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June 21, 2021

VIA ELECTRONIC FILING

Kimberley Campbell
Chief Clerk
North Carolina Utilities Commission
430 North Salisbury Street
Raleigh, N.C. 27603

Re: **Docket No. EMP-118, Sub 1**
Timbermill Wind, LLC's Application for a Certificate of Environmental Compatibility and Public Convenience and Necessity to Construct Approximately 6.0 Miles of Transmission Line in Chowan County, North Carolina

Dear Clerk Campbell:

Pursuant to N.C. Gen. Stat. §§ 62-101 et seq. and Commission Rule R8-62, Timbermill Wind, LLC ("Timbermill") submits for filing an Application, draft public notice summary of the Application[1], and supporting testimony for a Certificate of Environmental Compatibility and Public Convenience and Necessity to construct approximately 6.0 miles of new 230kV transmission line in Chowan County, North Carolina (the "Timbermill Line").

On June 14, 2021, Timbermill filed an Application for a Certificate of Public Convenience and Necessity ("CPCN") for a merchant plant wind energy facility with a capacity up to 189 MW_{AC}.[2] Timbermill requests that the CPCN and CECPCN applications be addressed simultaneously and that any required hearings be held jointly. Timbermill understands the Public Staff and Commission Legal Staff are in agreement with this request.

Timbermill proposes the following schedule for the Commission's consideration of this application:

Thursday, June 24th	Commission notifies Applicant of approval or any required changes to draft public notice summary and enters procedural order

[1] The draft public notice summary has been approved by Commission Staff.
[2] See Docket EMP-118, Sub 0

Wednesday, September 15th	Formal discovery requests related to application and Applicant's prefiled testimony
Wednesday, September 29th	Petitions to Intervene & direct testimony of Public Staff and intervenors
Monday, October 4th	Formal discovery requests related to Public Staff or intervenors
Tuesday, October 12th	Applicant's Rebuttal Testimony
Thursday, October 14th	Public Hearing in Chowan County
Friday, October 15th	Formal discovery requests related to Applicant's prefiled rebuttal testimony
Week of October 25th	Evidentiary Hearing in Raleigh

The above proposed schedule aligns with the proposed schedule Timbermill requested for the CPCN application, except for the date of the Public Hearing. We understand a location for the Public Hearing has been obtained for October 14, 2021, should the Commission order the hearing be held on this date. The date of October 14, 2021 is acceptable to Timbermill. We have discussed the schedule with the Public Staff and understand they are in general agreement with this proposed schedule.

The parties identified in N.C. Gen. Stat. § 62-102(b) will be served in the manner provided in N.C. Gen. Stat. § 1A-1, Rule 4, and notice will be published in the appropriate newspapers, once the Commission approves the draft public notice summary pursuant to N.C. Gen. Stat. § 62-102(c). Pursuant to Commission Rule R8-62(f), Timbermill respectfully requests that the Commission please either notify Timbermill of the Commission's approval of such notice or of any required changes within three (3) business days of the filing of this Application.

Thank you for your assistance. Please contact me if you have any questions.

Sincerely,

/s/ Katherine E. Ross

Enclosure

cc: Robert Josey, Public Staff
Heather Fennell, Commission Legal Staff
Erin Duffy, Commission Legal Staff

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STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. EMP-118, SUB 1

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Timbermill Wind, LLC's Application for a Certificate of Environmental Compatibility and Certificate of Public Convenience and Necessity Pursuant to G.S. §§ 62-100 *et. seq*. to Construct a Transmission Line for a Proposed Generating Facility	**)**	**TIMBERMILL WIND, LLC'S APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC CONVENIENCE AND NECESSITY**

Timbermill Wind, LLC ("Timbermill" or the "Applicant"), through counsel, and pursuant to G.S. §§ 62-101, 62-102 and 62-104 and Commission Rule R8-62, hereby applies to the North Carolina Utilities Commission (the "Commission") for a Certificate of Environmental Compatibility and Public Convenience and Necessity (the "CECPCN Application") to construct an approximately 6-mile 230kV transmission line (the "Timbermill Line") to allow interconnection of Applicant's proposed wind energy facility to be constructed in Chowan County (the "Facility") to the existing 230kV Winfall-Mackeys transmission line (the "Winfall Line") operated by Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina ("DENC"). In support of its CECPCN Application, Timbermill shows the Commission as follows:

Applicant

1. The Applicant's full and correct name, business address, and business telephone number are:

Timbermill Wind, LLC
310 4th Street NE
Suite 300
Charlottesville, VA 22902
(434) 282-2107

Correspondence, documents, and filings regarding this application should be sent as follows:

Attn: Jimmy Merrick, Development Manager
Apex Clean Energy, Inc.
310 4th Street NE
Suite 300
Charlottesville, VA 22902
Jimmy.merrick@apexcleanenergy.com
(434) 282-2107

with copies to:

Attn: Kate Heins, Associate General Counsel
Apex Clean Energy, Inc.
310 4th Street NE
Suite 300
Charlottesville, VA 22902
Kate.heins@apexcleanenergy.com

and (not for purposes of service):

Katherine E. Ross
Parker Poe Adams & Bernstein LLP
301 Fayetteville Street, Suite 1400
Raleigh, North Carolina 27601
katherineross@parkerpoe.com

2 Timbermill Wind, LLC is a Delaware limited liability company with its principal place of business in Charlottesville, Virginia. Timbermill is an indirect subsidiary of Apex Clean Energy Holdings, LLC ("Apex").

3. Timbermill has obtained a Certificate of Authority from the North Carolina Secretary of State to conduct business in North Carolina. A true and correct copy of the Certificate of Authority is included as **CECPCN Application Exhibit 1**. As a single-member managed limited liability company, Timbermill does not have officers or directors.

Need for the Line

4. Timbermill has filed an application for a Certificate of Public Convenience and Necessity to construct the Facility (the "CPCN Application").[1] As described in the CPCN Application, the Facility will include 34.5kV underground electrical collector lines connecting the turbines to each other and then to a Collector Substation. The principal function of the Collector Substation is to increase the voltage from the collector circuits from 34.5kV to 230kV. The Timbermill Line will exit the Collector Substation and transmit the electric output of the Facility to the Interconnection Switching Station and the point of interconnection on the Winfall Line. The Timbermill Line will terminate at the Interconnection Switching Station, which will be constructed, owned and operated by DENC. The Timbermill Line needs to be operational by October of 2023 based on the anticipated commercial operation date for the Facility.

Location of the Line

5. The Timbermill Line will be approximately 6 miles, running between the Collector Substation and the Interconnection Switching Station, and sited within easements on participating landowner property (the "Transmission Corridor"). A U.S. Geological Survey map showing the proposed Timbermill Line route is included as **CECPCN Application Exhibit 2**. Timbermill has established the Transmission Corridor through procurement of easements with landowners who desire to participate in the Facility. The siting of the Timbermill Line within the Transmission Corridor has taken into consideration natural resources to minimize environmental impacts, as described in more detail below. There is no alternative route for the Timbermill Line.

[1] See Docket EMP-118, Sub 0.

Description of the Timbermill Line

6. The Timbermill Line will have a voltage of 230kV. The Timbermill Line will be used exclusively for the output of the Facility and will have a minimum capacity sufficient for the Facility's 189 MW_{AC} output.

7. The Timbermill Line design uses three types of transmission structures:

- Dead end: used within the Collector Substation and Interconnection Switching Substation and at heavy angle turns (i.e., greater than 30 degrees) along the Timbermill Line route;
- Angle: used in locations where the alignment turns between 3 and 30 degrees along the Timbermill Line route; and
- Tangent: for in-line (straight) segments along the Timbermill Line route.

Between the Collector Substation and the Interconnection Switching Station, the Timbermill Line will be located within the Transmission Corridor, which is 150 feet wide, except for an approximately 950-foot span along the west side of Paradise Road that will be 75 feet wide. In the Transmission Corridor, the Timbermill Line will be supported by monopole transmission structures predominately made of wood (except the 950-foot span referenced above in which steel transmission structures will support the Timbermill Line). The transmission structures will be approximately 75 to 120 feet tall and typically 400 to 700 feet apart, based on preliminary engineering.

Within the fenced areas of the Collector Substation and the Interconnection Switching Station, the Timbermill Line will be supported by H-frame structures, which will also be approximately 75 to 120 feet in height based on preliminary engineering.

Generally, the transmission structures will be directly embedded into the ground, unless poor soil or geotechnical conditions necessitate concrete foundations. Timbermill anticipates all transmission structures, both wood and steel, will be embedded approximately 10 to 15 feet deep. Once the Timbermill Line has been erected, the Transmission Corridor will be graded and revegetated with herbaceous seed mix that

includes grasses. Once operational, general maintenance of the Transmission Corridor will consist of clearing vegetation within approximately 4 to 6 inches of the ground, unless an alternative land use is permitted to the landowner, such as agriculture activities.

8. The projected cost of the proposed Timbermill Line is approximately $3,500,000.

Environmental Report and Factors Influencing Route Selection

9. Included as **CECPCN Application Exhibit 3** is an environmental report prepared by Merjent, Inc. (the "Environmental Report"). This report satisfies all requirements of G.S. § 62-102 and Commission Rule R8-62.

10. As described in the Environmental Report, the Transmission Corridor was identified through careful review and consideration of the natural features, with a goal of minimal environmental impacts, and through discussions with landowners in an effort to locate the Transmission Corridor in a manner that maximizes the owner's continued use of the remainder of the property.

11. The anticipated permits for the Timbermill Line are found in Table 3.0-1 of the Environmental Report (pages 33-34). A copy of permits obtained for the Timbermill Line will be filed with the Commission promptly after receipt.

12. The information and data required to be filed by Commission Rule R8-62 is supported by the testimony of Jimmy Merrick, Jeremy Spaeth, Emmanuel Wemakoy, and Brie Anderson, which are being filed simultaneously with this CECPCN Application and incorporated herein by reference.

WHEREFORE, Timbermill Wind, LLC respectfully requests that the Commission issue a Certificate of Environmental Compatibility and Public Convenience and Necessity pursuant to G.S. §§ 62-101, 62-102 and 62-104 and Commission Rule R8-62 for construction of the Timbermill Line.

Respectfully submitted this 21st day of June 2021.

By: Katherine E Ross

Katherine E. Ross
N.C. State Bar No. 38468
E. Merrick Parrott
N.C. State Bar No. 47999
Parker Poe Adams & Bernstein LLP
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merrickparrott@parkerpoe.com

Attorneys for Timbermill Wind, LLC

Timbermill Wind, LLC CECPCN Table of Exhibits

1. Timbermill Wind, LLC's Certificate of Authority to Transact Business
2. U.S. Geological Survey Map Showing Proposed Location
3. Environmental Report prepared by Merjent

C201316100368

SOSID: 1323635
Date Filed: 6/18/2013 10:38:00 AM
Elaine F. Marshall
North Carolina Secretary of State
C201316100368

State of North Carolina
Department of the Secretary of State

APPLICATION FOR CERTIFICATE OF AUTHORITY FOR LIMITED LIABILITY COMPANY

Pursuant to §57C-7-04 of the General Statutes of North Carolina, the undersigned limited liability company hereby applies for a Certificate of Authority to transact business in the State of North Carolina, and for that purpose submits the following:

1. The name of the limited liability company is Apex Atlantic Wind, LLC ;
   and if the limited liability company name is unavailable for use in the State of North Carolina, the name the limited liability company wishes to use is _____
2. The state or country under whose laws the limited liability company was formed is: Delaware
3. The date of formation was January 27, 2012 ; its period of duration is: Perpetual
4. Principal office information: (*Select either a or b.*)
   a. ☑ The limited liability company has a principal office.
      The street address and county of the principal office of the limited liability company is:
      Number and Street 310 4th St. NE Suite 200
      City, State, Zip Code Charlottesville, VA 22902 County Albemarle
      The mailing address, *if different from the street address*, of the principal office of the corporation is:
      244 East High Street, Charlottesville, VA 22902
   b. ☐ The limited liability company does not have a principal office.
5. The street address and county of the registered office in the State of North Carolina is:
   Number and Street 111 Mine Lake Court, Suite 100
   City, State, Zip Code Raleigh, North Carolina 27615 County Wake
6. The mailing address, *if different from the street address*, of the registered office in the State of North Carolina is:
   _____
7. The name of the registered agent in the State of North Carolina is: National Corporate Research, LTD

C201316100368

APPLICATION FOR CERTIFICATE OF AUTHORITY
Page 2

8. The names, titles, and usual business addresses of the current managers of the limited liability company are:
(use attachment if necessary)

Name	***Business Address***
Apex Wind Energy Holdings, LLC	310 4th Street NE Suite 200, Charlottesville, VA 22902

9. Attached is a certificate of existence (or document of similar import), duly authenticated by the secretary of state or other official having custody of limited liability company records in the state or country of formation. **The Certificate of Existence must be less than six months old. A photocopy of the certification cannot be accepted.**

10. If the limited liability company is required to use a fictitious name in order to transact business in this State, a copy of the resolution of its managers adopting the fictitious name is attached.

11. This application will be effective upon filing, unless a delayed date and/or time is specified: _____

This the 3 day of June, 2013

Apex Atlantic Wind, LLC
Name of Limited Liability Company

Gordon J Trousdale
Signature of Manager

Gordon Trousdale, Member
Type or Print Name

Notes:
1. Filing fee is $250. This document must be filed with the Secretary of State.

CORPORATIONS DIVISION P. O. BOX 29622 RALEIGH, NC 27626-0622

(Revised January 2002) *(Form L-09)*

Delaware

PAGE 1

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "APEX ATLANTIC WIND, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE THIRTIETH DAY OF MAY, A.D. 2013.

Jeffrey W. Bullock, Secretary of State

5103461 8300

130699791

AUTHENTICATION: 0471617

DATE: 05-30-13

You may verify this certificate online at corp.delaware.gov/authver.shtml

SOSID: 1323635
Date Filed: 7/18/2013 1:13:00 PM
Elaine F. Marshall
North Carolina Secretary of State

C201319900246

State of North Carolina
Department of the Secretary of State

APPLICATION FOR AMENDED CERTIFICATE OF AUTHORITY FOR LIMITED LIABILITY COMPANY

Pursuant to §57C-7-05 of the General Statutes of North Carolina, the undersigned limited liability company hereby applies for an Amended Certificate of Authority to transact business in the State of North Carolina, and for that purpose submits the following statement.

1. The name of the limited liability company is: Apex Atlantic Wind, LLC

2. The name the limited liability company is currently using in the State of North Carolina is:
Apex Atlantic Wind, LLC

3. The state or country of formation is: Delaware

4. The date the limited liability company was authorized to transact business in the State of North Carolina is:
June 18th, 2013

5. The changes being made are as follows:
Name amended to: Timbermill Wind, LLC

6. Attached is a certificate of existence (or document of similar import), duly authenticated by the Secretary of State or other official having custody of limited liability company records in the state or country of formation. The certificate of existence must be less than six months old. A photocopy of the certification cannot be accepted.

7. This application will be effective upon filing, unless a date and/or time is specified: _____

This the 17th day of July, 20 13

Timbermill Wind, LLC
Name of Limited Liability Company

Signature

Christian Payne, Member
Type or Print Name and Title

Notes:
1. **Filing fee is $50. This application must be filed with the Secretary of State.**

Delaware

PAGE 1

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "TIMBERMILL WIND, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE SEVENTEENTH DAY OF JULY, A.D. 2013.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "TIMBERMILL WIND, LLC" WAS FORMED ON THE THIRTY-FIRST DAY OF JANUARY, A.D. 2012.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN PAID TO DATE.

Jeffrey W. Bullock, Secretary of State

5103461 8300

130889393

AUTHENTICATION: 0593593

DATE: 07-17-13

You may verify this certificate online at corp.delaware.gov/authver.shtml

TIMBERMILL WIND

0 1,000 2,000 Feet

1:22,000

N

merjent

For Environmental Review Purposes Only
Preliminary Not for Construction

USGS Map

Timbermill Wind Project

Chowan County, North Carolina

- Transmission Structure
- Alignment of Timbermill Line
- Access Road
- Transmission Route
- Collector Substation
- Switching Station
- County Boundary
- State Maintained Road
- Local Road

USGS The National Map: Orthoimagery. Data refreshed October, 2020.

ENVIRONMENTAL REPORT
FOR THE
TIMBERMILL 230 KV TRANSMISSION LINE

PREPARED FOR:

TIMBERMILL WIND, LLC

310 4th Street NE, Suite 300
Charlottesville, Virginia 22902

JUNE 2021

PREPARED BY:

merjent

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 ENVIRONMENTAL INFORMATION 3
2.1 Natural Environment 5
2.1.1 Topography and Soils 5
2.1.2 Geology and Groundwater Resources 8
2.1.3 Surface Waters and Floodplains 8
2.1.4 Wetlands 10
2.1.5 Vegetation 11
2.1.6 Wildlife 12
2.1.7 Threatened and Endangered Species 14
2.2 Human Environment 17
2.2.1 Land Use and Development 17
2.2.2 Transportation and Utilities 24
2.2.3 Managed Lands and Recreation Areas 27
2.2.4 Socioeconomics 27
2.2.5 Cultural Resources 29
2.2.6 Visual Resources 30
2.3 Summary of Environmental Information 31

3.0 REQUIRED FEDERAL, STATE, AND LOCAL APPROVALS 33

4.0 REFERENCES 35

LIST OF TABLES

Table 1.0-1 Summary of Timbermill Line Facilities (acres) 1
Table 2.0-1 Impact Assessment Area 4
Table 2.1-1 Soil Characteristics by Transmission Route 5
Table 2.1-2 Wildlife Species Common to the Transmission Route 12
Table 2.1-3 Federal and State-Listed Species Potentially Present Within One Mile of the Transmission Route 15
Table 2.2-1. Land Cover Types within the Transmission Route 18
Table 2.2-2 Population and Economic Characteristics within the Transmission Route 27
Table 2.3-1 Summary of Environmental Information 31
Table 3.0-1 Status of Required Federal, State, and Local Approvals 33

LIST OF FIGURES

Figure 1 Wind Project Location
Figure 2 Soils
Figure 3 Water Features
Figure 4 Land Cover/Land Use
Figure 5 Agriculture and Silviculture
Figure 6 Existing Infrastructure and Managed Lands
Figures 7a-7d Detailed Route Maps

ACRONYM LIST

ACC	Archaeological Consultants of the Carolinas, Inc.
ACS	American Community Survey
APLIC	Avian Power Line Interaction Committee
BMP	best management practice
CAMA	Coastal Area Management Act
CRA	Cultural Resource Analysts, Inc.
CRP	Conservation Reserve Program
CREP	Conservation Reserve Enhancement Program
CUP	Conditional Use Permit
ESA	Endangered Species Act
ETJ	extraterritorial jurisdiction
FEMA	Federal Emergency Management Agency
FSA	Farm Service Agency
IAA	impact assessment area
IBA	Important Bird Area
IPaC	Information for Planning and Consultation
kV	kilovolt
MBTA	Migratory Bird Treaty Act
MW	megawatt
NA	not applicable
NAS	National Audubon Society
NCDWR	North Carolina Division of Environmental Quality, Division of Water Resources
NCNHP	North Carolina Natural Heritage Program
NCWRC	North Carolina Wildlife Resources Commission
NESC	National Electrical Safety Code®
NLCD	National Land Cover Database
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSA	Office of State Archaeology
POI	Point of Interconnection
Preliminary Alignment	Preliminary alignment of the proposed 230 kilovolt transmission line that is used in this Environmental Report to analyze potential environmental impacts.
Collector Substation	Approximately 5.5-acre facility that will transform and step up the power from the Wind Project collection lines from 34.5 kilovolt to 230 kilovolt; the start of the Timbermill Wind 230 kilovolt transmission line.

ROW	Right-of-way; area for which Timbermill Wind has executed site control agreements for the Timbermill Line
SSURGO	Soil Survey Geographic Database
Switching Station	Approximately 4.3-acre facility at the terminal end of the Timbermill Wind 230 kilovolt transmission line prior to entering the existing transmission grid.
SWPPP	Stormwater Pollution Protection Plan
Tap Line	Approximately 150-foot 230 kilovolt Tap Line from the Switching Station to interconnect the Wind Project into the Winfall to Mackeys transmission line that would be designed, constructed, owned, and operated by Dominion Energy.
Timbermill Line	6.1-mile 230 kilovolt transmission line and associated facilities in Chowan County, North Carolina
Timbermill Wind	Timbermill Wind, LLC
Transmission Route	124.9-acre footprint of the transmission line right-of-way, Collector Substation, Switching Station, and access road
UDO	Unified Development Ordinance
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
Wind Project	Timbermill Wind, LLC, an indirect wholly-owned subsidiary of Apex Clean Energy Holdings, LLC, is proposing to construct up to 189 megawatts of new wind energy north of the Town of Edenton in Chowan County, North Carolina
Wind Project Area	A 6,263-acre area in which the proposed Timbermill Wind Project will be sited.

1.0 INTRODUCTION

Timbermill Wind, LLC (Timbermill Wind) is proposing to construct up to 189 megawatts (MWs) of new wind energy in Chowan County, North Carolina (Wind Project) north of the Town of Edenton. In addition, Timbermill is proposing to construct a 6.1-mile 230 kilovolt (kV) transmission line and associated facilities (Timbermill Line) to interconnect the Wind Project to the transmission grid (Figure 1 – Wind Project Location). This Environmental Report was prepared as part of the Application for a Certificate of Environmental Compatibility and Public Convenience and Necessity for the Timbermill Line in accordance with the requirements of Article 5A, Chapter 62 of the North Carolina Generate Statutes and North Carolina Utilities Commission Rule R8-62. Timbermill Wind retained Merjent, Inc to assist with environmental aspects of the line routing and preparation of this Environmental Report, the scope of which is limited to the Timbermill Line.

The Timbermill Line will include approximately 6.1 miles of new 230 kV transmission line between the proposed Timbermill Wind Collector Substation and the proposed Switching Station adjacent to the Point of Interconnection (POI) at the existing 230 kV Winfall to Mackeys (Virginia Electric and Power Company, dba Dominion Energy North Carolina Power; Dominion Energy) transmission line. At the POI, the Wind Project will interconnect to the existing Dominion Energy transmission line. Timbermill Wind has executed site control agreements for transmission facilities for the transmission line right-of-way (ROW). Additionally, Timbermill Wind has entered into purchase options for the proposed Collector Substation and Switching Station, facilities that have footprints of approximately 5.5 and 4.3 acres, respectively. From the Switching Station, there will be a short (approximately 150-foot) 230 kV Tap Line to interconnect the Wind Project into the Winfall to Mackeys transmission line that would be designed, constructed, owned, and operated by Dominion Energy. This Tap Line would require one transmission structure within the Switching Station and one approximately 150 feet southeast at the Winfall to Mackeys transmission line. Timbermill Wind will also construct a one mile 20-foot wide access road from Paradise Road to the Switching Station. Table 1.0-1 includes the footprint of each facility. Together, these facilities total 124.9 acres and represent the Transmission Route. Two-thirds (approximately 4.1 miles) of the Transmission Route length is within the Wind Project Area and approximately 2.0 miles of the Transmission Route extend south out of the Wind Project Area to the Switching Station.

Table 1.0-1
Summary of Timbermill Line Facilities (acres)[1]

Timbermill Line Facility[1]	Description of Footprint	Acres
Transmission ROW	The 75-foot to 150-foot width for which Timbermill Wind has easements for the transmission line	112.7
Collector Substation	Footprint of Facility	5.5
Switching Station	Footprint of Facility	4.3
Access Road[2]	20-foot-wide road from Paradise Road to the Switching Station (one mile)	2.4[1]
	Total	**124.9**

1 The Tap Line is not included here because it will be designed by Dominion Energy and not require easements by Timbermill Wind. General statements about design are based on the Switching Station location and proximity to the Winfall to Mackey transmission line.

2 The access road to the Switching Station is partially within the transmission ROW. Therefore, the 2.4-acre footprint for this facility is partially within the 112.7 acres of transmission ROW and represents a small amount of overlap (2.1 acres).

The transmission ROW is generally 150 feet wide, except on one parcel on the west side of Paradise Road. For approximately 950 feet, the ROW is 75-feet wide. The Timbermill Line will consist of monopole transmission structures predominately made of wood, except for the narrower ROW, which will have steel structures. Within the Collector Substation and Switching Station, the dead end structures will be steel H-frame structures. The transmission design will use three types of transmission structures:

- Dead end: used within the Collector Substation and Switching Station and at heavy angle turns (i.e., greater than 30 degrees);
- Angle: used in locations where the alignment turns between 3 and 30 degrees; and
- Tangent: for in-line (straight) segments.

Transmission structures will be between 75 feet and 120 feet tall and typically 400 to 700 feet apart. Timbermill Wind is proposing longer spans in two areas to minimize the number of structures near residences. Heights and spans may vary depending on the design, terrain, or measures to mitigate potential impacts of the line. Generally, transmission structures would be directly embedded into the ground, unless poor soil or geotechnical conditions necessitate concrete foundations. For both wood and steel transmission structures, Timbermill Wind anticipates the diameter of the permanent impact will be approximately 6 feet wide with a 75-foot diameter workspace for a temporary impact. All structures will be buried between 10- and 15-feet deep.

2.0 ENVIRONMENTAL INFORMATION

The Transmission Route is geographically located in an area that was historically a portion of Bear Swamp. During the 1940's and 1950's most of the area was ditched and drained for the purpose of agricultural and silvicultural practices. The majority of the Transmission Route occurs in the historically converted cropland and actively managed planted pine communities and not in natural forested habitats.

This Environmental Report provides a general description of the environmental and human setting of the Transmission Route. Topics discussed in the following subsections include the natural environment – topography, geology and groundwater resources, soils, surface water resources, wetlands, vegetation, wildlife, and threatened and endangered species and human settlement – land use and development, transportation and utilities, managed lands and recreation areas, socioeconomics, cultural resources, and visual resources. Timbermill Wind evaluates resources that are known to occur or may potentially occur within the Transmission Route. Impacts have been defined by their duration, size, intensity, and location. This context is used to determine an overall resource-level impact. Impact levels are described using qualitative descriptors that are not intended as value judgement, but rather as a measure to ensure a common understanding among readers.

- **Minimal** – Minimal impacts do not considerably alter an existing resource condition or function. Minimal impacts may, for some resources and at some locations, be noticeable to an average observer. These impacts generally affect common resources over the short term.
- **Moderate** – Moderate impacts alter an existing resource condition or function and are generally noticeable or predictable for the average observer. Effects may be spread out over a large area, making them difficult to observe, but they can be estimated by modeling or other means. Moderate impacts may be long term or permanent to common resources, but are generally short to long term for rare and unique resources.
- **Significant** – Significant impacts alter an existing resource or condition or function to the extent that the resource is severely impaired or cannot function. Significant impacts are likely noticeable or predictable for the average observer. Effects may be spread out over a large area, making them difficult to observe, but can be estimated by modeling. Significant impacts can be of any duration and may affect common or rare resources.

In addition to identifying existing resources and the potential effects on those resources, measures that can be used to avoid, minimize, or mitigate effects were identified. These actions are collectively referred to as mitigation.

- **Avoid** – Avoiding an impact means that the impact is eliminated altogether by moving or not undertaking parts or all of a project.
- **Minimize** – Minimizing an impact means to limit its intensity by reducing the project size or moving a portion of the project from a given location.
- **Mitigate** – Impacts that cannot be avoided or minimized could be mitigated. Impacts can be mitigated by repairing, rehabilitating, or restoring the affected environment, or compensating for it by replacing or providing a substitute somewhere else.

Where specific, quantified impacts are discussed, the impacts are quantified based on the Preliminary Alignment shown on the included figures. The Preliminary Alignment was identified based on the best data available at the time of this Environmental Report. Potential impacts to natural and human resources were analyzed based on specific impact assessment areas (IAAs). The IAA for each resource is the geographic area within which the Timbermill Line may exert some influence and were developed based on a combination of the scale of data and past experience. These IAAs vary with the resource being analyzed and the potential impact and are summarized in Table 2.0-1.

The following IAAs will be used:

- **ROW**. The Timbermill Line has a variable ROW: 150 feet for the majority of the length of the transmission line except for approximately 950 feet for which the ROW is 75 feet wide. These distances are used as the IAA for analyzing topography and soils, geology and groundwater resources, surface water resources, wetlands, and vegetation.
- **One thousand feet**. A distance of 1,000 feet from each side of the Preliminary Alignment is used as the IAA for analyzing visual resource impacts. Impacts may extend outside of this 1000-foot distance, but are anticipated to diminish relatively quickly with distance from the line such that potential impacts outside this distance would be minimal.
- **One mile**. A distance of one mile from the Preliminary Alignment is used as the IAA for analyzing potential impacts to threatened and endangered species, cultural resources, and managed lands and recreation areas.
- **Project Study Area**. The Project Study Area, defined generally as Chowan County as a whole, is used as the IAA for analyzing potential impacts to land use and development, transportation and utilities, and socioeconomics. These are resources for which impacts may extend throughout communities in the Project Study Area.

Table 2.0-1
Impact Assessment Areas

Type of Resource	Specific Resource/Potential Impact to Resource	Impact Assessment Area
Natural Environment	Topography and Soils, Geology and Groundwater Resources, Surface Water Resources, Wetlands, Vegetation	ROW[1]
	Threatened and Endangered Species	One Mile
Human Environment	Land Use and Development, Transportation and Utilities, Socioeconomics	Project Study Area
	Cultural Resources, Managed Lands and Recreation Areas	One Mile
	Visual Resources	1,000 feet[2]

[1] The ROW is 75 to 150 feet wide
[2] On each side of the Preliminary Alignment, for a total of 2,000-foot area of analysis

2.1 Natural Environment

Transmission lines have the potential to impact natural resources through temporary, construction-related impacts and long-term impacts on topography, geology and groundwater, soils, water resources, vegetation, wildlife and threatened and endangered resources. Construction of the Timbermill Line would temporarily disturb soils and vegetative cover, which could affect water quality in adjacent water resources, and also could affect habitat for flora and fauna. Avian species could also be impacted by operation of the Timbermill Line through potential collisions with transmission line structures and conductors.

Potential impacts to natural resources as a result of the Timbermill Line are anticipated to be minimal. This conclusion is due to the fact that the Transmission Route is primarily sited within agricultural and silviculture land with limited natural resource diversity and those potential impacts to natural resources, to a great extent, can be avoided, minimized, and/or mitigated.

2.1.1 Topography and Soils

Topography

Chowan County is located in the Inner Coastal Plain physiographic province of northeastern North Carolina. The county is bounded on the west by the Chowan River and on the south by the Albemarle Sound. Topography in the county consists mostly of low, flat plains with ridges and slopes along drainages. Elevations in the county range between sea level along broad bottom lands to 45 feet above mean sea level in the northwestern part of the county (Tant, 1986). Topography within the Transmission Route ranges from 4 to 5 feet above mean sea level.

Soils

Soil characteristics in the Transmission Route were assessed using the U.S. Department of Agriculture (USDA) Soil Survey Geographic Database (SSURGO) (Soil Survey Staff, 2021). The SSURGO database is a digital version of the original county soil surveys developed by Natural Resources Conservation Service (NRCS) for use with Geographic Information Systems. It provides the most detailed level of soils information for natural resource planning and management. Table 2.1-1 provides soil map units and characteristics in the Transmission Route.

Table 2.1-1
Soil Characteristics by Transmission Route

Soil Map Unit	Acres	Farmland Classification	Hydric Soil	Slope Range
At - Augusta fine sandy loam	10.1	Prime farmland if drained	No	0-5
Cf - Cape Fear loam, 0 to 2 percent slopes, rarely flooded	0.2	Farmland of statewide importance	Yes	0-5
CO - Chowan silt loam	1.6	Prime farmland if protected from flooding or not frequently flooded during the growing season	Yes	0-5
Nm - Nimmo loamy fine sand	4.3	Farmland of statewide importance	Yes	0-5
Pt - Portsmouth loam	56.0	Prime farmland if drained	Yes	0-5
Ro - Roanoke silt loam	13.4	Farmland of statewide importance	Yes	0-5
To - Tomotley fine sandy loam	39.3	Prime farmland if drained	Yes	0-5

Table 2.1-1
Soil Characteristics by Transmission Route

Soil Map Unit	Acres	Farmland Classification	Hydric Soil	Slope Range
Timbermill Line Total	**124.9**			

Source: Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture.2021. Web Soil Survey. Available online at the following link: https://websoilsurvey.sc.egov.usda.gov/. Accessed 3/2021.

Of the soil characteristics included in Table 2.1-1, the characteristics most applicable for an assessment of the potential to impact soils during construction and operation are prime farmland and farmland of statewide importance, hydric soils, and slope. Soils categorized as prime farmland and farmland of statewide importance are protected under the Farmland Protection Policy Act because of their value for agricultural production, and a significant or irreversible loss of these high-quality farmlands could have local economic impacts for the agricultural industry (see Section 2.2.1.1). Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pasture, woodland, or other lands; USDA NRCS, 2021). Prime farmland typically contains few or no rocks, is permeable to water and air, is not excessively erodible or saturated with water for long periods, and is not subject to frequent or prolonged flooding during the growing season. Soils that do not meet the above criteria may be considered prime farmland if the limiting factor is mitigated (e.g., by draining or protecting from flooding; USDA NRCS, 2021). Conversely, urbanized land and open water cannot be designated as prime farmland. Figure 2 – Soils displays the prime farmland in the Transmission Route.

The NRCS also recognizes farmlands of statewide importance, which are defined as lands other than prime farmland that are used for production of specific high-value food and fiber crops (e.g., citrus, tree nuts, olives, fruits, and vegetables; USDA NRCS, 2021). Farmlands of statewide importance have the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of specific crops when treated and managed according to acceptable farming methods. Farmland of statewide importance is similar to prime farmland but with minor shortcomings such as greater slopes or less ability to store soil moisture. The methods for defining and listing farmland of statewide importance are determined by the appropriate State agencies, typically in association with local soil conservation districts or other local agencies.

All soils within the Transmission Route are classified as Prime farmland if drained (84.4 percent), Prime farmland if protected from flooding (1.3 percent), or Farmland of statewide importance (14.3 percent).

Hydric soils are soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA NRCS, 2021). Also, soils in which the hydrology has been artificially modified are hydric if the soil, in an unaltered state, was hydric. Some soils designated as hydric have phases that are not hydric depending on water table, flooding, and ponding characteristics. A combination of hydric soil, hydrophytic vegetation, and hydrologic properties define wetlands as described in the *National Food Security Act Manual* (Soil Conservation Service, 1994). Hydric soils are one of several indicators of wetlands. Approximately 114.8 acres (91.9 percent) of the Transmission Route is underlain by hydric soils or soils containing hydric inclusions.

As displayed in Table 2.1-1, slopes in the Transmission Route are generally flat, all between 0-5 percent.

2.1.1.1 Impacts and Mitigation

Topography

Clearing, construction, and operation of the Timbermill Line will not result in any significant impacts to the existing topography. The Timbermill Line will generally follow the existing contour of land, and extensive grading or earthwork will not be necessary. Land clearing will consist of tree and shrub removal in portions of the ROW and at the Collector Substation and Switching Station locations. Impacts to, topography, if any, from the use of heavy equipment will be localized, limited, and temporary in nature.

Soils

The Timbermill Line will result in temporary and minimal soil impacts within the ROW during construction. Due to the amount of forested areas and predominately silviculture (currently forested and recently harvested silviculture), within the ROW, stump removal and "grubbing" will occur at structure locations (6 foot diameter) and along a 20-foot wide corridor under the alignment for operations and maintenance access within the ROW (approximately 6.4 acres), except for areas within forested wetlands. This 20-foot wide corridor will be graded and revegetated with herbaceous seed mix that includes grasses. Outside the 20-foot wide corridor (i.e., generally within the other 130 feet of the ROW), the clearing practice will involve cutting vegetation within 4 to 6 inches of the ground. Stumps, low-growing vegetation, and root balls will be left in place and no "grubbing" or grading will occur. These areas will be allowed to revegetate naturally as described in Section 2.1.5. Some impacts to area soils will result from the use of heavy equipment and the excavation of soils required for installing the transmission structures. Construction activities, which are temporary in nature, can cause soil compaction, ruts, or tracks from vehicular movement that can mix the soil profile.

During construction of the Timbermill Line, a small portion of prime farmland will be temporarily taken out of agricultural production for temporary workspace associated with erecting structures along the ROW. As discussed in Section 1.0, the footprint of each structure measures approximately 6 feet in diameter. All 51 transmission structures are proposed in prime farmland, which would result in an estimated impact of 28.3 square feet per transmission structure location or 1,443.3 square feet (0.03 acres; 51 transmission structures x 28.3 square feet).This reduction is negligible and will not have a meaningful effect on the availability of prime farmland within the state of North Carolina or within Chowan County. Refer to Section 2.2.1.1 for additional information related to agricultural impacts.

For the permanent facilities such as the Collector Substation, Switching Station, and access road, there will be vegetation removal and grading. These facilities total approximately 12.2 acres.

Timbermill Wind will implement measures to reduce soil compaction and will commit to decompaction of soils during restoration of areas around structures and the ROW. Impacts to soils would be temporary and minor, and would be mitigated through the proper use and installation of best management practices (BMPs), such as matting, minimizing the number of vehicles and protection and maintenance of topsoil during ROW clearing and generation tie line construction. Timbermill Wind will also develop a Stormwater Pollution Prevention Plan (SWPPP)

that complies with North Carolina Sedimentation Pollution Control Act, thus controlling offsite sedimentation and avoiding potential soil run-off into area streams.

2.1.2 Geology and Groundwater Resources

The Transmission Route is located is the Coastal Plain physiographic province, which is characterized by flat land to gently rolling hills and valleys. Elevations range from sea level near the coast to about 600 feet in the Sandhills of the southern Inner Coastal Plain. The Geologic Map of North Carolina shows the bedrock geology in the Transmission Route is “Qp” – characterized by sand, clay, gravel, and peat deposited in marine, fluvial, eolian, and lacustrine environments (North Carolina Geological Survey, 1984).

Groundwater is provided from the Lower Cape Fear aquifer, which covers the northwest portion of the Coast Plain physiographic province. This aquifer ranges from 23 to 2730 feet thick and is comprised of coarse sands (NCDWR, 2021a). The North Carolina Division of Environmental Quality, Division of Water Resources (NCDWR) actively monitors groundwater levels and quality at well locations throughout the state. There are no NCDWR monitoring well in Chowan County; there are two NCDWR wells in adjacent Perquimans County (NCDWR, 2021b). Based on well data in 2020 for these two wells, water levels are approximately 17 to 75 feet below the land surface. Additionally, NCDWR maps water supply watershed protection areas; there are none in Chowan County. The closest water supply watershed associated with the Pasquotank River in Pasquotank County.

2.1.2.1 Impacts and Mitigation

Timbermill Wind does not anticipate any impacts to bedrock during construction or operation of the Timbermill Line as the underlying geology is characterized by sand, clay, gravel, and peat deposits. Similarly, Timbermill Wind does not expect any impacts to groundwater resources as structure depths will be above aquifer levels based on the nearest available water level data. If shallow depths to groundwater resources are identified during geotechnical investigations, specialty structures requiring wider, but shallower, excavation for foundations may be used.

2.1.3 Surface Waters and Floodplains

The Timbermill Line is located in the Pasquotank River Basin. There are no surface waters in the Transmission Route. The closest surface water is Pollock Swamp, a stream east of the Transmission Route that flows south into Edenton Bay. As previously noted, the Transmission Route is within the area historically known as Bear Swamp, which was heavily ditched and drained in the 1940’s and 1950’s for the propose of agricultural and silvicultural practices. As such, there are several ditches within the Transmission Route. Based on on-site wetland and stream delineations to determine potentially jurisdictional and non-jurisdictional water features, there are 82 ditches within the Transmission Route, 70 of which are potentially non-jurisdictional and 12 of which are potentially jurisdictional (see Figure 3 – Water Features).

A floodplain is flat, or nearly flat, land adjacent to a river or stream that experiences occasional or periodic flooding. It includes the floodway, which consists of the stream channel and adjacent areas that carry flood flows, and the flood fringe, which includes areas covered by the flood but which do not experience strong current. Floodplains function to prevent damage by detaining debris, sediment, water, and ice. The Federal Emergency Management Agency (FEMA) delineates floodplains and determines flood risks in areas susceptible to flooding. The base flood that FEMA uses, known as the 100-year flood, has a one percent chance of occurring each year.

There are 1.4 acres of FEMA designated 100-year floodplain in the Transmission Route associated with an unnamed tributary to Pollock Swamp in the southern portion of the Transmission Route (see Figure 3 – Water Features).

2.1.3.1 Impacts and Mitigation

The Timbermill Line will have minimal impacts on surface water resources. Timbermill Wind will design the Timbermill Line to minimize or avoid impacts on surface water resources to the extent feasible. The Timbermill Line will be designed to span potentially jurisdictional and non-jurisdictional ditches. At the Collector Substation, there are two potential non-jurisdictional ditches that will be rerouted around the Collector Substation. There are no delineated waterbodies, potentially jurisdictional or non-jurisdictional, within the Switching Station. Ditches along the access road will be culverted to maintain flow and function.

Timbermill Wind is coordinating with the U.S. Army Corps of Engineers (USACE) related to impacts to potentially jurisdictional ditches. Timbermill Wind is in the process of submitting a request for an Approved Jurisdictional Determination and is in the process of submitting a Clean Water Act Individual Permit application for the Wind Project, which will include the Timbermill Line and associated facilities. Timbermill Wind will permit and mitigate temporary and permanent impacts to jurisdictional waterbodies, including required compensatory mitigation.

Construction of the proposed Timbermill Line could potentially impact water quality. Short-term, minimal, water quality impacts may occur during the construction of the Timbermill Line even though avoidance and minimization measures (i.e., BMPs) will be implemented to prevent sedimentation. The primary potential impacts would be associated with the soils from areas disturbed during construction being washed by stormwater into adjacent waters during rainstorm events. Therefore, increased turbidity and localized sedimentation of the stream bottom may potentially occur from the runoff. If any of these events occur, however, these impacts would be temporary and would not significantly alter water quality conditions due to the minimal soil disturbance that is expected to occur in any one location during construction of the Timbermill Line. As described above, Timbermill Wind will prepare a SWPPP that will identify BMPs to be implemented during construction to minimize erosion and sedimentation impacts to surface waters. Erosion and sedimentation abatement measures, for example, would be employed to decrease impacts to the hydrology. As an example, no fueling or maintenance of vehicles or application of herbicides would occur within 100 feet of streams, ditches, and waterways to protect against introduction of these materials into surface or groundwater systems. In addition, materials such as fuels, lubricants, paints, and solvents required for construction would be stored away from surface water resources according to appropriate regulatory standards. Lastly, any spills or leaks would be cleaned up immediately and leaking equipment removed from the area for proper maintenance.

All Timbermill Line facilities (transmission structures, Collector Substation, Switching Station, and access road) avoid the FEMA floodplain. The Collector Substation, Switching Station, and access road all avoid FEMA designated floodplains. However, as described in the Soils section (Section 2.1.1), there will be grubbing and grading of stumps within areas that are currently forested to provide access to structures during operation of the Transmission Line, which is where the FEMA designated 100-year floodplain occurs within the ROW. In these areas, and specifically the 100-year floodplain, there will not be a change to the elevation; the grubbed areas will be restored to pre-construction contours.

2.1.4 Wetlands

Wetlands are areas with hydric (wetland) soils, hydrophytic (water-loving) vegetation, and wetland hydrology (inundated or saturated much of the year). Wetlands are part of the foundation of water resources and are vital to the health of waterways and communities that are downstream. Wetlands detain floodwaters, recharge groundwater supplies, remove pollution, and provide fish and wildlife habitat. Wetlands are also economic drivers because of their key role in fishing, hunting, agriculture, and recreation. Wetlands vary widely due to differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors.

Based on on-site wetland and steam delineations to determine potentially jurisdictional and non-jurisdictional water features, there are 14 wetlands totaling 5.6 acres in the Transmission Route, 5.3 acres of which are potentially jurisdictional (4.3 percent of the Transmission Route). Wetlands are displayed on Figure 3 – Water Features.

2.1.4.1 Impacts and Mitigation

Wetlands located in the ROW will be spanned and placement of structures within wetlands will be avoided to the extent practicable. Based on preliminary design, Structures 14 and 15 will be sited in potentially jurisdictional wetlands that cannot be spanned. Where it is not possible to span a wetland, Timbermill Wind identified several mitigation strategies to minimize impacts to wetlands including:

- Use of all-terrain construction equipment that is designed to minimize soil impact in damp areas;
- Use of the shortest route to the pole location in the wetland; and
- Assembling structures in upland areas, when feasible, before they are brought to the site for installation.

The potentially jurisdictional wetland that cannot be spanned is also a forested wetland. As described in Section 2.1.1.1 (Impacts and Mitigation for Topography and Soils), in forested areas, a 20-foot wide corridor will be “grubbed” and reseeded with an herbaceous cover to facilitate access for operations and maintenance staff. However, this activity will not occur within the wetland. Instead, operations and maintenance staff will access these two structures from along the ROW from either side (not through) using temporary matting, as needed.

Wetlands impacted by construction will be restored as required by the USACE. As described above in Surface Waters, Timbermill Wind is coordinating with the USACE related to impacts to jurisdictional ditches. Timbermill Wind is in the process of submitting a request for an Approved Jurisdictional Determination and is in the process of submitting a Clean Water Act Individual Permit application for the Wind Project, which includes the Timbermill Line and associated facilities. Timbermill Wind will permit and mitigate temporary and permanent impacts to potentially jurisdictional waters, including required compensatory mitigation.

Wetlands can be also be impacted by soil erosion and sediment deposition during construction. Sedimentation and ground disturbance in wetlands can make them more susceptible to establishment of invasive plant species, such as reed canary grass, which could impact wetland function by reducing vegetative biodiversity and altering wildlife habitat. To address this, and as described in Section 2.1.1.1, Timbermill Wind will develop a SWPPP that complies with the North

Carolina Sedimentation Pollution Control Act that outlines BMP placement to control off-site sedimentation and avoid potential soil run-off into wetlands.

2.1.5 Vegetation

Most of the land within the Transmission Route is managed for agriculture and silviculture. Timber communities consist of planted Loblolly Pine that is planted in bedded and furrowed rows. Other areas have been recently timbered or clear cut; as such, vegetation is sparse and the ground cover is primarily woody debris from the recent harvests. Cultivated croplands are also interspersed throughout the Transmission Route with fields planted with soybean, peanut, and pumpkin. Although limited in scale, there are a few areas within the Transmission Route that still retain naturally occurring hardwoods. These areas typically include a canopy of sweetgum (*Liquidambar styriciflua*), loblolly pine, sweet bay (*Magnolia Virginiana*), and red maple (*Acer rubrum*). Additionally, these areas included woolgrass, pine barren goldenrod (*Solidago fistulosa*), Virginia chain fern, and bluestem (*Andropogon glomeratus*).

2.1.5.1 Impacts and Mitigation

The acreage of each land cover type within the Transmission Route is provided in Section 2.2.1 (refer to Table 2.2-1). Impacts on vegetation will primarily be associated with cultivated cropland areas within the ROW and silviculture areas. There are approximately 54.0 acres of cultivated cropland within the ROW and 55.6 acres of silviculture in the Transmission Route (based on 2020 aerial photography); see Section 2.2.1.1 for a discussion of impacts and mitigation measures that would be used in agricultural and silvicultural areas.

Construction of the Timbermill Line will result in short-term adverse impacts on existing vegetation, including localized physical disturbance and soil compaction. Construction activities, such as site preparation and installation of structures, are anticipated to impact approximately 0.1 acres of vegetation per structure (75-foot diameter around each structure). Construction activities involving establishment and use of access roads, staging, and stringing areas would also have short-term impacts on vegetation by concentrating surface disturbance and equipment use.

Construction would also result in long-term impacts on vegetation by permanently removing vegetation at each structure and within portions of the ROW that are currently dominated by forest or other woody vegetation. Timbermill Wind anticipates approximately 45.1 acres of forested land will need clearing (36 percent of the Transmission Route), 41.5 acres (92 percent) of which are in a commercial operation and actively managed as silviculture timber. Approximately 14.0 acres of silviculture within the Transmission Route have been recently harvested. There are approximately 3.6 acres of forest clearing of hardwood forest. Timbermill Wind would permanently convert forested areas and shrub lands to low-stature vegetation by clearing woody vegetation throughout the entire ROW and Collector Substation and Switching Station footprints where it occurs. As described in the Soils section, within forested areas and outside wetlands, Timbermill Wind will grub, grade, and revegetate with an herbaceous seed mix within a 20-foot wide corridor of the ROW to allow for operations and maintenance access. The other areas of the ROW will be left to naturally revegetate.

Construction of the Timbermill Line could lead to the potential introduction or spread of invasive species and noxious weeds. Construction activities that could potentially lead to the introduction of invasive species include ground disturbance that leaves soils exposed for extended periods, introduction of topsoil contaminated with weed seeds, invasion from existing patches, vehicles

importing weed seed from a contaminated site to an uncontaminated site, and conversion of landscape type, particularly from forested to open settings.

Impacts to vegetation can also be minimized by a number of strategies, including (1) routing the transmission line along existing corridors (roads) and parcel line edges, (2) placement of the alignment and of specific structures to avoid trees and other tall-growing species, (3) leaving or replanting compatible plants at the edge of the transmission line ROW, (4) limiting vehicle traffic to roads along the ROW, and (5) avoiding the introduction of invasive species and noxious weeds on equipment or through seeds or mulches. Timbermill Wind has routed the transmission line along roads and parcel line edges to minimize impacts to trees to the extent practicable. During construction, Timbermill Wind will limit vehicle traffic in an effort to avoid the introduction of invasive species.

Potential impacts due to invasive species and noxious weeds can be mitigated by:

- revegetating disturbed areas using weed-free seed mixes and using weed-free straw and hay for erosion control;
- removal of invasive species/noxious weeds via herbicide and manual means; and
- cleaning and inspecting construction vehicles to remove dirt, mud, plant, and debris from vehicles prior to arriving at and leaving construction sites.

2.1.6 Wildlife

The wildlife species that inhabit the vicinity of the Transmission Route are typical of those found in agricultural and silvicultural complexes within this ecoregion. Wildlife species that occur in open, wetland, riparian and/or forested areas may also be present in the vicinity of the Transmission Route. Species adapted to agricultural and silvicultural landscapes that likely occur in the vicinity of the Transmission Route are listed in Table 2.1-2 (NCWRC, 2021a).

Table 2.1-2
Wildlife Species Common to the Transmission Route

Common Name	Scientific Name
Mammals	
Red fox	*Vulpes vulpes*
Gray fox	*Urocyon cinereoargenteus*
Black bear	*Ursus americanus*
White-tailed deer	*Odocoileus virginianus*
Eastern cottontail	*Sylvilagus floridanus*
Raccoon	*Procyon lotor*
Eastern gray squirrel	*Sciurus carolinensis*
Striped skunk	*Mephitis mephitis*
Fox squirrel	*Sciurus niger niger*
Southern flying squirrel	*Glaucomys volans*
Long-tailed weasel	*Mustela frenata*
Virginia opossum	*Didelphis virginiana*
Nutria	*Myocaster coypus bonariensis*
Birds	

Table 2.1-2
Wildlife Species Common to the Transmission Route

Common Name	Scientific Name
Wild turkey	*Meleagris gallopavo*
Northern bobwhite quail	*Colinus virginianus*
Mourning dove	*Zenaida macroura*
Ruffed grouse	*Bonasa umbelius*
Eastern wild turkey	*Meleagris gallopavo*
Eastern bluebird	*Sialia sialis*
Red-tailed hawk	*Buteo jamaicensis*
Red-shouldered hawk	*Buteo lineatus*
Wood duck	*Aix sponsa*
Canada goose	*Branta canadensis*
Reptiles and Amphibians	
Eastern narrowmouth toad	*Gastrophryne carolinensis*
Fowler's toad	*Bufo (Anaxyrus) fowleri*
Eastern spadefoot	*Scaphiopus holbrookii*
Red-backed salamander	*Plethodon cinereus*
Eastern garter snake	*Thamnophis sirtalis sirtalis*
Eastern ribbon snake	*Thamnophis sauritus*
Eastern king snake	*Lampropeltis getula*
Ground skink	*Scincella lateralis*
Broad-headed skink	*Plestiodon laticeps*
Eastern box turtle	*Terrapene carolina carolina*

Source: NCWRC, 2021a

Migratory birds are protected by the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S. Code [USC] 703-712). The MBTA prohibits taking, killing, possession, transportation, and importation of migratory bird and their eggs, parts, and nests. Additionally, the Bald and Golden Eagle Protection Act (16 USC 668-668d) prohibits taking or possession of and commerce in bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*), either alive or dead, or any egg, nest, or part of eagles.

Timbermill Wind previously conducted aerial surveys for bald eagle nests within the Wind Project Area, including the Transmission Route. No bald eagle nests have been identified or are currently known to occur within two miles of the Timbermill Line. Additionally, the North Carolina Natural Heritage Program (NCNHP) conducts and maintains an inventory of known locations of rare animals and plants in the state. The bald eagle is listed as threatened in North Carolina, and the NCNHP maintains records of documented bald eagle nests in the state database. Based on a review of the NCNHP data, there are no records of bald eagle nests within one mile of the Transmission Route.

Timbermill Wind also previously conducted avian use surveys for the Wind Project. Based on these surveys, waterfowl use was higher in the winter, particularly with tundra swans and Canada goose in the winter and species diversity was highest during spring migration and lowest during the winter.

Key bird habitats in the United States are designated by The National Audubon Society (NAS) as Important Bird Areas (IBAs). The goal of IBAs is to ensure that bird populations persist by identifying and conserving significant habitats. In North Carolina, 95 IBAs have been identified (NAS, 2021). The Transmission Route does not overlap with any IBAs. The nearest IBA to Transmission Route is the Chowan River Bottomlands IBA, which is approximately 10 miles northwest of the Preliminary Alignment. The Chowan River Bottomlands IBA is a global priority IBA in the riverine swamp forest along the Chowan River from Colerain to Parkers Ferry, and includes Merchants Millpond State Park, the Chowan Swamp Game Lands, and the Chowan River (NAS, 2021).

2.1.6.1 Impacts and Mitigation

Where possible, Timbermill Wind designed the Timbermill Line to avoid impacts to wildlife resources. The majority of the land use in the Transmission Route is in cultivation, either agricultural (i.e., crop land) or silvicultural. As such, Timbermill Wind anticipates that the potential impacts from construction and maintenance of the Timbermill Line on wildlife and wildlife habitat will be minimal. In addition, most impacts on wildlife habitat would be temporary with the exception of any necessary tree clearing. Potential impacts on wildlife during construction would be primarily related to temporary disturbance and displacement; however, wildlife may be acclimated to anthropogenic disturbance due to the agricultural and silvicultural activity in the vicinity of the Timbermill Line.

Broadly, the Facility is located within the Atlantic Flyway; more locally, the Facility is located approximately eight miles north of Albemarle Sound and approximately five miles east of the Chowan River. These larger waterbodies provide suitable stopover and wintering habitat for waterfowl. Most of the waterfowl observations during avian surveys occurred in the winter and were of tundra swan. Tundra swans have become increasingly common the North Carolina coast since the 1990s, and 90 percent of the Eastern Population of tundra swans (estimated 80,000 to 100,000 individuals) winters in Maryland, Virginia, and North Carolina, with North Carolina hosting more tundra swan than any state (Wilkins et al, 2010, NCWRC, 2021b). Further, North Carolina is one of six states that issue tundra swan hunting permits – with approximately 5,000 permits available annually (NCWRC, 2021b). In general, waterfowl, including tundra swans, use of the Project Area in winter is characterized by local movements from foraging to roosting areas and among foraging areas. Tundra swan use is likely to be primarily moving through the area with a smaller proportion on the ground likely foraging on agricultural crops.

To minimize potential collision risk for waterfowl including tundra swans, Timbermill Wind will install avian flight diverters on the transmission line in areas of cultivated cropland. These measures will follow the appropriate suggested practices on marker type and spacing to increase transmission line visibility and minimize collision risk, as outlined by Avian Power Line Interaction Committee's (APLIC)'s collision manual (APLIC, 2012). Timbermill Wind will also design and construct the Timbermill Line to avoid electrocution risk to perching birds (i.e., raptors), as the size and clearances associated with this voltage will be consistent with guidance to minimize this risk (APLIC, 2006). Additionally, lighting at the Collector Substation and Switching Station will be down-shielded to avoid potentially attracting birds.

2.1.7 Threatened and Endangered Species

The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) website was reviewed for a list of federal species and resources protected under the Endangered

Species Act (ESA; i.e., threatened and endangered species and designated critical habitat) and that may occur in the vicinity of the Transmission Route. The IPaC review also identifies species not currently protected under the ESA such as candidate species and species under review (USFWS, 2021). The NCNHP database was also reviewed for documented occurrences of federal- and state-listed species within one mile of the Transmission Route (NCNHP, 2021). This data provides information on the potential presence of protected species and designated critical habitat within the vicinity of the Timbermill Line (refer to Table 2.1-3).

Table 2.1-3
Federal and State-Listed Species Potentially Present Within One Mile of the Transmission Route

Common Name	Scientific Name	Habitat	Status [1]	
			State [2]	Federal [3]
Mammals				
Eastern big-eared bat	*Corynorhinus rafinesquii macrotis*	Roosts in hollow trees, old buildings, and beneath bridges, usually near water.[2]	SC	N/A
Birds				
Rufa red knot	*Calidris canutus rufa*	In North Carolina, sandy beaches and salt marshes.[4]	T	T
Plants				
False hop sedge	*Carex lupuliformis*	Moist bottomlands, especially in calcareous or mafic areas.[2]	SR-P	N/A

[1] T = Threatened, SC = Special Concern, SR-P = Significantly Rare; Peripheral
[2] NCNHP, 2021, based on Natural Heritage Program records within one mile of the Transmission Line
[3] USFWS, 2021, based on IPaC review
[4] Legrand et al. 2021a.

2.1.7.1 Federally listed species

According to the USFWS IPaC review, the rufa red knot is the only species federally listed as threatened under the ESA that may occur in the vicinity of the Transmission Route. Based on the USFWS IPaC review, no other federally endangered species, candidate species, species under review, or designated critical habitat have potential to occur.

Rufa Red Knot

The rufa red knot is a large sandpiper known for its long-distance migration between breeding grounds in the Canadian Arctic and several wintering areas in the Southern Hemisphere. Large numbers of rufa red knots migrate along the Atlantic coast of North America and winter in South America. Red knots may also winter in the Southeastern U.S. in Florida, South Carolina, Georgia, and Texas.

Generally speaking, the rufa red knot is an aquatic prober/gleaner that forages for marine invertebrates in sandy and muddy areas. Much of the year, they will also feed on small bivalves, including mussels and their larvae, clams, and cockles, but will also eat amphipods, gastropods, marine worms, chitons, shrimp, and tiny crabs. In spring, eggs of horseshoe crabs in the Delaware Bay are important food for birds preparing for migration (Cornell Lab of Ornithology, 2021). In North Carolina, the species can be found in coastal areas in winter and during migration. Rufa red knots forage in tidal waters, such as ocean and inlet beaches and sand flats, and in the

shallow waters of coastal impoundments and pools (LeGrand et al., 2021a). The rufa red knot was federally listed as threatened effective January 12, 2015.

2.1.7.2 State-listed species

A review of the NCNHP data identified one state species of special concern and one "significantly rare" species with documented occurrences within one mile of the Transmission Route (see Table 2.1-3). Neither record is located within the Transmission Route. Species of special concern are protected under the North Carolina State Endangered Species Act (G.S. 113-331 to 113-337). The significantly rare status is a NCNHP designation and is for species that exist in the state in small numbers and have been determined by the NCNHP to need monitoring. A brief summary of each species follows.

Eastern Big-eared Bat

The review of the NCNHP identified an historic record of the state special concern eastern big-eared bat (*Corynorhinus rafinesquii macrotis*) within one mile of the Transmission Route. The eastern big-eared bat is also known as Rafinesque's big-eared bat. In North Carolina, the species' range is bimodal: it is found in the mountains and foothills in the western part of the state and in the Coastal Plain in the eastern portion of the state, but is absent in nearly all of the Piedmont. The Coastal Plain population is the subspecies *C. rafinesquii macrotis*. The species is uncommon to rare in the Coastal Plain but can be found roosting in hollow trees under loose bark in swamps and bottomland forests, and can sometimes be found in warmer months roosting in old buildings and under bridges (Legrand et al., 2021b). The species is non-migratory and hibernates in winter, although not much is known about hibernacula use in the Coastal Plain. The species may use hollow trees for cold weather, and possibly winter roosts (NatureServe, 2021).

False Hop Sedge

The review of the NCNHP identified a record of false hop sedge (*Carex lupuliformis*) within approximately 0.10-mile Transmission Route. This record is associated with the railroad corridor south of the Transmission Route. This species is rhizomatous and forms clumps or colonies in pools and open areas in moist bottomlands, and riparian marshes especially in calcareous areas (Legrand et al., 2021c). In North Carolina, the species is considered rare in the Coastal Plain, and has been designated as a "significantly rare; peripheral" species by the NCNHP, meaning the species is at the periphery of its range in the state (NCNHP, 2021).

2.1.7.3 Impacts and Mitigation

Federally Listed Species

Construction activities associated with the proposed Timbermill Line will not have impacts on rufa red knots. Suitable stopover and foraging habitat are not present in the Transmission Route. The Timbermill Line may have the potential to impact individual red knots if birds were to collide with the lines during operation, but the overall risk of collision is minimal due to the lack of suitable habitats. As discussed in the Wildlife section, Timbermill Wind will implement avian flight diverters on the transmission line in areas of cultivated cropland consistent with APLIC guidance.

State-Listed Species

Based on review of NCNHP data, one record of a state species of special concern (eastern big-eared bat) and one record of a NCNHP-designated "significantly rare; peripheral" species (false hop sedge), are documented within one mile of the Preliminary Alignment. While significantly rare species are not protected under North Carolina state law, the state's designation as a species of special concern affords the eastern big-eared bat protection under the North Carolina State Endangered Species Act (G.S. 113-331 to 113-337). The NCWRC requests that project proponents implement BMPs to avoid and minimize take to the maximum extent practicable and Timbermill Wind will take such measures.

Tree clearing activities will be minimized to the maximum extent practicable, and will be conducted outside the maternity roosting season when non-volant pups are most vulnerable (i.e., avoid tree clearing June 1 – July 31). Given the rarity of the species and the abundant availability of suitable habitat elsewhere in Chowan and neighboring counties, Timbermill Line construction and operation activities are anticipated to have minimal impacts on eastern big-eared bats.

Based on soil data, soils in Chowan County do not include the "Bk" soil horizon that typically support calcareous environments that are preferred by false hop sedge. Regardless, there is a record within one mile of the Transmission Route, identified in 2019. Suitable habitat for false hop sedge may be present within the Transmission Route; however, ground-disturbing activities in potentially suitable habitat are expected to be minimal. Therefore, minimal adverse impacts on the species are anticipated due to the fact that the species is rare in the Coastal Plain and that there will be minimal ground-disturbing activities in potentially suitable habitat.

2.2 Human Environment

Transmission lines have the potential to impact the human environment during construction and operation of the Timbermill Line. For example, transmission lines and conductors have the potential to be incompatible with existing land uses, zoning, or land management plans, displace homes or businesses, affect the aesthetics and socioeconomics of the Transmission Route, impact cultural resources, and impact existing utility infrastructure and transportation. Each of these resources related to the human environment and their potential impacts are discussed in more detail below.

Generally, the Transmission Route is a sparsely populated rural area with farmsteads located along roads, and away from population centers. The municipality nearest to the Wind Project, including the Timbermill Line, is the Town of Edenton which is approximately 0.3 mile from the southernmost end of the Timbermill Line. Figure 1 depicts the rural landscape in the Transmission Route.

2.2.1 Land Use and Development

Information about land use and zoning provides important insight into existing human settlement patterns and future development. Land use and county zoning information for Chowan County was reviewed to assess the Timbermill Line's potential to impact existing land uses and to identify any additional routing constraints that should be considered for development of the transmission line. The transmission line crosses through a predominantly rural area with sparsely scattered rural residences, farmsteads, agricultural production and silviculture operations, and agricultural support facilities throughout.

Land Cover and Use

Information available from the 2016 National Land Cover Database (NLCD) was reviewed to identify existing land cover types and uses in the Transmission Route (Yang, et al., 2018). Table 2.2-1 presents details about the amount of each NLCD land cover type within the Transmission Route and this information is also displayed on Figure 4 – Land Cover/Land Use.

Table 2.2-1
Land Cover Types within the Transmission Route

NLCD Land Cover Category	Transmission Route	
	Acres	Percent
Cultivated Crops	54.0	43.2
Deciduous/Evergreen/Mixed Forest	47.3	37.9
Woody Wetlands	14.7	11.8
Shrub/Scrub Land	4.4	3.5
Emergent Herbaceous Wetlands	2.0	1.6
Herbaceous Land	1.4	1.1
Developed Areas (i.e., low intensity, open space)	1.1	0.9
Total	**124.9**	**100.0**

Source: Yang et al., 2018

The primary land cover type in the Transmission Route is cultivated cropland (54.0 acres). The second most common land cover types are deciduous/evergreen/mixed forest (47.3 acres) and woody wetlands (14.7 acres). According to the NLCD data, the Transmission Route also includes a small amount of shrub/scrub land, emergent herbaceous wetlands, herbaceous land, and developed land (collectively totaling about 8.9 acres). A detailed discussion of wetlands and herbaceous vegetation within the Transmission Route is presented in Sections 2.1.5 and 2.1.6, respectively.

In addition to reviewing the NLCD data, Timbermill Wind compared this data to more recent aerial imagery and noted that approximately 14.0 acres categorized as deciduous/evergreen/mixed forest and woody wetland in the NLCD data has been cleared of trees (i.e., timber harvest). The areas are at the Switching Station site and about 0.6 mile of the transmission line ROW leading up to the Switching Station, and between Structures 14 and 15. This reduces the amount of forested land within the Transmission Route by 14.0 acres.

Zoning

County zoning information for Chowan County was reviewed to identify any additional routing constraints for the proposed transmission line. As discussed further in the Residences section, National Electrical Safety Code® (NESC) standards require certain clearances between transmission line facilities and buildings for safe operation of the transmission line. Areas zoned as commercial, industrial, or residential are the most likely areas where future development of residences and other structures may occur. As demonstrated with the land use data, and generally throughout the Human Environment section, much of the Transmission Route is rural and agricultural.

Most of the Transmission Route is within the Chowan County A-1, Agricultural District, from the Collector Substation south to the second crossing of Paradise Road (Chowan County, 2021). According to the Chowan County Zoning Ordinance (2006), the goals for the A1, Agricultural District are to preserve agricultural land and encourage continued use of the land for agricultural production while allowing low-intensity commercial development that supports rural residents in these areas. Construction and operation of transmission lines is a permitted use in the A1, Agricultural District according to Article 5, Table 5-1 of the Chowan County Zoning Ordinance (2006). Timbermill Wind obtained a conditional use permit for the Wind Facility in 2016 (amended in 2018), and the permit includes approval for the Transmission Line.

Chowan County also has a Flood Hazard Overlay District that applies to all areas defined as within the FEMA-designated 100-year floodplain (refer to Article IV, Section 4.04(B) of the Chowan County Zoning Ordinance, 2006). As noted in Section 2.1.3, there are 1.4 acres of FEMA-designated 100-year floodplain within the Transmission Route and associated with an unnamed tributary to Pollock Swamp. Timbermill Wind will not place poles for the transmission line within the 100-year floodplains; therefore, the conditions of the Flood Hazard Overlay District will not apply to the Timbermill Line.

While the Transmission Route is not located within the municipal boundary of the Town of Edenton, Edenton zoning districts extend beyond the municipal boundary (referred to as extraterritorial jurisdiction or ETJ). Based on review of the Town of Edenton Official Zoning Map (2008), the Switching Station and the last mile of the ROW south of the second crossing of Paradise Road are within the RA District. Article 9 of the Town of Edenton Unified Development Ordinance (UDO; Town of Edenton; 2016) states that the RA District was established to preserve low-density and single-family residential development and agricultural land uses. Construction and operation of transmission lines is a permitted use in the RA District according to Article X, Section 146 Edenton UDO Table of Permitted Uses. On March 13, 2018, Chowan County passed a resolution accepting jurisdiction of the portion of the Transmission Route that is within the ETJ for the Town of Edenton, thereby accepting responsibility for all zoning-related discussions related to the proposed Timbermill Line.

Agriculture and Silviculture

According to the USDA's 2017 Census of Agriculture, there are 97 farms operating in Chowan County with an average farm size of 552 acres (USDA, 2017). Crop sales account for a larger percentage of total market value of agricultural products sold annually compared to livestock, at $39 million vs. $8 million, respectively. Soybeans, cotton, and peanuts are the dominant agricultural crops by acreage in Chowan County and poultry (broilers and other meat-type chickens sold) is the dominant livestock raised by farm inventory numbers. A discussion of prime farmland in the Transmission Route is presented in Section 2.1.1. Agricultural areas are displayed on Figure 5 – Agriculture and Silviculture.

The Conservation Reserve Enhancement Program (CREP) is an offshoot of the Conservation Reserve Program (CRP), which is a land conservation program established by the USDA and administered by the Farm Service Agency (FSA) that pays farmers a yearly rental fee for agreeing to take environmentally sensitive land out of agricultural production in an effort to improve environmental health and quality (USDA, undated). Enrollment in the CREP is voluntary and participation in the program comes with certain restrictions on the types of development allowed on parcels enrolled in the program if such development is inconsistent with the conservation goals of the program. No CREP parcels have been identified within the Transmission Route.

Specialty crops typically include nurseries, vineyards, orchards, citrus groves, dairies, aquaculture, and tree farms. If present within the Transmission Route, specialty crop farms (e.g., organic farms) or livestock operations may necessitate additional specific mitigation measures to minimize the effects of construction. To date, no farmland engaged in specialty crop production has been identified within the ROW for the Timbermill Line. Timbermill Wind will continue to work with individual landowners through the easement process to identify any specialty crops or livestock operations that may be impacted by the Timbermill Line. If any specialty crops or livestock operations are identified, Timbermill Wind will work with landowners to determine measures to avoid and minimize impacts to these resources.

According to an assessment of forestry impacts on North Carolina's economy, prepared by the NC State Extension Office, 51,649 acres of private timberland (i.e., silvicultural land) are present in Chowan County, or 47 percent of the total acreage in the county (NC State Extension, 2018). Forestry, logging, and forest products contributed about $8.9 million in industry output to the state's economy and supported 82 jobs with a total payroll of approximately $4.4 million (NC State Extension, 2018). As a result of landowner outreach, Timbermill Wind has identified three landowners with silviculture operations along the Transmission Route. Silviculture areas are displayed on Figure 5 – Agriculture and Silviculture.

Urban, Commercial, and Industrial Areas

The Transmission Route is in a predominantly rural area with sparsely scattered rural residences, farmsteads, row crop and silviculture operations, and agricultural support facilities throughout. According to the U.S. Census Bureau's Quick Facts website, population density in Chowan County is about 85.8 persons per square mile (U.S. Census Bureau, 2019a). The nearest municipality is the Town of Edenton, which is about 0.3 mile south of the Timbermill Line. The Transmission Route is not located within commercial or industrial areas.

Residences

Industry safety standards (i.e., NESC) require certain clearances between transmission line facilities and the ground, and between transmission line facilities and buildings for safe operation of the transmission line. To comply with NESC standards and allow sufficient space for transmission line maintenance, transmission lines are generally routed to avoid residences or other buildings within the ROW. Residences or other buildings located within a proposed ROW that cannot be avoided are generally removed or displaced. Displacements are relatively rare and are more likely to occur in heavily populated areas where avoiding all residences is not always feasible.

The Transmission Route is located in a sparsely populated rural area that is primarily used for agricultural and silvicultural production. Timbermill Wind primarily co-located the transmission line along existing roadways and property lines, where residences are typically not present, to minimize proximity to residences and other buildings. However, one residence is located within the ROW and two residences are located within 30 and 80 feet of the ROW, respectively (see Figures 7b and 7d of the Detailed Route Maps). These three residences are participating residences. No other residences are located within 350 feet of the Transmission Route.

2.2.1.1 Impacts and Mitigation

Land Cover and Use

Construction and operation of the Timbermill Line is not expected to have a significant impact on land use within Chowan County. Existing land uses within the Transmission Route will experience minimal, short-term impacts during the period of construction. Timbermill Wind sited the transmission line to be co-located with roads, property lines, or field edges for most of its length to minimize impacts to non-developed areas. The ROW for the proposed transmission line (about 112.7 acres total) predominantly crosses cultivated crop land (53.2 acres), deciduous/evergreen/mixed forest land (41.6 acres), and woody wetland (10.4 acres). However, as noted in the description of existing land cover and use, review of more recent aerial imagery indicates that about 14.0 acres of silvicultural land has been timbered since the NLCD data was compiled, which reduces the total impacts on forested categories (e.g., deciduous/evergreen/mixed forest and woody wetlands). Of these 14.0 acres, about 9.3 acres is within the ROW for the transmission line; the remaining 4.7 acres are within the Switching Station site (4.3 acres) and access road (0.4 acre) which are discussed below. The remaining NLCD land cover types within the ROW for the transmission line include shrub/scrub land (3.8 acres), herbaceous land (1.4 acres), emergent herbaceous wetlands (1.3 acres), and developed land (1.0 acre).

When construction is complete, Timbermill Wind will restore areas disturbed during construction and most land uses will be allowed to continue as before. The exception is forested land which will be converted to transmission line ROW and maintained as herbaceous land or naturally revegetated for the life of the Timbermill Line. No additional mitigation measures are proposed. A detailed discussion of vegetation impacts and mitigation measures is presented in Section 2.1.5.1 and a discussion of impacts and mitigation measures that will be used in agricultural and silvicultural land is presented below.

Construction of the Collector Substation will affect deciduous/evergreen/mixed forest land (5.3 acres) and shrub/scrub land (0.2 acre). As noted in Section 1.0, the Collector Substation will affect about 5.5 acres of land. For the purposes of this Environmental Report, Timbermill Wind conservatively assumed permanent impacts to the entire 5.5-acre area. After trees and other woody vegetation are cleared from the 5.5-acre area, the Collector Substation components will be mounted on concrete pads, the area within the Collector Substation will be graveled to maintain the area free of vegetation, and a fence will be installed to prevent unauthorized entry by individuals and wildlife.

As noted above, the 4.3-acre Switching Station footprint, 3.7 acres of which was categorized as woody wetlands in the NLCD data, has since been timbered. The NLCD data also indicates that 0.6 acre of emergent herbaceous wetland is present within the Switching Station site; however, wetland delineations confirm that the Switching Station site avoids wetlands. For the purposes of this Environmental Report, Timbermill Wind conservatively assumed permanent impacts to the entire 4.3-acre site. Similar to the Collector Substation, the Switching Station components will be mounted on concrete pads, the area within the Switching Station will be graveled to maintain the area free of vegetation, and a fence will be installed to prevent unauthorized entry by individuals and wildlife. A more detailed discussion of impacts and mitigation measures for wetlands is presented in Section 2.1.4.1.

As noted in Table 2.2-1, the access road between Paradise Road and the Switching Station is partially located within the 150-foot ROW for the transmission line; the acres of land cover types presented in Table 2.2-1 are inclusive of the access road. The access road would be about one mile in length and 20-feet-wide, or about 2.4 acres. Based on NLCD data, land cover types crossed by the access road include 0.8 acre of cultivated crop land, 0.6 acre of woody wetland, 0.4 acre of deciduous/evergreen/mixed forest land, 0.4 acre of shrub/scrub land, 0.1 acre of emergent herbaceous wetland, and less than one acre of developed land. Timbermill Wind will import fill to construct the road base and maintain the access road as a gravel road during operation of the Timbermill Line; construction of the access road would constitute a permanent impact on the land cover types it crosses, for the life of the Timbermill Line.

Zoning

The proposed Timbermill Line predominantly crosses areas zoned as agricultural by Chowan County and as RA by the Town of Edenton. Construction and operation of transmission lines is a permitted use in both the Chowan County Agricultural District and the Town of Edenton RA District. The Timbermill Line also crosses the Flood Hazard Overlay District in Chowan County. Timbermill received a Conditional Use Permit (CUP) from Chowan County for the Wind Project, including the Timbermill Line and associated facilities, in November 2016 and an amended CUP for the current configuration of the Wind Project, including the current configuration of the Timbermill Line and associated facilities, in May 2018.

Timbermill Wind will avoid placing transmission line structures in the Flood Hazard Overlay District by spanning the Timbermill Line over these areas. No areas zoned as commercial or industrial are crossed by the proposed Timbermill Line. Based on review of the zoning information for Chowan County, the likelihood of future residential, commercial, or industrial development within the proposed transmission line is low; therefore, no mitigation measures are proposed.

Agriculture and Silviculture

Construction of the Timbermill Line could cause minimal, temporary impacts on agricultural land from soil compaction and rutting, accelerated soil erosion, crop damage, temporary disruption to normal farming activities, and introduction of noxious weeds to the soil surface. As shown in Table 2.2-1, there are 54.0 acres of cultivated crop land within the Transmission Route; of these 54.0 acres, 53.2 are within the ROW for the proposed transmission line and 0.8 are crossed by the access road. The Collector Substation and the Switching Station are not sited in cultivated crop land.

Timbermill Wind will implement measures to reduce compaction, soil erosion, and the introduction of noxious weeds in actively cultivated crop land affected by the Timbermill Line. Construction impacts on farmland would be short term and minimal in nature and would be mitigated through the proper use and installation of BMPs, such as minimizing the number of vehicles and protection and maintenance of topsoil during ROW clearing and transmission line construction. Timbermill Wind will further mitigate impacts on agricultural production by coordinating with landowners or farm operators regarding the timing of construction to avoid peak growing season by constructing the Timbermill Line before spring planting or after harvest in the fall. If this is not possible, Timbermill Wind will compensate the landowner or farm operator for crop damage

The Transmission Route was developed with attention to minimizing impacts on agricultural land; however, permanent impacts to agricultural land will occur where structures are placed in

cultivated fields. Based on review of NLCD data and preliminary design, approximately 24 structures will be located in cultivated crop land (i.e., agricultural land). Construction activities, such as site preparation and installation of structures, are anticipated to impact approximately 0.1 acres per structure (75-foot diameter around each structure), for a total of 2.4 acres of impact on cultivated crop land.

Structures in cultivated fields act as barriers and can hinder efficient operation of large machinery. The proposed transmission line follows roads, property lines, and field edges for most of its length. Timbermill Wind proposes to minimize impacts on agricultural land by placing structures along field edges, as closely as feasible from the edge of road rights-of-way or parcel lines. Furthermore, Timbermill Wind will make reasonable efforts to work with landowners to finalize the structure locations. The final spacing and location of structures will be designed to accommodate the movement of farm equipment within agricultural fields while still maintaining safety and design standards. Lastly, Timbermill Wind will implement monopole structures instead of H-frame structures, which occupy less space and are easier for farmers to maneuver around.

The proposed access road to the Switching Station, which would be partially located within the ROW for the transmission line, would cross 0.8 acre of cultivated crop land. Timbermill Wind will import fill for the road base and maintain this as a gravel road during operation of the Timbermill Line; construction of the access road would constitute an additional permanent impact on agricultural land for the life of the Timbermill Line.

Timbermill Wind has designed the Timbermill Line to avoid CREP parcels. Timbermill Wind identified one CREP parcel within 0.4 mile of the proposed transmission line, but this parcel will be avoided during construction and operation of the Timbermill Line. If additional CREP easements are identified during the easement and title clearance process and final design requires transmission line structures to be placed on parcels enrolled in the CREP program, Timbermill Wind will work with landowners and the USDA FSA to address potential impacts to these conservation easements and to fully compensate landowners for lost CREP revenue resulting from the placement of the line within a CREP easement.

Post-construction restoration efforts in agricultural land will include restoration of any temporary access modifications and deep plowing to remove compaction. Agricultural production activities will be able to continue around facilities after construction.

The Timbermill Line would impact 55.6 acres of land that is currently used for silvicultural production, 41.5 acres of which is forested and 14.1 acres that has been recently cleared. Of these 41.5 acres, 36.0 acres are within the ROW for the proposed transmission line and 5.5 are within the Switching Station site. Trees and other woody vegetation will be harvested from silvicultural land within the Transmission Route. To allow for safe operation of the Timbermill Line, the Transmission Route will be converted to herbaceous cover or naturally revegetated area for the life of the Timbermill Line. Timbermill Wind secured voluntary easement agreements with the owners of the silviculture operations that will compensate the owners via lease payments that will offset any loss of merchantable timber. No additional mitigation measures are proposed.

Urban, Commercial, and Industrial Areas

The Timbermill Line is not located in urban, commercial, or industrial areas; therefore, no impacts on these areas are anticipated and no mitigation measures are proposed.

Residences

As noted in the description of existing environment, Timbermill Wind primarily co-located the transmission line along existing roadways and property lines to avoid impacting residences, but one residence is located within the ROW for the proposed transmission line and two residences are located within 30 and 80 feet of the ROW, respectively.

One residence is located north of Paradise Road, about 1.3 miles east of the intersection of Paradise Road and Greenhall Road (Residence A on Figure 6 – Existing Infrastructure and Managed Lands). This residence is occupied and is approximately 30 feet east of the 150-foot ROW. The landowner has signed an agreement with Timbermill Wind. In addition to the residence, an outbuilding north of the residence on this parcel is located immediately adjacent to the 150-foot ROW. The Preliminary Alignment is on the adjacent parcel near this residence and outbuilding; only the ROW extends on the parcel with these buildings. Additionally, Timbermill Wind has designed a longer span of approximately 1,450 feet to avoid transmission structures adjacent to either building.

Two residences are located on adjacent parcels on the west side of Paradise Road, about one mile west/northwest of the Switching Station and U.S. Highway 17 (Residences B and C on Figure 6, respectively). To minimize impacts in this area, Timbermill Wind reduced the width of the ROW from 150 feet to 75 feet and increased the span between poles to 840 feet. One residence and an outbuilding are within the 75-foot ROW and another outbuilding is partially within the ROW. The landowner has confirmed that this residence has been vacant for several years and Timbermill Wind has an agreement with the landowner to demolish the residence and both outbuildings. The second residence on the adjacent parcel is about 80 feet north of the transmission line ROW. This residence is the homestead of a participating landowner.

2.2.2 Transportation and Utilities

Transmission line projects have the potential to affect local transportation networks such as roadways, railroads, airports, and airstrips. Use of heavy equipment during construction may damage existing road surfaces and local roadways could experience temporary road and/or lane closures during construction. In addition, the influx of construction contractors could increase traffic volumes on local roadways. Co-location of transmission lines with existing public roads could limit future roadway expansion or realignments, and could interfere with routine maintenance of roadways. In addition, if a transmission line is sited too close to an operating railroad, it could interfere with safe operation of the railroad.

Transmission line projects also have the potential to affect existing public utility infrastructure and the location of existing utilities is an important factor to be considered during transmission line routing and development. While co-location with existing utilities is encouraged, any co-location with existing utilities should be done in a way that avoids impacting the safe operation and routine maintenance of those utilities.

Online research was conducted to identify roadways, railroads, airports, airstrips, and existing utility infrastructure within the Transmission Route. The results of this review and a discussion of potential impacts to these features from construction and operation of the Timbermill Line is presented below.

2.2.2.1 Transportation

The Transmission Route does not cross any U.S. or state highways or interstates. The nearest highway is U.S. Highway 17, which is about 0.2 mile southeast of the Switching Station and the southern end of the transmission line. The remainder of the Transmission Route primarily crosses and is co-located with county and gravel roadways, such as Paradise Road, and private drives. U.S. Highway 17 extends southwest to northeast across southern Chowan County through the Town of Edenton in the Transmission Route. Paradise Road beings on the northeastern end of the Town of Edenton, travels north/northeast for just under three miles, then turns to the west for just under two miles before intersecting with Greenhall Road and New Road. The Timbermill Line crosses Paradise Road in two locations (see Figure 6 – Existing Infrastructure and Managed Lands).

There are no railroads in the Transmission Route. The Chesapeake & Albemarle Railroad travels north and east from the Town of Edenton, eventually crossing U.S. Highway 17 near the intersection of U.S. Highway 17 and N. Broad Street. After the railroad crosses the highway, it is adjacent to the southern end of the transmission line and the Switching Station for about 0.25 mile of its length (Figure 6 – Existing Infrastructure and Managed Lands).

There are no operating public-use airports or heliports within or within one mile of the Transmission Route. The nearest public airport is the Edenton Northeastern Regional Airport, located approximately 3.5 miles southeast of the Transmission Route and about two miles southeast of the Town of Edenton.

2.2.2.2 Existing Utilities

The primary electrical provider for the Transmission Route is Albemarle EMC (NC Electric Cooperatives, 2021). Within the Town of Edenton, electricity is provided by the city's Electric Department. Natural gas service in the Transmission Route is provided by Piedmont Natural Gas Company, Inc. (North Carolina Utilities Commission, 2018.).

An existing 230 kV transmission line (Winfall to Mackeys), and the existing Chowan Substation (a distribution level substation), both owned by Dominion Energy, are present at the south end of the Transmission Route. The 230 kV line parallels the south side of the Chesapeake & Albemarle Railroad in a northeast to southwest direction and is therefore parallel to the proposed Switching Station and the transmission line for about 0.2 mile. Existing Utilities are displayed on Figure 6 – Existing Infrastructure and Managed Lands.

Based on review of the National Pipeline Mapping System, there are no pipelines in the Transmission Route (National Pipeline Mapping System, 2021).

2.2.2.3 Impacts and Mitigation

Transportation

Construction activities are not expected to impact transportation in the Transmission Route permanently or significantly. Construction could create a minor increase in traffic from construction vehicles and material/equipment delivery along roadways within and in proximity to the Transmission Route; however, this increase would be temporary and traffic volumes would return to normal conditions after construction activities are completed. Line and construction maintenance at crossing locations could also cause temporary delays if maintenance vehicles are

present. To minimize overall impacts, Timbermill Wind will limit vehicle traffic to the Timbermill Line ROW and existing access points to the greatest extent feasible.

Temporary road or lane closures may occur during the construction process to ensure safety of the construction crews and the traveling public. While the line is being constructed, the electrical conductors will be strung on support structures using a pulley system or a tensioner mounted on the back of a digger/derrick truck. At road crossings, roads or lands may be temporarily closed for safety purposes when stringing electrical conductors between support structures. These closures could range in duration from minutes to hours based on the width of the road and the complexity of the crossing. Temporary closings are not expected to have significant impacts on transportation in the area because of the generally rural nature of the area and subsequent low traffic levels on most roads. Once an aerial crossing is completed, the road(s) will be reopened to allow normal traffic flow.

After the completion of construction, Timbermill Wind will ensure that local and county roads used for purposes of access during construction are returned to either the condition they were in, or better, before ROW clearing began. Timbermill Wind will meet with township road supervisors, city road personnel, or county highway departments to address any issues that arise during construction with roadways to ensure the roads are adequately restored, if necessary, after construction is complete.

Construction and operation of the Timbermill Line would not impact the Chesapeake & Albemarle Railroad. The Tap Line, to be designed, constructed, and owned by Dominion energy, will cross the Chesapeake & Albemarle railroad. Dominion Energy will obtain all necessary railroad crossing permits from Chesapeake & Albemarle for crossing the railroad with the Tap Line. Additionally, Dominion Energy will also coordinate with the appropriate railroad personnel during construction to schedule electrical conductor stringing near the rail line for the safety of construction personnel and rail line operations.

Timbermill Wind does not anticipate any impacts on public airports, heliports, or private landing strips because there are none present within one mile of the transmission line and the structures for the transmission line will be less than 200 feet in height.

Existing Utilities

The Timbermill Line is not expected to impact existing utilities. Timbermill Wind will coordinate with utility providers and authorities to determine the locations of facilities, appropriate safety precautions and standards, and measures to address these precautions and standards. Timbermill Wind will meet with utility providers and residents as needed to avoid direct and indirect impacts on their services.

The proposed Timbermill Line does not cross the existing 230 kV Winfall to Mackeys transmission line. As noted in Section 1.0, Timbermill Wind will construct the Switching Station for the Wind Facility adjacent to the existing 230 kV transmission line where the Timbermill Line will interconnect to the existing Dominion Energy transmission line (i.e., the POI for the Wind Facility). No impacts or interruptions of service to the Chowan Substation will be necessary to connect the Wind Project.

Activities could damage existing underground utilities during grading, but this is improbable. Prior to construction, Timbermill Wind will locate and mark underground utilities using the North Carolina 811 system. If crossings of an underground utility or other underground infrastructure

with heavy equipment is necessary during construction, Timbermill Wind will employ BMPs to protect the infrastructure, such as construction matting.

Because no impacts to existing utilities are anticipated, no additional mitigation measures are proposed.

2.2.3 Managed Lands and Recreation Areas

The Transmission Route is located entirely on privately owned land. Additionally, no federal-, state-, or county-managed lands occur within one mile of the Timbermill Line (refer to Figure 6 – Existing Infrastructure and Managed Lands). According to the Edenton-Chowan Recreation Department website, recreational opportunities in Chowan County include youth football, baseball, soccer, softball, and volleyball leagues as well as adult pickle ball, tennis, and volleyball leagues and numerous walking trails throughout the county (Chowan County, Undated).

2.2.3.1 Impacts and Mitigation

Because no managed lands or recreation areas are within one mile of the Transmission Route, no impacts on these resources would occur and no mitigation measures specific to managed lands or recreation areas are proposed.

2.2.4 Socioeconomics

Existing socioeconomic conditions within the Transmission Route are reported based on data from the U.S. Census Bureau's QuickFacts and Explore Census Data websites. Data is provided at the county level to characterize the socioeconomic conditions in the Project Study Area and at the state level for the purpose of comparison. Table 2.2-2 provides income and employment information for North Carolina and Chowan County.

Table 2.2-2 Population and Economic Characteristics within the Transmission Route

Category	North Carolina	Chowan County
Population, Census, April 1, 2010[1]	9,535,483	14,793
ACS Population Estimates July 1, 2019[1]	10,488,084	13,943
Percent Change 2010 - 2019[1]	10.0	-5.7
ACS 2019 Estimates Per Capita Income Level (in 2018 U.S. dollars)[2]	$30,783	$26,256
ACS 2019 Estimates Unemployment Rate (%)[2]	5.6	7.7
ACS 2019 Estimates Persons Living Below the Poverty Level (%)[2]	14.7	16.0
Top 3 Industries[2, 3]	E (22.9%), M (12.4%), and R (11.5%)	E (31.8%), R (11.1%) and M (9.7%)
Total Minority Population[1, 4]	40.2	37.4

Note: ACS = American Community Survey

1 U.S. Census Bureau, 2019a

2 U.S. Census Bureau, 2019b

3 Industries are defined under the 2012 North American Industry Classification System and abbreviated as follows: E = Educational, Health and Social Services; M = Manufacturing; and R = Retail Trade.

4 Total minority percentage equals the total population minus the percentage of white alone, not Hispanic or Latino.

2.2.4.1 Demographics and Population Trends

Chowan County has very small population compared to the State of North Carolina as a whole, comprising about one percent of the state's total population. According to the U.S. Census Bureau's 2019 population estimates, the total population in North Carolina increased by 10.0 percent as compared to 2010 census data, while the estimated population in Chowan County has decreased during this same time period (U.S. Census Bureau, 2019a).

About 63 percent of the population in Chowan County identifies as white only, not Hispanic or Latino, which is slightly higher than the state level of about 60 percent. The largest minority group in North Carolina and in Chowan County is comprised of residents who identify as Black or African American alone.

2.2.4.2 Employment and Income

According to U.S. Census Bureau's 2019 American Community Survey 5-year Estimates, per capita income in Chowan County is similar, but approximately $4,000 less than per capita income at the state level (see Table 2.2-2). The unemployment rate in Chowan County is about 2 percentage points higher than the state level and the percentage of persons living below the poverty level is slightly higher than the state level at 16.0 percent (see Table 2.2-2).

The top three industries of employment in the State of North Carolina are education, health, and social services at 22.9 percent, manufacturing at 12.4 percent, and retail trade at 11.5 percent (U.S. Census Bureau, 2019b). The top three industries of employment in Chowan County vary slightly from the state level, with employment in the education, health, and social services industry significantly higher than at the state level (31.8 percent vs. 22.9 percent, respectively), and manufacturing slightly lower than at the state level (9.7 percent vs. 12.4 percent, respectively). Employment in the retail trade industry is similar to the state level.

2.2.4.3 Impacts and Mitigation

Transmission line projects have the potential to impact the socioeconomic conditions of an area in the short term through an influx of non-local personnel, creation of construction jobs, purchases of construction material and other goods from local businesses, and expenditures on temporary housing for non-local personnel. In the long term, transmission line projects may beneficially impact the local tax base in the form of revenues generated from utility property taxes. Additionally, permanent job creation or relocation of project personnel to the area for operation of a transmission line project could affect area demographics.

Construction of the Timbermill Line would have minimal, short-term impacts on the existing socioeconomic conditions in the Transmission Route. The Timbermill Line would not result in long-term or signification changes in the population size or demographics, or significantly affect employment or income, in the Transmission Route. The construction and operation of the proposed Timbermill Line is not anticipated to create or remove jobs in the Transmission Route or result in the permanent relocation of individuals to or from the area.

The communities in the Transmission Route will likely experience short-term positive economic impacts related to the increase in expenditures during construction of the Timbermill Line. Construction of the Timbermill Line would take approximately 4 months and the construction work force would be approximately 30 workers. Construction personnel would likely commute to the Wind Project Area on a daily or weekly basis instead of relocating to the area. The influx of

additional construction personnel in the Transmission Route will have a small positive impact on the local economy from construction crew expenditures in the local community (e.g., lodging, fuel, food). Construction materials (e.g., lumber, concrete, aggregate) may be purchased from local vendors when feasible.

No additional permanent staff will be necessary for operation and maintenance of the proposed transmission line. Therefore, the Timbermill Line is not expected to have a long-term effect on population trends, economic conditions, or employment. However, the Wind Project, including the Timbermill Line, will have a long-term beneficial impact on the local tax base from the incremental increase in revenues generated by property taxes paid by Timbermill Wind. As the overall socioeconomic impact of the Timbermill Line is anticipated to be positive, no mitigation measures are proposed.

2.2.5 Cultural Resources

Cultural resources can be defined as physical evidence or place of past human activity and include archaeological and historic architectural resources that provide important information about the history of human occupation and alteration of the landscape over time. Archaeological resources include prehistoric and historic artifacts, structural ruins, and earthworks or rock art that are typically found either partially or completely below the ground surface. Historic architectural resources include standing structures, such as buildings and bridges, as well as historic districts and landscapes.

Timbermill Wind hired Archaeological Consultants of the Carolinas, Inc. (ACC) to conduct a background literature review and archaeological field survey for the Timbermill Line. Background research on known cultural resources was conducted by reviewing archaeological site forms at the Office of State Archaeology (OSA) and the Office of Survey and Planning's online portal, as well as reviewing previous cultural resource reports and historic maps of the Transmission Route. These sources were reviewed to identify the types of archaeological sites that may be encountered and landforms or geographic features that have a higher potential for containing significant cultural resources. The archaeological field investigation for the Timbermill Line followed a predictive model that was developed by Cultural Resource Analysts, Inc. (CRA) in 2016. The predictive model was reviewed and approved by OSA in 2018, prior to the start of field investigations for the Timbermill Line. Timbermill Wind also hired CRA to conduct a review of historic architectural resources in and within 0.5 mile of the Transmission Route.

2.2.5.1 Impacts and Mitigation

Transmission line projects have the potential to impact archaeological resources primarily through ground disturbing construction activities. Archaeological resources could be impacted by the disruption or removal of subsurface archaeological materials, structural remains, or earthworks during transmission line construction. Conversely, historic architectural resources may be potentially impacted by the placement of a transmission line within the established viewshed of an historic property, which could affect the integrity of the viewshed in a way that decreases the historic value of the resource.

Based on the predictive model used for the Timbermill Line, the transmission line is not located within an area that has high potential to contain archaeological sites. ACC recommends that no archaeological sites listed in or eligible for listing in the National Register of Historic Places (NRHP) would be affected by the proposed Timbermill Line. Both the background research and

archaeological field investigation did not identify archaeological sites that would be affected by the proposed transmission line, Collector Substation, Switching Station, or access road.

If archaeological resources are discovered during construction, measures will be implemented in accordance with the Unanticipated Discoveries Plan and may include halting construction and/or notification of the State Historic Preservation Office, if appropriate. Additionally, if unanticipated human remains or burial resources are discovered during construction, they will be reported to the State Archaeologist per North Carolina General Statutes, Chapter 70, Article 3, and construction will cease in that area until adequate mitigation measures have been developed between Timbermill Wind and the State Archaeologist.

The survey conducted by CRA to identify historic architectural resources identified 24 structures within 0.5 mile of the proposed transmission line. None of structures are recommended as eligible for listing in the NRHP, therefore the Timbermill Line will not affect historic architectural resources that are eligible for listing in the NRHP.

2.2.6 Visual Resources

As described in Section 2.1.1, topography within the Transmission Route is generally flat. In forested areas of the Transmission Route, the vegetative cover is tall and dense, limiting the extent of the field of view. In agricultural areas, the vegetation cover is uniformly low, making the topography vulnerable to visual disruptions. Viewsheds in this area are generally broad and uninterrupted in agricultural areas and limited in forested and silviculture areas. The settlements in the vicinity are residences and farm buildings (inhabited and uninhabited farmsteads) scattered along rural county roads generally surrounded by trees. The southern portion of the Transmission Route is also shaped by a built environment. Horizontal elements, such as highways and county roads, are consistent with the long and open viewsheds in agricultural areas in the Project vicinity. Vertical elements such as transmission lines are visible from considerable distances in the southern portion of the Transmission Route and are the tallest and often the most dominant visual feature on the landscape.

2.2.6.1 Impacts and Mitigation Measures

The Timbermill Line structures and conductors would create aesthetic impacts that are anticipated to be minimal to moderate. The Timbermill Line will result in an alteration of the current landscape through construction of wood and steel poles of 75 to 120 feet. Timbermill Wind has minimized aesthetic impacts by routing the transmission line in such a way that is most harmonious with the existing landscape, such as along roads and field edges. While the Timbermill Line will require tree clearing for the ROW and Collector Substation, these areas are generally away from public use areas such as roads and residences. Other minimization measures include avoiding placing structures directly in front of residences and using construction methods that minimize clearing of vegetation near the transmission line.

Construction of an up-to-5.5-acre Collector Substation in an existing silviculture area will present a minimal visual impact because the facility will be surrounded by trees accessed by local roads primarily used to access the timber tracts (i.e., not well-traveled public roads). The up-to-4.3-acre Switching Station will occur in a recently harvested silviculture tract that will be most visible from south of the Transmission Route. The structures within the Collector Substation and Switching Station will be up to 120 feet high at their highest for lighting protection, but will on average have the profile of a single-story building and will consist of high voltage electrical equipment. In

addition, down-shielded lighting will help to maintain security at these facilities while minimizing lighting impacts.

2.3 Summary of Environmental Information

The Timbermill Line has been sited to avoid and minimize natural and human environmental impacts. Table 2.3-1 provides a summary of quantitative impacts on each resource described throughout this Environmental Report. Detailed Route Maps (Figures 7a-7d) provide a detailed review of the Preliminary Alignment, preliminary structures, the transmission ROW, Collector Substation, Switching Station, and access road on 2020 aerial photography with environmental features.

Table 2.3-1
Summary of Environmental Information

Environmental Feature	Transmission Line Facility			
	Transmission ROW	Collector Substation	Switching Station	Access Road
General				
Length (miles)	6.1	NA	NA	1.0
Right-of-Way or Footprint (acres)	112.7	5.5	4.3	2.4
Prime Farmland				
Total All Categories of Prime Farmland (acres)	96.2	5.5	4.3	1.0
Surface Waters and Floodplains				
Jurisdictional Waterbody Crossings (number)	11	-	-	1
Non-Jurisdictional Waterbody Crossings (number)	63	2	-	5[1]
100-year Floodplain (acres)	1.4	-	-	-
Wetlands				
Jurisdictional Wetlands (acres)	5.3	-	-	-
Non-Jurisdictional Wetlands (acres)	0.3	-	-	-
Transmission Structures in Jurisdictional Wetlands (number)	2	NA	NA	NA
Transmission Structures in Non-Jurisdictional Wetlands (number)	-	NA	NA	NA
Vegetation				
Silviculture to be cleared (acres)	36.0	5.5	-	-
Silviculture, recently harvested (acres)	9.3	-	4.3	0.4
Hardwood Forest to be cleared (acres)	3.6	-	-	-
Land Use (NLCD, 2016)				
Cultivated Crops	53.2	-	-	0.8
Deciduous/Evergreen/Mixed Forest	41.6	5.4	-	0.4
Woody Wetlands	10.4	-	3.7	0.6

Table 2.3-1
Summary of Environmental Information

Environmental Feature	Transmission Line Facility			
	Transmission ROW	Collector Substation	Switching Station	Access Road
Shrub/Scrub Land	3.8	0.1	-	0.4
Emergent Herbaceous Wetlands	1.3	-	0.6	0.1
Herbaceous Land	1.4	-	-	-
Developed Areas (i.e., low intensity, open space)	1.0	-	-	<0.1
Proximity to Residences				
Number of Residences within 0 to 75 feet from Preliminary Alignment or footprint of facility	1	-	-	-
Number of Residences within 76 to 150 feet from Preliminary Alignment or footprint of facility	2	-	-	-
Number of Residences within 151 to 300 feet from Preliminary Alignment or footprint of facility	-	-	-	-
Agricultural Impacts				
Number of Structures in Cultivated Cropland (estimate)	24	NA	NA	NA
Transportation				
Number of Road Crossings	5	NA	NA	-
Number of Railroad Crossings	0[2]	NA	NA	-
Corridor Sharing				
Roads and Railroads (miles)	0.9	NA	NA	-
Property and Field Lines (miles)	3.3	NA	NA	0.85
No Linear Feature Sharing (miles)	1.9	NA	NA	0.15
Total Linear Feature Sharing (miles)	4.2	NA	NA	0.85
Total Linear Feature Sharing (percent)	68.8%	NA	NA	85%

[1] The access road crosses five of the same non-jurisdictional waterbodies as the Transmission ROW; the access road does not cross any unique waterbodies.

[2] The Tap Line, which will be designed, constructed, and owned by Dominion Energy, will cross the Chesapeake & Albemarle railroad.

3.0 REQUIRED FEDERAL, STATE, AND LOCAL APPROVALS

The Timbermill Line will require various regulatory permits, reviews, and approvals. Table 3.0-1 provides a summary of the required permits, approvals, and consultations for the Timbermill Line. All permits, licenses, approvals, or consultations which are required will be obtained in the applicable areas prior to construction beginning.

Table 3.0-1
Status of Required Federal, State, and Local Approvals

Authorization	Administering Agency	Details	Status
Federal			
Section 404 Clean Water Act	US Army Corps of Engineers	Section 404 Individual Permit application is in process and will be submitted to USACE. Anticipated submittal Q2 2021.	In progress
Section 106 of the National Historic Preservation Act	State Historic Preservation Office	Cultural and historic resource survey studies have been planned and completed in coordination with North Carolina Department of Cultural Resources and State Historic Preservation Office. Section 106 consultation requirements for the USACE Section 404 Individual Permit are ongoing.	In progress
Section 7 of the Endangered Species Act	US Fish & Wildlife Service	Timbermill Wind has completed voluntary wildlife surveys and coordinated with USFWS on protocols and survey results under Section 10 of the ESA. Section 7 consultation requirements for the USACE Section 404 Individual Permit are ongoing.	In progress
State of North Carolina			
Section 401 Clean Water Act	North Carolina Department of Environmental Quality – Division of Water Resources	401 Water Quality Certification will be applied for in connection with the Section 404 Individual Permit.	In progress
Coastal Area Management Act (CAMA)	North Carolina Department of Environmental Quality – Coastal Management Division	Areas under Coastal Area Management Act (CAMA) jurisdiction are avoided by project design. No permit required.	Complete
Natural Resource Agency Consultation	North Carolina Wildlife Resources Commission	Study plans were developed, and results reviewed in coordination with North Carolina Wildlife Resources Commission (NCWRC) and NCWRC recommendations for impact avoidance, minimization and monitoring have been incorporated into project design and operations planning.	In Progress

Table 3.0-1
Status of Required Federal, State, and Local Approvals

Authorization	Administering Agency	Details	Status
Cultural Resource Agency Consultation	Division of Cultural Resources; Office of Archives and History	Cultural resource studies have been planned in coordination with North Carolina Department of Cultural Resources and State Historic Preservation Office to meet State regulatory requirements.	In progress
Certificate of Environmental Compatibility and Public Convenience and Necessity	North Carolina Utilities Commission	Expect to submit application Q2 2021. Certificate for transmission facility.	In progress
Certificate of Public Convenience and Necessity	North Carolina Utilities Commission	Expect to submit application in Q2 2021. Certificate for generation facility.	In progress
North Carolina Wind Permit	North Carolina Department of Environmental Quality	House Bill 484 established a permitting program for the siting and operation of wind energy facilities. Expect to submit application materials Q2 2021.	In progress
Clean Water Act, Section 401 WQC and/or State Isolated Waters/Wetland Permit	North Carolina Department of Environmental Quality – Division of Water Quality	To be addressed via Section 404 compliance and in accordance with NC DEQ requirements. Anticipated submittal Q2 2021.	In progress.
National Pollutant Discharge Elimination System Permit for Storm Water Runoff – Construction Sites	North Carolina Department of Environmental Quality – Division of Water Quality	To be addressed via Stormwater Pollution Prevention Plan, which is required for the National Pollutant Discharge and Elimination System Permit.	Not begun
Local			
Conditional Use Permit, as Amended	Chowan County Board of Commissioners	Received Chowan County Conditional Use Permit in November 2016, amended in May 2018.	Complete
Building Permit	Chowan County Planning Division and Building Inspector	Applicant proposes to complete prior to construction.	Not begun

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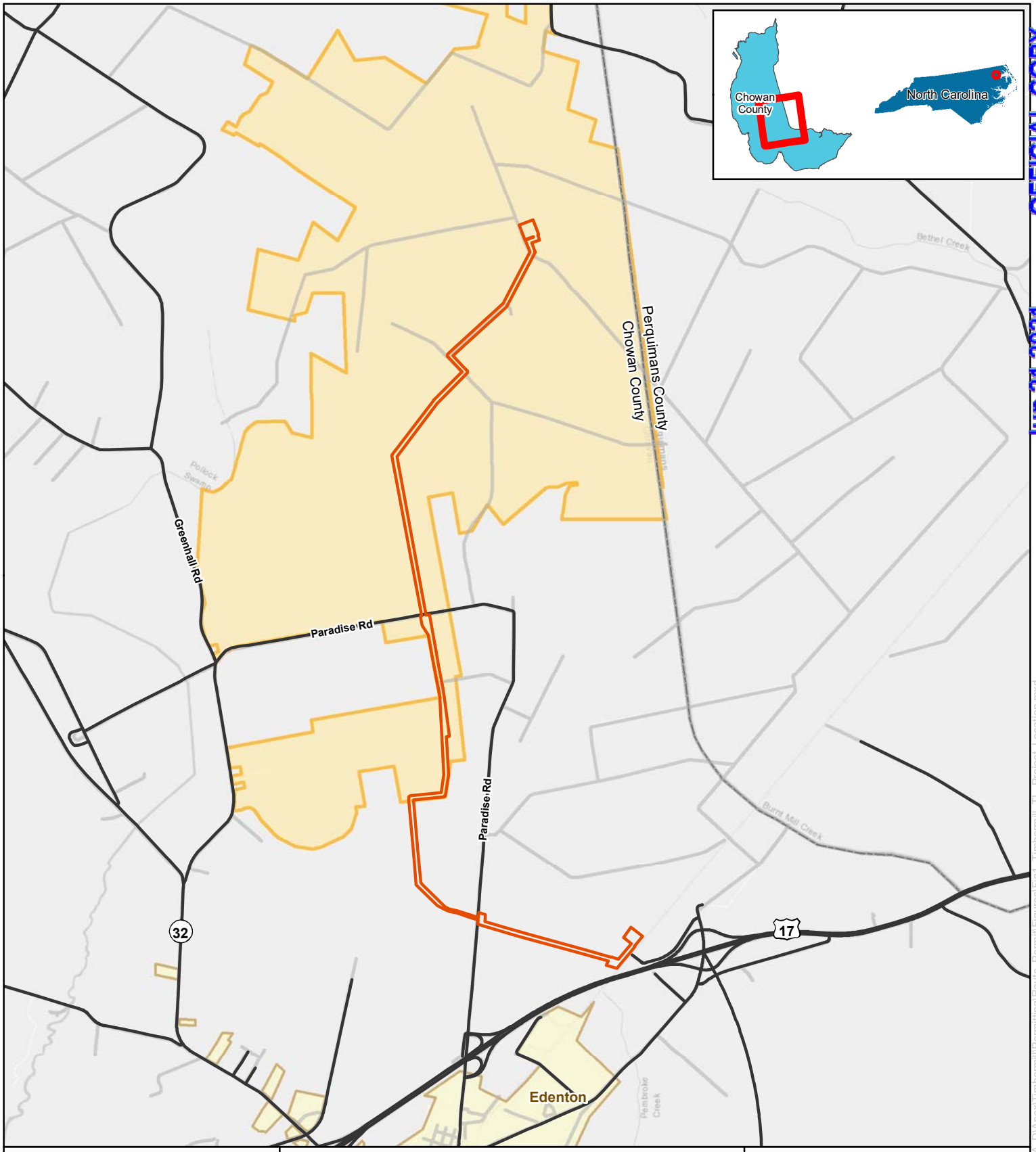
Figures



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Jun 21 2021

TIMBERMILL WIND

merjent

N

0 0.25 0.5 0.75 Miles

1:50,000

For Environmental Review Purposes Only
Preliminary Not for Construction

Figure 1
Wind Project Location
Timbermill Wind Project
Chowan County, North Carolina

- Transmission Route
- Wind Project Area
- City
- County
- State Maintained Road
- Local Road

Source: Z:\Clients\A_D\Apex\Timbermill\Permitting\Route_Permit\Figures\Fig1_Timbermill_TL_Project_Location.mxd

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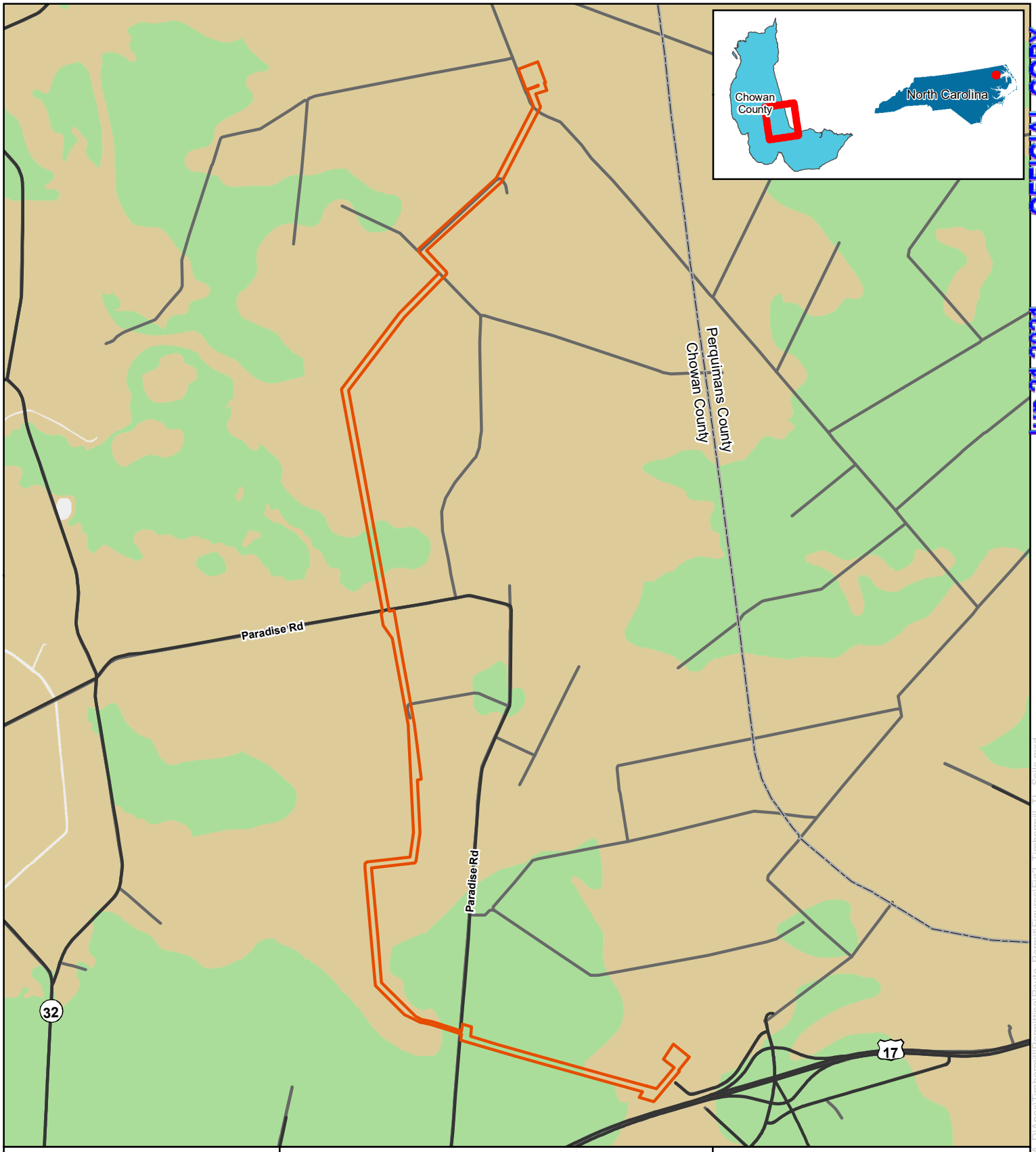

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Jun 21 2021

TIMBERMILL WIND

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0 0.25 0.5 Miles

1:36,000

For Environmental Review Purposes Only
Preliminary Not for Construction

Figure 2
Soils
Timbermill Wind Project
Chowan County, North Carolina

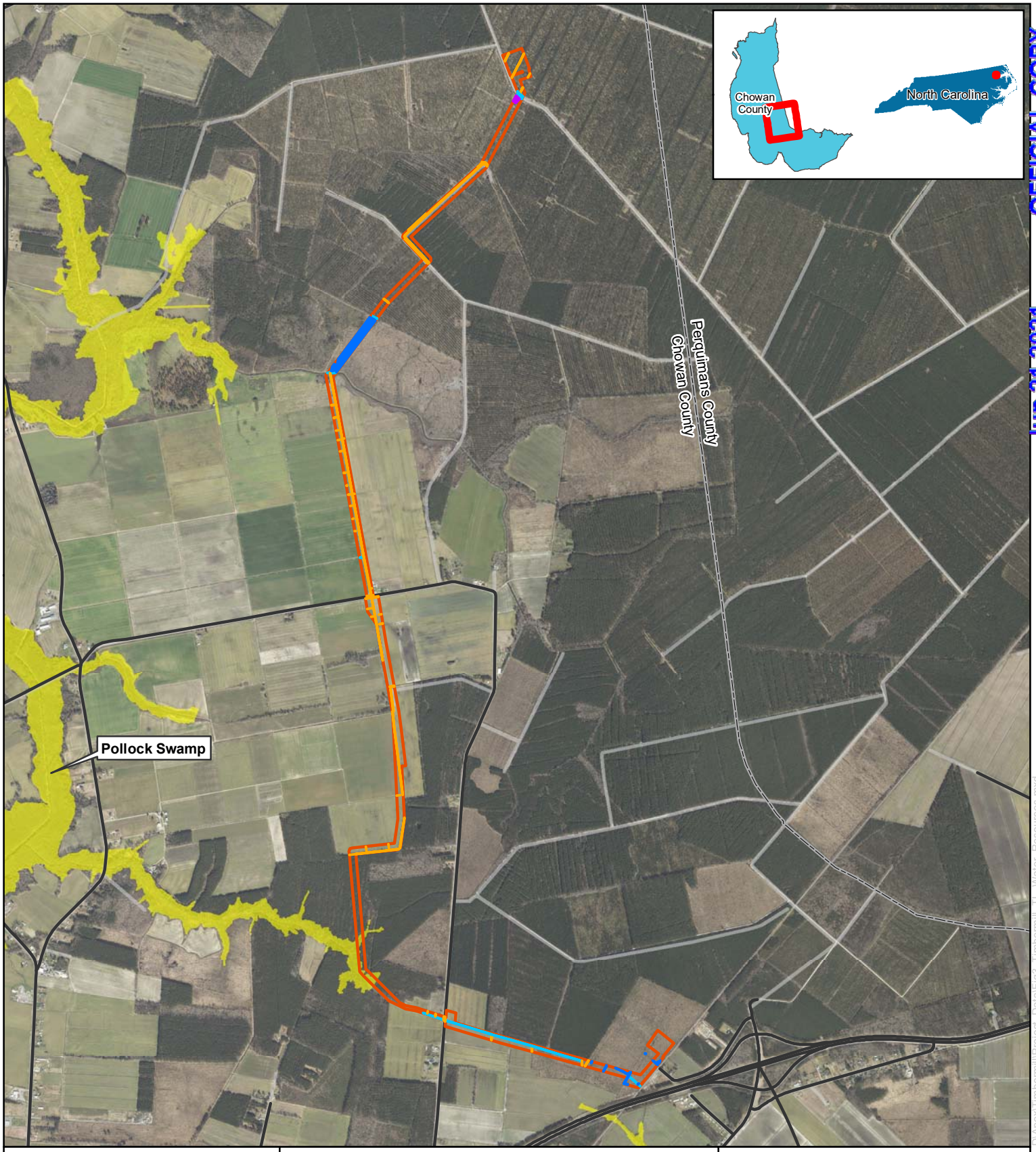
Transmission Route
State Maintained Road
Local Road

Farmland Classification

Prime Farmland
Farmland of Statewide Importance
Not prime farmland

Source: Z:\Clients\A_D\Apex\Timbermill\Permitting\Route_Permit\Figures\Fig2_Timbermill_1L_Soils.mxd

Date: (6/10/2021)



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Jun 21 2021

TIMBERMILL WIND

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0 0.25 0.5 Miles

1:36,000

For Environmental Review Purposes Only
Preliminary Not for Construction

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Figure 3
Water Features
Timbermill Wind Project
Chowan County, North Carolina

Field Delineated Wetland
- Potential Jurisdictional Wetland (a)(4)
- Non-Jurisdictional Wetland (b)(1)

Field Delineated Waterbody
- Potential Jurisdictional Ditch (a)(2)
- Non-Jurisdictional Ditch (b)(5)
- Transmission Route
- 100-Year Floodplain

Source: Z:\Clients\A_D\Apex\Timbermill\Project_Data\Fig3_Timbermill_IL_Water_Resources.mxd

Date: (6/9/2021)

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TIMBERMILL WIND

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Preliminary Not for Construction

Figure 4
Landcover
Timbermill Wind Project
Chowan County, North Carolina

Transmission Route

Source: Z:\Clients\A_DNApex\TimbermillProject_Data\Fig4_TimbermillIL_Landcover.mxd

Date: (6/9/2021)

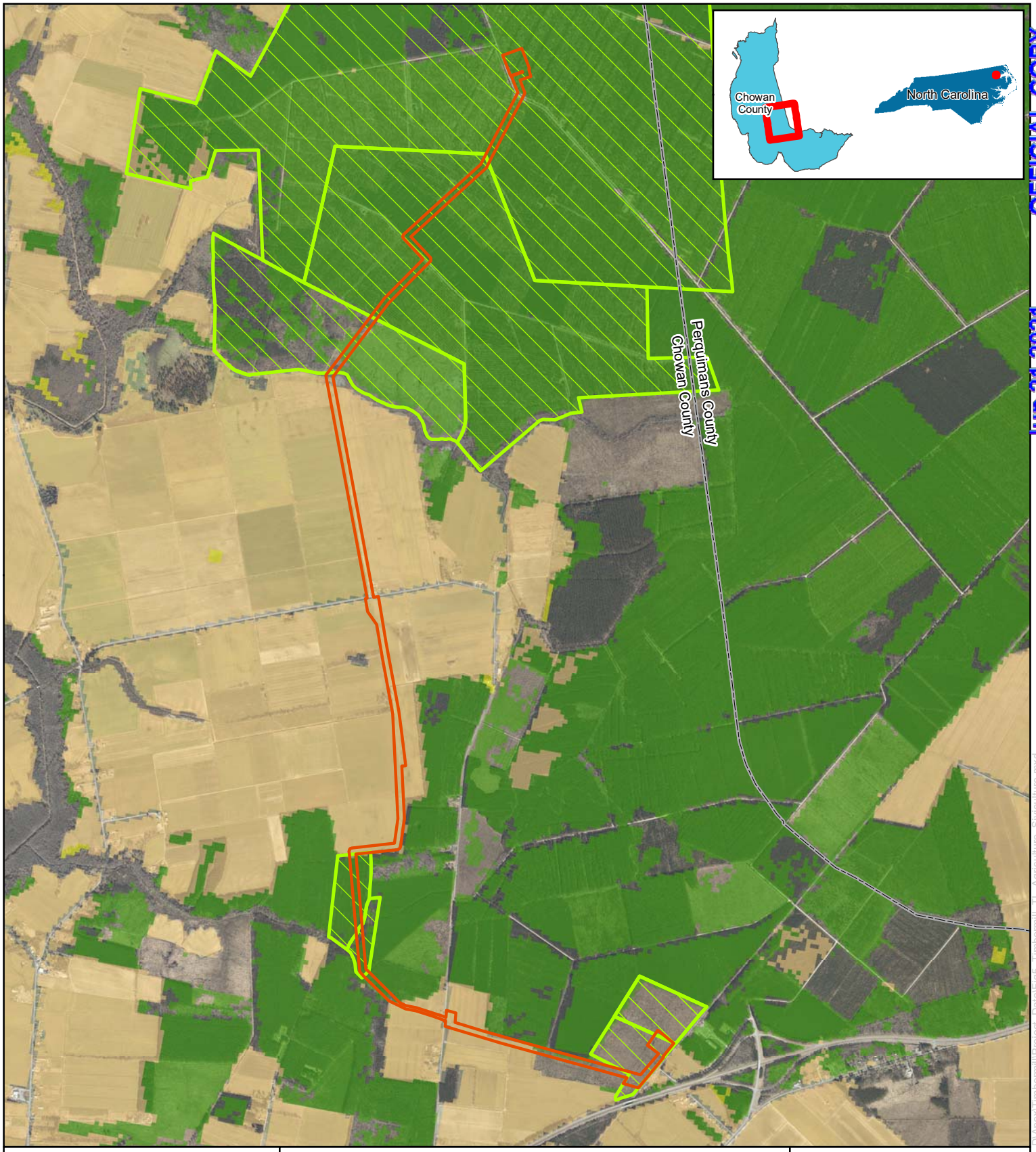

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Figure 5
Agriculture and Silviculture
Timbermill Wind Project
Chowan County, North Carolina

Transmission Route
Silviculture Parcels

NLCD Land Cover (2016)

Cultivated Crops
Forested
Hay/Pasture

Source: Z:\Clients\A_DAApex\Timbermill\Project_Data\Figs_Timbermill_IL_Agriculture_Silviculture.mxd

Date: (6/9/2021)

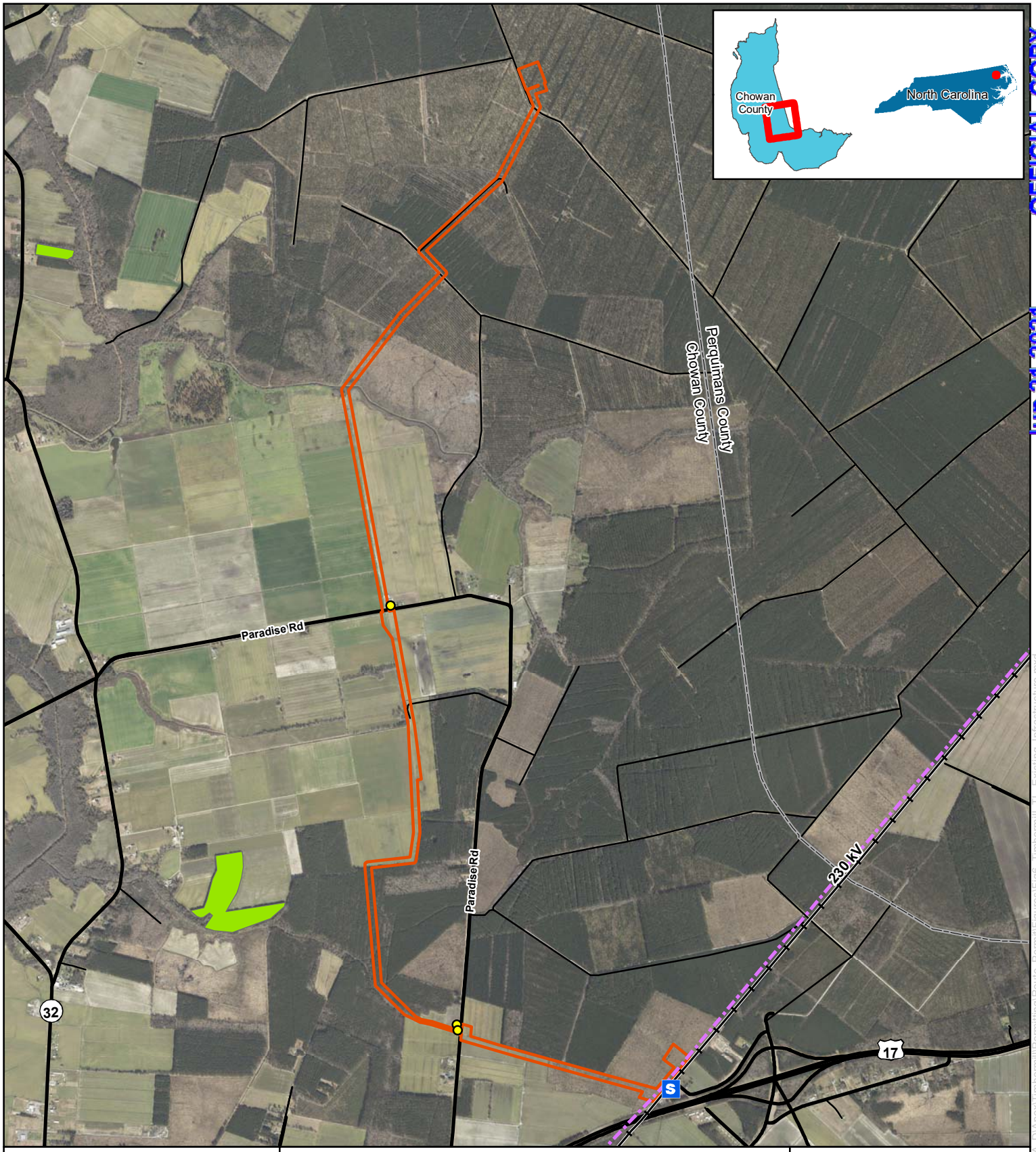

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Figure 6
Existing Infrastructure and Managed Lands
Timbermill Wind Project
Chowan County, North Carolina

- Residence/Building
- Existing Substation
- Transmission Route
- CREP Easement
- Railroad
- Existing Transmission Line
- State Maintained Road
- Local Road

Source: Z:\Clients\A_D\Apex\Timbermill\Permitting\Route_Permit\Figures\Fig6_Timbermill_TL_Existing_Infrastructure.mxd

Date: (6/10/2021)

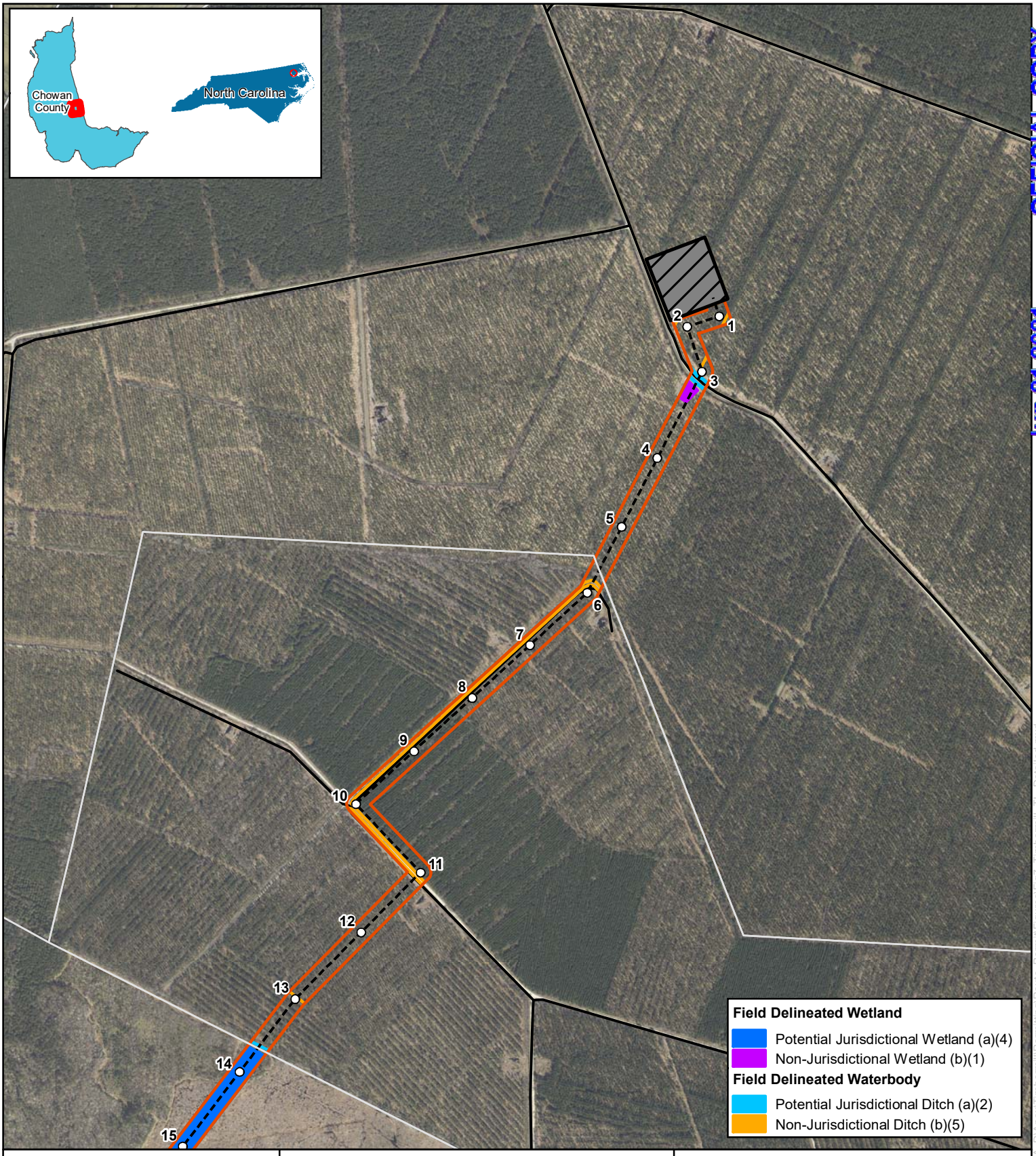

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Figure 7a
Detailed Route Map
Timbermill Wind Project
Chowan County, North Carolina

Page 1 of 4

- Transmission Structure
- Alignment of Timbermill Line
- Collector Substation
- Transmission Route
- Local Road

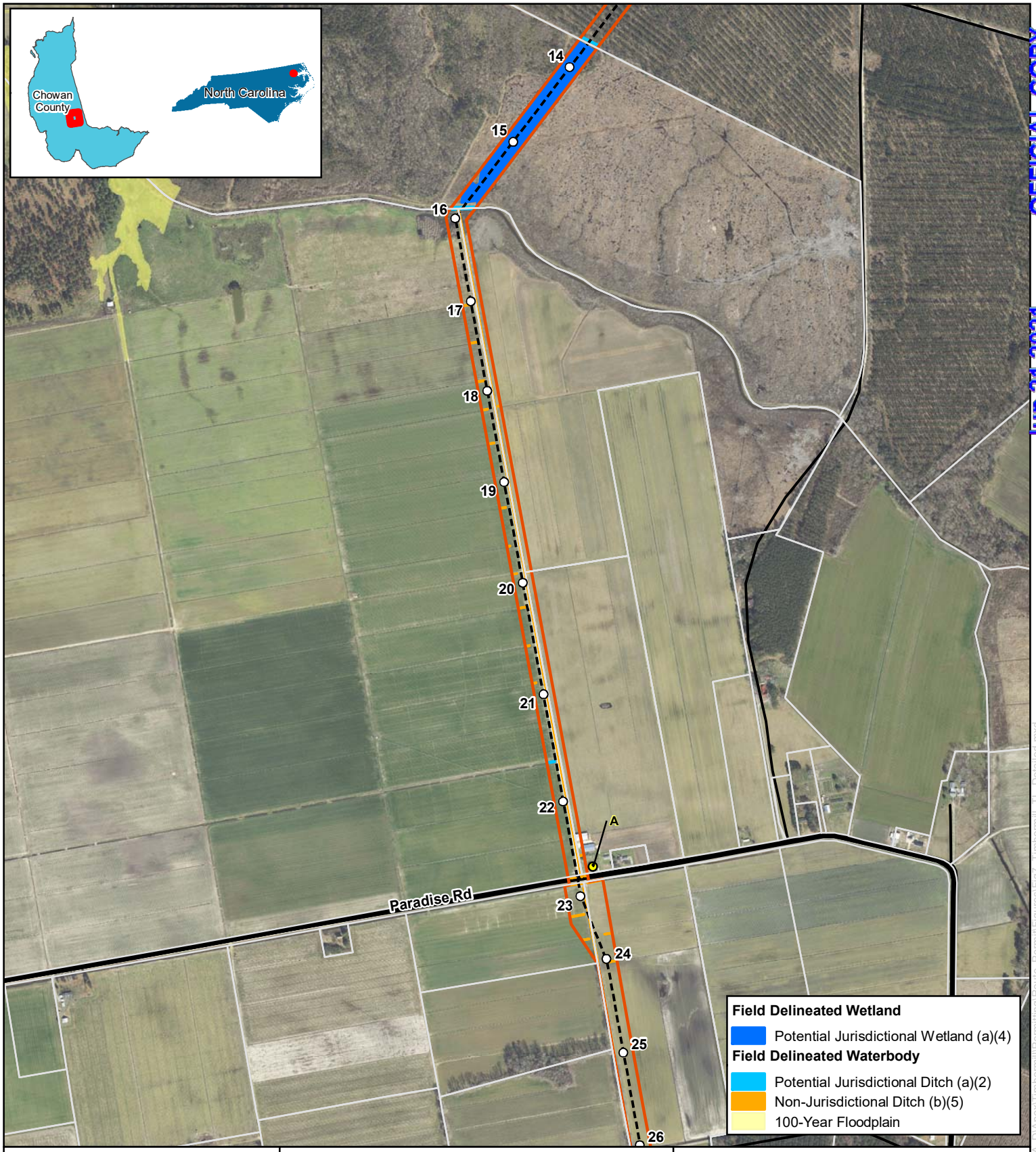

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Figure 7b
Detailed Route Map
Timbermill Wind Project
Chowan County, North Carolina

Page 2 of 4

- Transmission Structure
- Residence
- Alignment of Timbermill Line
- Transmission Route
- State Maintained Road
- Local Road

Source: Z:\Clients\A_D\Apex\Timbermill\Permitting\Route_Permit\Figures\Fig7_Timbermill_1L_Detailed.mxd

Date: (6/10/2021)

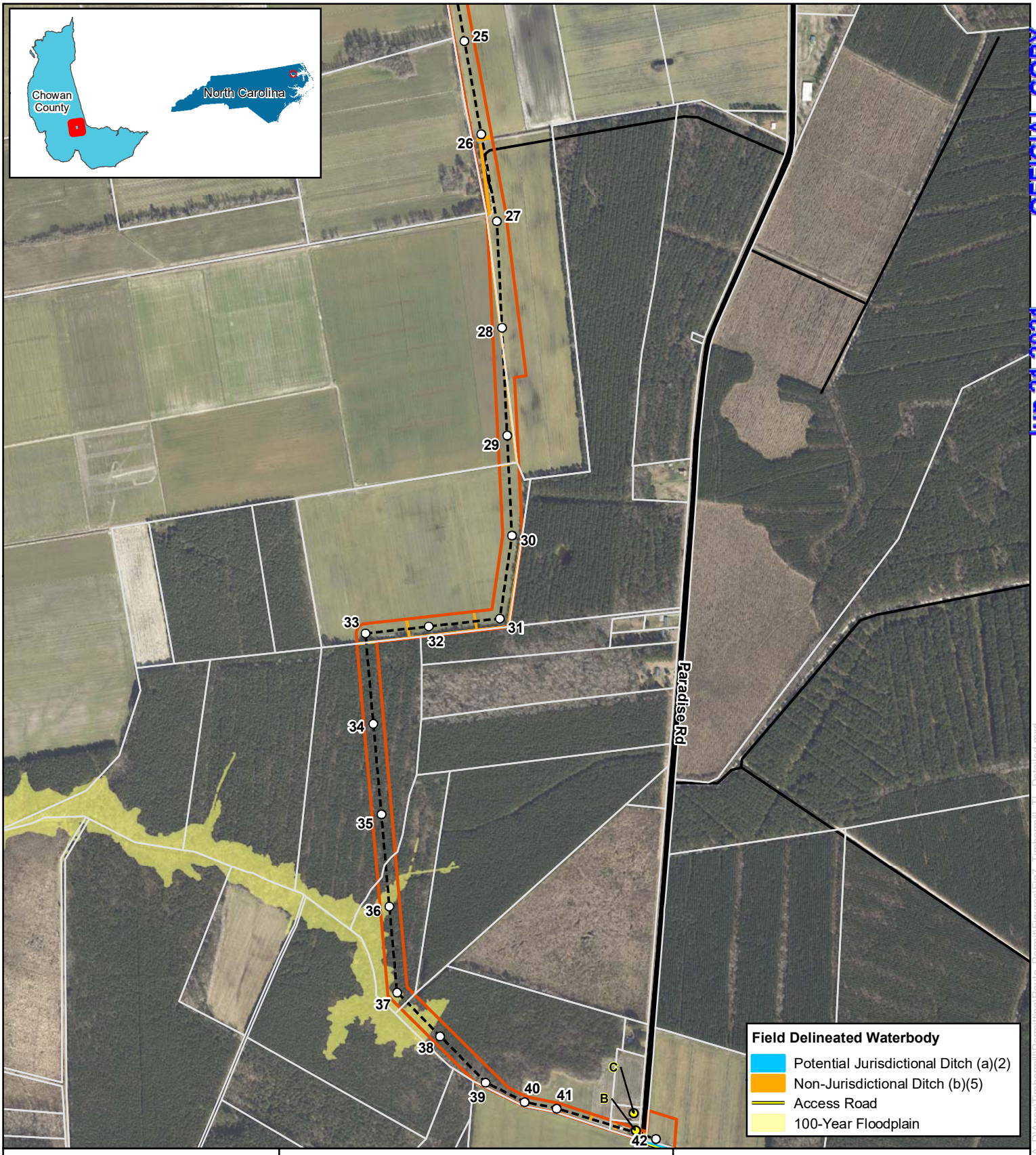

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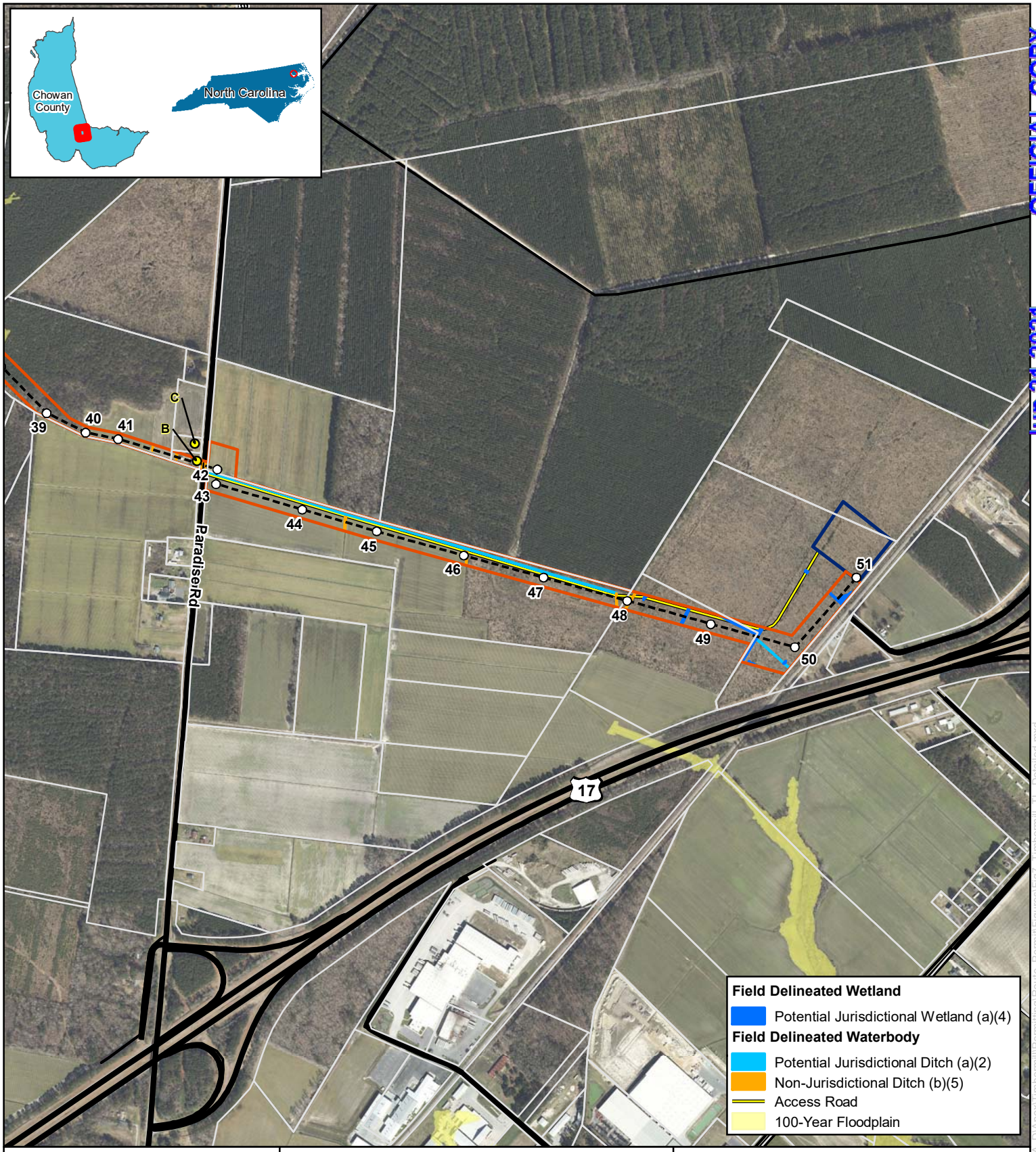
Figure 7c
Detailed Route Map
Timbermill Wind Project
Chowan County, North Carolina

- Transmission Structure
- Residence
- Alignment of Timbermill Line
- Access Road
- Transmission Route
- State Maintained Road
- Local Road



TIMBERMILL WIND

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Figure 7d
Detailed Route Map
Timbermill Wind Project
Chowan County, North Carolina

- Transmission Structure
- Residence
- Alignment of Timbermill Line
- Access Road
- Switching Station
- Transmission Route
- State Maintained Road
- Local Road

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. EMP-118, SUB 1

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Timbermill Wind, LLC'S Application for a Certificate of Environmental Compatibility and Certificate of Public Convenience and Necessity Pursuant to G.S. §§ 62-100 *et. seq.* to Construct a Transmission Line for a Proposed Generating Facility	)))))))	**VERIFICATION**

I, Ken Young, being duly sworn, do hereby declare that I am duly authorized to act on behalf of the Applicant, that I have made appropriate inquiries of the subject matter experts on whom I have reasonably relied to prepare the foregoing Application regarding the contents thereof, and that the same are true and correct to the best of my knowledge, information, and belief.

This 11th day of June, 2021.

Ken Young, COO of the manager of the sole member of the sole member of Timbermill Wind, LLC

Sworn and subscribed to before me this 11th day of June, 2021.

Alison Elisabeth Breaud
NOTARY PUBLIC
Commonwealth of Virginia
Reg. # 7190954
My Commission Expires December 31, 2021

[Notary Seal]

Alison E Breaud

Notary Public [Signature of Notary Public]

ALISON E BREAUD

Name of Notary Public [typewritten or printed]

My Commission expires December 31, 2021

PPAB 6317765v2