NATURAL RESOURCES TECHNICAL REPORT

New Interchange on I-26 near Mile Marker 35

Asheville
Buncombe County, North Carolina

STIP HE-0001
WBS Element No. 49742

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Environmental Coordination and Permitting

March 25, 2022

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1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) proposes construction of a new interchange on I-26 near mile marker 35 (TIP HE-0001) located south of the I-26 bridge over the French Broad River (FBR) approximately 6 miles south of Asheville, in Buncombe County, North Carolina. (Coordinates 35.50378 -82.57796) (Appendix A Figure 1) The following Natural Resources Technical Report (NRTR) has been prepared to assist in the preparation of the appropriate environmental documentation.

2.0 METHODOLOGY

All work was conducted in accordance with the NCDOT Environmental Coordination and Permitting's Preparing Natural Resources Technical Reports Procedure and the latest NRTR Template (September 2021). The Preliminary Jurisdictional Determination (PJD) field work for the Project Study Area (PSA) was conducted on July 13-15, 2021. The PJD for the PSA includes the existing I-4700 PJD. The HE-0001 PJD was delineated to the active construction limits or control of access (C/A) fence resulting in some overlap with the I-4700 PJD. In these cases, the HE-0001 (i.e., more recent / July 13-15, 2021) delineation was used and the I-4700 PJD feature removed from the PSA PJD. This overlap did not affect the I-4700 PJD in the bifurcated section of I-26. Water resources identified in the study area were field verified by the U.S. Army Corps of Engineers (USACE) and the North Carolina Division of Water Resources (NCDWR) on August 27, 2021. Documentation of this jurisdictional determination is provided in Appendix B. The principal personnel contributing to the field work and this document was:

Investigator	John Thomas
Education	B.S. Forest Management, North Carolina State University, 1973; B.S. Biology, North Carolina State University, 1974
Experience	US Army Corps of Engineers, Regulatory Project Manager 1990-2017
Responsibilities	Wetland and stream delineations, natural community assessment, stream assessment, Cultural Resource assessment, Threatened and Endangered species surveys, Environmental Permit process review, document preparation

Prior to initiation of the field effort, data sources were reviewed including the NC Natural Heritage Program (NCNHP) database, US Department of Agriculture Natural Resources Conservation Service (NRCS) online soil mapping website and Buncombe County soil survey, US Fish and Wildlife Service (USFWS) National Wetland Inventory mapping, US Geological Survey (USGS) 7.5-minute topographic quadrangle Asheville (NC 2019), and North Carolina Drought Update map.

The following NRTR has been prepared to assist in the preparation of a document for the purposes of the National Environmental Policy Act (NEPA).

3.0 TERRESTRIAL COMMUNITIES

The project area is located within the Blue Ridge physiographic region of North Carolina. Topography within PSA is a deeply dissected mountainous area of steep mountain ridges, intermontane basins and trenched valleys. The elevations in the project area range from approximately 2,000 feet above mean sea level to approximately 2,200 feet above mean sea level. A PSA has been established to encompass all potential impacts of the project and is included in the mapping figures attached in Appendix A. The PSA encompasses a total of approximately 210 acres and includes the proposed new interchange and connecting roadway to Frederick Law Olmsted Way East, currently under construction by a private developer. The proposed interchange will be primarily within the existing I-26 right-of-way which currently is under a widening construction contract operation (I-4400/4700). The PSA includes a portion of the I-4400/4700 project.

Land use in the project vicinity is mixed and includes manufacturing/distribution facilities, single- and multi-family residential neighborhoods, open space, and commercial and recreational uses. The PSA is bound by the FBR to the north and west, the Blue Ridge Parkway (BRP) to the south, and the Biltmore Estates property to the east. The PSA is currently a mature Hardwood Forest (except for the I-26 corridor which is maintained NCDOT right-of-way) but is currently part of the Biltmore Farms, LLC planned mixed-use development (aka Biltmore Park West) to include industrial, commercial, and residential land uses.

Two terrestrial communities were identified in the study area. Appendix A Figure 2 shows the location and extent of these terrestrial communities. Terrestrial community data are presented in the context of total coverage of each type within the study area (Table 1).

Table 1. Coverage of terrestrial communities in the study area

Community	Dominant Species (scientific name)	Coverage (ac.)
Montane oak-hickory forest (Biltmore Farms LLC)	White Oak (*Quercus alba*) Rhododendron (*Rhododendron maximum*)	125
I-26 right-of-way	N/A	85
	Total	**210**

The PSA (210-acre area) is divided into two current terrestrial communities identified as a montane oak-hickory forest located to the west of the I-26 right-of-way and the I-26 right-of-way. The forest is made up of White Oak (*Quercus alba*) mixed with other oaks, hickories, and some White Pine (*Pinus strobus*). The understory has a significant component of Rhododendron (*Rhododendron maximum*). This community occurs on a broad range of soils taxonomic class Typic Hapludults. The soils series in this soils class

are very deep well drained soils located on 15 to 30 percent slopes. The Buncombe County Soil Survey identifies soils within the PSA as Tate loam (TkD), Evard-Cowee complex fine loamy (EwE), and Clifton sandy loam (CsD). The entire PSA has 15 to 30 percent slopes with Tate loam (TkD) located in the lower elevations and Clifton sandy loam (CsD) in the upper elevations. Tate loam (TkD), Evard-Cowee complex fine loamy (EwE), and Clifton sandy loam (CsD) are very deep well drained soils. Hydric soils (i.e., wetland soils) are not normally defined as "well drained soils". However, in the PSA, Tate loam (TkD) soils are located in flood zone shelves/terraces adjacent to first order potential jurisdictional stream channels. These terraces include concave depressions that pond water for sufficient durations to establish anaerobic conditions in the upper part of the soil. These situations are defined as small hydric inclusions. These conditions were confirmed by field inspections showing these referenced concave depressions supporting hydrophytic vegetation, saturation to the surface, and having a 10YR 3/2 Munsell matrix in the first 12" (A12-Thick Dark Surface / Hydric Soil Indicator).

The I-26 right-of-way is an east-west freeway facility connecting Charleston, SC to Kingsport, TN. In North Carolina, I-26 is included in the NC Strategic Transportation Corridors (STC) Network as Corridor C (I-26/US 23). The western terminus of the PSA is NC 191. The I-26 ROW includes the area graded for the interstate facility and associated features (e.g., drainage, signage, etc.). I-26 in this section is currently under construction for widening to 8 lanes, 4 travel lanes in each direction of travel. The I-26 terrestrial community also extends to the northern and eastern PSA boundaries.

4.0 PROTECTED SPECIES

The PSA was evaluated to include a project action area for potential habitat for federally Threatened (T) or Endangered (E) species known to have ranges extending into Buncombe County (17 June 2021 USFWS list / USFWS IPaC planning tool, USFWS T&E Species List letter dated July 28, 2021, included in Appendix B). As of June 17, 2021, the USFWS lists 12 federally protected species, under the Endangered Species Act (ESA) for Buncombe County (Table 2). Records held by the NCNHP were reviewed to determine if any of these species have been recorded in or within 1 mile of the PSA.

Field surveys were conducted for the identified species between June 17th and August 2nd, 2021. For each species, a discussion of the presence or absence of habitat is included below along with the Biological Conclusion rendered based on survey results in the PSA and NCDOT commitment implementation of Conservation Measures outlined in Revised Informal Consultation USFWS letter dated March 16, 2022.

4.1 Endangered Species Act Protected Species

The USFWS and National Oceanic and Atmospheric Administration (NOAA) list the following federally protected species within the PSA, under the Endangered Species Act (ESA) (Table 2). For each species, a discussion of the presence or absence of habitat is included below along with the Biological Conclusion rendered based on survey results in the PSA and NCDOT commitment implementation of Conservation Measures outlined in Revised Informal Consultation USFWS letter dated March 16, 2022.

Table 2. ESA federally protected species listed[1] for Buncombe County.

Scientific name	Common Name	Federal Status	Habitat Present	Biological Conclusion
Alasmidonta raveneliana	Appalachian elktoe	E	No	MANLAA**
Solidago spithamaea	Blue Ridge goldenrod	T	No	NE
Glyptemys muhlenbergii	Bog turtle	T(S/A)	No	Not Required
Glaucomys sabrinus coloratus	Carolina Northern flying squirrel	E	No	NE
Myotis grisescens	Gray bat	E	Yes	MANLAA**
Sarracenia rubra ssp. jonesii	Mountain sweet pitcher plant	E	No	NE
Myotis septentrionalis	Northern long-eared bat	T	Yes	4(d) rule exemption
Gymnoderma lineare	Rock gnome lichen	E	No	NE
Hedyotis purpurea var. montana	Roan Mountain bluet	E	No	NE
Geum radiatum	Spreading avens	E	No	NE
Microhexura montivaga	Spruce-fir moss spider	E	No	NE
Spiraea virginiana	Virginia spiraea	T*	No	Not Required

[1] USFWS County List dated June 17, 2021, IPaC countywide data checked on July 28, 2021 (Appendix B)
E - Endangered
T – Threatened
MANLAA - May Affect Not Likely Adversely Affect
T(S/A) - Threatened due to similarity of appearance.
NE - No Effect
* - Historical record (the species was last observed in the county more than 50 years ago) per previous USFWS County list dated July 17, 2020
** -BC includes NCDOT commitment implementation of Conservation Measures outlined in Revised Informal Consultation USFWS letter dated March 16, 2022.

Appalachian elktoe
USFWS Recommended Survey Window: March 1–November 1 (optimal)

Biological Conclusion: May Affect Not Likely Adversely Affect
A review of NHP records on July 28, 2021, indicates one known occurrence within 1.0 mile of the study area (EO ID 21150, last observed September 29, 2019). BC includes NCDOT commitment implementation of Conservation Measures outlined in Revised Informal Consultation USFWS letter dated March 16, 2022.

Blue Ridge goldenrod
USFWS Recommended Survey Window: July-September

Biological Conclusion: No effect
Suitable habitat for the Blue Ridge goldenrod in the form of High Elevation Rocky Summit natural community generally at or above elevations of 4,600 feet above mean sea level does not exist within the study area. Elevations in the study area do not exceed 2,220 feet above mean sea level. A review of NHP records on July 28, 2021, indicates no known occurrences within 1.0 mile of the study area.

Bog turtle
USFWS Recommended Survey Window: April 1-October 1 (visual surveys); April 1-June 15 (optimal for breeding/nesting); May 1-June 30 (trapping surveys)

Biological Conclusion: Not required
The southern population of bog turtle is listed as Threatened due to similarity of appearance with the northern bog turtle population. The southern population of the species is not subject to Section 7 consultations requirements under the Endangered Species Act. Therefore, surveys for this species were not performed.

No suitable habitat for the bog turtle was observed within the study area. No individuals of this species were observed within the study area. The wetlands in the study area, although some area partially located within the Rosman soil type in the project action area, are not graminoid-dominated, and had partial to closed canopy that shaded the majority of each wetland. Therefore, no suitable habitat is present for bog turtles within the study area wetlands. A review of NHP records on July 28, 2021, indicates two known occurrences within 1.0 mile of the study area (EO ID 3427, last observed May 5, 2008, and EO 6227, last observed September 27, 2017).

Carolina Northern flying squirrel
USFWS Recommended Survey Window: May-October; coldest days in coldest winter months (nest box surveys)

Biological Conclusion: No effect

Suitable habitat for the Carolina Northern flying squirrel in the form of the ecotone between spruce-fir and birch forests above 4,500 feet elevation above mean sea level does not exist within the study area. Elevations in the study area do not exceed 2,220 feet above mean sea level. A review of NHP records on July 28, 2021, indicates no known occurrences within 1.0 mile of the study area.

Gray bat
USFWS Recommended Survey Window: Structure Checks: May 15-August 15. Mist netting and/or acoustic bat surveys are dependent on results of bat structure checks or USFWS requirements. Mist Netting Surveys: June 1-August 15, Acoustic Surveys: May 15-August 15.

Biological Conclusion: May Affect Not Likely to Adversely Affect
A review of NHP records on July 28, 2021, indicates two known occurrences within 1.0 mile of the study area. EO ID 39015 was last observed July 18, 2018, and EO 40722 was last observed in 2019. EO 40722 falls within the boundaries of the National Park Service, Blue Ridge Parkway. BC includes NCDOT commitment implementation of Conservation Measures outlined in Revised Informal Consultation USFWS letter dated March 16, 2022.

Mountain sweet pitcher plant
USFWS Optimal Survey Window: April-October

Biological Conclusion: No effect
No suitable habitat in the form of stream bank and bog habitats situated along intermittently exposed to intermittently flooded level depressions associated with valley floodplains. No Toxaway or Hatboro soils are present in the study area. A review of NHP records on July 28, 2021, indicates no known occurrences within 1.0 mile of the study area.

Northern long-eared bat
USFWS Recommended Survey Window: Structure Checks: May 15-August 15. Mist netting and/or acoustic bat surveys are dependent on results of bat structure checks or USFWS requirements. Mist Netting Surveys: June 1-August 15, Acoustic Surveys: May 15-August 15.

Biological Conclusion: 4(d) rule exemption
A review of NHP records on July 28, 2021, indicates no known occurrences within 1.0 mile of the study area. 4(d) rule exemption concurrence included in Revised Informal Consultation USFWS letter dated March 16, 2022. The Service is currently reevaluating the listing status of NLEB, and a final listing decision is expected in 2022. Consultations that use the 4(d) rule for NLEB may need to be reinitiated if the 4(d) rule is rescinded or the listing status of the species changes during the life of the project.

Roan Mountain bluet
USFWS Optimal Survey Window: June-July

Biological Conclusion: No effect
Suitable habitat for the Roan Mountain bluet (elevations of 4,200-6,300 feet above mean sea level) does not exist within the study area. Elevations in the study area do not exceed 2,220 feet above mean sea level. A review of NHP records on July 28, 2021, indicates no known occurrences within 1.0 mile of the study area.

Rock gnome lichen
USFWS Optimal Survey Window: year round

Biological Conclusion: No effect
Suitable habitat for the rock gnome lichen does not exist within the study area. There are no rocky outcrops or cliff habitats with a great deal of humidity and seepage that flows only during wet periods, nor elevations above 5,000 feet above mean sea level. Elevations in the study area do not exceed 2,220 feet above mean sea level. A review of NHP records on July 28, 2021, indicates no known occurrences within 1.0 mile of the study area.

Spreading avens
USFWS Optimal Survey Window: June-September

Biological Conclusion: No effect
There is no suitable habitat for spreading avens within the study area. No areas of exposed to full sunlight at or above 4,200 feet above mean sea level within the study area were found. Elevations in the study area do not exceed 2,220 feet above mean sea level. A review of NHP records on July 28, 2021, indicates no known occurrences within 1.0 mile of the study area.

Spruce-fir moss spider
USFWS Recommended Survey Window: May-August

Biological Conclusion: No effect
Suitable habitat for the spruce-fir moss spider (high elevation spruce-fir forests) does not exist within the study area. Elevations in the study area do not exceed 2,220 feet above mean sea level. A review of NHP records on July 28, 2021, indicates no known occurrences within 1.0 mile of the study area.

Virginia spiraea
USFWS Optimal Survey Window: May-early July

Biological Conclusion: Not required

Suitable habitat for Virginia spiraea does not exist within the study area. The reach of the French Broad River that occurs within the study area is currently part of an active construction area where some vegetation management has occurred, and the riverbanks are eroded and nearly vertical. There are no rocky banks that receive enough high velocity scouring to eliminate competition of other woody species. A review of NHP records on July 28, 2021, indicates no known occurrences within 1.0 mile of the study area. USFWS does not require surveys, a biological conclusion, or consultation for species with a historic record status.

4.2 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act is enforced by the USFWS. Golden eagles do not nest in North Carolina.

Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large dominant trees are utilized for nesting sites, typically within 1.0 mile of open water. A desktop-GIS assessment of the project action area, as well as the area within a 1.0-mile radius of the project limits, was performed on July 13, 2021, using 2017 color aerials. Suitable habitat for the bald eagle exists in the project action area, especially along the FBR. A field survey of the project action area and the area within 660 feet of the project limits was also conducted on July 13-15, 2021, to assess foraging habitat. None was found. A review of NCNHP records, updated April 2021, indicates no known bald eagle or golden eagle occurrences within 1.0 mile of the PSA. Due to the lack of habitat, known occurrences, and the minimal impact anticipated for this project, this project will not affect these species.

4.3 Essential Fish Habitat

There are no designated anadromous fish waters or Primary Nursery Areas (PNA) present in the PSA. The PSA adjacent to the FBR (Class B) is located within a designated mountain trout watershed (Tr). The PSA tributaries are within 1.0 mile upstream of this section of the FBR. Table 3 lists the fish species that may occur in the study area that are managed by NMFS, including the life stages which are reported to occur.

Table 3. Managed fish species reported to occur in the study area

Species	Life Stage
None	N/A

5.0 WATER RESOURCES

The Preliminary Jurisdictional Determination (PJD) field work for the Project Study Area (PJD) was conducted on July 13-15, 2021. The PJD for the PSA includes the existing I-4700 PJD. The HE-0001 PJD was delineated to the active construction limits or control of access (C/A) fence resulting in some overlap with the I-4700 PJD. In these cases, the HE-0001 (i.e., more recent / July 13-15, 2021) delineation was used and the I-4700 PJD feature removed from the PSA PJD. This overlap did not affect the I-4700 PJD in the bifurcated section of I-26. Water resources in the study area are part of the Bent Creek – French Broad River Basin [U.S. Geological Survey (USGS) Hydrologic Unit 060101050705]. There are 16 potential Jurisdictional Stream Channels totaling 6,191 Linear Feet mapped in the PSA. The I-4700 PJD (i.e., I-26 bifurcated section) within the PSA includes an additional 7 potential Jurisdictional Stream Channels totaling 4,772 linear feet. The western end of the PSA includes a five-lane bridge under construction by Biltmore Farms, LLC that crosses approximately 300 Linear Feet of the FBR (i.e., Project Ranger section) (Table 4). The potential Jurisdictional Stream Channel total for the PSA is 11,263 linear feet (Table 5). The location of each stream is shown in Appendix A Figure 3.

Table 4. Streams in the study area

Stream Name	Map ID	NCDWR Index Number	Best Usage Classification	Bank Height (ft)	Bankfull width (ft)	Depth (in)
UT FBR	SA	N/A	C	1.5	3	6
UT FBR	SA-B	N/A	C	1.5	3	6
UT FBR	SB	N/A	C	1.5	3	6
UT FBR	SC	N/A	C	1.5	3	6
UT FBR	SD	N/A	C	1.5	3	6
UT FBR	SE	N/A	C	1.5	3	6
UT FBR	SF	N/A	C	1.5	3	6
UT FBR	SG	N/A	C	1.5	3	6
UT FBR	SH	N/A	C	1.5	3	6
UT FBR	SI	N/A	C	1.5	3	6
UT FBR	SJ	N/A	C	1.5	3	6
UT FBR	SK	N/A	C	1.5	3	6
UT FBR	SL	N/A	C	1.5	3	6
UT FBR	SM	N/A	C	1.5	3	6
UT FBR	SN	N/A	C	1.5	3	6
UT FBR	SO	N/A	C	1.5	3	6
I-26 bifurcated section						
UT FBR	SDX	N/A	C	1	2	4
UT FBR	SDY	N/A	C	1	2	4

UT FBR	SDZ	N/A	C	1	2	4
UT FBR	SEQ	N/A	C	1	2	4
UT FBR	SEU	N/A	C	1	2	4
UT FBR	SEV	N/A	C	1	2	4
UT FBR	SEW	N/A	C	1	2	4
Project Ranger section						
FBR	FBR	6-(54.75)	B	10	250	48

There are no Outstanding Resource Waters (ORW), High Quality Waters (HQW), or water supply watersheds. The PSA adjacent to the French Broad River (Class B) is located within a designated mountain trout watershed (Tr). The PSA tributaries are within 1.0 mile upstream of this section of the FBR. The North Carolina 2020 Final 303(d) list of impaired waters identifies no impaired waters within the PSA. The PSA is not located within any North Carolina Buffer Rule River Basins.

No surface waters were identified in the PSA.

6.0 REGULATORY CONSIDERATIONS

The PSA lies within the Bent Creek – French Broad River Basin (USGS Hydrologic Unit 060101050705). This PSA was reviewed to determine the presence or absence of jurisdictional wetland areas using the three-parameter approach (hydric soils, hydrophytic vegetation and the evidence of jurisdictional hydrology) as outlined by the U.S. Army Corps of Engineers (USACE). Jurisdictional surface waters (streams) are identified using N.C. Division of Water Quality (DWQ) and USACE Standards. Based on these approaches, 21 non-tidal wetlands totaling 0.745 acres and 16 potential Jurisdictional Stream Channels totaling 6,191 linear feet were mapped in the PSA. The I-4700 PJD (i.e., I-26 bifurcated section) within the PSA includes 14 non-tidal wetlands totaling 0.52 acres, one potential Sec 10/404 non-tidal wetland in the FBR floodplain totaling 1.32 acres, and 7 potential Jurisdictional Stream Channels totaling 4,772 linear feet. The western end of the PSA includes a five-lane bridge under construction by Biltmore Farms, LLC that crosses approximately 300 linear feet of the FBR (i.e., Project Ranger section). (See Appendix A Figure 3.)

6.1 Clean Water Act Waters of the U.S.

Twenty-four (24) streams were identified in the PSA (Table 5). The location of these streams is shown on Appendix A Figure 3. North Carolina Stream Assessment Method (NCSAM) and NCDWR stream identification forms are included in a separate Jurisdictional Determination (JD) Package (Appendix B). All streams in the PSA have been designated as cool water streams for the purposes of stream mitigation.

Table 5. Status of streams in the study area

Map ID	Length (ft.)	Classification	Compensatory Mitigation Required	River Basin Buffer
SA*	2,939	Perennial	Undetermined	Not Subject
SA-B	305	Perennial	Undetermined	Not Subject
SB	141	Perennial	Undetermined	Not Subject
SC	31	Perennial	Undetermined	Not Subject
SD	293	Perennial	Undetermined	Not Subject
SE	679	Perennial	Undetermined	Not Subject
SF	218	Perennial	Undetermined	Not Subject
SG	496	Perennial	Undetermined	Not Subject
SH	187	Perennial	Undetermined	Not Subject
SI	25	Perennial	Undetermined	Not Subject
SJ	62	Perennial	Undetermined	Not Subject
SK	555	Perennial	Undetermined	Not Subject
SL	78	Perennial	Undetermined	Not Subject
SM	81	Perennial	Undetermined	Not Subject
SN	24	Perennial	Undetermined	Not Subject
SO	77	Perennial	Undetermined	Not Subject
*I-26 bifurcated section**				
SDX	3,919	Perennial	Undetermined	Not Subject
SDY	72	Perennial	Undetermined	Not Subject
SDZ	151	Perennial	Undetermined	Not Subject
SEQ	306	Perennial	Undetermined	Not Subject
SEU	18	Perennial	Undetermined	Not Subject
SEV	145	Perennial	Undetermined	Not Subject
SEW	161	Perennial	Undetermined	Not Subject
Project Ranger section				
FBR	300	Perennial	Undetermined	Not Subject
Total	**11,263**			

*NCSAM forms are available in the JD package

Thirty-six (36) wetlands were identified within the study area (Table 6). The location of these wetlands is shown on Appendix A Figure 3. All wetlands in the study area are located within the Bent Creek – French Broad River Basin [USGS Hydrologic Unit 060101050705]. USACE wetland determination forms and NCWAM forms are included in a separate Jurisdictional Determination Package (Appendix B).

Table 6. Characteristics of wetlands in the study area

Map ID	NCWAM Classification	Forested	NCWAM Rating	Hydrologic Classification	404/401 or 401	Area (ac.) in Study Area
WA	Headwater Forest	Yes	High	Riparian	404/401	0.046 acre

WB	Headwater Forest	Yes	High	Riparian	404/401	0.014 acre
WC	Headwater Forest	Yes	High	Riparian	404/401	0.013
WD	Headwater Forest	Yes	High	Riparian	404/401	0.039
WE	Headwater Forest	Yes	High	Riparian	404/401	0.055 acre
WF	Headwater Forest	Yes	High	Riparian	404/401	0.064
WG	Headwater Forest	Yes	High	Riparian	404/401	0.020
WH	Headwater Forest	Yes	High	Riparian	404/401	0.007
WI	Headwater Forest	Yes	High	Riparian	404/401	0.022
WJ	Headwater Forest	Yes	High	Riparian	404/401	0.003
WK	Headwater Forest	Yes	High	Riparian	404/401	0.015
WL	Headwater Forest	Yes	High	Riparian	404/401	0.080
WM	Headwater Forest	Yes	High	Riparian	404/401	0.058 acre
WN	Headwater Forest	Yes	High	Riparian	404/401	0.019 acre
WO	Headwater Forest	Yes	High	Riparian	404/401	0.021
WP	Headwater Forest	Yes	High	Riparian	404/401	0.014 acre
WQ	Headwater Forest	Yes	High	Riparian	404/401	0.135 acre
WR	Headwater Forest	Yes	High	Riparian	404/401	0.059 acre
WS	Headwater Forest	Yes	High	Riparian	404/401	0.045 acre
WT	Headwater Forest	Yes	High	Riparian	404/401	0.002 acre
WU	Headwater Forest	Yes	High	Riparian	404/401	0.014 acre
I-26 bifurcated section						
WCL	Headwater Forest	Yes	Medium	Riparian	404/401	0.01 acre
WCM	Headwater	Yes	Medium	Riparian	404/401	<0.01 acre

	Forest					
WCN	Headwater Forest	Yes	Medium	Riparian	404/401	0.13 acre
WCQ	Headwater Forest	Yes	Medium	Riparian	404/401	<0.01 acre
WCR	Headwater Forest	Yes	Medium	Riparian	404/401	<0.01 acre
WCS	Headwater Forest	Yes	Medium	Riparian	404/401	0.05 acre
WCT	Headwater Forest	Yes	Medium	Riparian	404/401	0.08 acre
WCU	Headwater Forest	Yes	Medium	Riparian	404/401	<0.01 acre
WCV	Headwater Forest	Yes	Medium	Riparian	404/401	0.01 acre
WCW	Bottomland Forest	Yes	Medium	Riparian	10/404/ 401*	1.32 acre
WDR	Headwater Forest	Yes	Medium	Riparian	404/401	0.09 acre
WDT	Headwater Forest	Yes	Medium	Riparian	404/401	0.02 acre
WDU	Headwater Forest	Yes	Medium	Riparian	404/401	<0.01 acre
WDV	Headwater Forest	Yes	Medium	Riparian	404/401	0.07 acre
WDW	Headwater Forest	Yes	Medium	Riparian	404/401	<0.01 acre
					Total	**1.265-acre 404/401 1.32-acre 10/404/401**

* Section 10 / French Broad River

6.2 Construction Moratoria

The PSA adjacent to the French Broad River (Class B) is located within a designated mountain trout watershed (Tr). However, the streams in the PSA are not mountain trout habitat streams. Therefore, no mandatory trout moratorium is required for the project.

In addition, no anadromous fish habitat has been identified within the PSA. As a result, no in-water construction moratorium will be required for anadromous fish habitat.

6.3 N.C. River Basin Buffer Rules

Streamside riparian zones within the study areas are protected under provisions of the N.C. River Basin Buffer Rules administered by NCDWR. However, as Table 5 indicates, there are no streams that are subject to buffer rule protection within the PSA.

6.4 Rivers and Harbors Act Section 10 Navigable Waters

The French Broad River has been designated by the USACE as a Navigable Water under Section 10 of the Rivers and Harbors Act.

6.5 Coastal Area Management Act Areas of Environmental Concern

There are no Coastal Area Management Act (CAMA) Areas of Environmental Concern (AEC) identified in the PSA. No Public Trust Water or CAMA coastal marsh habitat is present in the PSA.

6.6 Coastal Barrier Resources System

No Coastal Barrier Resources System (CBRS) units exist within the PSA.

7.0 Summary

There are jurisdictional stream channels and wetlands within the PSA. Permits are necessary prior to impacting any features determined to be jurisdictional under the Clean Water Act. Project related work that impacts these features may require a permit from the US Army Corps of Engineers. The corresponding water quality certification will also be required. It has not been determined if an Individual Section 404 Permit would be required or the project could be permitted by Section 404 Nationwide or Regional Permits. The PSA adjacent to the French Broad River (Class B) is located within a designated mountain trout watershed. Buncombe County is not a designated coastal county in North Carolina; therefore, Coastal Area Management Act (CAMA) does not apply for this project. There are documented occurrences of federally Endangered or Threatened species within the PSA.

Environmental Feature	YES	No
Wetlands present	X	
Streams present	X	
Buffers present		X
Section 10 waters	X*	

CAMA		X
ORW/HQW		X
WS-I or II		X
303d waters		X
Anadromous fish		X
Essential Fish Habitat		X
Coast Guard Considerations		X
Coastal Barrier Resource Systems		X
Endangered Species including Bald Eagle	X**	
Any other Env. items of interest or Notes	none	

* French Broad River
** BC includes NCDOT commitment implementation of Conservation Measures outlined in Revised Informal Consultation USFWS letter dated March 16, 2022.

8.0 REFERENCES

North Carolina Drought Update map, Accessed October 01, 2021, https://www.ncwater.org/?page=655.

NC Department of Environmental Quality (NCDEQ), Surface Water Classification. Accessed October 01, 2021, https://ncdenr.maps.arcgis.com/apps/webappviewer/index.html?id=6e125ad7628f494694e259c80dd64265.

NC Department of Environment and Natural Resources Maps, Find Your HUC in North Carolina. Accessed October 01, 2021, https://ncdenr.maps.arcgis.com/apps/PublicInformation/index.html?appid=ad3a85a0c6d644a0b97cd069db238ac3.

NC Department of Environment and Natural Resources Maps, North Carolina Physiographic Regions. Accessed October 01, 2021, https://deq.nc.gov/about/divisions/energy-mineral-land-resources/north-carolina-geological-survey/interactive-geologic-maps.

NC Natural Heritage Program (NCNHP), Element Occurrence Online Database. Accessed October 01, 2021, https://ncnhde.natureserve.org/content/map.

US Fish and Wildlife Service (USFWS), Information for Planning and Consultation (IPaC). Accessed October 01, 2021, https://ecos.fws.gov/ipac/user/login#.

US Fish and Wildlife Service (USFWS), National Wetland Inventory Online Mapping. Accessed October 01, 2021, https://www.fws.gov/wetlands/.

US Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Web Soil Survey and Buncombe County Soil Survey. Accessed October 01, 2021, https://websoilsurvey.nrcs.usda.gov/app/.

US Department of Agriculture Natural Resource Conservation Service, Hydric Soils Lists. Accessed October 01, 2021, https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316620.html.

US Geological Survey (USGS) 7.5-minute topographic quadrangle Asheville (NC 2019). Accessed October 01, 2021, https://ngmdb.usgs.gov/topoview/viewer/#8/35.129/-80.340.

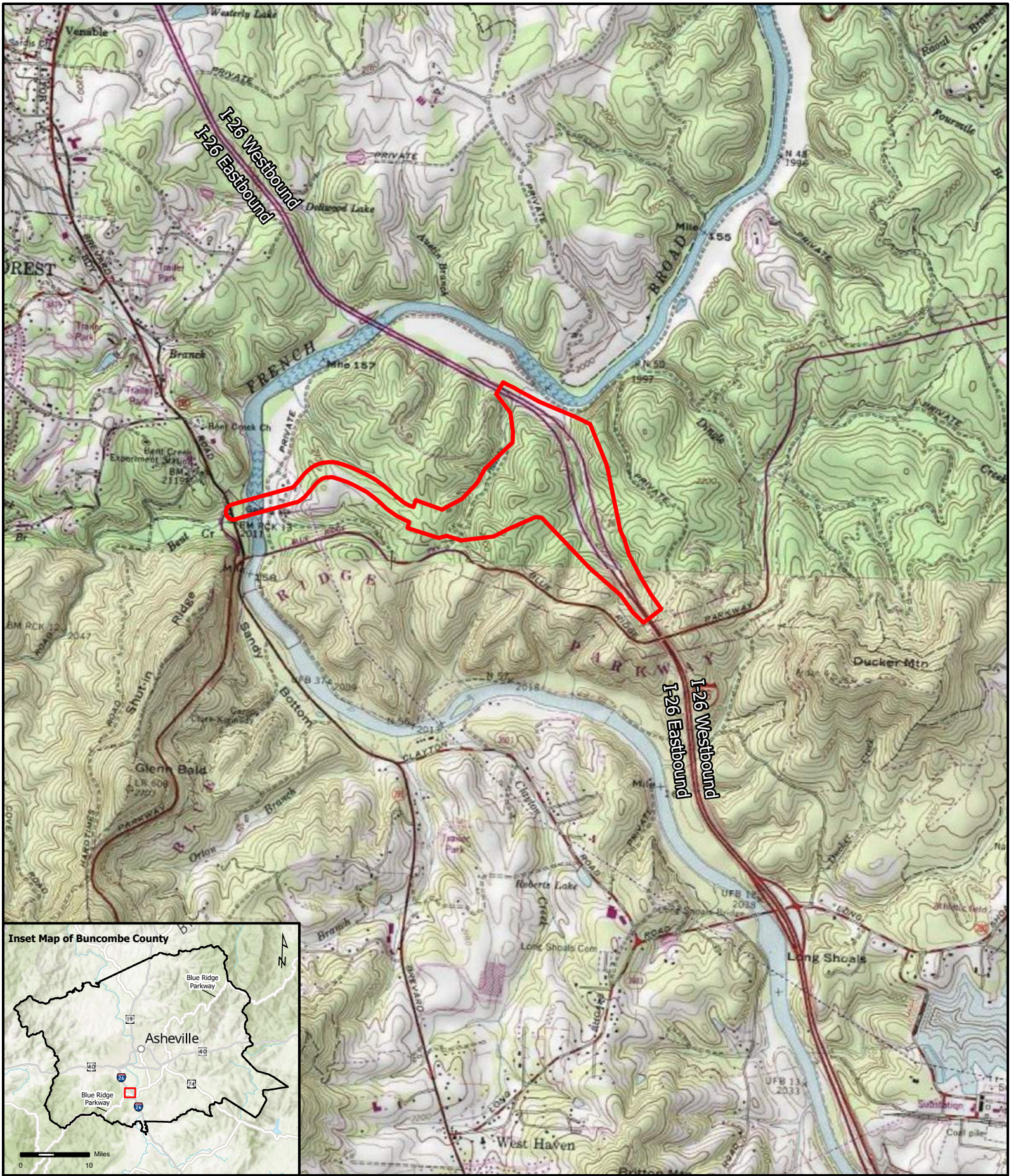
I-4700 NRTR Addendum #5. NCDOT Connects site. (Available upon request) Accessed October 01, 2021, https://connect.ncdot.gov/site/Preconstruction/division/div14/I-4400%20I-4700%20I-26%20Widening/Natural%20Environment/I4400_4700__NRTR_Addendum%205_09232021.pdf

Appendix A
Figures

Vicinity Map
NCDOT STIP HE-0001
Proposed I-26 Interchange
{Figure 1}

Gannett Fleming
Excellence Delivered As Promised

Map Created 9/29/2021

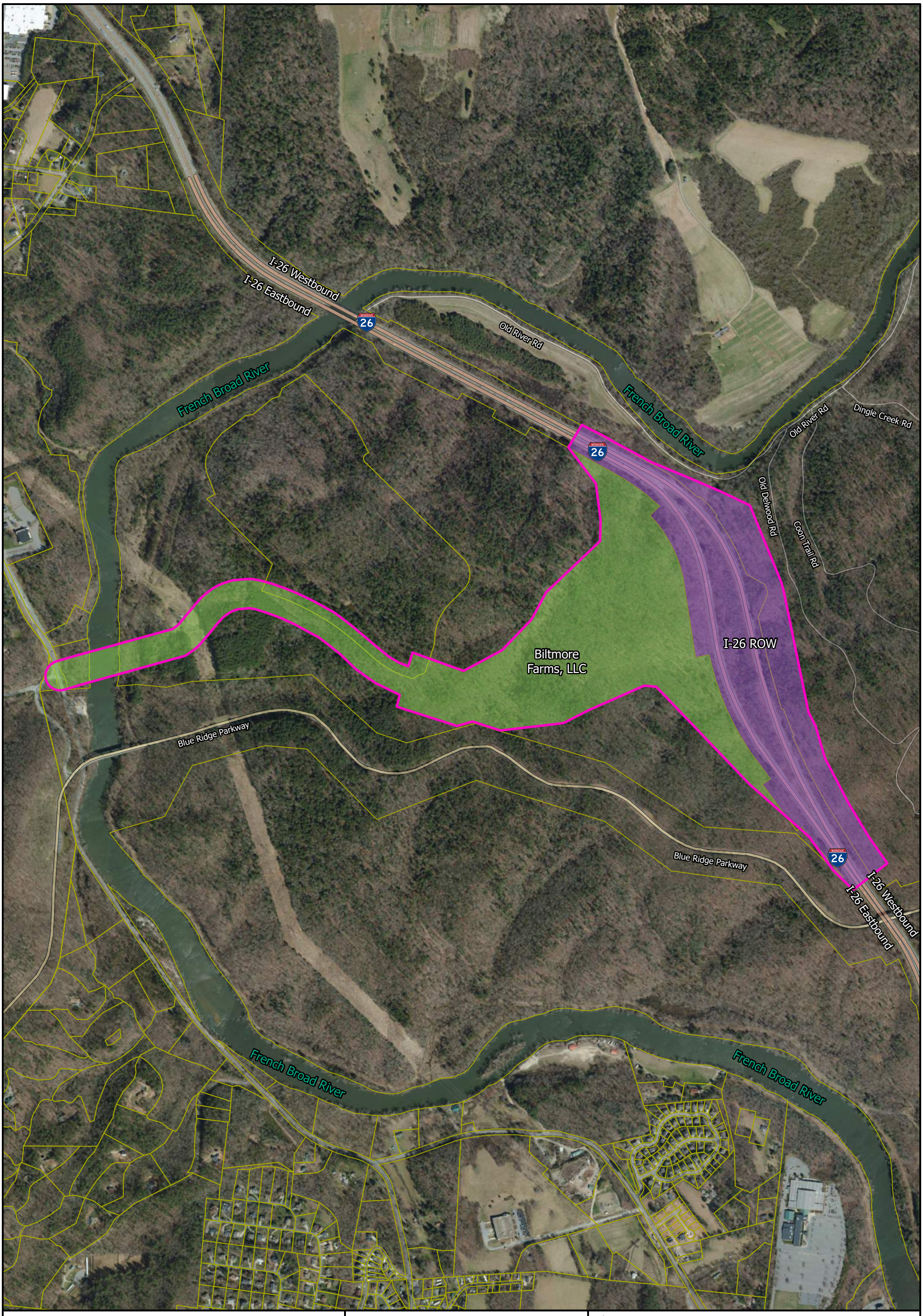


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Vicinity Map
NCDOT STIP HE-0001
Proposed I-26 Interchange
{Figure 1}

Gannett Fleming
Excellence Delivered As Promised

Map Created 9/29/2021



Preliminary Study Area

Buncombe County Parcels

Communities

Biltmore Farms, LLC

I-26 ROW

Study Area is within Bent Creek-French Broad River Trout Watershed.

Data Sources: NCDOT, ATLAS, Buncombe County GIS.

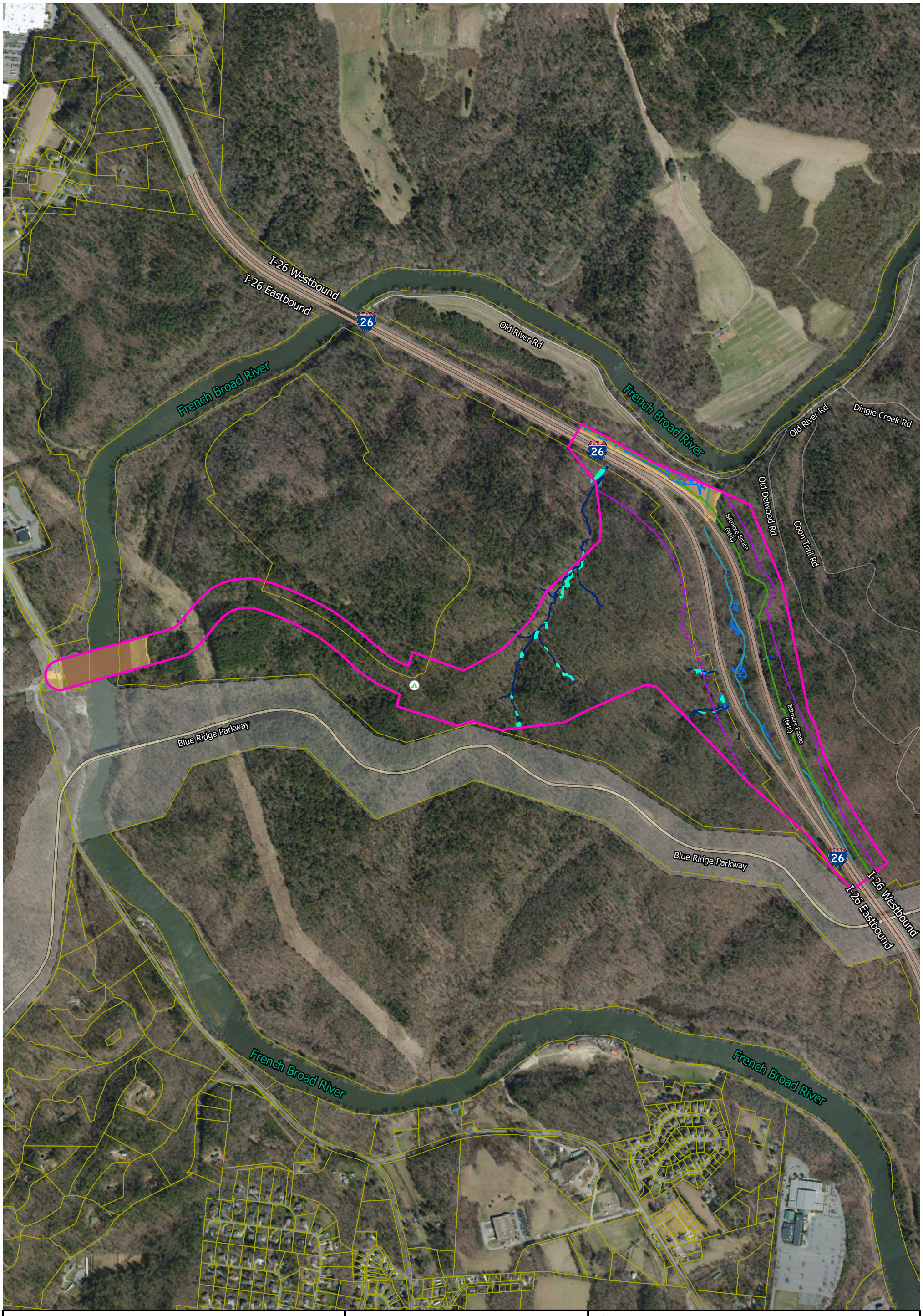
N

Terrestrial Community Types Map
NCDOT STIP HE-0001
Proposed I-26 Interchange
Buncombe County, North Carolina
{Figure 2}

US Feet

0 250 500 1,000

Created September 29, 2021



Preliminary Study Area
Poriton of I-4700 Study Area
Stream (I-4700/I-4400 WET)
Streams (HE-0001 WEX)
Wetland (I-4700/I-4400 WET)
Wetlands (HE-0001 WEX)
Biltmore Estate NHL
Buncombe County Parcels

National Park - Blue Ridge Parkway
SHPO Ineligible Resource

Flood Zone

500 Year Flood Zone
100 Year Flood Zone
FEMA Floodway

Study Area is within Bent Creek-French Broad River Trout Watershed.

Data Sources: NCDOT, ATLAS, Buncombe County GIS.

N

Potential Jurisdictional Features Map
NCDOT STIP HE-0001
Proposed I-26 Interchange
Buncombe County, North Carolina
{Figure 3}

0 250 500 1,000 US Feet

Created September 29, 2021

Appendix B
Agency Correspondence

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

September 14, 2021

Ms. Lori Beckwith
US Army Corps of Engineers
Regulatory Division
151 Patton Avenue,
Room 208
Asheville, NC 28801-5006

Re: Preliminary Jurisdictional Determination Request Package:
I-26 proposed exit 35, Asheville, Buncombe County, North Carolina
NCDOT HE-0001

Dear Ms. Beckwith:

North Carolina Department of Transportation (NCDOT) proposes construction of a new exit 35 on I-26 located south of the I-26 bridge over the French Broad River, south of Asheville, in Buncombe County, North Carolina (coordinates 35.50378 -82.57796). To determine the environmental impacts and permitting requirements of the proposed project, the NCDOT has contracted Gannett Fleming as a consultant to delineate and identify any potential wetland features for the proposed project and submit a request for a Preliminary Jurisdictional Determination (PJD) to your office.

A project study area (PSA) has been established to encompass all potential impacts of the project and is included in the mapping figures attached. The PSA encompasses a total of approximately 210 acres and includes the proposed new exit 35 and an approximate ½-mile connector to Frederick Law Olmsted Way East currently under construction by a private developer to access the new Pratt & Whitney manufacturing plant also under current construction. The proposed exit 35 will be located along I-26 which currently is under a widening construction contract operation (NCDOT STIP No. I-4400/4700). The PSA includes a portion of this I-4400/4700 project and this submitted PJD includes the potential jurisdictional features within the I-4400/4700 project. The potential jurisdictional features were reviewed and confirmed with the I-4400/4700 Department of the Army permit process for the I-4400/4700 project and are currently still valid (SAW-2013-01883). NCDOT is relying on these referenced potential jurisdictional determinations to be included in the study for the Exit 35 project. Please reference:

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH, NC 27699-1548

Telephone: (919) 707-6000
Fax: (919) 250-4224
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH, NC 27610

- Application for an Individual Section 404, Section 10, and Section 401 Water Quality Certification, December 3, 2018;
- Phased Individual Permit, June 21, 2019;
- Amended Request for Modification of the Section 404 Individual Permit, March 18, 2021; and
- Permit Modification, March 25, 2021

The adjacent Biltmore Farms property that will include sections of the ramps for the Exit 35 project and the connector road to the Frederick Law Olmsted Way East, currently has an "Approved Jurisdictional Determination'' (AJD) (SAW-2019-01867) (aka "Project Ranger"). However, this AJD will expire October of 2021 and review of the survey plat for the AJD revealed projection and mapping irregularities that did not conform with NCDOT standards. With these concerns, it was determined new field surveys and mapping would result in a more reliable PJD jurisdictional determination for planning and DA permitting purposes. Construction activity at the site is being completed under DA Permit Authorization SAW 2019-01867 for Biltmore Farms, LLC dated July 10, 2020. This DA permit authorizes a new bridge over the French Broad River and the referenced extension of the Frederick Law Olmsted Way East roadway.

The Frederick Law Olmsted Way East road construction intersects NC 191 (Brevard Road) which is currently listed for improvements under NCDOT STIP Project No. U-3403B. The pending PJD for STIP U-3403B and the Biltmore Farms, LLC ADJ concurred on the jurisdictional wetlands and stream impacts associated with the French Broad River bridge construction. The Frederick Law Olmsted Way East extension was determined to be constructed on highground associated with DA SAW 2019-01867 permit authorization. Field inspections of the roadway construction corridor conducted by Gannett Fleming on July 15, 2021, concurred with this determination. NCDOT does not plan to make additional improvements to the Frederick Law Olmsted Way East corridor.

Delineations were completed for NCDOT Project No. HE-0001 on July 13-15, 2021. Field reviews of the PSA identified: twenty non-tidal wetlands totaling 0.743 acres and sixteen potential Jurisdictional Stream Channels totaling 6,343 Linear Feet. The I-4700 PJD (i.e., I-26 bifurcated section) within the PSA includes fifteen non-tidal wetlands totaling 0.52 acres, one potential Sec 10/404 non-tidal wetland in the FBR floodplain totaling 1.32 acres, and seven potential Jurisdictional Stream Channels totaling 4,772 Linear Feet. The western end of the PSA includes a five-lane bridge under construction by Biltmore Farms LLC (Project Ranger) that crosses approximately 300 Linear Feet of the FBR.

Prior to conducting fieldwork, Gannett Fleming staff reviewed reference materials including:

- US Geological Survey (USGS) 7.5-minute topographic quadrangle: Asheville, NC (2019 24k)
- US Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database: Buncombe County, North Carolina (Version 17, June 2, 2020)
- USDA-NRCS National List of Hydric Soils Database; National List; North Carolina. (2018)
- US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Seamless Wetlands Data for North Carolina (July 2021)

The boundaries of delineated waters within the PSA were flagged (delineated) in the field. The non-tidal wetlands were delineated using pink and black striped flagging tape. The potential jurisdictional stream channels were delineated with light blue flagging. Flag locations were geolocated using a handheld Trimble Geo7x Global Positioning System (GPS) unit capable of sub-meter accuracy. Representative photographs of delineated features and routine wetland determination forms were obtained and are included as part of this request package.

The attached PJD request package includes supplemental maps that provide background information that may be useful in determining jurisdiction of the wetlands within the project boundary. Also included is a Potential Jurisdictional Features maps depicting the PSA with boundaries of potential jurisdictional features. Wetland Determination Data Forms (Eastern Mountains and Piedmont Region) are included for each data sampling point within the PSA. Also included is a stream assessment form that documents stream channel features used to document the hydrology regime (i.e., ephemeral, intermittent, perennial) of the project stream channels.

Field inspections were conducted for the PSA PJD verification on August 27, 2021, by Lori Beckwith with the Wilmington District Regulatory Division and Kevin Mitchell of the NC DWR. Also in attendance was McCray Coates and Roger Bryan of NCDOT Division 13; and Rick Tipton, Adam Archual, and John Thomas of Gannett Fleming. The PSA PJD was field verified with minor additions and adjustments. The field verification minor additions and adjustment have been included in the revised attached PSA PJD package. The attached PSA PJD package is submitted for your final review and approval.

If a site visit is required to review wetland boundaries; if you have any questions about the information provided in the PJD request package; or if NCDOT can be of additional assistance in your determination please feel free to contact me directly by phone at (828) 250-3005 or by email: rdbryan@ncdot.gov.

Respectfully,

DocuSigned by:

Roger D. Bryan

Roger D. Bryan
NCDOT Division 13
Division Environmental Officer

Enclosures

Jurisdictional Determination Request

US Army Corps of Engineers
Wilmington District

This form is intended for use by anyone requesting a jurisdictional determination (JD) from the U.S. Army Corps of Engineers, Wilmington District (Corps). Please include all supporting information, as described within each category, with your request. You may submit your request via mail, electronic mail, or facsimile. Requests should be sent to the appropriate project manager of the county in which the property is located. A current list of project managers by assigned counties can be found on-line at: http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/Contact/CountyLocator.aspx, by calling 910-251-4633, or by contacting any of the field offices listed below. Once your request is received you will be contacted by a Corps project manager.

ASHEVILLE & CHARLOTTE REGULATORY FIELD OFFICES
US Army Corps of Engineers
151 Patton Avenue, Room 208
Asheville, North Carolina 28801-5006
General Number: (828) 271-7980
Fax Number: (828) 281-8120

RALEIGH REGULATORY FIELD OFFICE
US Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587
General Number: (919) 554-4884
Fax Number: (919) 562-0421

WASHINGTON REGULATORY FIELD OFFICE
US Army Corps of Engineers
2407 West Fifth Street
Washington, North Carolina 27889
General Number: (910) 251-4610
Fax Number: (252) 975-1399

WILMINGTON REGULATORY FIELD OFFICE
US Army Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403
General Number: 910-251-4633
Fax Number: (910) 251-4025

INSTRUCTIONS:

All requestors must complete Parts A, B, C, D, E, F and G.

NOTE TO CONSULTANTS AND AGENCIES: If you are requesting a JD on behalf of a paying client or your agency, please note the specific submittal requirements in **Part H**.

NOTE ON PART D – PROPERTY OWNER AUTHORIZATION: Please be aware that all JD requests must include the current property owner authorization for the Corps to proceed with the determination, which may include inspection of the property when necessary. This form must be signed by the current property owner(s) or the owner(s) authorized agent to be considered a complete request.

NOTE ON PART D - NCDOT REQUESTS: Property owner authorization/notification for JD requests associated with North Carolina Department of Transportation (NCDOT) projects will be conducted according to the current NCDOT/USACE protocols.

NOTE TO USDA PROGRAM PARTICIPANTS: A Corps approved or preliminary JD may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should also request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

Jurisdictional Determination Request

A. PARCEL INFORMATION

Street Address: I-26 proposed new exit 35

City, State: Asheville, North Carolina

County: Buncombe County

Parcel Index Number(s) (PIN): 963537043900000/NCDOT RW/9

B. REQUESTOR INFORMATION

Name: NCDOT Division 13

Mailing Address: 55 Orange Street

Asheville, NC 28801-2340

Telephone Number: 828 250-3005

Electronic Mail Address: rdbryan@ncdot.gov

Select one:

- ☐ I am the current property owner.
- ☐ I am an Authorized Agent or Environmental Consultant[1]
- ☐ Interested Buyer or Under Contract to Purchase
- ☑ Other, please explain. NCDOT Division 13 Environmental Officer for project.

C. PROPERTY OWNER INFORMATION[2]

Name: Biltmore Farms LLC/Biltmore Estates

Mailing Address: P.O. Box 5355/1 N Pack SQ #400

Asheville, NC 28813/28801

Telephone Number:

Electronic Mail Address:

[1] Must provide completed Agent Authorization Form/Letter.

[2] Documentation of ownership also needs to be provided with request (copy of Deed, County GIS/Parcel/Tax Record).

D. PROPERTY ACCESS CERTIFICATION[3,4]

By signing below, I authorize representatives of the Wilmington District, U.S. Army Corps of Engineers (Corps) to enter upon the property herein described for the purpose of conducting on-site investigations, if necessary, and issuing a jurisdictional determination pursuant to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899. I, the undersigned, am either a duly authorized owner of record of the property identified herein, or acting as the duly authorized agent of the owner of record of the property.

NCDOT/USACE protocols

Print Name

Capacity: ☐ Owner ☐ Authorized Agent[5]

_____

Date

_____

Signature

E. REASON FOR JD REQUEST: (Check as many as applicable)

☐ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.

☐ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.

☑ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.

☐ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.

☐ I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.

☐ A Corps JD is required in order obtain my local/state authorization.

☐ I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.

☐ I believe that the site may be comprised entirely of dry land.

☐ Other:_____

[3] For NCDOT requests following the current NCDOT/USACE protocols, skip to Part E.

[4] If there are multiple parcels owned by different parties, please provide the following for each additional parcel on a continuation sheet.

[5] Must provide agent authorization form/letter signed by owner(s).

F. JURISDICTIONAL DETERMINATION (JD) TYPE (Select One)

☑ I am requesting that the Corps provide a preliminary JD for the property identified herein.

A Preliminary Jurisdictional Determination (PJD) provides an indication that there may be "waters of the United States" or "navigable waters of the United States"on a property. PJDs are sufficient as the basis for permit decisions. For the purposes of permitting, all waters and wetlands on the property will be treated as if they are jurisdictional "waters of the United States". PJDs cannot be appealed (33 C.F.R. 331.2); however, a PJD is "preliminary" in the sense that an approved JD can be requested at any time. PJDs do not expire.

☐ I am requesting that the Corps provide an approved JD for the property identified herein.

An Approved Jurisdictional Determination (AJD) is a determination that jurisdictional "waters of the United States" or "navigable waters of the United States" are either present or absent on a site. An approved JD identifies the limits of waters on a site determined to be jurisdictional under the Clean Water Act and/or Rivers and Harbors Act. Approved JDs are sufficient as the basis for permit decisions. AJDs are appealable (33 C.F.R. 331.2). The results of the AJD will be posted on the Corps website. A landowner, permit applicant, or other "affected party" (33 C.F.R. 331.2) who receives an AJD may rely upon the AJD for five years (subject to certain limited exceptions explained in Regulatory Guidance Letter 05-02).

☐ I am unclear as to which JD I would like to request and require additional information to inform my decision.

G. ALL REQUESTS

☑ Map of Property or Project Area. This Map must clearly depict the boundaries of the review area.

☑ Size of Property or Review Area 210 acres.

☑ The property boundary (or review area boundary) is clearly physically marked on the site.

H. REQUESTS FROM CONSULTANTS

☑ Project Coordinates (Decimal Degrees): Latitude: 35.50378
Longitude: -82.57796

☑ A legible delineation map depicting the aquatic resources and the property/review area. Delineation maps must be no larger than 11x17 and should contain the following: (Corps signature of submitted survey plats will occur after the submitted delineation map has been reviewed and approved).[6]

- North Arrow
- Graphical Scale
- Boundary of Review Area
- Date
- Location of data points for each Wetland Determination Data Form or tributary assessment reach.

For Approved Jurisdictional Determinations:

- Jurisdictional wetland features should be labeled as Wetland Waters of the US, 404 wetlands, etc. Please include the acreage of these features.
- Jurisdictional non-wetland features (i.e. tidal/navigable waters, tributaries, impoundments) should be labeled as Non-Wetland Waters of the US, stream, tributary, open water, relatively permanent water, pond, etc. Please include the acreage or linear length of each of these features as appropriate.
- Isolated waters, waters that lack a significant nexus to navigable waters, or non-jurisdictional upland features should be identified as Non-Jurisdictional. Please include a justification in the label regarding why the feature is non-jurisdictional (i.e. "Isolated", "No Significant Nexus", or "Upland Feature"). Please include the acreage or linear length of these features as appropriate.

For Preliminary Jurisdictional Determinations:

- Wetland and non-wetland features should not be identified as Jurisdictional, 404, Waters of the United States, or anything that implies jurisdiction. These features can be identified as Potential Waters of the United States, Potential Non-wetland Waters of the United States, wetland, stream, open water, etc. Please include the acreage and linear length of these features as appropriate.

☑ Completed Wetland Determination Data Forms for appropriate region
(at least one wetland and one upland form needs to be completed for each wetland type)

[6] Please refer to the guidance document titled "Survey Standards for Jurisdictional Determinations" to ensure that the supplied map meets the necessary mapping standards. http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Jurisdiction/

- [x] Completed appropriate Jurisdictional Determination form
  - **PJDs,** please complete a Preliminary Jurisdictional Determination Form[7] and include the Aquatic Resource Table
  - **AJDs**, please complete an Approved Jurisdictional Determination Form[8]
- [x] Vicinity Map
- [x] Aerial Photograph
- [x] USGS Topographic Map
- [x] Soil Survey Map
- [x] Other Maps, as appropriate (e.g. National Wetland Inventory Map, Proposed Site Plan, previous delineation maps, LIDAR maps, FEMA floodplain maps)
- [x] Landscape Photos (if taken)
- [x] NCSAM and/or NCWAM Assessment Forms and Rating Sheets
- [x] NC Division of Water Resources Stream Identification Forms
- [x] Other Assessment Forms

[7] www.saw.usace.army.mil/Portals/59/docs/regulatory/regdocs/JD/RGL_08-02_App_A_Prelim_JD_Form_fillable.pdf
[8] Please see http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Jurisdiction/

Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.
Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: 07/30/2021

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Roger Bryan DEO NCDOT Div 13

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: NCDOT Div 13 I-26 proposed exit 35

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

State: North Carolina County/parish/borough: Buncombe City: Asheville

Center coordinates of site (lat/long in degree decimal format):

Lat.: 35.546624 Long.: -82.57796

Universal Transverse Mercator: NAD 83

Name of nearest waterbody: French Broad River Sec 10/404

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

☐ Office (Desk) Determination. Date:

☒ Field Determination. Date(s): 07/13-15/2021

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

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
SA	35.5013060	-82.5778650	2,939 ln.ft.	Non-wetland waters	Section 404
SA-A*	35.5082537	-82.5756799	311 ln.ft. *(Stream outside project area)	Non-wetland waters	Section 404
SA-B	35.5082842	-82.5756581	305 ln.ft.	Non-wetland waters	Section 404
SB	35.5021443	-82.5787202	141 ln.ft.	Non-wetland waters	Section 404
SC	35.5034570	-82.5779742	31 ln.ft.	Non-wetland waters	Section 404
SD	35.5040540	-82.5784568	293 ln.ft.	Non-wetland waters	Section 404

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

SA through SD repeated from previous page

HE-001 Project Study Area

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
SA	35.5013060	-82.5778650	2,939 ln.ft.	Non-wetland waters	Section 404
SA-A*	35.5082537	-82.5756799	311 ln.ft. * (Stream outside project area)	Non-wetland waters	Section 404
SA-B	35.5082842	-82.5756581	305 ln.ft.	Non-wetland waters	Section 404
SB	35.5021443	-82.5787202	141 ln.ft.	Non-wetland waters	Section 404
SC	35.5034570	-82.5779742	31 ln.ft.	Non-wetland waters	Section 404
SD	35.5040540	-82.5784568	293 ln.ft.	Non-wetland waters	Section 404
SE	35.5026722	-82.5761795	679 ln.ft.	Non-wetland waters	Section 404
SF	35.5052828	-82.5774303	218 ln.ft.	Non-wetland waters	Section 404
SG	35.5048409	-82.5752765	496 ln.ft.	Non-wetland waters	Section 404

SH	35.503147	-82.5722507	187 ln.ft.	Non-wetland waters	Section 404
SI	35.5031035	-82.5716195	25 ln.ft.	Non-wetland waters	Section 404
SJ	35.5021320	-82.5708675	62 ln.ft.	Non-wetland waters	Section 404
SK	35.5016931	-82.5721982	555 ln.ft.	Non-wetland waters	Section 404
SL	35.5020113	-82.5719845	78 ln.ft.	Non-wetland waters	Section 404
SM	35.5012527	-82.5704763	81 ln.ft.	Non-wetland waters	Section 404
SN	35.5036411	-82.5694671	24 ln.ft.	Non-wetland waters	Section 404
SO	35.5035644	-82.5693112	77 ln.ft.	Non-wetland waters	Section 404
WA	35.5014454	-82.5780295	2,007 sq.ft. 0.046 acre	Wetland	Section 404
WB	35.5017578	-82.5781035	595 sq.ft. 0.014 acre	Wetland	Section 404
WC	35.5022045	-82.5782884	558 sq.ft. 0.013 acre	Wetland	Section 404
WD	35.5034088	-82.5780061	1,695 sq.ft. 0.039 acre	Wetland	Section 404
WE	35.5040075	-82.5775218	2,379 sq.ft. 0.055 acre	Wetland	Section 404

WF	35.502871	-82.576361	2,785 sq. ft. 0.064 acre	Wetland	Section 404
WG	35.5031545	-82.5767443	850 sq.ft. 0.020 acre	Wetland	Section 404
WH	35.5036181	-82.5771690	310 sq.ft. 0.007 acre	Wetland	Section 404
WI	35.5043453	-82.5772208	940 sq.ft. 0.022 acre	Wetland	Section 404
WJ	35.5042391	-82.5771934	116 sq.ft. 0.003 acre	Wetland	Section 404
WK	35.5058211	-82.5764325	638 sq.ft. 0.015 acre	Wetland	Section 404
WL	35.5055221	-82.5765579	3,474 sq.ft. 0.080 acre	Wetland	Section 404
WM	35.5052259	-82.5766872	2,519 sq.ft. 0.058 acre	Wetland	Section 404
WN	35.5056612	-82.5763926	814 sq.ft. 0.019 acre	Wetland	Section 404
WO	35.5060294	-82.5760440	926 sq.ft. 0.021 acre	Wetland	Section 404
WP	35.5062926	-82.5760187	631 sq.ft. 0.014 acre	Wetland	Section 404
WQ	35.5085400	-82.5755818	5,898 sq.ft. 0.135 acre	Wetland	Section 404
WR	35.5031605	-82.5718554	2,555 sq.ft. 0.059 acre	Wetland	Section 404

WS	35.5023547	-82.5710286	1,969 sq. ft. 0.045 acre	Wetland	Section 404
WT	35.5019965	-82.5713242	103 sq.ft. 0.002 acre	Wetland	Section 404
WU	35.5019710	-82.571700	615 sq. ft. 0.014 acre	Wetland	Section 404
Totals			6,191 ln.ft.	Non-wetland waters	Section 404
			32,377 sq.ft. 0.743 acre	Wetland	Section 404

Project Ranger Section PJD

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
FBR*			300 ln.ft.	Non-Wetland Waters	**Section 10/404**

*French Broad River

Bifurcated Section PJD I-4700

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
SDX	35.501983	-82.569955	3,919 ln.ft.	Non-wetland waters	Section 404
SDY	35.503536	-82.569906	72 ln.ft.	Non-wetland waters	Section 404

SDZ	35.503416	-82.570415	151 ln.ft.	Non-wetland waters	Section 404
SEQ	35.50889	-82.575300	306 ln.ft.	Non-wetland waters	Section 404
SEU	35.501047	-82.570074	18 ln.ft.	Non-wetland waters	Section 404
SEV	35.503133	-82.571506	145 ln.ft.	Non-wetland waters	Section 404
SEW	35.502127	-82.571068	161 ln.ft.	Non-wetland waters	Section 404
WCL	35.501407	-82.569444	0.01 acre	Wetland	Section 404
WCM	35.501645	-82.569598	<0.01 acre	Wetland	Section 404
WCN	35.503147	-82.570406	0.13 acre	Wetland	Section 404
WCQ	35.505444	-82.570958	<0.01 acre	Wetland	Section 404
WCR	35.505959	-82.571007	<0.01 acre	Wetland	Section 404
WCS	35.504992	-82.570704	0.05 acre	Wetland	Section 404
WCT	35.504372	-82.570691	0.08 acre	Wetland	Section 404
WCU	35.503208	-82.570713	<0.01 acre	Wetland	Section 404
WCV	35.503606	-82.569575	0.01 acre	Wetland	Section 404
WCW	35.508855	-82.573517	1.32 acres	Wetland	Section 10/404

WDR	35.508592	-82.575532	0.09 acre	Wetland	Section 404
WDT	35.503078	-82.571703	0.02 acre	Wetland	Section 404
WDU	35.503186	-82.571782	<0.01 acre	Wetland	Section 404
WDV	35.502077	-82.571306	0.07	Wetland	Section 404
WDW	35.502077	-82.571306	<0.01 acre	Wetland	Section 404
Totals			4,772 ln.ft.	Non-wetland waters	Section 404
			0.52 acre	Wetland	Section 404
			1.32 acres	Wetland	Section 10/404

1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.

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

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

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

- [x] Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
  Map: PJD features topo/aerial map.
- [x] Data sheets prepared/submitted by or on behalf of the PJD requestor.
  - [ ] Office concurs with data sheets/delineation report.
  - [ ] Office does not concur with data sheets/delineation report. Rationale: _____.
- [ ] Data sheets prepared by the Corps: _____.
- [ ] Corps navigable waters' study: _____.
- [ ] U.S. Geological Survey Hydrologic Atlas: _____.
  - [ ] USGS NHD data.
  - [ ] USGS 8 and 12 digit HUC maps.
- [x] U.S. Geological Survey map(s). Cite scale & quad name: Asheville 7.5 minute series 2019.
- [x] Natural Resources Conservation Service Soil Survey. Citation: Buncombe Co. Version 17 June 2, 2020.
- [x] National wetlands inventory map(s). Cite name: NWI Mobile Website.
- [ ] State/local wetland inventory map(s): _____.
- [x] FEMA/FIRM maps: FEMA Flood Map Service area number 3700964900J.
- [ ] 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- [ ] Photographs: [ ] Aerial (Name & Date): _____.
  or [ ] Other (Name & Date): _____.
- [ ] Previous determination(s). File no. and date of response letter: _____.
- [x] Other information (please specify): NC drought map.

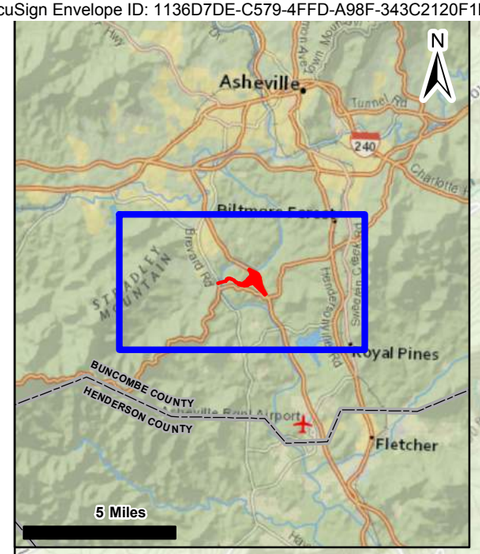
IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

DocuSigned by:
Roger D. Bryan 9/14/2021
33212C738EB8411...

Signature and date of Regulatory staff member completing PJD

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

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

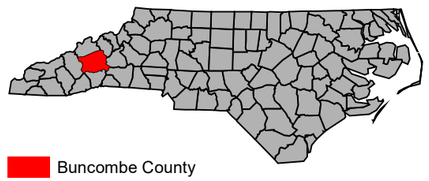


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT

FIGURE 1
VICINITY MAP

New I-26 Interchange in Buncombe County

STIP Project HE-0001



Legend

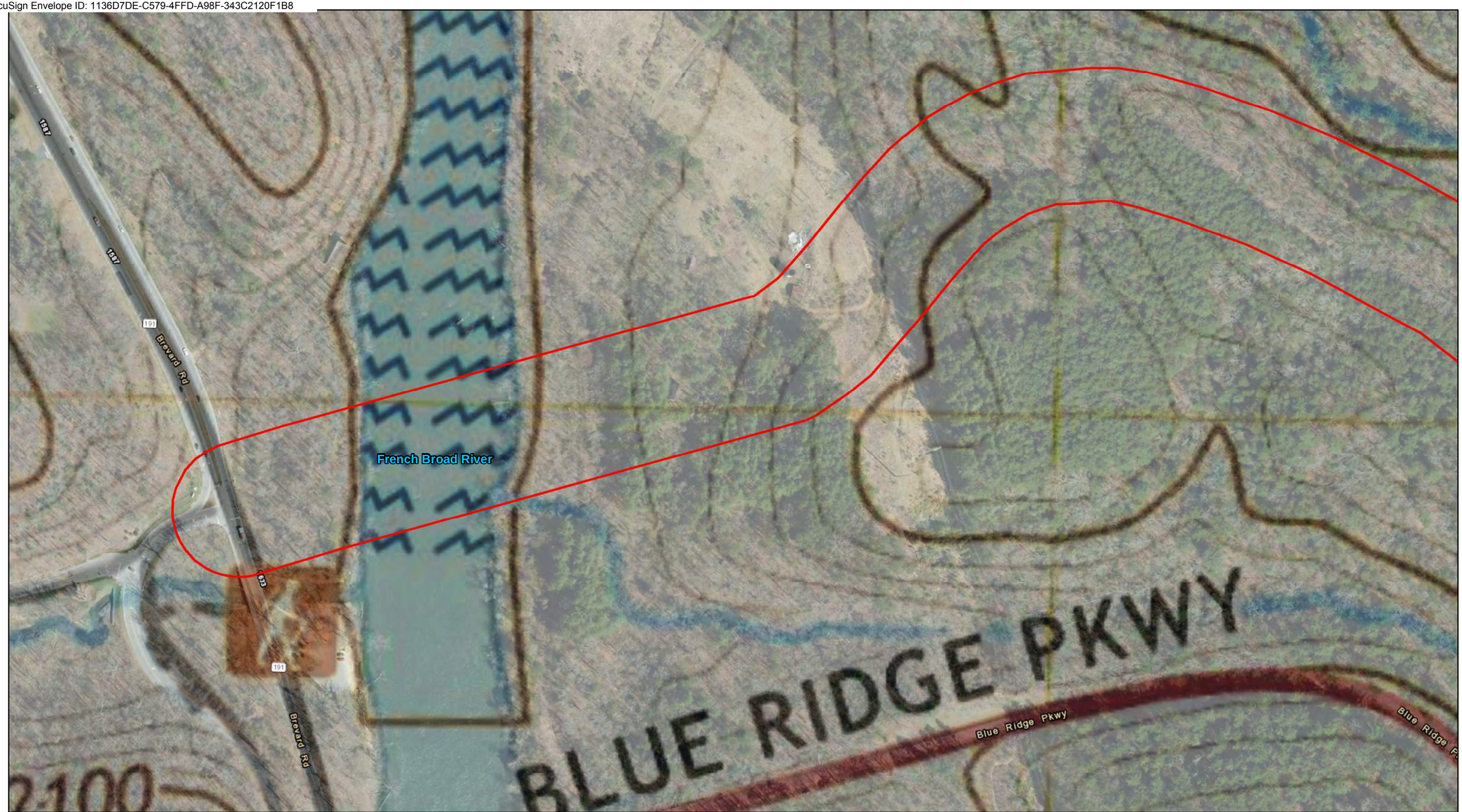
Project Study Area

Upper French Broad Sub-Basin HUC 06010105

French Broad River Basin

N
W E
S

Miles
0.5 0.25 0 0.5

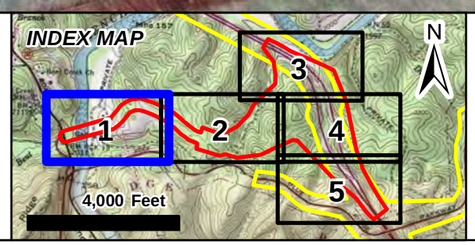


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT

POTENTIAL JURISDICTIONAL FEATURES TOPOGRAPHIC MAP MAP 1 OF 5

New I-26 Interchange in Buncombe County

STIP Project HE-0001



Legend

STIP Project HE-0001
- Project Study Area
- Palustrine Forested Wetlands (PFO1A)
- Perennial Streams (R5UBH)
- Sample Plots
- Culvert Locations
- WX Wetland Feature ID
- SX Stream Feature ID
- WX-SP Sample Plot ID

TIP Project I-4400/I-4700
- Project Study Area
- Palustrine Forest Wetlands (PFO)
- Perennial Streams (R5)
- Intermittent Streams (R4)
- Culverts Locations
- WXX Wetland Feature ID
- SXX Stream Feature ID
- Culvert Culvert Location Label

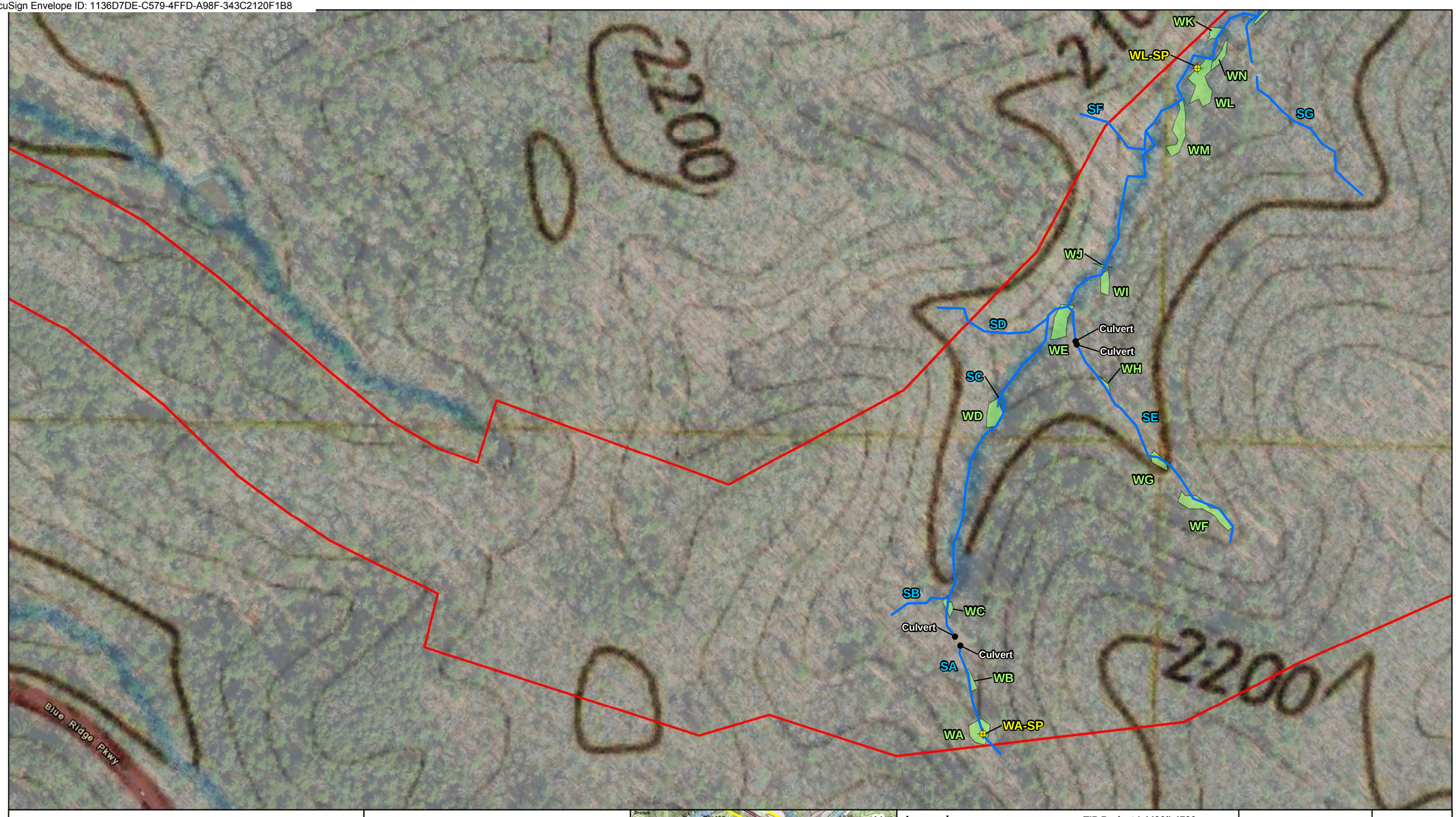
Upper French Broad Sub-Basin HUC 06010105

French Broad River Basin

N W E S

Feet
200 100 0 200

Sources: Aerial imagery and transportation basemapping provided by ESRI ArcGIS Online. Wetlands and waterways were delienated in the field by Gannett Fleming, Inc. (July 2021). Map Prepared: 07/24/2021, Updated: 09/08/2021; GF Project No. 64926

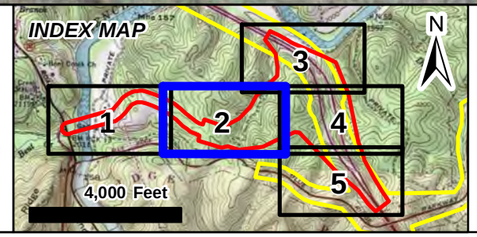


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT

POTENTIAL JURISDICTIONAL FEATURES TOPOGRAPHIC MAP MAP 2 OF 5

New I-26 Interchange in Buncombe County

STIP Project HE-0001



Legend

STIP Project HE-0001
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- Perennial Streams (R5UBH)
- Sample Plots
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- WX Wetland Feature ID
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TIP Project I-4400/I-4700
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- SXX Stream Feature ID
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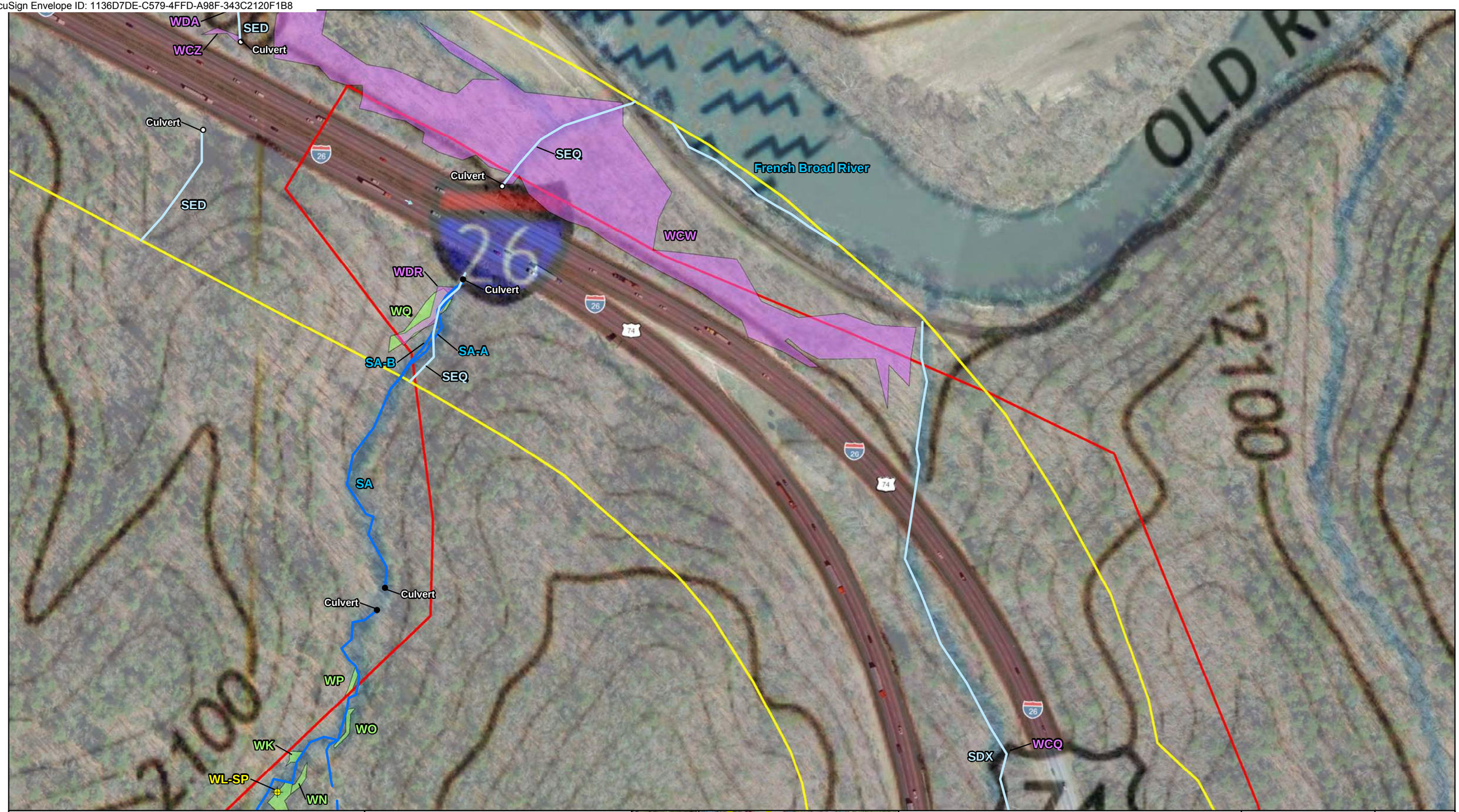
Upper French Broad Sub-Basin HUC 06010105

French Broad River Basin

N W E S

Feet
200 100 0 200

Sources: Aerial imagery and transportation basemapping provided by ESRI ArcGIS Online. Wetlands and waterways were delienated in the field by Gannett Fleming, Inc. (July 2021). Map Prepared: 07/24/2021, Updated: 09/08/2021; GF Project No. 64926

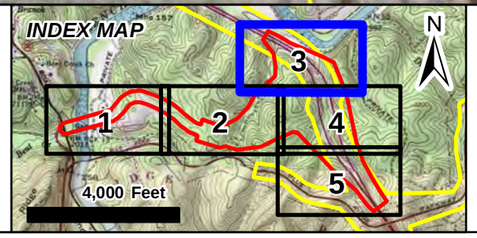


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT

POTENTIAL JURISDICTIONAL FEATURES TOPOGRAPHIC MAP MAP 3 OF 5

New I-26 Interchange in Buncombe County

STIP Project HE-0001



Legend

STIP Project HE-0001
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TIP Project I-4400/I-4700
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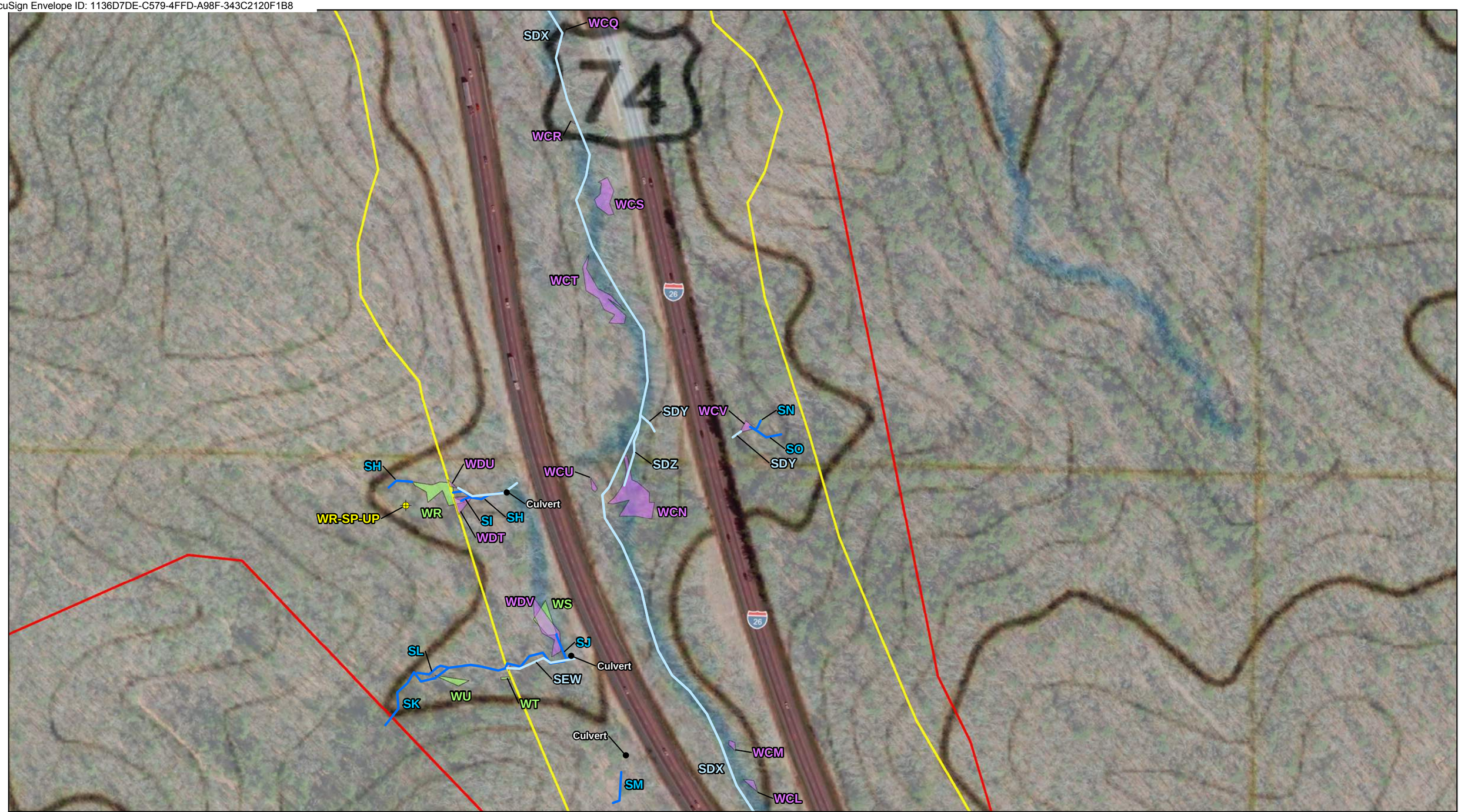
Upper French Broad Sub-Basin HUC 06010105

French Broad River Basin

N W E S

Feet
200 100 0 200

Sources: Aerial imagery and transportation basemapping provided by ESRI ArcGIS Online. Wetlands and waterways were delienated in the field by Gannett Fleming, Inc. (July 2021). Map Prepared: 07/24/2021, Updated: 09/08/2021; GF Project No. 64926

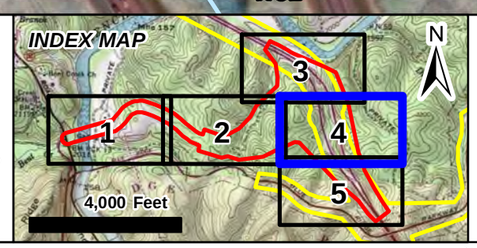


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT

POTENTIAL JURISDICTIONAL FEATURES TOPOGRAPHIC MAP MAP 4 OF 5

New I-26 Interchange in Buncombe County

STIP Project HE-0001



Legend

STIP Project HE-0001
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Upper French Broad Sub-Basin HUC 06010105

French Broad River Basin

N W E S

Feet
200 100 0 200

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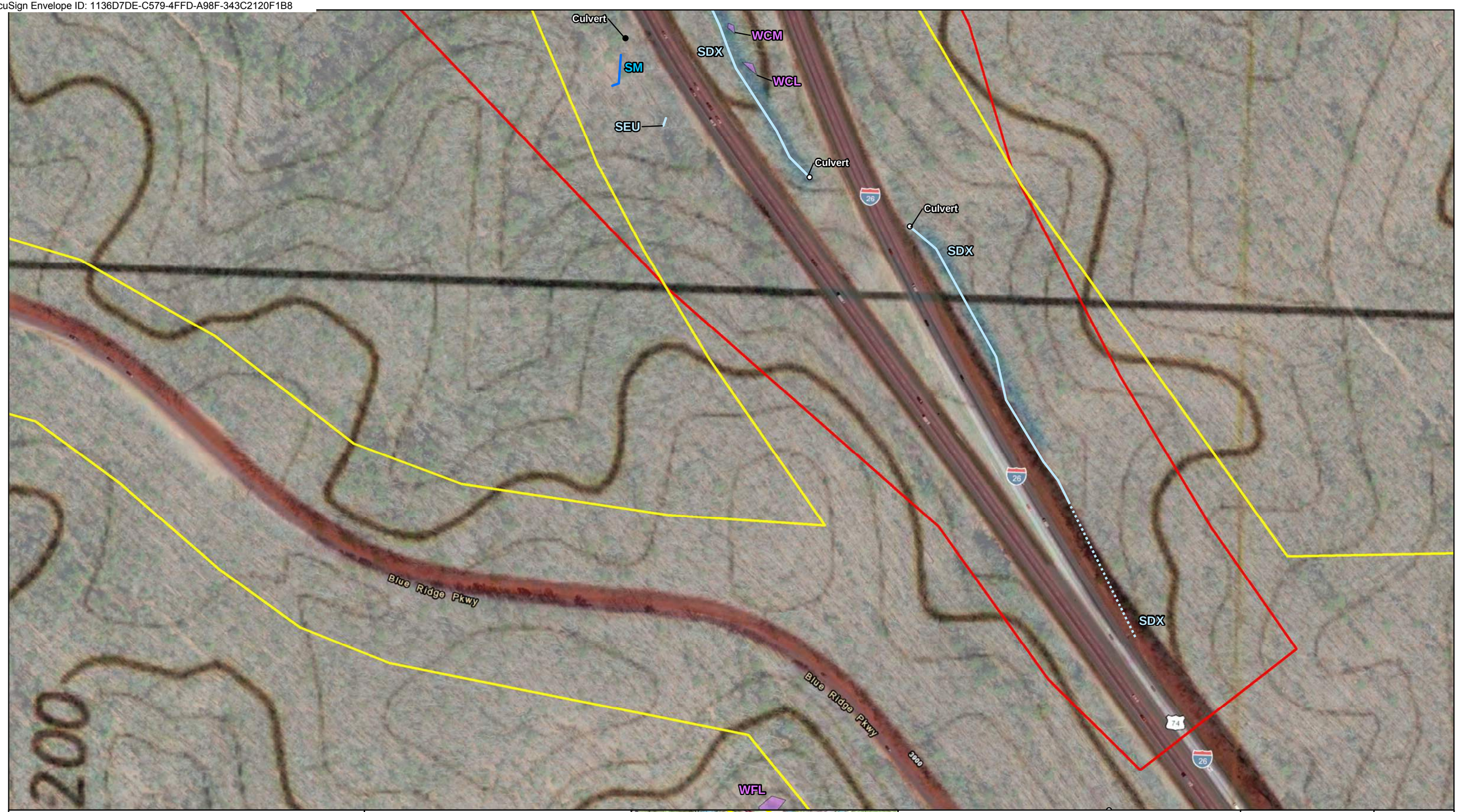
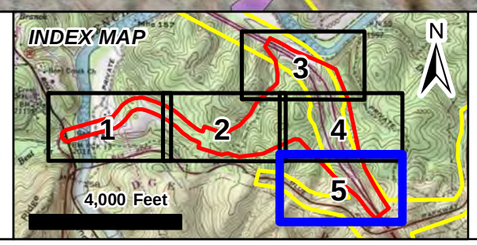


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT

POTENTIAL JURISDICTIONAL FEATURES TOPOGRAPHIC MAP MAP 5 OF 5

New I-26 Interchange in Buncombe County

STIP Project HE-0001



Legend

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Upper French Broad Sub-Basin HUC 06010105

French Broad River Basin

N W E S

Feet
200 100 0 200

Sources: Aerial imagery and transportation basemapping provided by ESRI ArcGIS Online. Wetlands and waterways were delienated in the field by Gannett Fleming, Inc. (July 2021). Map Prepared: 07/24/2021, Updated: 09/08/2021; GF Project No. 64926

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: HE-0001 I-26 Exit 35 City/County: Buncombe Sampling Date: 7/13/2021

Applicant/Owner: NCDOT / Biltmore Farms LLC State: NC Sampling Point: WA-SP

Investigator(s): John Thomas (Gannett Fleming) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): hillslope (hollow) Local relief (concave, convex, none): Concave Slope (%): 15-30

Subregion (LRR or MLRA): LRR N Lat: 35.50318 Long: -82.57813 Datum: NAD 83

Soil Map Unit Name: Tate loam NWI classification: None

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

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

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

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [x] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [x] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): 1-2"
Water Table Present?	Yes X	No _____	Depth (inches): 3"
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): Surface

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Wetland saturated to surface with auger hole filled with water within three inches of the surface. There were some small pockets of standing water 1-2" deep.

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

Sampling Point: WA-SP

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	Yes	FAC
2. Liriodendron tulipifera	5	No	FACU
3. Pinus strobus	5	No	FACU
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. Carpinus caroliniana	20	Yes	FAC
2. Lindera melissifora	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Herb Stratum (Plot size: 30' radius)			
1. Osmundastrum cinnamomeum	35	Yes	FACW
2. Microstegium vimineum	35	Yes	FAC
3. Impatiens capensis	15	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		

Woody Vine Stratum (Plot size: 30' radius)			
1. Smilax rotundifolia	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	85	x 3 =	255
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	165 (A)		435 (B)

Prevalence Index = B/A = 2.64

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ X 2 - Dominance Test is >50%

___ X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks.)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WA-SP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	100					loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Check boxes seemed to be jumbled. I intended to check box for "Thick Dark Surface (A12)".

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: HE-0001 I-26 Exit 35 City/County: Buncombe Sampling Date: 7/13/2021

Applicant/Owner: NCDOT / Biltmore Farms LLC State: NC Sampling Point: WL-SP

Investigator(s): John Thomas (Gannett Fleming) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): hillslope (hollow) Local relief (concave, convex, none): Concave Slope (%): 15-30

Subregion (LRR or MLRA): LRR N Lat: 35.50544 Long: -82.57668 Datum: NAD 83

Soil Map Unit Name: Tate loam NWI classification: None

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

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

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

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [x] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [x] Crayfish Burrows (C8)
- [x] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): 1-2"
Water Table Present?	Yes X	No _____	Depth (inches): 3"
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): Surface

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Wetland saturated to surface with auger hole filled with water within three inches of the surface. There were some small pockets of standing water 1-2" deep.

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

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	Yes	FAC
2. Liriodendron tulipifera	5	No	FACU
3. Pinus strobus	5	No	FACU
4. Acer saccharum	5	No	FACU
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. Carpinus caroliniana	20	Yes	FAC
2. Lindera melissifora	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Herb Stratum (Plot size: 30' radius)			
1. Osmundastrum cinnamomeum	35	Yes	FACW
2. Microstegium vimineum	35	Yes	FAC
3. Impatiens capensis	15	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		

Woody Vine Stratum (Plot size: 30' radius)			
1. Smilax rotundifolia	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	105	x 2 =	140
FAC species	50	x 3 =	255
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	170 (A)		455 (B)

Prevalence Index = B/A = 2.68

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

__ X 2 - Dominance Test is >50%

__ X 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks)

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-SP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR 4/2	100					loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Check boxes seemed to be jumbled. I intended to check box for "Thick Dark Surface (A12)".

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: HE-0001 I-26 Exit 35 City/County: Buncombe Sampling Date: 7/14/2021

Applicant/Owner: NCDOT / Biltmore Farms LLC State: NC Sampling Point: WR-SP

Investigator(s): John Thomas (Gannett Fleming) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): hillslope (hollow) Local relief (concave, convex, none): Concave Slope (%): 15-30

Subregion (LRR or MLRA): LRR N Lat: 35.0327 Long: -82.57170 Datum: NAD 83

Soil Map Unit Name: Evard fine-loamy NWI classification: None

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

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

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

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Sampling Point: WR-SP

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	15	Yes	FAC
2. Liriodendron tulipifera	10	Yes	FACU
3. Pinus strobus	10	Yes	FACU
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		

Sapling/Shrub Stratum (Plot size: 30' radius)			
1. Acer rubrum	20	Yes	FAC
2. Pinus strobus	20	Yes	FACU
3. Ilex opaca	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		

Herb Stratum (Plot size: 30' radius)			
1. Osmunda claytoniana	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 2		

Woody Vine Stratum (Plot size: 30' radius)			
1. Smilax rotundifolia	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 8 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	120 (A)		415 (B)

Prevalence Index = B/A = 3.46

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WR-SP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR 4/4	100					fine loamy	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

SA-3

NC DWQ Stream Identification Form Version 4.11

Date: July 13 2021	Project/Site: I-26 & I-35	Latitude: 35.50318
Evaluator: John Thomas	County: Buncombe	Longitude: -82.57813
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 31.25	Stream Determination (circle one) Ephemeral Intermittent (Perennial)	Other Asheville *e.g. Quad Name:*

A. Geomorphology (Subtotal = 17)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	(3)
4. Particle size of stream substrate	0	1	2	(3)
5. Active/relict floodplain	0	1	(2)	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	1	(2)	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	(No = 0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8.5)				
12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		(Yes = 3)	

C. Biology (Subtotal = 5.75)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	3	2	(1)	0
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3
21. Aquatic Mollusks	0	(1)	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	0	(0.5)	1	1.5
24. Amphibians	0	(0.5)	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = (0.75) OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

SA-17

NC DWQ Stream Identification Form Version 4.11

Date: July 13, 2021	Project/Site: I-26 & I-35	Latitude: 35.56544
Evaluator: John Thomas	County: Buncombe	Longitude: -82.57668
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 36	Stream Determination (circle one) Ephemeral Intermittent (Perennial)	Other Asheville e.g. Quad Name:

A. Geomorphology (Subtotal = 18)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	(3)
4. Particle size of stream substrate	0	1	2	(3)
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	1	(2)	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	(No = 0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8.5)				
12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		(Yes = 3)	

C. Biology (Subtotal = 9.5)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3
21. Aquatic Mollusks	0	(1)	2	3
22. Fish	0	(0.5)	1	1.5
23. Crayfish	0	(0.5)	1	1.5
24. Amphibians	0	(0.5)	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

SM-4

NC DWQ Stream Identification Form Version 4.11

Date: Aug 27 2021	Project/Site: HE-0001	Latitude: 35.5012527
Evaluator: J. Thomas	County: Buncombe	Longitude: -82.5204763
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 15	Stream Determination (circle one) (Ephemeral) Intermittent Perennial	Other Asheville *e.g. Quad Name:*

A. Geomorphology (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	(0)	1	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	(0)	0.5	1	1.5
11. Second or greater order channel	(No = 0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 2.5)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	(No = 0)		Yes = 3	

C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 (Other = 0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Dry prior SM bank to CB Feeder Nick Point / Base flow to Culvert at I-26 East bound

Sketch:

NC SAM FIELD ASSESSMENT FORM
Accompanies User Manual Version 2.1

USACE AID #: NCDWR #:

INSTRUCTIONS: Attach a sketch of the assessment area and photographs. Attach a copy of the USGS 7.5 quadrangle, and circle the location of the stream reach under evaluation. If multiple stream reaches will be evalu property, identify and number all reaches on the attached map, and include a separate form for each reach. See Manual for detailed descriptions and explanations of requested information. Record in the "Notes/Sketch" section if any supplemental measurements were performed. See the NC SAM User Manual for examples of additional measurements that may be relevant.
NOTE EVIDENCE OF STRESSORS AFFECTING THE ASSESSMENT AREA (do not need to be within the assessment area).

PROJECT / SITE INFORMATION:

1. Project name (if any): HE-0001 I-26 Exit 35
2. Date of evaluation: 8 30 2021
3. Applicant/owner name: NCDOT
4. Assessor name/organization: GF
5. County: Buncombe
6. Nearest named water body on USGS 7.5-minute quad: Fench Broad River
7. River Basin: French Broad River
8. Site coordinates (decimal degrees, at lower end of assessment reach): 35.4988 -82.5689

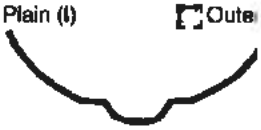
STREAM INFORMATION: (depth and width can be approximations)

9. Site number (show on attached map): SDX
10. Length of assessment reach evaluated (feet): 3680
11. Channel depth from bed (in riffle, if present) to top of bank (feet): 1 ☐ Unable to assess chann
12. Channel width at top of bank (feet): 2
13. Is assessment reach a swamp stream? ☐ Yes
14. Feature type: ☒ Perennial flow ☐ Intermittent flow ☐ Tidal Marsh Stream

STREAM RATING INFORMATION:

15. NC SAM Zone: ☒ Mountains (M) ☐ Piedmont (P) ☐ Inner Coastal Plain (I) ☐ Oute

16. Estimated geomorphic valley shape **(skip for Tidal Marsh Stream):**

☐ a (more sinuous stream, flatter valley slope)

☒ b (less sinuous stream, steeper va

17. Watershed size: **(skip for Tidal Marsh Stream)** ☐ Size 1 (< 0.1 mi²) ☒ Size 2 (0.1 to < 0.5 mi²) ☐ Size 3 (0.5 to < 5 mi²) ☐

ADDITIONAL INFORMATION:

18. Were regulatory considerations evaluated? ☒ Yes ☐ No If Yes, check all that appy to the assessment area.
- ☐ Section 10 water
- ☑ Classified Trout Waters
- ☐ Water Supply Watershed (☐ I ☐ II
- ☐ Essential Fish Habitat
- ☐ Primary Nursery Area
- ☐ High Quality Waters/Outstanding Resource W
- ☐ Publicly owned property
- ☐ NCDWR riparian buffer rule in effect
- ☐ Nutrient Sensitive Waters
- ☐ Anadromous fish
- ☐ 303(d) List
- ☐ CAMA Area of Environmental Concern (AEC)
- ☐ Documented presence of a federal and/or state listed protected species within the assessment area. List species:
- ☐ Designated Critical Habitat (list species):

19. Are additional stream information/supplementary measurements included in "Notes/Sketch" section or attached?

1. **Channel Water – assessment reach metric (skip for Size 1 streams and Tidal Marsh Streams)**
   - ☒ A Water throughout assessment reach.
   - ☐ B No flow, water in pools only.
   - ☐ C No water in assessment reach.

2. **Evidence of Flow Restriction – assessment reach metric**
   - ☐ A At least 10% of assessment reach in-stream habitat or riffle-pool sequence is adversely affected by a flow restriction o point of obstructing flow or a channel choked with aquatic macrophytes or ponded water or impounded on flood or ebb the assessment reach (examples: undersized or perched culverts, causeways that constrict the channel, tidal gates).
   - ☒ B Not A

3. **Feature Pattern – assessment reach metric**
   - ☐ A A majority of the assessment reach has altered pattern (examples: straightening, modification above or below culvert)
   - ☒ B Not A.

4. **Feature Longitudinal Profile – assessment reach metric**
   - ☐ A Majority of assessment reach has a substantially altered stream profile (examples: channel down-cutting, existing dam over widening, active aggradation, dredging, and excavation where appropriate channel profile has not reformed from these disturbances).
   - ☒ B Not A

5. **Signs of Active Instability – assessment reach metric**
Consider only current instability, not past events from which the stream has currently recovered. Examples of instabil active bank failure, active channel down-cutting (head-cut), active widening, and artificial hardening (such as concrete, gabion
   - ☒ A < 10% of channel unstable
   - ☐ B 10 to 25% of channel unstable
   - ☐ C > 25% of channel unstable

6. **Streamside Area Interaction – streamside area metric**
Consider for the Left Bank (LB) and the Right Bank (RB).

LB	RB	
☐ A	☐ A	Little or no evidence of conditions that adversely affect reference interaction
☐ B	☐ B	Moderate evidence of conditions (examples: berms, levees, down-cutting, aggradation, dredging) that adversely reference interaction (examples: limited streamside area access, disruption of flood flows through streamside leaky or intermittent bulkheads, causeways with floodplain constriction, minor ditching [including mosquito ditc
☒ C	☒ C	Extensive evidence of conditions that adversely affect reference interaction (little to no floodplain/intertidal zor [examples: causeways with floodplain and channel constriction, bulkheads, retaining walls, fill, stream incisior disruption of flood flows through streamside area] or too much floodplain/intertidal zone access [examples: impoundments, intensive mosquito ditching]) or floodplain/intertidal zone unnaturally absent or assessment re man-made feature on an interstream divide

7. **Water Quality Stressors – assessment reach/intertidal zone metric**
Check all that apply.
- ☐ A Discolored water in stream or intertidal zone (milky white, blue, unnatural water discoloration, oil sheen, stream foam)
- ☐ B Excessive sedimentation (burying of stream features or intertidal zone)
- ☑ C Noticeable evidence of pollutant discharges entering the assessment reach and causing a water quality problem
- ☐ D Odor (not including natural sulfide odors)
- ☐ E Current published or collected data indicating degraded water quality in the assessment reach. Cite source in the "Nc section.
- ☐ F Livestock with access to stream or intertidal zone
- ☐ G Excessive algae in stream or intertidal zone
- ☐ H Degraded marsh vegetation in the intertidal zone (removal, burning, regular mowing, destruction, etc.)
- ☐ I Other: _____ (explain in "Notes/Sketch" section)
- ☐ J Little to no stressors

8. **Recent Weather – watershed metric**
For Size 1 or 2 streams, D1 drought or higher is considered a drought; for Size 3 or 4 streams, D2 drought or higher is consid drought.
- ☐ A Drought conditions and no rainfall or rainfall not exceeding 1 inch within the last 48 hours
- ☐ B Drought conditions and rainfall exceeding 1 inch within the last 48 hours
- ☒ C No drought conditions

9 **Large or Dangerous Stream – assessment reach metric**
☐ Yes ☒ No Is stream is too large or dangerous to assess? **If Yes, skip to Metric 13 (Streamside Area Ground S**

10. **Natural In-stream Habitat Types – assessment reach metric**
10a. ☐ Yes ☒ No Degraded in-stream habitat over majority of the assessment reach (examples of stressors include sedimentation, mining, excavation, in-stream hardening [for example, rip-rap], recent dredging, an **(evaluate for size 4 Coastal Plain streams only, then skip to Metric 12)**

10b. **Check all that occur** (occurs if > 5% coverage of assessment reach) **(skip for Size 4 Coastal Plain streams)**
- ☐ A Multiple aquatic macrophytes and aquatic mosses (include liverworts, lichens, and algal mats)
- ☐ B Multiple sticks and/or leaf packs and/or emergent vegetation
- ☑ C Multiple snags and logs (including lap trees)
- ☐ D 5% undercut banks and/or root mats and/or roots in banks extend to the normal wetted perimeter
- ☐ E Little or no habitat

Check for Tidal Marsh Streams only
- ☐ F 5% oysters or other natural hard bo
- ☐ G Submerged aquatic vegetation
- ☐ H Low-tide refugia (pools)
- ☐ I Sand bottom
- ☐ J 5% vertical bank along the marsh
- ☐ K Little or no habitat

***************************************REMAINING QUESTIONS ARE NOT APPLICABLE FOR TIDAL MARSH STREAMS************

11. **Bedform and Substrate – assessment reach metric (skip for Size 4 Coastal Plain streams and Tidal Marsh Streams)**
11a. ☐ Yes ☒ No Is assessment reach in a natural sand-bed stream? **(skip for Coastal Plain streams)**

11b. Bedform evaluated. **Check the appropriate box(es).**
- ☑ A Riffle-run section (evaluate 11c)
- ☐ B Pool-glide section (evaluate 11d)
- ☐ C Natural bedform absent **(skip to Metric 12, Aquatic Life)**

11c. In riffles sections, check all that occur below the normal wetted perimeter of the assessment reach – whether or not subr **Check at least one box in each row (skip for Size 4 Coastal Plain Streams and Tidal Marsh Streams).** Not Preser absent, Rare (R) = present but ≤ 10%, Common (C) = > 10-40%, Abundant (A) = > 40-70%, Predominant (P) = > 70%. percentages should not exceed 100% for each assessment reach.

NP	R	C	A	P	
☐	☒	☐	☐	☐	Bedrock/saprolite
☐	☐	☐	☐	☐	Boulder (256 – 4096 mm)
☐	☐	☒	☐	☐	Cobble (64 – 256 mm)
☐	☐	☐	☐	☐	Gravel (2 – 64 mm)

☐ ☐ ☐ ☒ ☐ Sand (.062 – 2 mm)
☐ ☐ ☐ ☐ ☐ Silt/clay (< 0.062 mm)
☐ ☐ ☐ ☐ ☐ Detritus
☐ ☐ ☐ ☐ ☐ Artificial (rip-rap, concrete, etc.)

11d. ☐ Yes ☐ No Are pools filled with sediment? (skip for Size 4 Coastal Plain streams and Tidal Marsh Streams

12. Aquatic Life – assessment reach metric (skip for Size 4 Coastal Plain streams and Tidal Marsh Streams)

12a. ☒ Yes ☐ No Was an in-stream aquatic life assessment performed as described in the User Manual?
If No, select one of the following reasons and skip to Metric 13. ☐ No Water ☐ Other: _____

12b. ☒ Yes ☐ No Are aquatic organisms present in the assessment reach (look in riffles, pools, then snags)? If Yes all that apply. If No, skip to Metric 13.

1	>1	Numbers over columns refer to "individuals" for size 1 and 2 streams and "taxa" for size 3 and 4 streams.
☐	☐	Adult frogs
☐	☑	Aquatic reptiles
☐	☐	Aquatic macrophytes and aquatic mosses (include liverworts, lichens, and algal mats)
☐	☐	Beetles (including water pennies)
☐	☑	Caddisfly larvae (Trichoptera [T])
☐	☐	Asian clam (*Corbicula*)
☐	☐	Crustacean (isopod/amphipod/crayfish/shrimp)
☐	☐	Damselfly and dragonfly larvae
☐	☐	Dipterans (true flies)
☐	☐	Mayfly larvae (Ephemeroptera [E])
☐	☐	Megaloptera (alderfly, fishfly, dobsonfly larvae)
☐	☐	Midges/mosquito larvae
☐	☑	Mosquito fish (*Gambusia*) or mud minnows (*Umbra pygmaea*)
☐	☐	Mussels/Clams (not *Corbicula*)
☐	☐	Other fish
☐	☐	Salamanders/tadpoles
☐	☐	Snails
☐	☐	Stonefly larvae (Plecoptera [P])
☐	☐	Tipulid larvae
☐	☐	Worms/leeches

13. Streamside Area Ground Surface Condition – streamside area metric (skip for Tidal Marsh Streams and B valley types
Consider for the Left Bank (LB) and the Right Bank (RB). Consider storage capacity with regard to both overbank flow and upland runoff.

LB	RB	
☐ A	☐ A	Little or no alteration to water storage capacity over a majority of the streamside area
☐ B	☐ B	Moderate alteration to water storage capacity over a majority of the streamside area
☒ C	☒ C	Severe alteration to water storage capacity over a majority of the streamside area (examples include: ditches soil, compaction, livestock disturbance, buildings, man-made levees, drainage pipes)

14. Streamside Area Water Storage – streamside area metric (skip for Size 1 streams, Tidal Marsh Streams, and B valley
Consider for the Left Bank (LB) and the Right Bank (RB) of the streamside area.

LB	RB	
☒ A	☒ A	Majority of streamside area with depressions able to pond water ≥ 6 inches deep
☐ B	☐ B	Majority of streamside area with depressions able to pond water 3 to 6 inches deep
☐ C	☐ C	Majority of streamside area with depressions able to pond water < 3 inches deep

15. Wetland Presence – streamside area metric (skip for Tidal Marsh Streams)
Consider for the Left Bank (LB) and the Right Bank (RB). Do not consider wetlands outside of the streamside area or with normal wetted perimeter of assessment reach.

LB	RB	
☒ Y	☒ Y	Are wetlands present in the streamside area?
☐ N	☐ N	

16. Baseflow Contributors – assessment reach metric (skip for size 4 streams and Tidal Marsh Streams)
Check all contributors within the assessment reach or within view of and draining to the assessment reach.

- ☑ A Streams and/or springs (jurisdictional discharges)
- ☐ B Ponds (include wet detention basins; do not include sediment basins or dry detention basins)
- ☐ C Obstruction that passes some flow during low-flow periods within assessment area (beaver dam, bottom-release dam
- ☐ D Evidence of bank seepage or sweating (iron oxidizing bacteria in water indicates seepage)
- ☐ E Stream bed or bank soil reduced (dig through deposited sediment if present)
- ☐ F None of the above

17. Baseflow Detractors – assessment area metric (skip for Tidal Marsh Streams)
Check all that apply.

- ☐ A Evidence of substantial water withdrawals from the assessment reach (includes areas excavated for pump installation

- ☐ B Obstruction not passing flow during low flow periods affecting the assessment reach (ex: watertight dam, sediment d
- ☐ C Urban stream (≥ 24% impervious surface for watershed)
- ☑ D Evidence that the stream-side area has been modified resulting in accelerated drainage into the assessment reach
- ☐ E Assessment reach relocated to valley edge
- ☐ F None of the above

18. Shading – assessment reach metric (skip for Tidal Marsh Streams)
Consider aspect. Consider "leaf-on" condition.

- ◉ A Stream shading is appropriate for stream category (may include gaps associated with natural processes)
- ☐ B Degraded (example: scattered trees)
- ☐ C Stream shading is gone or largely absent

19. Buffer Width – streamside area metric (skip for Tidal Marsh Streams)
Consider "vegetated buffer" and "wooded buffer" separately for left bank (LB) and right bank (RB) starting at the top of bank out to the first break.

Vegetated		Wooded		
LB	RB	LB	RB	
☐ A	☐ A	☐ A	☐ A	≥ 100-feet wide or extends to the edge of the watershed
☐ B	☐ B	☐ B	☐ B	From 50 to < 100-feet wide
☐ C	☐ C	◉ C	◉ C	From 30 to < 50-feet wide
☐ D	☐ D	☐ D	☐ D	From 10 to < 30-feet wide
◉ E	◉ E	☐ E	☐ E	< 10-feet wide or no trees

20. Buffer Structure – streamside area metric (skip for Tidal Marsh Streams)
Consider for left bank (LB) and right bank (RB) for Metric 19 ("Vegetated" Buffer Width).

LB	RB	
☐ A	☐ A	Mature forest
◉ B	◉ B	Non-mature woody vegetation or modified vegetation structure
☐ C	☐ C	Herbaceous vegetation with or without a strip of trees < 10 feet wide
☐ D	☐ D	Maintained shrubs
☐ E	☐ E	Little or no vegetation

21. Buffer Stressors – streamside area metric (skip for Tidal Marsh Streams)
Check all appropriate boxes for left bank (LB) and right bank (RB). Indicate if listed stressor abuts stream (Abuts), does is within 30 feet of stream (< 30 feet), or is between 30 to 50 feet of stream (30-50 feet).
If none of the following stressors occurs on either bank, check here and skip to Metric 22: ☑

Abuts		< 30 feet		30-50 feet		
LB	RB	LB	RB	LB	RB	
☐ A	☐ A	☐ A	☐ A	☐ A	☐ A	Row crops
☐ B	☐ B	☐ B	☐ B	☐ B	☐ B	Maintained turf
☐ C	☐ C	☐ C	☐ C	☐ C	☐ C	Pasture (no livestock)/commercial horticulture
☐ D	☐ D	☐ D	☐ D	☐ D	☐ D	Pasture (active livestock use)

22. Stem Density – streamside area metric (skip for Tidal Marsh Streams)
Consider for left bank (LB) and right bank (RB) for Metric 19 ("Wooded" Buffer Width).

LB	RB	
◉ A	◉ A	Medium to high stem density
☐ B	☐ B	Low stem density
☐ C	☐ C	No wooded riparian buffer or predominantly herbaceous species or bare ground

23. Continuity of Vegetated Buffer – streamside area metric (skip for Tidal Marsh Streams)
Consider whether vegetated buffer is continuous along stream (parallel). Breaks are areas lacking vegetation > 10-feet wide.

LB	RB	
◉ A	◉ A	The total length of buffer breaks is < 25 percent.
☐ B	☐ B	The total length of buffer breaks is between 25 and 50 percent.
☐ C	☐ C	The total length of buffer breaks is > 50 percent.

24. Vegetative Composition – First 100 feet of streamside area metric (skip for Tidal Marsh Streams)
Evaluate the dominant vegetation within 100 feet of each bank or to the edge of the watershed (whichever comes first) as it co to assessment reach habitat.

LB	RB	
☐ A	☐ A	Vegetation is close to undisturbed in species present and their proportions. Lower strata composed of nati species, with non-native invasive species absent or sparse.
◉ B	◉ B	Vegetation indicates disturbance in terms of species diversity or proportions, but is still largely composed c species. This may include communities of weedy native species that develop after clear-cutting or clearing communities with non-native invasive species present, but not dominant, over a large portion of the expect communities missing understory but retaining canopy trees.
☐ C	☐ C	Vegetation is severely disturbed in terms of species diversity or proportions. Mature canopy is absent or c with non-native invasive species dominant over a large portion of expected strata or communities compose stands of non-characteristic species or communities inappropriately composed of a single species or no ve

25. Conductivity – assessment reach metric (skip for all Coastal Plain streams)

25a. ☐ Yes ☒ No Was a conductivity measurement recorded?

If No, select one of the following reasons. ☐ No Water ☐ Other: _____

25b. Check the box corresponding to the conductivity measurement (units of microsiemens per centimeter).

☐ A <46 ☐ B 46 to < 67 ☐ C 67 to < 79 ☐ D 79 to < 230 ☐ E ≥ 230

Notes/Sketch:

NC SAM Stream Rating Sheet
Accompanies User Manual Version 2.1

Stream Site Name HE-0001 I-26 Exit 35 I-4700 SDX
Date of Evaluation 6 30 2021
Stream Category Mb2
Assessor Name/Organization GF

Notes of Field Assessment Form (Y/N) No N
Presence of regulatory considerations (Y/N) Yes Y
Additional stream information/supplementary measurements included (Y/N) All N
NC SAM feature type (perennial, intermittent, Tidal Marsh Stream) Per

Function Class Rating Summary	USACE/ All Streams	NCDWR Intermittent
(1) Hydrology	MEDIUM	
(2) Baseflow	HIGH	
(2) Flood Flow	MEDIUM	
(3) Streamside Area Attenuation	LOW	
(4) Floodplain Access	LOW	
(4) Wooded Riparian Buffer	HIGH	
(4) Microtopography	NA	
(3) Stream Stability	HIGH	
(4) Channel Stability	HIGH	
(4) Sediment Transport	MEDIUM	
(4) Stream Geomorphology	HIGH	
(2) Stream/Intertidal Zone Interaction	NA	
(2) Longitudinal Tidal Flow	NA	
(2) Tidal Marsh Stream Stability	NA	
(3) Tidal Marsh Channel Stability	NA	
(3) Tidal Marsh Stream Geomorphology	NA	
(1) Water Quality	LOW	
(2) Baseflow	HIGH	
(2) Streamside Area Vegetation	MEDIUM	
(3) Upland Pollutant Filtration	LOW	
(3) Thermoregulation	HIGH	
(2) Indicators of Stressors	YES	
(2) Aquatic Life Tolerance	MEDIUM	
(2) Intertidal Zone Filtration	NA	
(1) Habitat	LOW	
(2) In-stream Habitat	LOW	
(3) Baseflow	HIGH	
(3) Substrate	MEDIUM	
(3) Stream Stability	HIGH	
(3) In-stream Habitat	LOW	
(2) Stream-side Habitat	HIGH	
(3) Stream-side Habitat	MEDIUM	
(3) Thermoregulation	HIGH	
(2) Tidal Marsh In-stream Habitat	NA	
(3) Flow Restriction	NA	
(3) Tidal Marsh Stream Stability	NA	
(4) Tidal Marsh Channel Stability	NA	
(4) Tidal Marsh Stream Geomorphology	NA	
(3) Tidal Marsh In-stream Habitat	NA	
(2) Intertidal Zone Habitat	NA	
Overall	LOW	

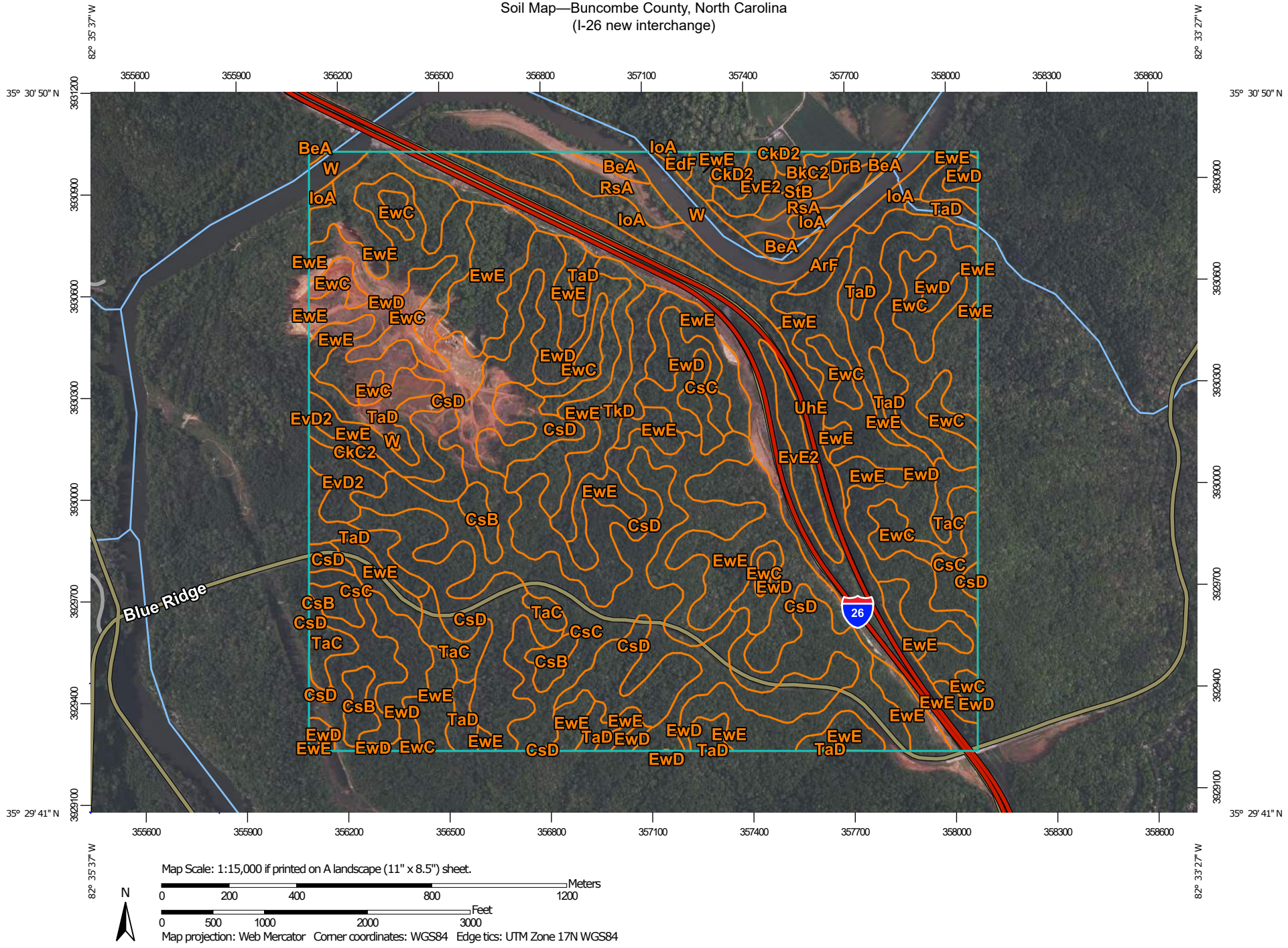
Wetland WA typical view

Wetland WL typical view

Stream SA typical upper reach view

Stream SA typical lower reach view

Soil Map—Buncombe County, North Carolina
(I-26 new interchange)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Buncombe County, North Carolina
Survey Area Data: Version 17, Jun 2, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 3, 2020—May 7, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

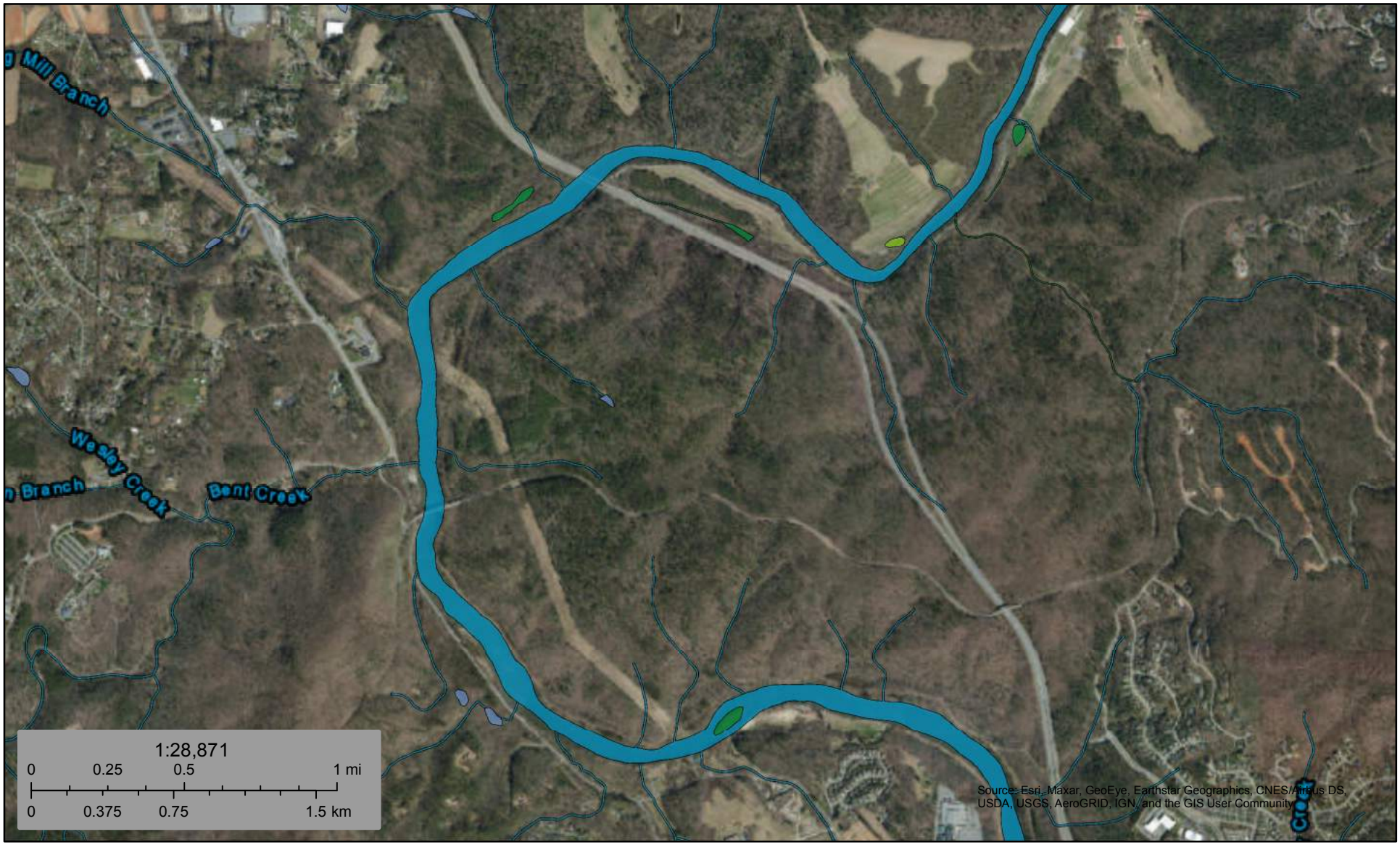
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ArF	Ashe-Cleveland-Rock outcrop complex, 50 to 95 percent slopes, very bouldery	3.1	0.4%
BeA	Biltmore loamy sand, 0 to 3 percent slopes, occasionally flooded	6.3	0.7%
BkC2	Braddock clay loam, 8 to 15 percent slopes, moderately eroded	2.5	0.3%
BkD2	Braddock clay loam, 15 to 30 percent slopes, moderately eroded	1.5	0.2%
CkC2	Clifton clay loam, 8 to 15 percent slopes, moderately eroded	2.7	0.3%
CkD2	Clifton clay loam, 15 to 30 percent slopes, moderately eroded	2.8	0.3%
CsB	Clifton sandy loam, 2 to 8 percent slopes	14.0	1.6%
CsC	Clifton sandy loam, 8 to 15 percent slopes	107.8	12.4%
CsD	Clifton sandy loam, 15 to 30 percent slopes	137.1	15.8%
DrB	Dillard loam, 1 to 5 percent slopes, rarely flooded	1.8	0.2%
EdF	Edneyville-Chestnut complex, 50 to 95 percent slopes, stony	1.1	0.1%
EvD2	Evard-Cowee complex, 15 to 30 percent slopes, moderately eroded	7.3	0.8%
EvE2	Evard-Cowee complex, 30 to 50 percent slopes, moderately eroded	13.4	1.5%
EwC	Evard-Cowee complex, basin, 8 to 15 percent slopes, stony	40.0	4.6%
EwD	Evard-Cowee complex, basin, 15 to 30 percent slopes, stony	153.9	17.7%
EwE	Evard-Cowee complex, basin, 30 to 50 percent slopes, stony	180.5	20.8%
IoA	Iotla loam, 0 to 2 percent slopes, occasionally flooded	27.1	3.1%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
RsA	Rosman fine sandy loam, 0 to 3 percent slopes, occasionally flooded	13.8	1.6%
StB	Statler loam, 1 to 5 percent slopes, rarely flooded	3.1	0.4%
TaC	Tate loam, basin, 8 to 15 percent slopes	15.4	1.8%
TaD	Tate loam, basin, 15 to 30 percent slopes	32.6	3.8%
TkD	Tate loam, basin, 15 to 30 percent slopes, very stony	11.9	1.4%
UhE	Udorthents-Urban land complex, 2 to 50 percent slopes	67.2	7.7%
W	Water	21.8	2.5%
Totals for Area of Interest		**868.5**	**100.0%**

U.S. Fish and Wildlife Service

National Wetlands Inventory

NCDOT I-26 exit 35



July 21, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

FEMA (//www.fema.gov)

FEMA Flood Map Service Center: Search By Address

Enter an address, place, or coordinates:

Asheville, NC Search

Whether you are in a high risk zone or not, you may need flood insurance (https://www.fema.gov/national-flood-insurance-program) because most homeowners insurance doesn't cover flood damage. If you live in an area with lower moderate flood risk, you are 5 times more likely to experience flood than a fire in your home over the next 30 years. For many, a National Flood Insurance Program's flood insurance policy could cost less than $400 per year. Call your insurance agent today and protect what you've built.

Learn more about steps you can take (https://www.fema.gov/what-mitigation) to reduce flood risk damage.

Search Results—Products for ASHEVILLE, CITY OF

Show ALL Products » (https://msc.fema.gov/portal/availabilitySearch?addcommunity=370032&communityName=ASHEVILLE, CITY OF#searchresultsanchor)

The flood map for the selected area is number **3700964900J**, effective on **01/06/2010**

DYNAMIC MAP

MAP IMAGE (https://msc.fema.gov/portal/downloadProduct?productTypeID=FINAL_PRODUCT&productSubTypeID=FIRM_PANEL&productID=3700964900J)

Changes to this FIRM

Revisions (0)
Amendments (6)
Revalidations (0)

You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMette. If you are a person with a disability, are blind, or have low vision, and need assistance, please contact a map specialist (https://msc.fema.gov/portal/resources/contact).

Go To NFHL Viewer » (https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-82.60296789314793,35.497

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North Carolina Drought Update

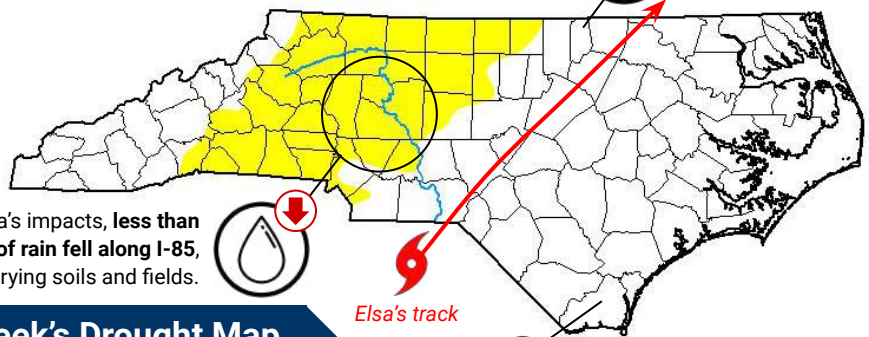
For the assessment period ending July 13, 2021

This Week's Drought Monitor of North Carolina Map

From the US Drought Monitor, authored by Adam Hartman (*NOAA/NWS/NCEP/CPC*) with input from the North Carolina Drought Management Advisory Council (ncdrought.org)

Statewide, **real-time streamflows are mostly at or above normal**, with only a handful of below-normal gauges scattered across the western Piedmont.

Nearly 5 inches of rain fell at John H. Kerr Lake, raising it back to its seasonal guide curve.



West of Elsa's impacts, **less than half an inch of rain fell along I-85**, further drying soils and fields.

Brunswick County rescinded Stage 1 water restrictions after 2"+ of rain from Elsa, but irrigating on alternating days outside of peak demand hours is still encouraged.

Last Week's Drought Map

This infographic was created by NORTH CAROLINA CLIMATEOFFICE

Statewide Condition Summary

What's Changed? For the first time since early May, North Carolina is drought-free after Tropical Storm Elsa soaked the eastern Piedmont and southern Coastal Plain.

What's New? In just two weeks, conditions along the Virginia border have reversed from *very dry* to *very wet* thanks to an early-July cold front and Elsa last week. The western Piedmont is now the driest part of the state over the past three months, but impacts have been slow to emerge there, so it remains only Abnormally Dry (D0).

What's Next? Our hot, summer-like pattern will give way to cooler weather and better rain chances early next week as a cold front approaches from the northwest.

Statewide Coverage By Category

Category	Coverage This Week	Change Since Last Week
D0: Abnormally Dry	26.27%	-18.95%
D1: Moderate Drought	0.00%	-2.38%
D2: Severe Drought	0.00%	0.00%
D3: Extreme Drought	0.00%	0.00%
D4: Exceptional Drought	0.00%	0.00%

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Initials: 0
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Roger D. Bryan rdbryan@ncdot.gov North Carolina Department of Transportation Security Level: Email, Account Authentication (None)	DocuSigned by: Roger D. Bryan 33212C738EB8411... Signature Adoption: Pre-selected Style Using IP Address: 199.90.35.10	Sent: 9/14/2021 9:51:21 AM Viewed: 9/14/2021 9:52:11 AM Signed: 9/14/2021 9:52:33 AM

Electronic Record and Signature Disclosure:
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ID: 5df2df8a-8ab1-4093-af9d-579a4748d86e

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	9/14/2021 9:51:21 AM
Certified Delivered	Security Checked	9/14/2021 9:52:11 AM
Signing Complete	Security Checked	9/14/2021 9:52:33 AM
Completed	Security Checked	9/14/2021 9:52:33 AM

Payment Events	Status	Timestamps

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IPaC **U.S. Fish & Wildlife Service**

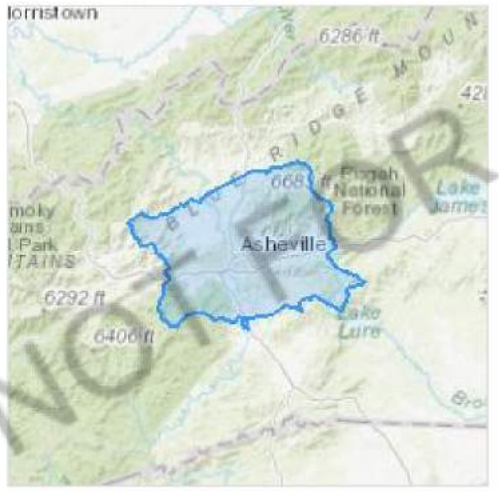
IPaC resource list

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

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

Location

Buncombe County, North Carolina



Local office

Asheville Ecological Services Field Office

(828) 258-3939
(828) 258-5330

160 Zillicoa Street
Asheville, NC 28801-1082

http://www.fws.gov/nc-es/es/countyfr.html

Endangered species

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

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

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

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

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

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

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

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

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

Mammals

NAME	STATUS

Carolina Northern Flying Squirrel Glaucomys sabrinus coloratus — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2657

Gray Bat Myotis grisescens — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6329

Northern Long-eared Bat Myotis septentrionalis — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9045

Reptiles

NAME	STATUS

Bog Turtle Clemmys muhlenbergii — SAT
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6962

Clams

NAME	STATUS

Appalachian Elktoe Alasmidonta raveneliana — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/5039

Arachnids

NAME	STATUS

Spruce-fir Moss Spider Microhexura montivaga — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/4801

Flowering Plants

NAME	STATUS

Blue Ridge Goldenrod Solidago spithamaea — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5821

Mountain Sweet Pitcher-plant Sarracenia rubra ssp. jonesii — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4283

Roan Mountain Bluet Hedyotis purpurea var. montana — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1087

Spreading Avens Geum radiatum — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6854

Virginia Spiraea Spiraea virginiana — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1728

Lichens

NAME	STATUS
Rock Gnome Lichen Gymnoderma lineare Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3933	Endangered

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

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

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

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

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

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

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

Bald Eagle Haliaeetus leucocephalus — Breeds Sep 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Black-billed Cuckoo Coccyzus erythropthalmus — Breeds May 15 to Oct 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9399

Bobolink Dolichonyx oryzivorus — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Canada Warbler Cardellina canadensis — Breeds May 20 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Cerulean Warbler Dendroica cerulea — Breeds Apr 27 to Jul 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/2974

Eastern Whip-poor-will Antrostomus vociferus — Breeds May 1 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Golden-winged Warbler Vermivora chrysoptera — Breeds May 1 to Jul 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8745

Henslow's Sparrow Ammodramus henslowii — Breeds May 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3941

Kentucky Warbler Oporornis formosus — Breeds Apr 20 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Northern Saw-whet Owl Aegolius acadicus acadicus — Breeds Mar 1 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31
Yellow-bellied Sapsucker sphyrapicus varius This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8792	Breeds May 10 to Jul 15

Probability of Presence Summary

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

Probability of Presence (■)

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

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

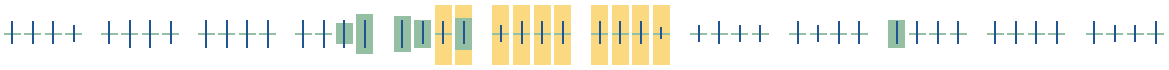
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

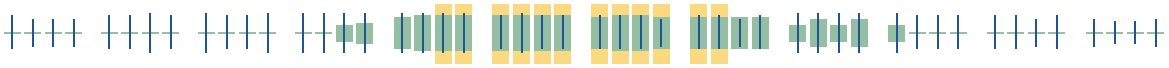
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

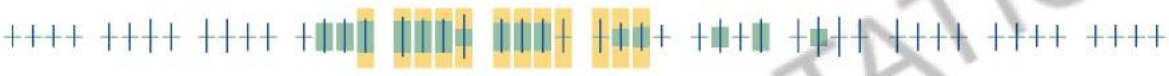
Bobolink BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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

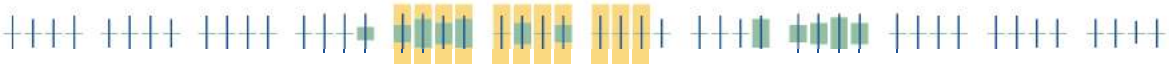


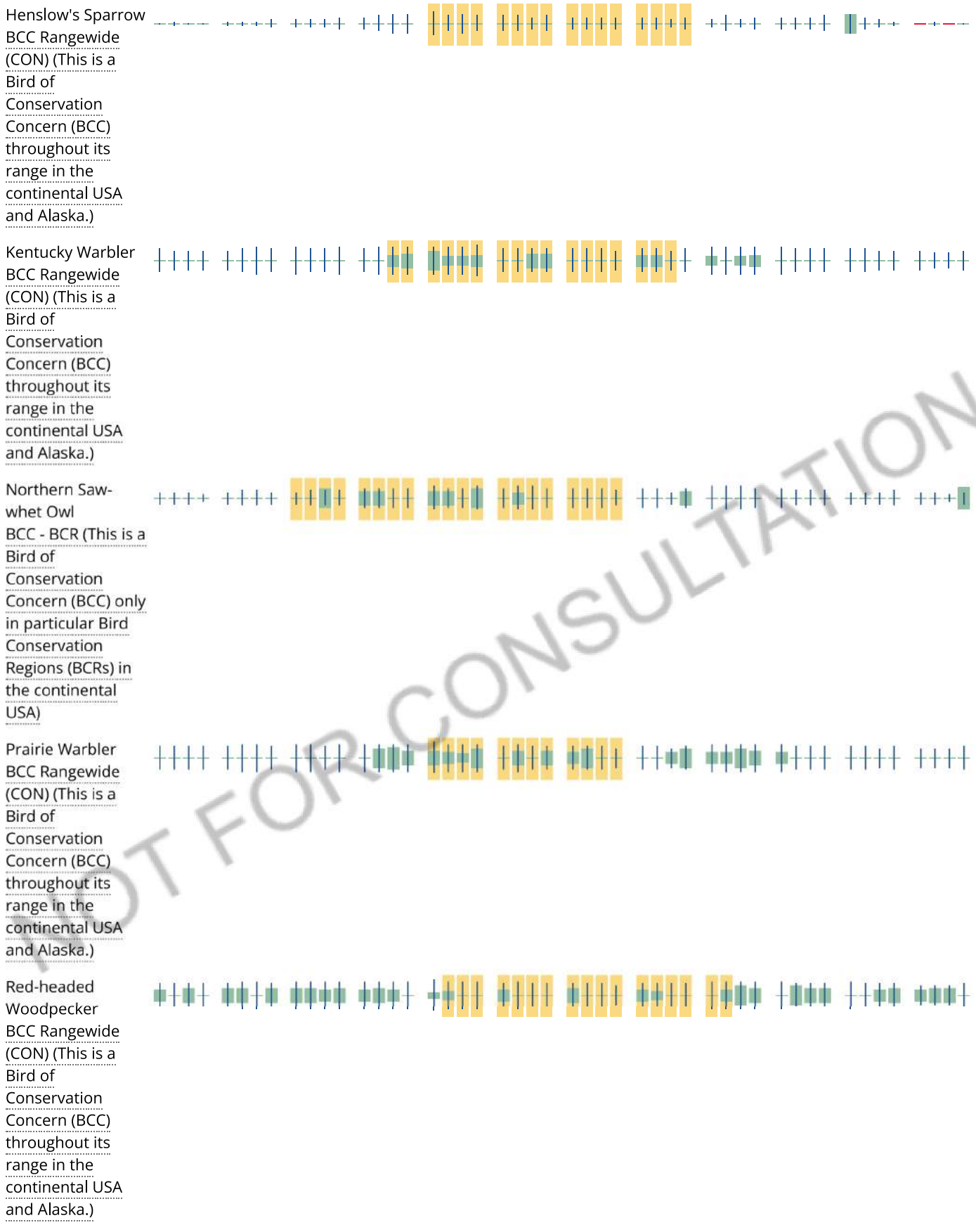
Cerulean Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Eastern Whip-poor-will BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

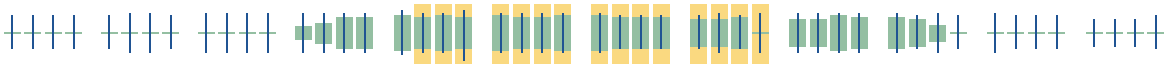
Golden-winged Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)





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

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



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

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NC DEPARTMENT OF
NATURAL AND CULTURAL RESOURCES

Roy Cooper, **Governor**
D. Reid Wilson, **Secretary**
Walter Clark
Director, Division of Land and Water Stewardship

NCNHDE-15250

July 28, 2021

Heather Wallace
NV5 Engineers and Consultants, Inc.
6750 Tryon Road
Cary, NC 27518
RE: HE-0001 Jun21 study area; 2021076.00

Dear Heather Wallace:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

A query of the NCNHP database indicates that there are records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. These results are presented in the attached 'Documented Occurrences' tables and map.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is documented within the project area or indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: https://www.fws.gov/offices/Directory/ListOffices.cfm?statecode=37.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

Also please note that the NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Land and Water Fund easement, or an occurrence of a Federally-listed species is documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919-707-8603.

Sincerely,
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Intersecting the Project Area
HE-0001 Jun21 study area
Project No. 2021076.00
July 28, 2021
NCNHDE-15250

Element Occurrences Documented Within Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Amphibian	2672	Cryptobranchus alleganiensis alleganiensis	Eastern Hellbender	2020-09-04	A	3-Medium	---	Special Concern	G3T2	S3
Freshwater Bivalve	33458	Strophitus undulatus	Creeper	2015-09-21	E	3-Medium	---	Threatened	G5	S3
Reptile	5520	Apalone spinifera spinifera	Eastern Spiny Softshell	1984-06-25	H	3-Medium	---	Special Concern	G5T5	S1
Unknown	40722	Restricted Data Area	Contact National Park Service for data		E	2-High	---	---	GNR	SNR

No Natural Areas are Documented within the Project Area

Managed Areas Documented Within Project Area*

Managed Area Name	Owner	Owner Type
Pisgah National Forest - Pisgah Ranger District	US Forest Service	Federal
Blue Ridge Parkway	US National Park Service	Federal
Pisgah National Forest - Bent Creek Experimental Forest	US Forest Service	Federal

*NOTE: If the proposed project intersects with a conservation/managed area, please contact the landowner directly for additional information. If the project intersects with a Dedicated Nature Pr (DNP), Registered Natural Heritage Area (RHA), or Federally-listed species, NCNHP staff may provide additional correspondence regarding the project.

Definitions and an explanation of status designations and codes can be found at https://ncnhde.natureserve.org/help. Data query generated on July 28, 2021; source: NCNHP, Q1 April 2021. Pleas resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
HE-0001 Jun21 study area
Project No. 2021076.00
July 28, 2021
NCNHDE-15250

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Amphibian	7868	Ambystoma talpoideum	Mole Salamander	2020-02-12	B	3-Medium	---	Special Concern	G5	S2S3
Amphibian	2672	Cryptobranchus alleganiensis alleganiensis	Eastern Hellbender	2020-09-04	A	3-Medium	---	Special Concern	G3T2	S3
Amphibian	7882	Hemidactylium scutatum	Four-toed Salamander	2020-03-14	B?	3-Medium	---	Special Concern	G5	S3
Bird	487	Vireo gilvus	Warbling Vireo	1986-06-05	H	3-Medium	---	Significantly Rare	G5	S2B
Dragonfly or Damselfly	33442	Calopteryx amata	Superb Jewelwing	2004-Pre	H?	5-Very Low	---	Significantly Rare	G5	S1S2
Freshwater Bivalve	21150	Alasmidonta raveneliana	Appalachian Elktoe	2017-09-29	E	3-Medium	Endangered	Endangered	G1	S1
Freshwater Bivalve	33458	Strophitus undulatus	Creeper	2015-09-21	E	3-Medium	---	Threatened	G5	S3
Freshwater Fish	9302	Percina williamsi	Sickle Darter	1940-04-04	X	3-Medium	Proposed Threatened	Special Concern	G2	SX
Freshwater Fish	11061	Polyodon spathula	Paddlefish	1983	H	4-Low	---	Endangered	G4	SX
Mammal	39015	Myotis grisescens	Gray Bat	2018-07-18	E	2-High	Endangered	Endangered	G4	S1
Natural Community	3274	Montane Alluvial Forest (Large River Subtype)	---	1984-05	C	3-Medium	---	---	G2?	S1
Natural Community	35608	Montane Floodplain Slough Forest	---	2015-05-07	BC	2-High	---	---	G1	S1
Natural Community	34441	Montane Floodplain Slough Forest	---	2014-11-19	BC	2-High	---	---	G1	S1
Natural Community	35607	Piedmont/Mountain Semipermanent Impoundment (Montane Marsh Subtype)	---	2015-05-07	B	2-High	---	---	G3	S3S4

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Reptile	5520	Apalone spinifera spinifera	Eastern Spiny Softshell	1984-06-25	H	3-Medium	---	Special Concern	G5T5	S1
Reptile	3427	Glyptemys muhlenbergii	Bog Turtle	2008-05-27	B	3-Medium	Threatened Similar Appearance	Threatened	G2G3	S2
Reptile	6227	Glyptemys muhlenbergii	Bog Turtle	2017-09-27	B	3-Medium	Threatened Similar Appearance	Threatened	G2G3	S2
Unknown	40722	Restricted Data Area	Contact National Park Service for data		E	2-High	---	---	GNR	SNR
Vascular Plant	34396	Glyceria laxa	Lax Mannagrass	2014-11-19	A	2-High	---	Significantly Rare Peripheral	G5	S2
Vascular Plant	28598	Hackelia virginiana	Virginia Stickseed	2007-previous	E	2-High	---	Significantly Rare Peripheral	G5	S2
Vascular Plant	16582	Helianthus occidentalis ssp. occidentalis	Naked-stem Sunflower	1897-08-23	X	4-Low	---	Special Concern Historical	G5T5	SX
Vascular Plant	2507	Hexastylis rhombiformis	French Broad Heartleaf	2004-10-18	A	3-Medium	---	Significantly Rare Limited	G3	S3
Vascular Plant	17094	Lysimachia fraseri	Fraser's Loosestrife	1897-09	H	4-Low	---	Endangered	G3	S3

Natural Areas Documented Within a One-mile Radius of the Project Area

Site Name	Representational Rating	Collective Rating
Bent Creek Heartleaf Natural Area	R2 (Very High)	C5 (General)
Sandy Bottom	R2 (Very High)	C3 (High)
Long Shoals Wetland Complex	R3 (High)	C4 (Moderate)

Managed Areas Documented Within a One-mile Radius of the Project Area

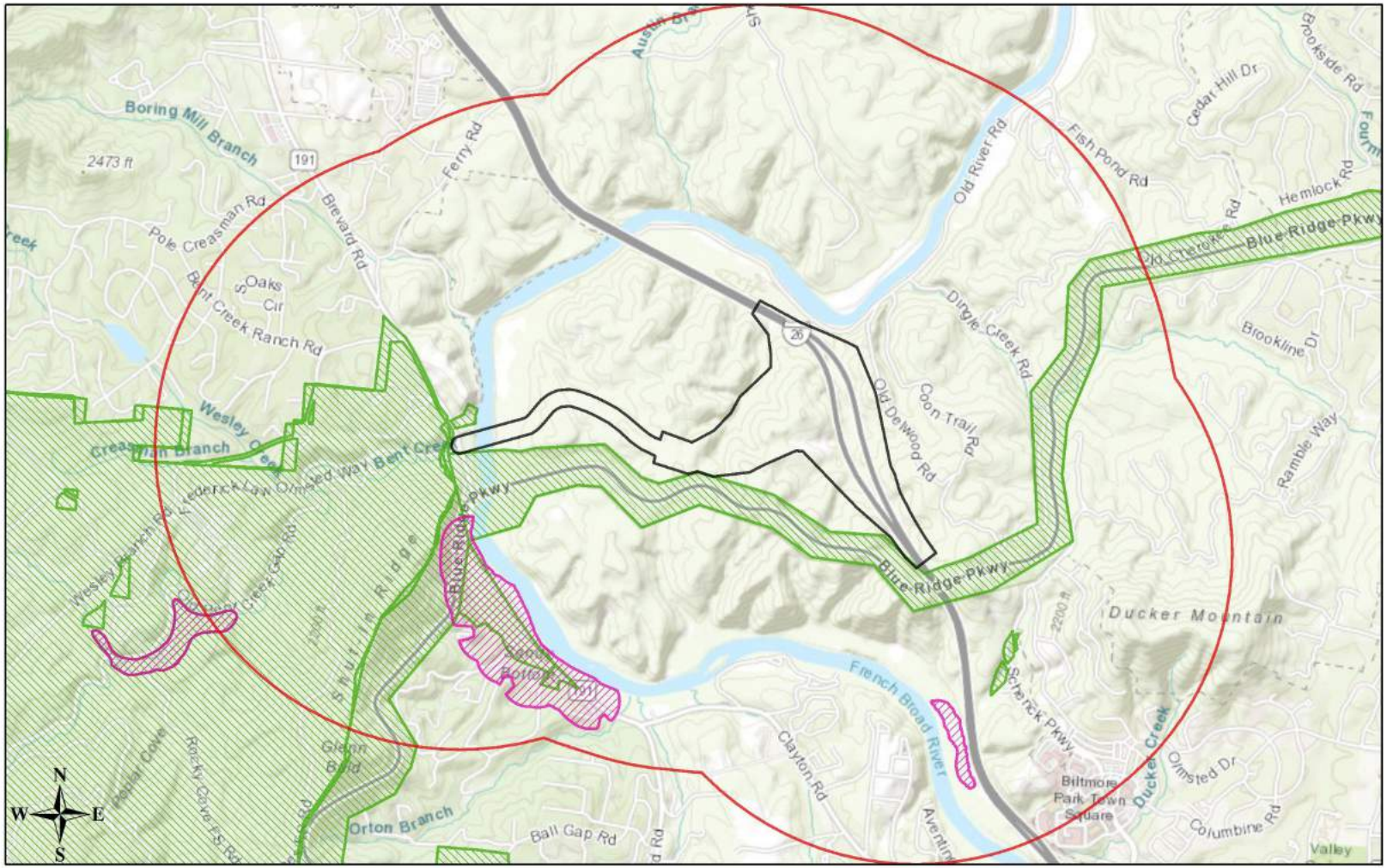
Managed Area Name	Owner	Owner Type
Sandy Bottom Preserve	University of North Carolina - Asheville	State
Bent Creek Heartleaf Registered Heritage Area	University of North Carolina - Chapel Hill	State
Pisgah National Forest - Pisgah Ranger District	US Forest Service	Federal
Sandy Bottom (Long Branch) Registered Heritage Area	Long Branch Environmental Education Center	Private

Managed Areas Documented Within a One-mile Radius of the Project Area

Managed Area Name	Owner	Owner Type
Blue Ridge Parkway	US National Park Service	Federal
Pisgah National Forest - Bent Creek Experimental Forest	US Forest Service	Federal
NC Division of Mitigation Services Easement	NC DEQ, Division of Mitigation Services	State
City of Asheville Water Authority Property	City of Asheville	Local Government

Definitions and an explanation of status designations and codes can be found at https://ncnhde.natureserve.org/help. Data query generated on July 28, 2021; source: NCNHP, Q1 April 2021. Pleas resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-15250: HE-0001 Jun21 study area



July 28, 2021

- Project Boundary
- Buffered Project Boundary
- NHP Natural Area (NHNA)
- Managed Area (MAREA)

1:29,433

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Asheville Field Office
160 Zillicoa Street Suite B
Asheville, North Carolina 28801

March 16, 2022

Marissa Cox
Biological Surveys Group
North Carolina Department of Transportation
1000 Birch Ridge Drive
Raleigh, North Carolina 27610

Subject: Revised Informal Consultation for the New I-26 Interchange at Exit 35 and Roadway Connection to Fredrick Law Olmstead Way East, Asheville, Buncombe County, North Carolina (TIP No. HE-0001)

Dear Marissa Cox:

This responds to your request for a revised concurrence letter on the subject proposed action. On June 16, 2021, we attended an external scoping meeting with regulatory partners where the North Carolina Department of Transportation (NCDOT) introduced the HE-0001 project and indicated its placement in the Merger Process. On June 24, 2021, we received (via e-mail) NCDOT's request for informal consultation and section 7 concurrence on effects the subject project may have on federally listed species. On June 29, 2021, we met with you and your staff to discuss the informal consultation request and initial comments. We then submitted written comments to NCDOT on July 7, 2021. On September 16, 2021, we received (via e-mail) an updated request for informal consultation and section 7 concurrence. We attended additional meetings with NCDOT staff to discuss issues and concerns. We sent you an informal concurrence letter dated November 18, 2021. Members of your staff provided additional information on January 18 and 31, 2022. We reviewed the CP3 Merger Packet provided on January 26, 2022, sent additional comments and questions to you on February 4, 2022, and received NCDOT's responses on February 14, 2022, which included a request for a revised concurrence letter. The following is provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C.§ 4321 et seq.); the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661 - 667e); and section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 - 1543) (Act). This revised informal concurrence letter supersedes our previous letter dated November 18, 2021.

Project Description

A full project description is included in the original concurrence letter signed November 18, 2022. NCDOT is not able to implement all the lighting conservation measures requested by the U.S. Fish and Wildlife Service (Service) and provided additional information on nighttime lighting, stormwater, and inclusion of development as an indirect effect. Most agencies concurred with the use of Detailed Study Alternative 3 (Figure 2) at the CP3 Merger Meeting on February 9, 2022. The North Carolina State Historic Preservation Office abstained. The study area (Figure 1) remains the same though the action area is likely to narrow in the future when final designs are completed.

For HE-0001, NCDOT will analyze the project using the Stochastic Empirical Loading and Dilution Model (SELDM) Catalog for North Carolina (NC-SELDM) to determine recommendations for stormwater treatment goals. The model returns one of three recommendations for stormwater treatment 1) a direct discharge is acceptable; 2) minimization measures are sufficient; or 3) implement toolbox best

management practices. Based on the analysis from the NC-SELDM Catalog, NCDOT will implement stormwater controls as needed to guard against erosion and to protect water quality. Stormwater design information is limited at this stage of project development.

NCDOT provided additional information on construction sediment and erosion control (SEC) measures. NCDOT follows design requirements based on peak flow and designs devices to handle the 25-year or 10-year peak flow storm event. Runoff velocities must be controlled so that the peak runoff from the 10-year frequency storm occurring during or after construction will not damage the receiving stream channel at the discharge point. The velocity must not exceed the greater of the maximum non-erosive velocity of the existing channel, based on soil texture or peak velocity in the channel prior to disturbance. If neither condition can be met, then protective measures must be applied to the receiving channel. As stated in the BE, NCDOT will default to the most-restrictive SEC measure requirements.

NCDOT has committed to the following conservation measures in their BE dated September 15, 2021, in emails dated January 18 and 31, 2022, or did not object to their inclusion in the November 18, 2021 concurrence letter. Conservation measures have been modified for clarity as needed, numbered consecutively, and named based on the type of measure.

Conservation Measures for Gray Bat

TREE 1: As the proposed action will impact suitable habitat for gray bat throughout the action area, all tree clearing will occur between November 15 – March 15, which is outside of the bat active season for gray bat in the French Broad River (FBR) Basin.

TREE 2: Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal in excess of what is required to implement the project safely.

TREE 3: Ensure tree removal is limited to that specified in project plans and ensure that clearing limits are clearly marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits).

LIGHT 1: Permanent lighting will be confined to the interchange portion of this project along I-26 and will meet safety requirements for fully controlled access roadways. The roadway connection to Frederick Law Olmstead Way East will remain a dark forested corridor.

LIGHT 2: Lighting used for construction will be limited to what is necessary to maintain safety standards and will only be directed toward active work areas, not into adjacent wooded areas or inactive work sites.

LIGHT 3: NCDOT will use the shortest light pole that meets highway requirements and safety parameters and limits light in suitable bat habitat.

LIGHT 4: NCDOT will use light emitting diode (LED) fixtures with a Type II distribution pattern. This pattern projects light from the fixture further along the road and less across the road.

LIGHT 5: In all cases, the BUG (Backlight, Uplight, and Glare) rating will not exceed 3-0-3.

LIGHT 6: NCDOT will meet the AASHTO minimum requirements of 0.6 fc at 4:1 uniformity, which represents a 25% reduction in the average light on the pavement surface (compared with using the 0.8 fc standard) and should reduce the amount of light reaching suitable bat habitat.

LIGHT 7: NCDOT will eliminate all high mast light poles within the action area.

SEC 1: NCDOT will implement Design Standards for Sensitive Watersheds to minimize impacts to surface waters and wetlands which support aquatic macroinvertebrates, a food source for gray bats.

Conservation Measures for Appalachian Elktoe

Sediment and Erosion Control (SEC)

SEC 2: A combination of Design Standards in Sensitive Watersheds (DSSW, 15A NCAC 04B .0124), Environmentally Sensitive Areas, and the NC Division of Water Quality (NCDWQ) Construction

General Permit (NCG01) terms and conditions that allow for stormwater discharge under the National Pollutant Discharge Elimination System (NPDES) apply and NCDOT will default to the most-restrictive SEC measure requirements.

SEC 3: The sedimentation and erosion control plan (SECP) will be in place prior to any ground disturbance for all pipe replacements and construction. When needed, combinations of SEC measures (such as silt bags in conjunction with a stilling basin) will be used to ensure that the most protective measures are implemented.

SEC 4: The SECP shall adhere to the DSSW for portions of the project draining directly or indirectly to the FBR. Consideration will be given to any on the ground practical application which is most protective of the resource. For example, there may be some areas where NCDOT would not extend a measure of the DSSW (e.g., cut trees to construct a basin) which would have greater impact to sensitive resources.

SEC 5: Environmentally Sensitive Areas will be demarcated within the action area and will be defined by a 50-foot buffer zone on both sides of jurisdictional streams measured from top of streambank, in which the following shall apply:

- The contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations.
- Once grading operations begin, work shall progress in a continuous manner until complete.
- Erosion control devices shall be installed immediately following the clearing operation.
- Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment.
- Seeding and mulching shall be done in stages on cut and fill slopes that are greater than 20 feet in height measured along the slope, or greater than 2 acres in area, whichever is less.
- All SEC measures, throughout the project limits, must be cleaned out when half full of sediment, when applicable, to ensure proper function.

Monitoring Effectiveness of SEC Devices

SEC 6: One Construction Project Inspector will monitor SEC devices for the life of the project.

SEC 7: Inspections of erosion control devices will be done on the standard inspection schedule (weekly, or after a rainfall event of one inch or greater).

SEC 8: NCDOT will self-report to the Service any SEC device failures or sediment loss resulting from exceeding the capacity of the measures. The NCDOT inspector will report any failures or sediment loss to the Division Environmental Officer, who will contact the agency within 24 hours. If there are any failures or sediment loss, NCDOT will meet with resource agencies and work to adaptively manage SEC devices for further storm events while construction continues.

Agency Coordination (AC)

AC 1: NCDOT will invite representatives from the Service, U.S. Army Corp of Engineers, and the North Carolina Wildlife Resources Commission to the preconstruction meeting for the proposed project, as well as to all subsequent field inspections prior to construction, to ensure compliance with all special project commitments.

AC 2: NCDOT shall provide the Service with the SECP and allow 30 calendar days for review.

Stormwater Control Measures (SCM):

SCM 1: NCDOT has developed stormwater commitment guidance, which will apply to any portion of the NCDOT stormwater conveyance system draining to an outfall discharging to the FBR within the NCDOT right of way.

SCM 2: NCDOT will prepare a stormwater management plan (SMP) that implements structural and non-structural post-construction stormwater best management practices (BMPs) to the maximum extent practical, which is consistent with NPDES Post-Construction Stormwater Program.

SCM 3: NCDOT will use a hierarchical BMP selection process, which is optimized to treat silt, nutrients, and heavy metals.
SCM 4: NCDOT will evaluate the use of emerging BMP technologies that NCDOT has yet to publish in its BMP Toolbox. These emerging BMP technologies include bioswales, bioembankments, biofiltration conveyances, and soil improvements that maximize infiltration.

Federally Listed Species

Appalachian elktoe (Alasmidonta raveneliana)

Appalachian elktoe occur in the FBR upstream and downstream of the project. While the project may not directly impact the FBR, the project will impact jurisdictional streams SA and SDX that flow into the FBR. The jurisdictional streams themselves do not provide suitable habitat for Appalachian elktoe, but they do affect the water quality of the FBR. Tree clearing, land clearing, and stormwater management may all result in effects to the FBR, as discussed in the BE.

The BE states that due to the implementation of conservation measures related to sediment and erosion control and stormwater, any sedimentation or water quality impacts associated with construction of HE-0001 will be insignificant or discountable as it is not expected to reach the main stem of the FBR.

Based on the conservation measures outlined above, we concur with NCDOT's determination that the project may affect, but is not likely to adversely affect Appalachian elktoe.

Gray bat (Myotis grisescens)

While many gray bats forage and commute over water, some choose to fly over land including heavily wooded areas in the FBR basin and near the project study area (Weber et al., 2020, Figure 3). Additionally, several studies indicate that bad weather in spring and fall can cause gray bats to leave primary feeding locations along water bodies for forest canopies (LaVal et al. 1977, Stevenson and Tuttle 1981). Based on this information and the facts that follow, we believe gray bats forage and commute throughout the action area:

1) a primary gray bat roost occurs within 0.65 miles of the action area boundary,
2) the action area is located within a bend of the FBR that is a well-documented foraging and commuting corridor for gray bats, which creates opportunity for the action area to serve as an overland bypass for gray bats traveling north or south along the river, and
3) the action area is within a small undeveloped forested corridor – connecting the U.S. Forest Service's Bent Creek Experimental Forest with the undeveloped portions of Biltmore properties – that we believe may serve as an important commuting and foraging overland flyway.

Because gray bats are expected to be foraging, commuting, and potentially roosting within the action area, artificial lighting and tree removal may cause avoidance behavior in gray bats during construction and operation of the proposed project. Studies (e.g., Rydell 1992; Blake et al. 1994; Stone et al. 2009, 2012) have shown that road lighting deters many bat species, notably slow-flying, woodland-adapted species such as members of the genus *Myotis*, from approaching the road. Deforestation at foraging sites and along commuting routes is likely to have negative effects due to the removal of prey abundance and reduced cover from natural predators (Tuttle 1979). Recently-volant young are especially susceptible to the effects of deforestation, as they require the protection of forest cover while becoming proficient fliers.

Based on the best available science, information above, and the information provided, we believe that tree removal and new artificial lighting may have short and long-term effects on the gray bat. Conservation measures for this project aim to address these concerns and ensure effects are insignificant. Winter tree clearing and other tree-related measures should reduce any impacts to gray bats including impacts to bats

that may temporarily roost in trees during migration (Samoray et al. 2020). Lighting measures aim to address and reduce the amount of light leaving paved surfaces.

Based on the information provided in the BE, including the conservation measures listed above, we concur with NCDOT that the project may affect, but is not likely to adversely affect the gray bat.

Northern long-eared bat (Myotis septentrionalis, NLEB)
Suitable habitat for NLEB is present within the action area. Based on the information provided, the project is consistent with the final section 4(d) rule, codified at 50 C.F.R. § 17.40(o) and effective February 16, 2016 for NLEB. This rule exempts take of this species for any tree cutting activity that occurs more than 0.25 miles from a known hibernation site or more than 150 feet from a known maternity roost during the pup rearing season (June 1 - July 31). Because this project meets the "exempt" criteria, any take associated with the project has already been addressed in the Biological Opinion for the 4(d) rule, and no further action under section 7 of the Act is required for this species at this time.

The Service is currently reevaluating the listing status of NLEB, and a final listing decision is expected in 2022. Consultations that use the 4(d) rule for NLEB may need to be reinitiated if the 4(d) rule is rescinded or the listing status of the species changes during the life of the project.

Other Species
While the following species occur in the region, the action area is outside the current range and/or area of influence for blue ridge goldenrod (*Solidago spithamaea*), Carolina northern flying squirrel (*Glaucomys sabrinus coloratus),* roan mountain bluet (*Hedyotis purpurea var. montana*), spreading avens (*Geum radiatum*), and spruce-fir moss spider (*Microhexura montivaga*). While the action area is within the current range and/or area of influence for mountain sweet pitcherplant (*Sarracenia rubra* ssp. *jonesii*) and rock gnome lichen (*Gymnoderma lineare*), no suitable habitat is present within the action area for either species. Therefore, no further section 7 review for these species is required.

Little brown bat (*Myotis lucifugus*) and tricolored bat (*Perimyotis subflavus*) are at-risk species (ARS). ARS are not legally protected under the Act and are not subject to any of its provisions, including section 7, unless they are formally proposed or listed as endangered or threatened. The Service is expected to make listing determinations on these species in the near future. While lead federal agencies are not prohibited from jeopardizing the continued existence of an ARS or proposed species unless the species becomes listed, the prohibition against jeopardy and taking a listed species under section 9 of the Act applies as soon as a listing becomes effective, regardless of the stage of completion of the proposed action. We include this notification to make you aware of their current status and potential occurrence within the action area and to request your assistance in protecting them. Depending on the timeline of the subject project and final listing determinations, reinitiation may be required.

Conservation Recommendations
Section 7(a)(1) of the ESA directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- Consider timing clearing and grading operations (not including tree cutting) such that follow-up seeding and mulching activities avoid the coldest winter months of January and February when growth of winter rye is slow and may not perform well as a protective BMP for sediment and erosion control. This measure may be most effective when applied to Environmentally Sensitive Areas.

- Use only low-pressure sodium (LPS), high-pressure sodium (HPS), or LED light sources that emit "warm" light. "Warm" light sources are those that contain low amounts of blue light in their spectrum. Choosing light sources with a color temperature of no more than 3,000 Kelvins will minimize the effects of blue light exposure. For additional information and actions that can be taken to reduce outdoor light pollution, visit: *https://www.darksky.org/our-work/lighting/lighting-for-citizens/lighting-basics/*.
- Consider the conservation needs of the Appalachian elktoe when designing SEC and SCM plans for HE-0001. Include SCMs that provide control of water quantity to prevent downstream flooding and erosion of Streams SA and SDX. We encourage the use of wet detention basins which maintain a permanent pool of water and attenuates peak stormwater flows (NCDOT BMP Toolbox Chapter 12, 2014). Wet detention basins will benefit gray bats as they have been shown to use them in Weaverville and will improve the aesthetics of the roadway for users and the Blue Ridge Parkway viewshed.
- Develop a study to monitor the new roadway's impacts to Stream SA. We are concerned about the long-term implications of increased impervious surfaces within the watersheds of Appalachian elktoe, and this situation presents an opportunity to observe and learn, on a small scale, what happens to stable streams when well-designed roadway projects that include SCMs are introduced on the landscape. We are ultimately interested in creating adaptive feedback loops that can inform freshwater mussel recovery in a landscape that is under constant development pressure.

For the Service to be kept informed of actions benefitting listed species or their habitats, we request written notification of the implementation of any conservation recommendations along with the results of any monitoring.

Reinitiation Notice

We believe the requirements under section 7 of the Act are fulfilled for the federally listed species discussed above. However, obligations under section 7 must be reconsidered if: (1) new information reveals impacts of this proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) this proposed action is subsequently modified in a manner that was not considered in this review, or (3) a new species is listed, or critical habitat is determined that may be affected by the proposed action.

We appreciate the opportunity to provide these comments. Please contact Ms. Lauren B. Wilson of our staff at lauren_wilson@fws.gov if you have any questions. In any future correspondence concerning this project, please reference our Log Number 21-330.

Sincerely,

Janet Mizzi
Field Supervisor

Enclosures: maps

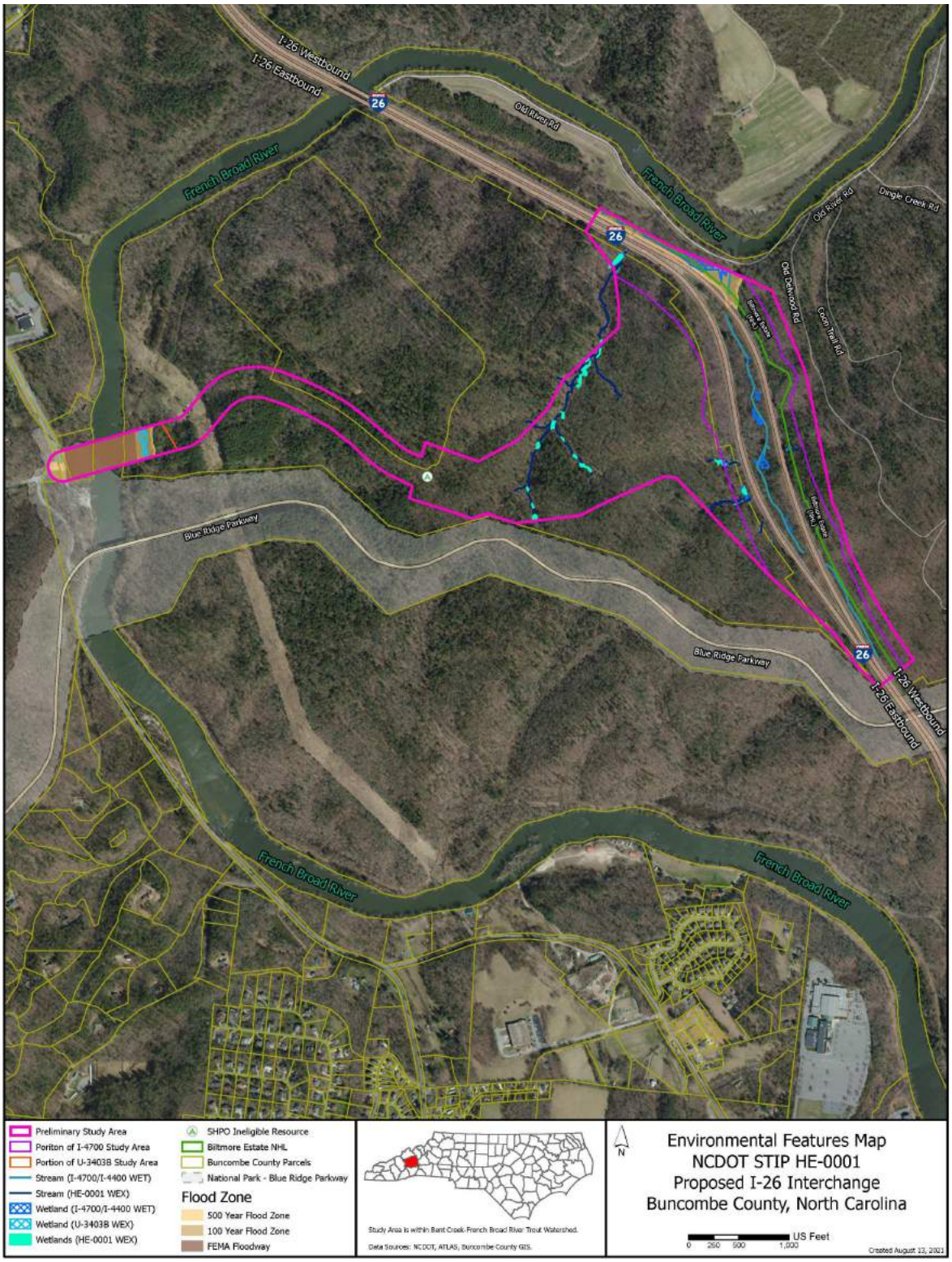


Figure 1. Stream SA and SDX in the Action Area. Map shows results of the jurisdictional determination for streams and wetlands within the action area.

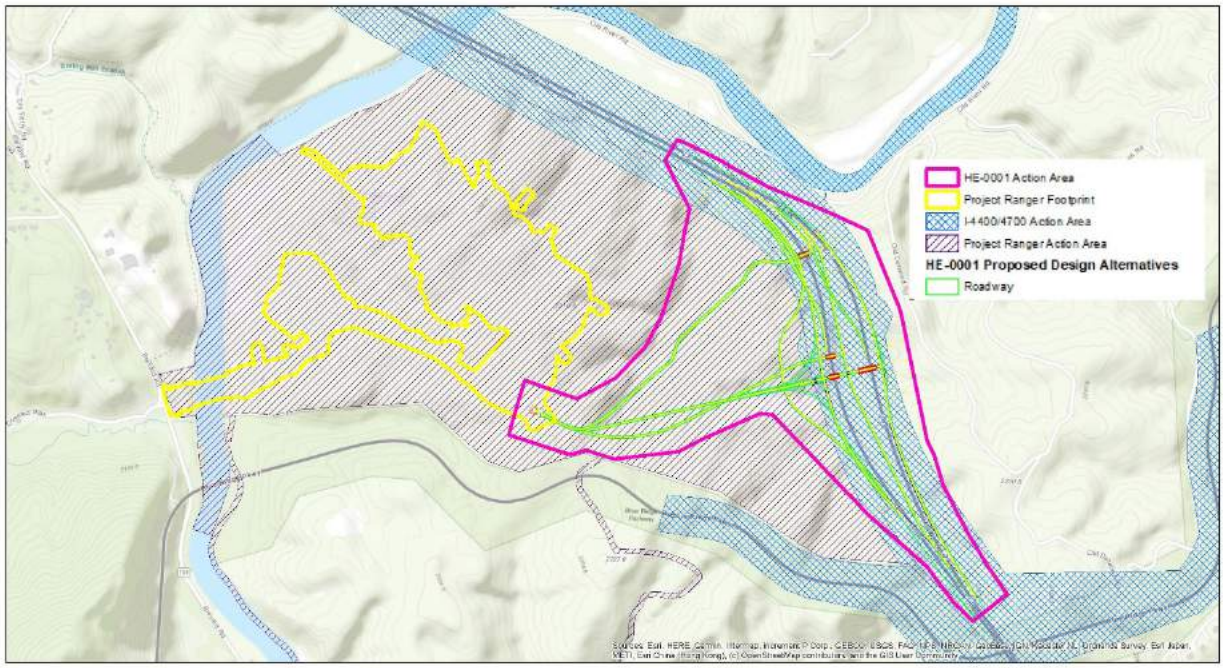


Figure 2. **HE-0001 Detailed Study Alternatives and Consultation History in Project Vicinity.** Includes action areas for Project Ranger (FWS Log No. 19-328) and I-26 Widening Project (I-4400/I-4700). Merger agencies choose Detailed Study Alternative 3, the northern most green road, as the least environmentally damaging practicable alternative.

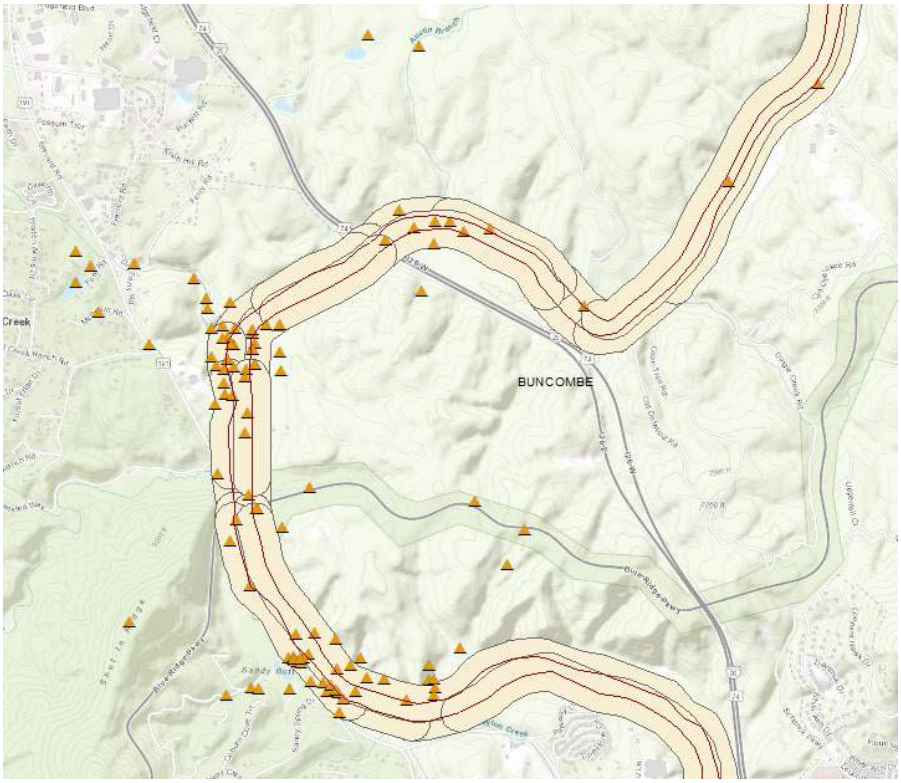


Figure 3. Gray Bat Locations Near the Action Area. Known gray bat foraging locations (orange triangles) from Weber et al. (2020) in the vicinity of the action area. The map shows the French Broad River (cream colored polygon with red outline) and a 100 m buffer (cream polygon with a gray outline).

From: McHenry, David G
To: Thomas, John T.
Cc: Archual, Adam J.; Bryan, Roger D
Subject: RE: [External] HE-0001 Trout water moratorium
Date: Wednesday, March 30, 2022 7:14:24 AM

John,

WRC biologists do not anticipate wild trout spawning in the currently proposed HE-ooo1 project area and would waive the moratorium in any applicable permit.

Please advise if you need anything else.

Thanks

Dave

From: Thomas, John T. <jthomas@GFNET.com>
Sent: Tuesday, March 29, 2022 4:16 PM
To: McHenry, David G <david.mchenry@ncwildlife.org>
Cc: Archual, Adam J. <aarchual@gfnet.com>; Bryan, Roger D <rdbryan@ncdot.gov>
Subject: [External] HE-0001 Trout water moratorium

Dave,

Please reference our telephone conversation earlier today concerning potential trout water construction moratorium for the proposed NCDOT Div. 13 HE-0001 I-26 exit 35 project. As discussed, the HE-0001 project is within a “Designated Trout Watershed” as identified by the Wilmington District Corps of Engineers’ (COE) “Designated Trout Watersheds for Buncombe County”. (I have attached copies of the COE Buncombe County trout watershed map, PSA location maps, and a project jurisdictional waters features map.)

With reference to our telephone conversation, the two jurisdictional stream features in the HE-0001 Project Study Area (PSA) are small first order streams that flow through culverts under the I-26 existing highway right-of-way to the French Broad River. Neither stream is accessed by trout waters or support trout populations. Therefore, as the result of this determination, these two streams should not be subject to “Trout Water Construction Moratorium”.

The purpose of this email is to request your comment and concurrence to the above determination.

Please contact me if you have any questions or concerns with this request.

Thank you,
John Thomas

#BeHealthyBeSafeBeKind

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