Anne Chazal, Natural Heritage Chief Biologist, at anne.chazal@dcr.virginia.gov or 804-786-9014 to discuss availability and rates for field work.

Due to the legal status of the Tri-colored bat, DCR also recommends coordination with the VDWR, Virginia's regulatory authority for the management and protection of this species to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

In addition, the proposed project will fragment Ecological Cores (C4, C5) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. 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 unfragmented natural cover with at least 100 acres of interior 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. Cores also provide benefits in terms of open space, recreation, water quality (including drinking water protection and erosion prevention), and air quality (including carbon sequestration and oxygen production), along with the many associated economic benefits of these functions. The cores are ranked from C1 to C5 (C5 being the least ecologically relevant) using many prioritization criteria, such as the proportions of sensitive habitats of natural heritage resources they contain.

Fragmentation occurs when a large, contiguous block of natural cover is dissected by development, and other forms of permanent conversion, into one or more smaller patches. Habitat fragmentation results in biogeographic changes that disrupt species interactions and ecosystem processes, reducing biodiversity and habitat quality due to limited recolonization, increased predation and egg parasitism, and increased invasion by weedy species.

Therefore minimizing fragmentation is a key mitigation measure that will reduce deleterious effects and preserve the natural patterns and connectivity of habitats that are key components of biodiversity. DCR recommends efforts to minimize edge in remaining fragments, retain natural corridors that allow movement between fragments and designing the intervening landscape to minimize its hostility to native wildlife (natural cover versus lawns).

Harpers to Fentress 1, Harpers to Fentress-Hybrid Route

According to the information currently in our files, the West Neck Conservation Site and the North Landing River Conservation Site are located within the proposed route. West Neck Conservation Site has been given a biodiversity significance ranking of B4, which represents a site of moderate significance. The natural heritage resource of concern for this route at this site is:

Trillium pusillum var. *virginianum* Virginia least trillium G3T2/S2/SOC/NL

Virginia least trillium is a state rare perennial herb that primarily inhabits somewhat acidic, moist to saturated soils, although it does not grow in standing water. The plant is most often found on the margins of swamps, on high spots within swamps or in ground-water seepage areas. Direct destruction of individuals, loss of habitat, and

alterations of water quality are the primary threats to this species (Clark and Potter, 1995). This herb species blooms from late March to May (Radford et. al., 1968). Surveys should be conducted during the earlier stages of the flowering period from late March to late April. Please note that this species is currently tracked as a species of concern by the United States Fish and Wildlife Service (USFWS), however this designation has no official legal status.

DCR recommends an inventory for Virginia least trillium within the West Neck Creek Conservation Site to confirm the presence and extent of the documented occurrence. With the survey results we can more accurately evaluate potential impacts to the natural heritage resource and offer specific protection recommendations for minimizing impacts to the documented resources.

DCR-Division of Natural Heritage biologists are qualified to conduct inventories for rare, threatened, and endangered species. Please contact Anne Chazal, Natural Heritage Chief Biologist, at anne.chazal@dcr.virginia.gov or 804-786-9014 to discuss availability and rates for field work.

Please note, the above comments for the West Neck Conservation Site and the survey recommendation for Virginia least trillium also apply to the other proposed routes that cross West Neck Conservation Site in the same alignment: **Harpers to Fentress 2, Harpers to Fentress 3.**

North Landing River Conservation Site has been given a biodiversity significance ranking of B1, which represents a site of outstanding significance. The natural heritage resources of concern for this route at this site are:

<i>Euphyes dukesi</i>	Duke's skipper	G3/S2/NL/NL
<i>Trillium pusillum</i> var. <i>virginianum</i>	Virginia least trillium	G3T2/S2/SOC/NL
Non-riverine Swamp Forest (Tupelo – Bald Cypress Type)		G2G3/S1S2/NL/NL
Bald Cypress – Mixed Tupelo Swamp		G3G4/S3S4/NL/NL

In addition, the proposed project will fragment Ecological Cores (C5) and dependent on the width of the right-of-way or crossing method within Gum Swamp, may fragment Ecological Cores (C2, C3) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

Harpers to Fentress 2

According to the information currently in our files, the North Landing River Conservation Site is located within the project area. North Landing River Conservation Site has been given a biodiversity significance ranking of B1, which represents a site of outstanding significance. The natural heritage resources of concern for this route at this site are:

<i>Euphyes dukesi</i>	Duke's skipper	G3/S2/NL/NL
Bald Cypress – Mixed Tupelo Swamp		G3G4/S3S4/NL/NL

In addition, the proposed project will fragment Ecological Cores (C2, C4, C5) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

Dam Neck Route Variation

According to the information currently in our files, the West Neck Conservation Site is located within the proposed route. West Neck Conservation Site has been given a biodiversity significance ranking of B4, which represents a site of moderate significance. The natural heritage resource of concern for this route at this site is:

Southern Coastal Plain Mesic Mixed Hardwood Forest G3/S2S3/NL/NL

The Southern Coastal Plain Mesic Mixed Hardwood Forest is dominated by American beech (*Fagus grandifolia*) and various oaks, most commonly white oak (*Quercus alba*), water oak (*Quercus nigra*), and swamp chestnut oak (*Quercus michauxii*). This community type occupies mesic uplands, ravines, lower slopes, swamp "islands," and well-drained "flatwoods" on deep acidic, relatively nutrient-poor soils of the Coastal Plain from southeastern Virginia to South Carolina. It grades into drier forests in which Southern red oak (*Quercus falcata*), Shortleaf pine (*Pinus echinata*), and Loblolly pine (*Pinus taeda*) are common. In the southeastern Virginia Coastal Plain, American hornbeam (*Carpinus caroliniana*), American holly (*Ilex opaca*), flowering dogwood (*Cornus florida*), sourwood (*Oxydendrum arboreum*), silky camellia (*Stewartia malacodendron*), and big-leaf snowbell (*Styrax grandifolius*) are characteristic small trees. The herb layer is usually open or sparse, but contains scattered individuals and patches of Christmas fern (*Polystichum acrostichoides*), New York fern (*Thelypteris noveboracensis*), slender spikegrass (*Chasmanthium laxum*), partridge-berry (*Mitchella repens*), and other species. The Southern Coastal Plain Mesic Mixed Hardwood Forest has been greatly reduced in Virginia by agriculture and development, and many of the remaining stands have been degraded by repeated logging. (Fleming, 2012, NatureServe, 2011)

In addition, the proposed project will fragment an Ecological Core (C5) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

Line 2085 Route Variation

According to the information currently in our files, the North Landing River Conservation Site is located within the proposed route. North Landing River Conservation Site has been given a biodiversity significance ranking of B1, which represents a site of outstanding significance. The natural heritage resources of concern for this route at this site are:

Euphyes dukesi Duke's skipper G3/S2/NL/NL
Bald Cypress – Mixed Tupelo Swamp G3G4/S3S4/NL/NL

In addition, the proposed project will fragment Ecological Cores (C1, C2,) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

Harpers to Fentress 3

According to the information currently in our files, the North Landing River Conservation Site is located within the proposed route. North Landing River Conservation Site has been given a biodiversity significance ranking of B1, which represents a site of outstanding significance. The natural heritage resources of concern for this route at this site are:

Euphyes dukesi Duke's skipper G3/S2/NL/NL
Crotalus horridus Canebroke rattlesnake G4/S1/NL/LE

In addition, the proposed project will fragment Ecological Cores (C1, C2, C3, C5) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

Due to the legal status of the Canebrake rattlesnake, DCR recommends coordination with the VDWR, Virginia's regulatory authority for the management and protection of this species to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

All Routes

Due to the potential for these project areas to support populations of rare bats, DCR recommends a habitat assessment if proposed tree clearing includes the removal or disturbance of large Bald cypress, Water tupelo, or Swamp tupelo trees to identify any potential roost sites. With the habitat assessment results, we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources. DCR also recommends coordination with DWR if removal of potential roost habitat for the Eastern big-eared bat becomes necessary to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

In addition, according to a DCR zoologist, there is a potential for Little Metalmark (*Calephelis virginienis*, G4/SH/NL/NL) and additional populations of Duke's skipper (*Euphyes dukesi*, G3/S2/NL/NL) to occur within the proposed routes if suitable habitat exists on site. The Little Metalmark is a butterfly of the southeastern United States, from Virginia to Florida and west to Texas (Cech and Tudor, 2005). In Virginia, it is documented only in three southeastern counties (VDCR-DNH and VDGIF, 2013). It is a very small butterfly, which almost resembles a moth by resting with its wings open pressed against the underside of leaves thus revealing its orange, black, and metallic markings. The Little Metalmark prefers open areas with its host plants, usually pine flatwoods, savannas and roadsides. Yellow Thistle (*Cirsium horridulum*) was considered the sole host plant, but others have more recently been cited (VDCR-DNH and VDGIF, 2013). Where found, the Little Metalmark can be quite common although it may be much less common at the periphery of its range. The loss of habitat through succession or development is likely the main threat to this species (VDCR-DNH and VDGIF, 2013).

The Duke's skipper is a small, orange-brown and yellow butterfly species which ranges along coastal areas from southeastern Virginia to central Florida, and up the Mississippi River valley from Louisiana to Illinois, and with a pocket in northwestern Ohio and northeastern Indiana (Glassberg, 1999). Dukes' Skippers prefer wet, marshy areas. They are found in swamps, open marshes, and wet roadside ditches, while expansive estuarine or coastal marshes are preferred. Dukes' skippers prefer broad-leaved sedges such as Shoreline sedge (*Carex hyalinolepis*) (VDCR, 2015). In Virginia, it is only recorded from the southeastern outer coastal plain. Females lay their eggs on the undersides of leaves of specific sedge (*Carex*) species; the larvae are dependent on these host sedges. The Duke's skipper is primarily threatened by habitat destruction and fragmentation, especially the elimination of the host sedge species (Clark and Potter, 1995; NatureServe, 2009). Mosquito spraying may be a threat if Dibrome is used (NatureServe, 2009).

Due to the potential for all routes to support populations of Little metalmark and additional populations of Duke's skipper, DCR recommends an inventory for the resources in the study area. DCR recommends surveying for Duke's skipper in wetlands associated with West Neck Creek, North Landing River, Pocatay River and the Intracoastal Waterway where the larval food plant Shoreline sedge (*Carex hyalinolepis*) is found. DCR recommends surveying for Little metalmark in upland areas containing Yellow thistle (*Cirsium horridulum*). With the survey results we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

DCR-Division of Natural Heritage biologists are qualified to conduct inventories for rare, threatened, and endangered species. Please contact Anne Chazal, Natural Heritage Chief Biologist, at anne.chazal@dcr.virginia.gov or 804-786-9014 to discuss availability and rates for field work.

Furthermore, if **Harpers to Fentress 1**, **Harpers to Fentress-Hybrid Route**, or **Harpers to Fentress 2** are selected, DCR recommends an inventory of the documented significant natural communities (e.g., Bald Cypress-Mixed Tupelo swamp) within those proposed routes to determine the condition and extent of the significant natural communities.

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.

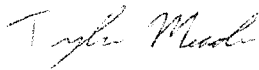
There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please re-submit a completed order form and project 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.

The 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 <https://vafwis.dgif.virginia.gov/fwis/> or contact Ernie Aschenbach at 804-367-2733 or Ernie.Aschenbach@dwr.virginia.gov. According to the information currently in our files, there is potential for the northern long-eared bat (*Myotis septentrionalis*) to occur within the project area. Due to the legal status of the northern long-eared bat and the associated final 4(d) rule effective February 16, 2016, if tree removal is proposed for the project DCR recommends coordination with the USFWS and the VDWR to ensure compliance with protected species legislation.

Should you have any questions or concerns, please contact me at 804-225-2429. Thank you for the opportunity to comment on this project.

Sincerely,



Tyler Meader
Natural Heritage Locality Liaison

CC: Troy Andersen, USFWS
Amy Martin, VDWR
Valerie Fulcher, DEQ-Office of Environmental Impact Review

Literature Cited

Clark, K.H. and J.L. Potter. 1995. North Landing River Natural Area Preserve Resource Management Plan, First Edition. Natural Heritage Technical Document 95-9. Virginia Department of Conservation and Recreation, Richmond, Virginia. February 1995.

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Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219
P.O. Box 1105, Richmond, Virginia 23218
(800) 592-5482
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

August 13, 2019

Mr. Jason E. Williams
Director Environmental Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, VA 23060

Transmitted electronically: jason.e.william@dominionenergy.com

Subject: Dominion Energy (Electric Transmission) – Annual Standards and Specifications for Erosion & Sediment Control and Stormwater Management (AS&S for ESC and SWM)

Dear Mr. Williams:

The Virginia Department of Environmental Quality ("DEQ") hereby approves the Annual Standards and Specifications for Erosion & Sediment Control and Stormwater Management for Dominion Energy (Electric Transmission) dated "May 29, 2019". This coverage is effective from August 13, 2019 to August 12, 2020.

To ensure compliance with approved specifications, the Virginia Erosion and Sediment Control Law and the Virginia Stormwater Management Act, DEQ staff will conduct random site inspections, respond to complaints, and provide on-site technical assistance with specific erosion and sediment control and stormwater management measures and plan implementation.

Please note that your approved Annual Standards and Specifications include the following requirements:

1. Variance, exception, and deviation requests must be submitted separately from this Annual Standards and Specifications submission to DEQ. DEQ may require project-specific plans associated with variance requests to be submitted for review and approval.
2. The following information must be submitted to DEQ for each project at least two weeks in advance of the commencement of regulated land-disturbing activities. Notifications shall be sent by email to: StandardsandSpecs@deq.virginia.gov
 - i: Project name or project number;
 - ii: Project location (including nearest intersection, latitude and longitude, access point);
 - iii: On-site project manager name and contact info;
 - iv: Responsible Land Disturber (RLD) name and contact info;
 - v: Project description;

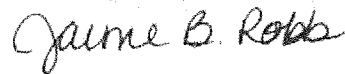
Dominion Energy (Electric Transmission) – AS&S for ESC and SWM
August 12, 2019
Page 2 of 2

- vi: Acreage of disturbance for project;
 - vii: Project start and finish date; and
 - viii: Any variances/exceptions/waivers associated with this project.
3. Project tracking of all regulated land disturbing activities (LDA) must be submitted to the DEQ on a bi-annual basis. Project tracking records shall contain the same information as required in the two week e-notifications for each regulated LDA.
 4. Erosion & Sediment Control and Stormwater Management plan review and approval must be conducted by DEQ-Certified plan reviewers and documented in writing.

To ensure an efficient information exchange and response to inquiries, the DEQ Central Office is your primary point of contact. Central Office staff will coordinate with our Regional Office staff as appropriate.

Thank you very much for your submission and continued efforts to conserve and protect Virginia's precious natural resources.

Sincerely,



Jaime B. Robb, Manager
Office of Stormwater Management

Cc: Amelia Boschen, Amelia.h.boschen@dominionenergy.com
Elizabeth Hester, Elizabeth.l.hester@dominionenergy.com
Stacey Ellis, Stacey.t.ellis@dominionenergy.com

Case Decision Information:

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period.