

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

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

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

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: _____

City, State: _____

County: _____

Parcel Index Number(s) (PIN): _____

B. REQUESTOR INFORMATION

Name: _____

Mailing Address: _____

Telephone Number: _____

Electronic Mail Address: _____

Select one:

- I am the current property owner.
- I am an Authorized Agent or Environmental Consultant¹
- Interested Buyer or Under Contract to Purchase
- Other, please explain. _____

C. PROPERTY OWNER INFORMATION²

Name: _____

Mailing Address: _____

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).

Jurisdictional Determination Request

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.

Print Name

Capacity: Owner Authorized Agent⁵

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).

Jurisdictional Determination Request

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 _____ acres.

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

Jurisdictional Determination Request

H. REQUESTS FROM CONSULTANTS

Project Coordinates (Decimal Degrees): Latitude: _____
Longitude: _____

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/>

Jurisdictional Determination Request

- Completed appropriate Jurisdictional Determination form
 - **PJDs**, please complete a Preliminary Jurisdictional Determination Form⁷ and include the Aquatic Resource Table
 - **AJDs**, please complete an Approved Jurisdictional Determination Form⁸
- Vicinity Map
- Aerial Photograph
- USGS Topographic Map
- Soil Survey Map
- Other Maps, as appropriate (e.g. National Wetland Inventory Map, Proposed Site Plan, previous delineation maps, LIDAR maps, FEMA floodplain maps)
- Landscape Photos (if taken)
- NCSAM and/or NCWAM Assessment Forms and Rating Sheets
- NC Division of Water Resources Stream Identification Forms
- 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 USAGE 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.

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.	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			6,502 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:

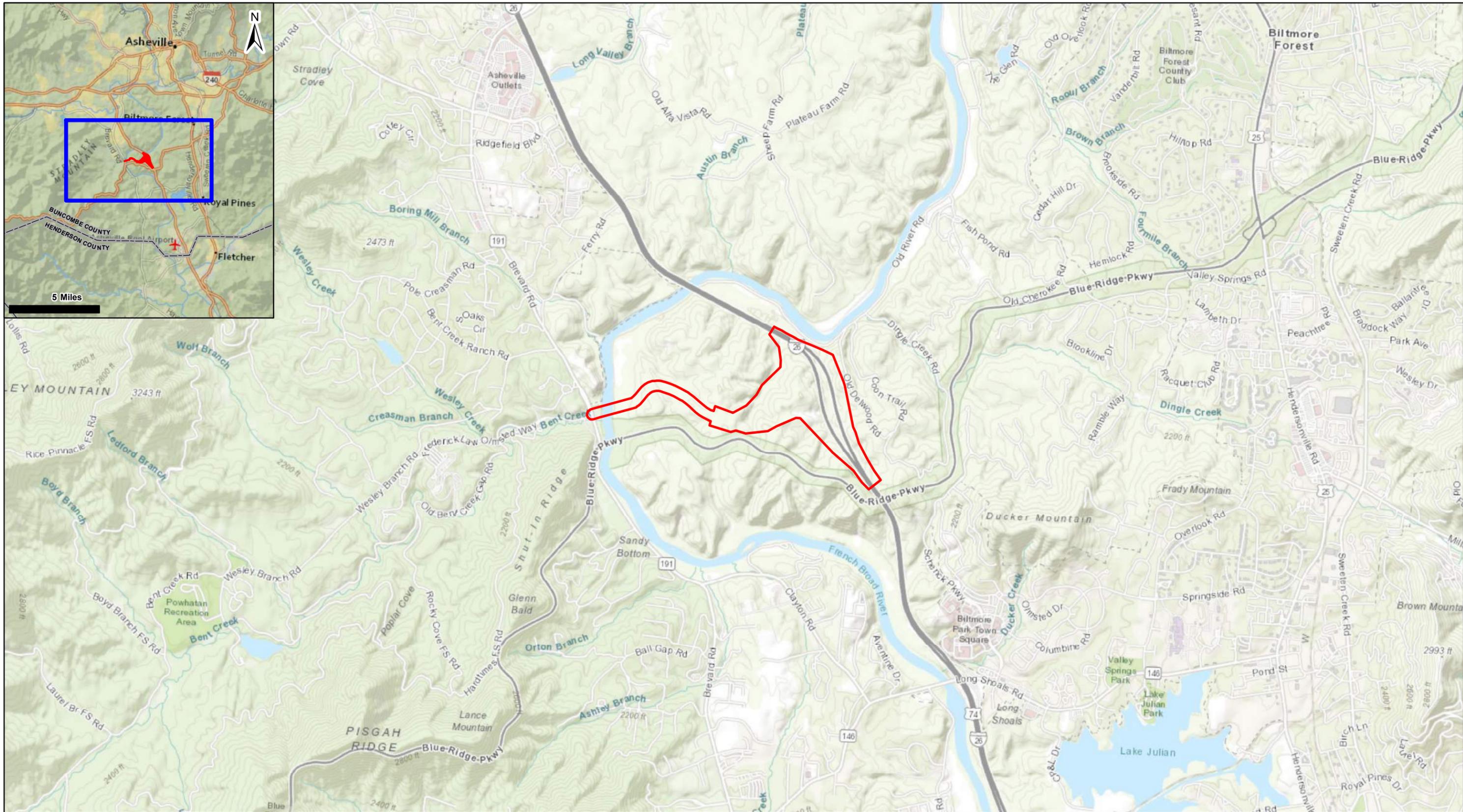
- Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: _____.
- Data sheets prepared/submitted by or on behalf of the PJD requestor.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report. Rationale: _____.
- Data 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.
- U.S. Geological Survey map(s). Cite scale & quad name: _____.
- Natural Resources Conservation Service Soil Survey. Citation: _____.
- National wetlands inventory map(s). Cite name: _____.
- State/local wetland inventory map(s): _____.
- FEMA/FIRM maps: _____.
- 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): _____.
or Other (Name & Date): _____.
- Previous determination(s). File no. and date of response letter: _____.
- Other information (please specify): _____.

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

Signature and date of
Regulatory staff member
completing PJD

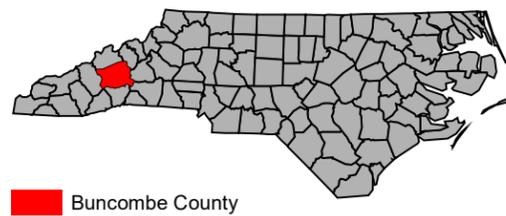
Signature and date of
person requesting PJD
(REQUIRED, unless obtaining
the signature is impracticable)¹

¹ Districts may establish timeframes for 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

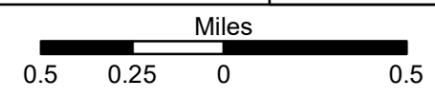


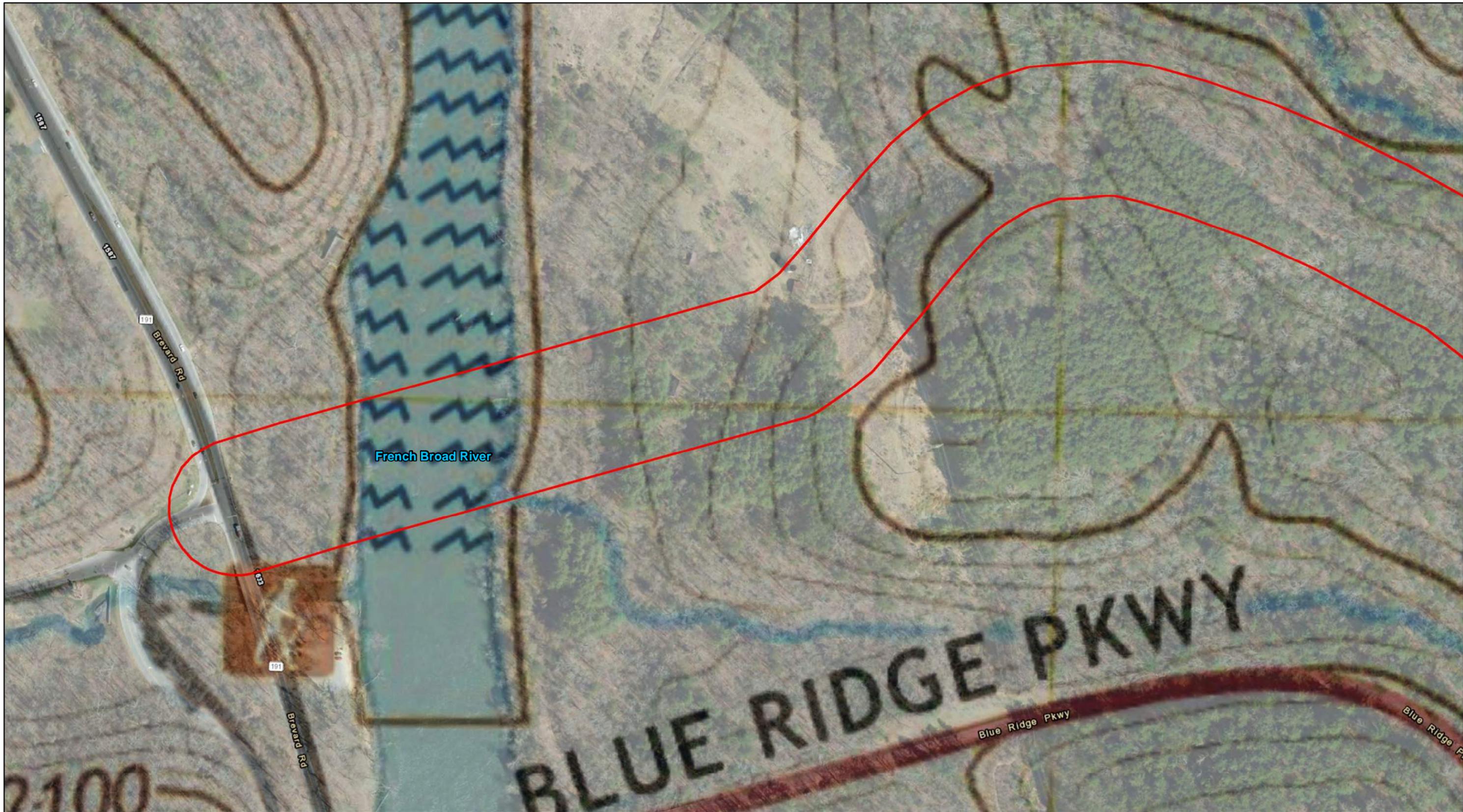
Buncombe County

Legend

Project Study Area

**Upper French Broad
Sub-Basin
HUC 06010105**
French Broad River Basin

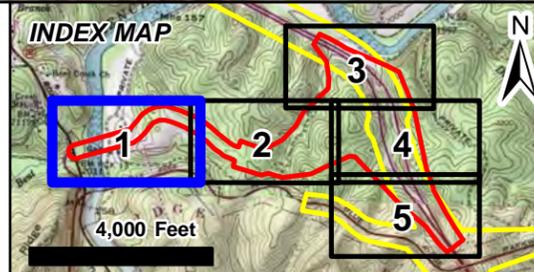




NORTH CAROLINA DEPARTMENT
OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS UNIT

**POTENTIAL JURISDICTIONAL
FEATURES TOPOGRAPHIC MAP
MAP 1 OF 5**

New I-26 Interchange in Buncombe County
STIP Project HE-0001



Legend

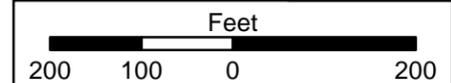
STIP Project HE-0001

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

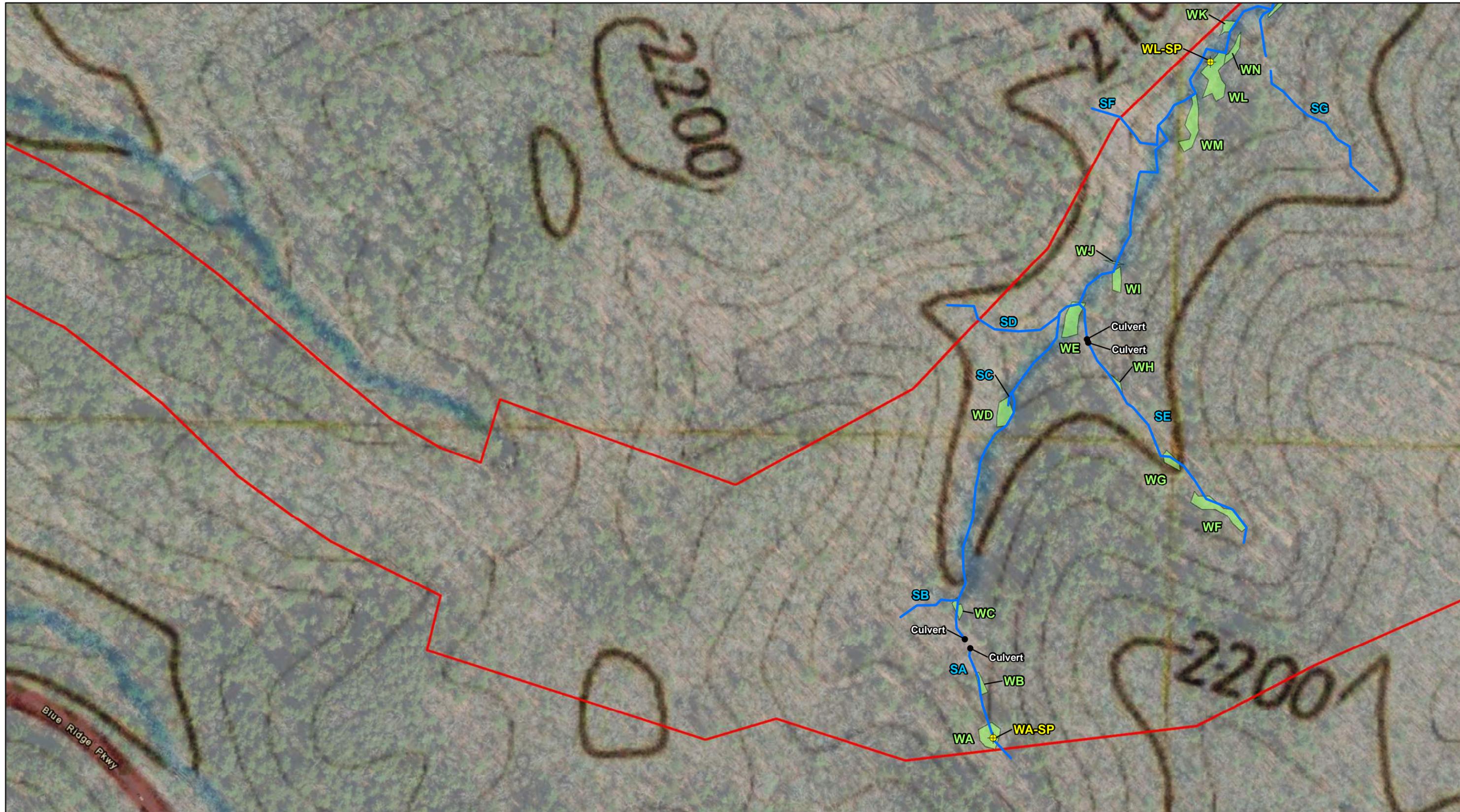
TIP Project I-4400/I-4700

- 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



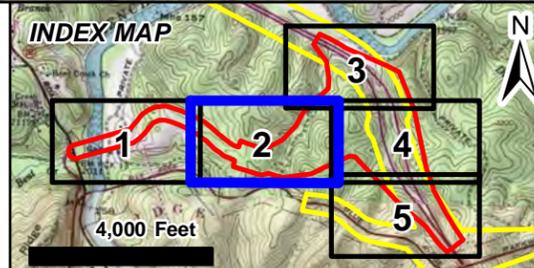
Sources: Aerial imagery and transportation basemapping provided by ESRI ArcGIS Online. Wetlands and waterways were delineated in the field by Gannett Fleming, Inc. (July 2021). Map Prepared: 07/24/2021, Updated: 09/08/2021, GF Project No. 64926



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

**POTENTIAL JURISDICTIONAL
FEATURES TOPOGRAPHIC MAP
MAP 2 OF 5**

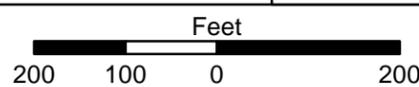
New I-26 Interchange in Buncombe County
STIP Project HE-0001



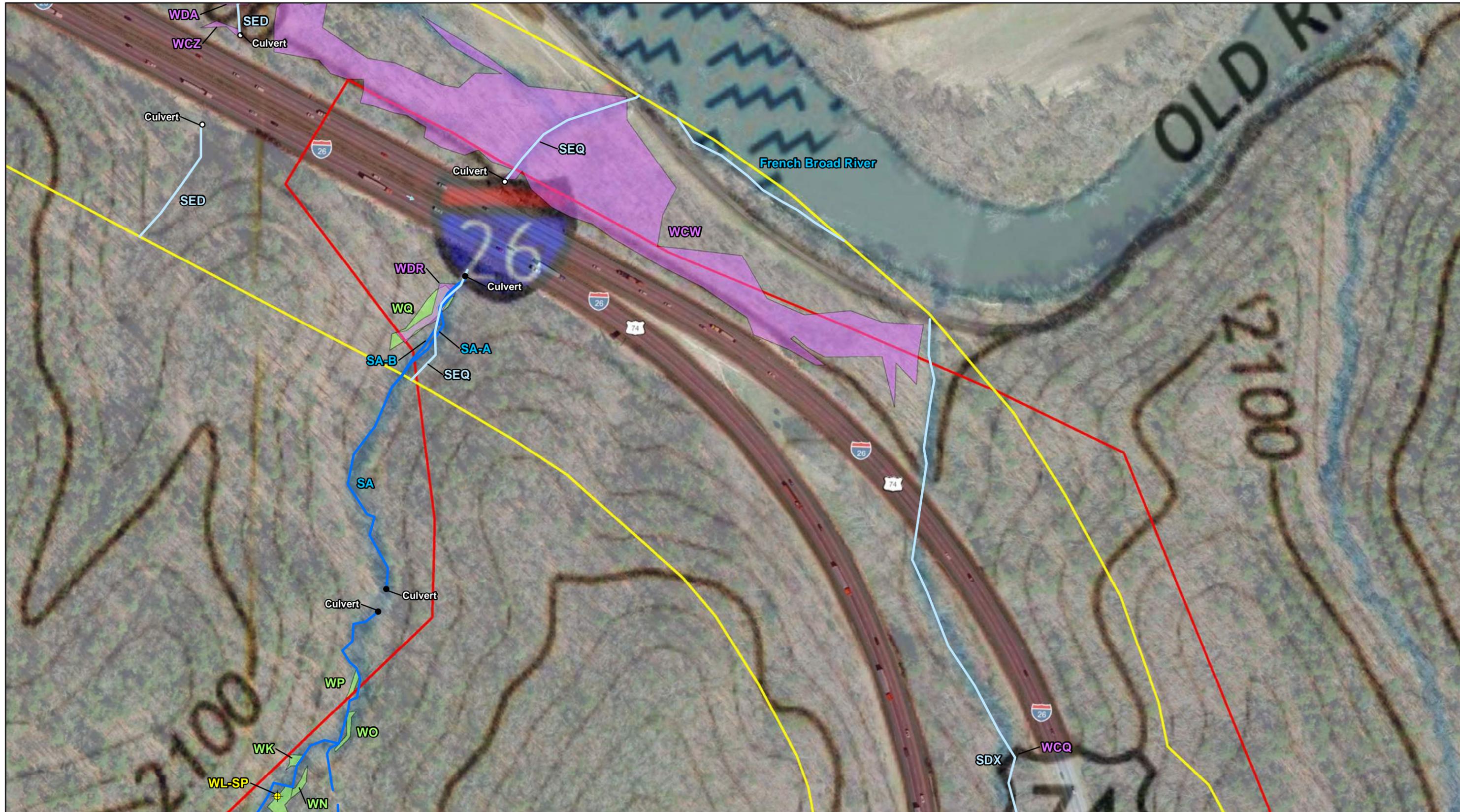
- Legend**
- STIP Project HE-0001
 - Project Study Area
 - Palustrine Forested Wetlands (PFO1A)
 - Perennial Streams (R5UBH)
 - Sample Plots
 - Culvert Locations
 - Wetland Feature ID
 - Stream Feature ID
 - Sample Plot ID

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

**Upper French Broad
Sub-Basin
HUC 06010105**
French Broad River Basin



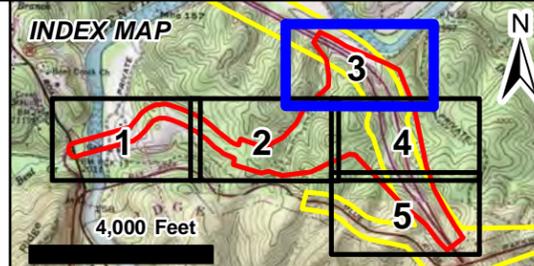
Sources: Aerial imagery and transportation basemapping provided by ESRI ArcGIS Online. Wetlands and waterways were delineated in the field by Gannett Fleming, Inc. (July 2021). Map Prepared: 07/24/2021, Updated: 09/08/2021, GF Project No. 64926



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

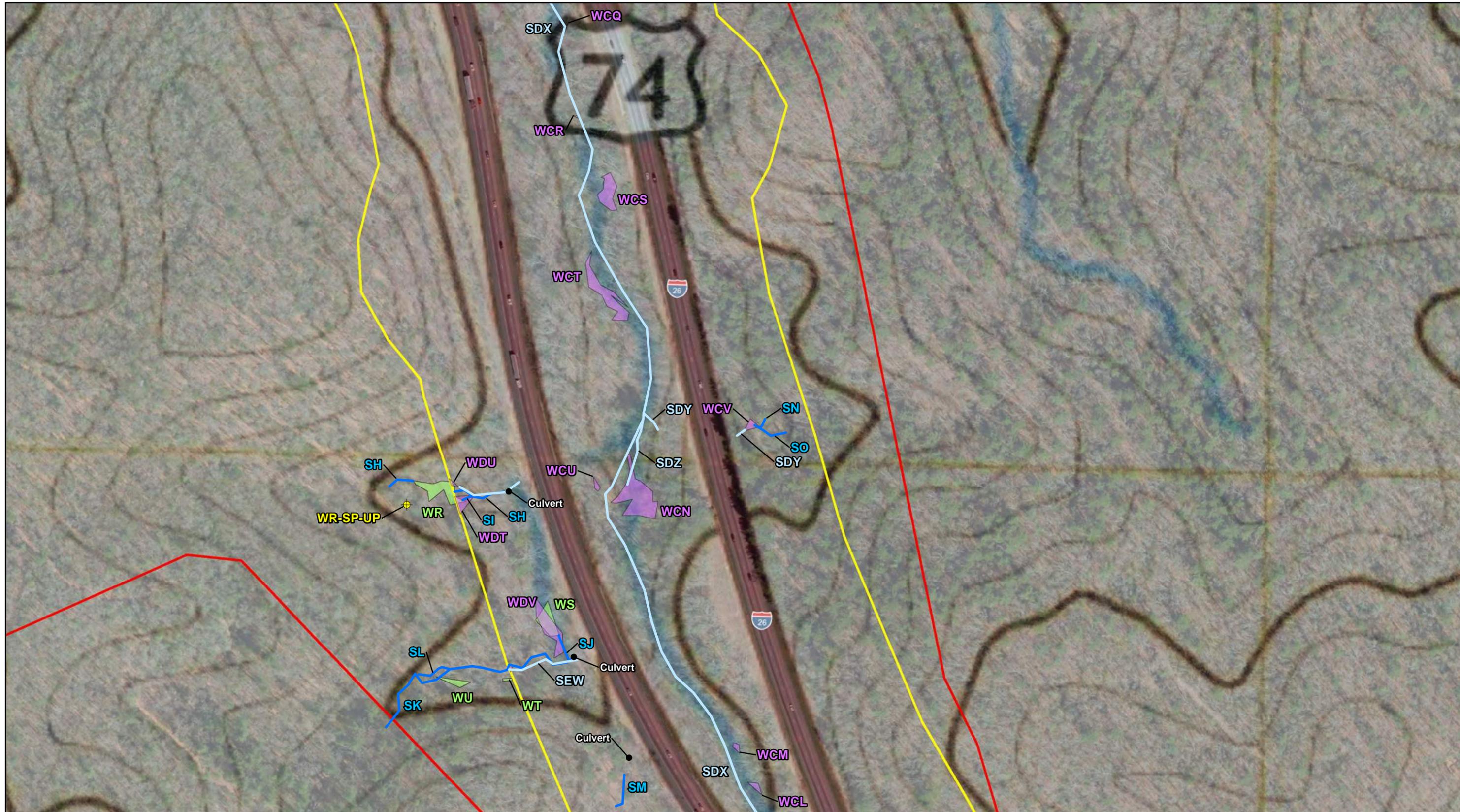
- STIP Project HE-0001**
- ▭ Project Study Area
 - ▭ Palustrine Forested Wetlands (PFO1A)
 - ▭ Perennial Streams (R5UBH)
 - ⊕ Sample Plots
 - Culvert Locations
 - WX Wetland Feature ID
 - SX Stream Feature ID
 - WL-SP Sample Plot ID

TIP Project I-4400/I-4700

- ▭ Project Study Area
- ▭ Palustrine Forest Wetlands (PFO)
- ▭ Perennial Streams (R5)
- ▭ Intermittent Streams (R4)
- Culverts Locations
- WX Wetland Feature ID
- SX Stream Feature ID
- Culvert Culvert Location Label

Upper French Broad
Sub-Basin
HUC 06010105
French Broad River Basin

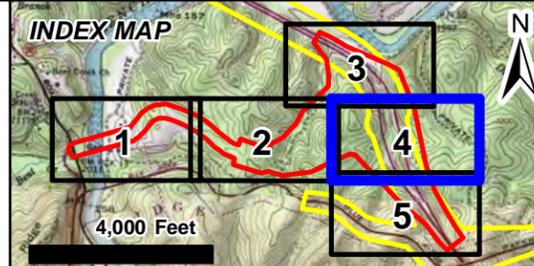




NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT

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

- Project Study Area
- Palustrine Forested Wetlands (PFO1A)
- Perennial Streams (R5UBH)
- Sample Plots
- Culvert Locations
- Wetland Feature ID
- Stream Feature ID
- Sample Plot ID

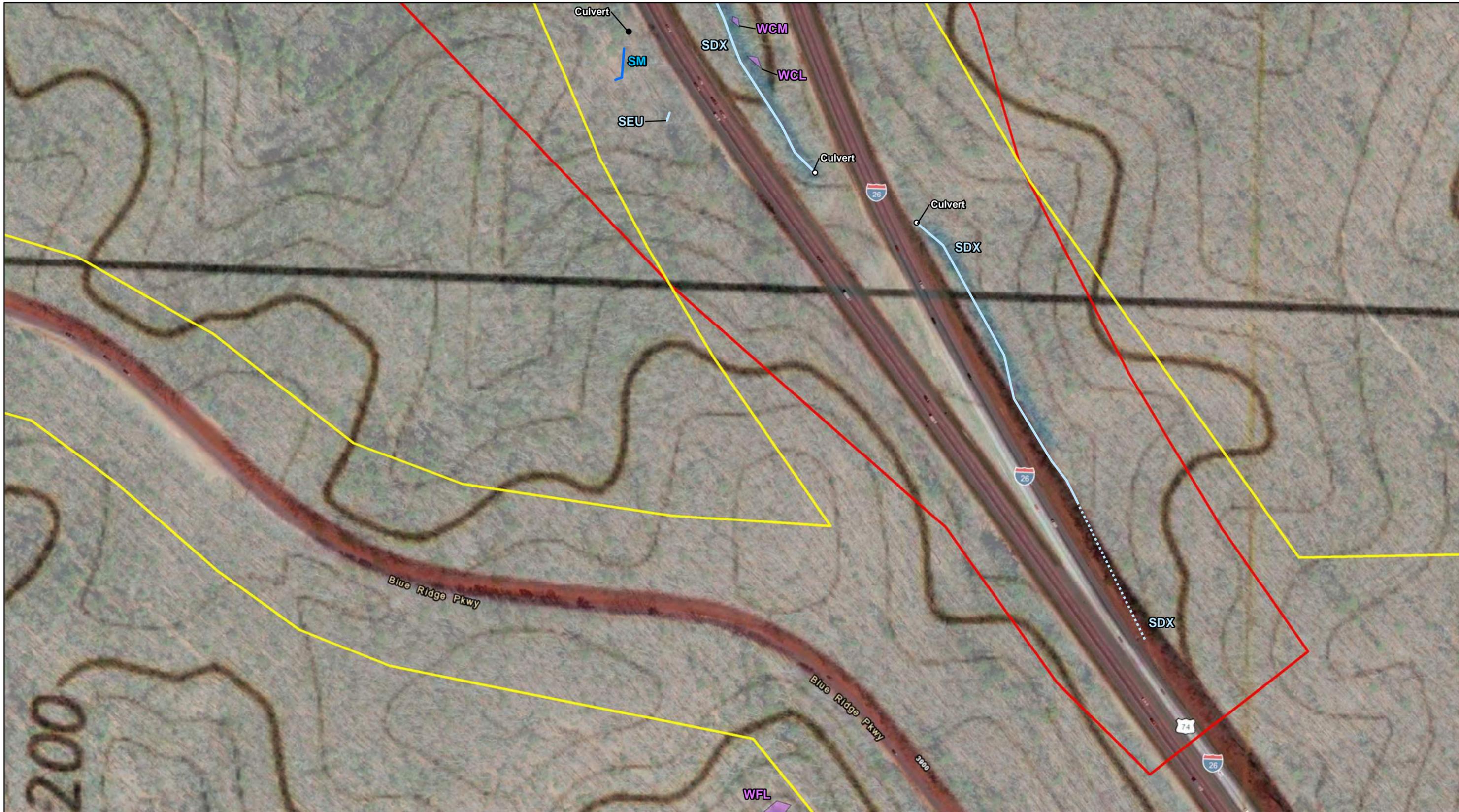
TIP Project I-4400/I-4700

- Project Study Area
- Palustrine Forest Wetlands (PFO)
- Perennial Streams (R5)
- Intermittent Streams (R4)
- Culverts Locations
- Wetland Feature ID
- Stream Feature ID
- Culvert Location Label

Upper French Broad Sub-Basin
HUC 06010105
French Broad River Basin



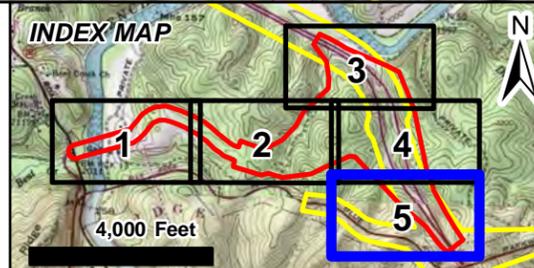
Sources: Aerial imagery and transportation basemapping provided by ESRI ArcGIS Online. Wetlands and waterways were delineated in the field by Gannett Fleming, Inc. (July 2021). Map Prepared: 07/24/2021, Updated: 09/08/2021, GF Project No. 64926



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

**POTENTIAL JURISDICTIONAL FEATURES TOPOGRAPHIC MAP
MAP 5 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



Sources: Aerial imagery and transportation basemapping provided by ESRI ArcGIS Online. Wetlands and waterways were delineated 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>1-2"</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>3"</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Wetland Hydrology Present? Yes <u>X</u> 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: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Liriodendron tulipifera</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
3. <u>Pinus strobus</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

_____ = Total Cover
 50% of total cover: 15 20% of total cover: 6

Sapling/Shrub Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carpinus caroliniana</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Lindera melissifora</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

_____ = Total Cover
 50% of total cover: 20 20% of total cover: 8

Herb Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Osmundastrum cinnamomeum</u>	<u>35</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Microstegium vimineum</u>	<u>35</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Impatiens capensis</u>	<u>15</u>	<u>No</u>	<u>FACW</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____

_____ = Total Cover
 50% of total cover: 42.5 20% of total cover: 17

Woody Vine Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

_____ = 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 <u>0</u>	x 1 = <u>0</u>
FACW species <u>70</u>	x 2 = <u>140</u>
FAC species <u>85</u>	x 3 = <u>255</u>
FACU species <u>10</u>	x 4 = <u>40</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>165</u> (A)	<u>435</u> (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 $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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.)

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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one is required; check all that apply)</p> <table style="width:100%;"> <tr> <td><input checked="" type="checkbox"/> Surface Water (A1)</td> <td><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td><input checked="" type="checkbox"/> High Water Table (A2)</td> <td><input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><input type="checkbox"/> Saturation (A3)</td> <td><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><input type="checkbox"/> Water Marks (B1)</td> <td><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><input type="checkbox"/> Sediment Deposits (B2)</td> <td><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><input type="checkbox"/> Drift Deposits (B3)</td> <td><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input checked="" type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		<p>Secondary Indicators (minimum of two required)</p> <table style="width:100%;"> <tr><td><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td><input type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td><input type="checkbox"/> Dry-Season Water Table (C2)</td></tr> <tr><td><input type="checkbox"/> Crayfish Burrows (C6)</td></tr> <tr><td><input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td><input type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td><input type="checkbox"/> FAC-Neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C6)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)																																		
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<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)																																		
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<input type="checkbox"/> Iron Deposits (B5)																																			
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<input type="checkbox"/> Microtopographic Relief (D4)																																			
<input type="checkbox"/> FAC-Neutral Test (D5)																																			
<p>Field Observations:</p> Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>1-2"</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>3"</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> 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: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Liriodendron tulipifera</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
3. <u>Pinus strobus</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
4. <u>Acer saccharum</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

35 = Total Cover
 50% of total cover: 17.5 20% of total cover: 7

Sapling/Shrub Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carpinus caroliniana</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Lindera melissiflora</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

40 = Total Cover
 50% of total cover: 20 20% of total cover: 8

Herb Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Osmundastrum cinnamomeum</u>	<u>35</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Microstegium vimineum</u>	<u>35</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Impatiens capensis</u>	<u>15</u>	<u>No</u>	<u>FACW</u>
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: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
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 <u>0</u>	x 1 = <u>0</u>
FACW species <u>105</u>	x 2 = <u>140</u>
FAC species <u>50</u>	x 3 = <u>255</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>170</u> (A)	<u>455</u> (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 $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 _____

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

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

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR N)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input checked="" type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p>	<p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)</p> <p><input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)</p> <p><input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
--	---	---

³Indicators 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 / Billmore 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Acer rubrum</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. <u>Liriodendron tulipifera</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Pinus strobus</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	Total Number of Dominant Species Across All Strata: <u>8</u> (B)
4. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	Prevalence Index worksheet:
7. _____	_____	_____	_____	
<u>35</u> = Total Cover 50% of total cover: <u>17.5</u> 20% of total cover: <u>7</u>				Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>65</u> x 3 = <u>195</u> FACU species <u>55</u> x 4 = <u>220</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>120</u> (A) <u>415</u> (B)
Sapling/Shrub Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index = B/A = <u>3.46</u>
1. <u>Acer rubrum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	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)
2. <u>Pinus strobus</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Ilex opaca</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Definitions of Four Vegetation Strata:
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	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.
8. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
9. _____	_____	_____	_____	
<u>55</u> = Total Cover 50% of total cover: <u>27.5</u> 20% of total cover: <u>11</u>				
Herb Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status	Remarks: (Include photo numbers here or on a separate sheet)
1. <u>Osmunda claytoniana</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>20</u> = Total Cover 50% of total cover: <u>10</u> 20% of total cover: <u>2</u>				
Woody Vine Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species?	Indicator Status	Remarks: (Include photo numbers here or on a separate sheet)
1. <u>Smilax rotundifolia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>10</u> = Total Cover 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>				

NC DWQ Stream Identification Form Version 4.11

Date: July 13 2021	Project/Site: I-26 exit 35	Latitude: 35.50318
Evaluator: John Thomas	County: Buncombe	Longitude: -82.57813
Total Points: Stream is at least intermittent if ≥ 19 or perennial if $\geq 30^*$ 31.25	Stream Determination (circle one) Ephemeral Intermittent <u>Perennial</u>	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. Macroinvertebrates (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: <u>July 13, 2021</u>	Project/Site: <u>I-26 ext 35</u>	Latitude: <u>35.56544</u>
Evaluator: <u>John Thomas</u>	County: <u>Buncombe</u>	Longitude: <u>-82.57668</u>
Total Points: <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i> <u>36</u>	Stream Determination (circle one) Ephemeral Intermittent <u>Perennial</u>	Other <u>Asterville</u> 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: <u>Aug 27 2021</u>	Project/Site: <u>HE-0001</u>	Latitude: <u>35.5012527</u>
Evaluator: <u>J. Thomas</u>	County: <u>Furcombe</u>	Longitude: <u>-82.5204783</u>
Total Points: <u>15</u> <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) <u>Ephemeral</u> Intermittent Perennial	Other <u>Asheville</u> e.g. Quad Name:

A. Geomorphology (Subtotal = 8.5)

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

^a artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 2.5)

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

C. Biology (Subtotal = 4)

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

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

Notes: Dropped SM bank to CA Feeder Nish 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 evaluated, 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 supplementary 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
 7. River Basin: French Broad River on USGS 7.5-minute quad: 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 channel
 12. Channel width at top of bank (feet): 2 13. Is assessment reach a swamp stream? Yes No
 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) Outer Coastal Plain (O)
 16. Estimated geomorphic valley shape (skip for Tidal Marsh Stream):
 a  (more sinuous stream, flatter valley slope) b  (less sinuous stream, steeper valley slope)
 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) Size 4 (> 5 mi²)

ADDITIONAL INFORMATION:

18. Were regulatory considerations evaluated? Yes No If Yes, check all that apply 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 or a 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 channel 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 instability include 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

- 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 dike)
- C Urban stream ($\geq 24\%$ 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	
<input checked="" type="checkbox"/> A	≥ 100 -feet wide <u>or</u> extends to the edge of the watershed			
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B	From 50 to < 100-feet wide
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C	From 30 to < 50-feet wide
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 30-feet wide
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E	< 10-feet wide <u>or</u> 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	
<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Mature forest
<input type="checkbox"/> B	<input type="checkbox"/> B	Non-mature woody vegetation <u>or</u> modified vegetation structure
<input type="checkbox"/> C	<input type="checkbox"/> C	Herbaceous vegetation with or without a strip of trees < 10 feet wide
<input type="checkbox"/> D	<input type="checkbox"/> D	Maintained shrubs
<input type="checkbox"/> E	<input type="checkbox"/> 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 it 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	
<input checked="" type="checkbox"/> A	Row crops					
<input type="checkbox"/> B	Maintained turf					
<input type="checkbox"/> C	Pasture (no livestock)/commercial horticulture					
<input type="checkbox"/> 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	
<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Medium to high stem density
<input type="checkbox"/> B	<input type="checkbox"/> B	Low stem density
<input type="checkbox"/> C	<input type="checkbox"/> C	No wooded riparian buffer <u>or</u> predominantly herbaceous species <u>or</u> 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	
<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	The total length of buffer breaks is < 25 percent.
<input type="checkbox"/> B	<input type="checkbox"/> B	The total length of buffer breaks is between 25 and 50 percent.
<input type="checkbox"/> C	<input type="checkbox"/> 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 occurs to assessment reach habitat.

LB	RB	
<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Vegetation is close to undisturbed in species present and their proportions. Lower strata composed of native species, with non-native invasive species absent or sparse.
<input checked="" type="checkbox"/> B	<input checked="" type="checkbox"/> B	Vegetation indicates disturbance in terms of species diversity or proportions, but is still largely composed of native 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 expected communities missing understory but retaining canopy trees.
<input type="checkbox"/> C	<input type="checkbox"/> C	Vegetation is severely disturbed in terms of species diversity or proportions. Mature canopy is absent <u>or</u> communities with non-native invasive species dominant over a large portion of expected strata <u>or</u> communities composed of non-characteristic species <u>or</u> communities inappropriately composed of a single species <u>or</u> no vegetation

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 1-4700 SDX
Stream Category Mb2

Date of Evaluation 8 30 2021
Assessor Name/Organization GF

Notes of Field Assessment Form (Y/N)

Presence of regulatory considerations (Y/N)

Additional stream information/supplementary measurements included (Y/N)

NC SAM feature type (Perennial, Intermittent, Tidal Marsh Stream)

N/A N
Yes Y
All N
Per Per

Function Class Rating Summary	USACE/ All Streams	NCOWR 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

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.

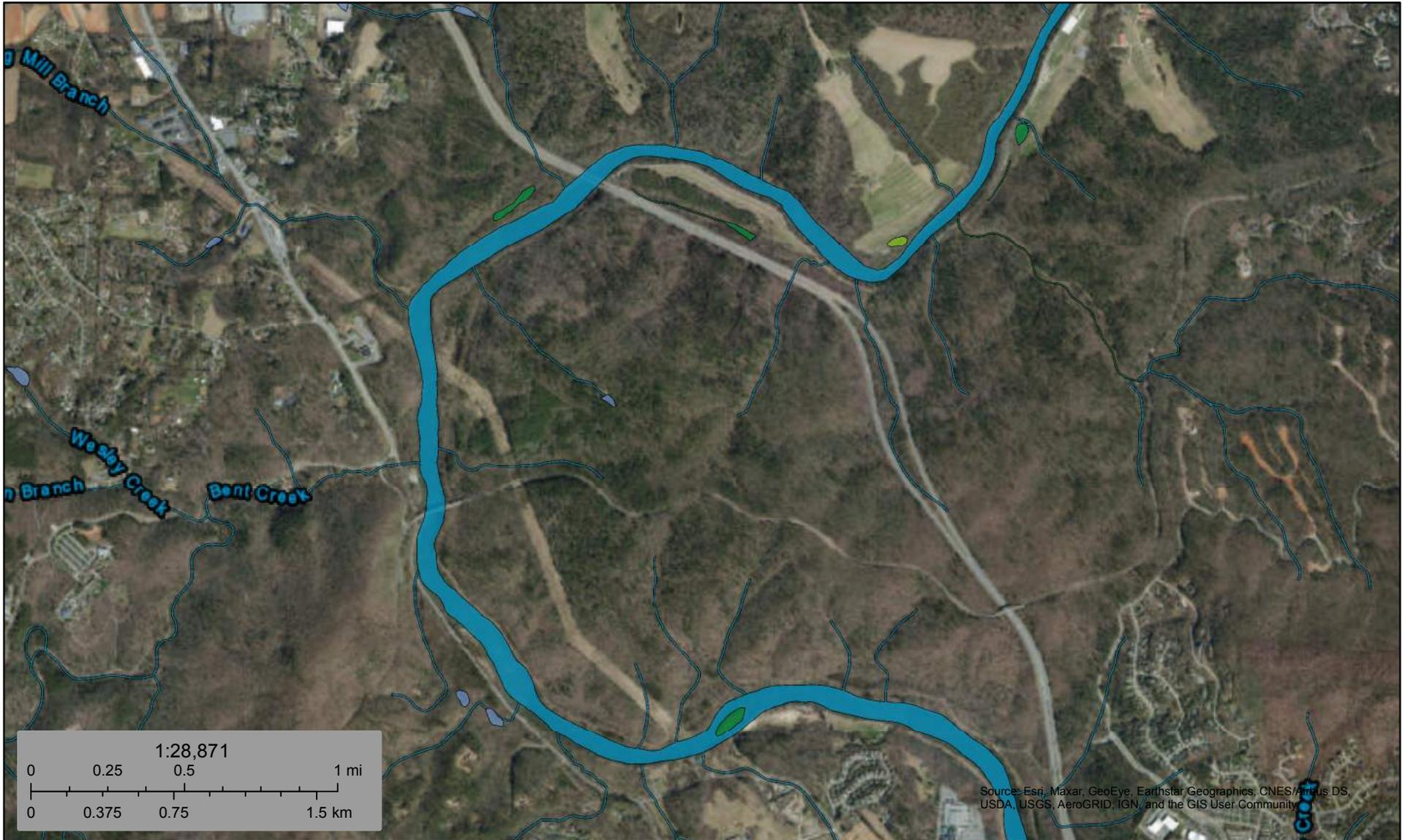
Date(s) aerial images were photographed: May 3, 2020—May 7, 2020

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%



July 21, 2021

Wetlands

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

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

North Carolina Drought Update

For the assessment period ending July 13, 2021

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.

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.



Elsa's track



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



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%

This infographic was created by

