

# CONCURRENCE POINT 2 UPDATE ALTERNATIVES TO BE STUDIED IN DETAIL

I-26 Interchange (Future Exit 35)  
Buncombe County  
STIP Project HE-0001  
WBS No. 49742

September 16, 2021

The CP 2 form dated July 15, 2021, included the following statement: “If the traffic forecast shows that only 2 lanes are required for the roadway tie, Concurrence Point 2 will be revisited.”

The Traffic Forecast for HE-0001 was completed June 29, 2021. NCDOT has completed a preliminary evaluation of the forecast results and has determined that a 2-lane shoulder typical section for the proposed new alignment roadway (extension of Frederick Law Olmsted Way East) will accommodate the projected traffic volumes. Auxiliary lanes (e.g., turn lanes, slip lanes) will be evaluated and included in preliminary designs for proposed intersections to facilitate traffic operations.

## Traffic Forecast Summary

The Traffic Forecast for HE-0001 results are summarized in **Table 1** (page 2).

The 2021 Base Year No-Build scenario represents current traffic conditions. The 2021 Build scenario assumes that HE-0001 would be constructed; the Frederick Law Olmsted Way East between NC 191 and the roundabout (under construction by the private developer) is complete; and the Pratt & Whitney Manufacturing Center is open. The 2021 Build scenario suggests HE-0001 would attract additional vehicles to I-26 (approximately 2% more) and reduce the number of vehicles on the arterial roadways (i.e., NC 191 and NC 146) west of the adjacent I-26 interchanges (approximately 20% less on NC 191 and 4% less on NC 146).

The 2045 Build scenario assumes that HE-0001 would be constructed in addition to all fiscally constrained and programmed transportation projects included in the *French Broad River MPO Metropolitan Transportation Plan 2045* (adopted on September 24, 2020). The future build scenario assumes a full buildout of the Biltmore Park West property based on current development estimates provided by the private developer in May 2021 (see **Table 2** on page 2). This assumption was made in addition to growth factors included in the FBRMPO Travel Demand Model (2015/2045 FBRMPO TDM v1.1, issued April 28, 2021).

According to the HE-0001 Traffic Forecast, the 2045 Build scenario shows HE-0001 would attract about 1% to 6% more vehicles per day (vpd) to I-26 compared to the No Build. Potential benefits to the adjacent I-26 interchanges and the NC 191 corridor are more pronounced in the design year. The introduction of HE-0001 would reduce NC 191 AADT west of the I-26 interchange by approximately 39% and reduce NC 146 AADT west of I-26 by approximately 18% indicating a redistribution of traffic in the network. Further, traffic volumes along NC 191 are projected to decrease by between approximately

Corridor	Corridor Segment	Lanes	Annual Average Daily Traffic (AADT)			
			2021 No Build	2021 Build	2045 No Build	2045 Build
I-26	north of NC 191	4-lane (8-lane 2024)	89,000	90,500	131,800	132,800
	south of NC 191/north of NC 146	4-lane (8-lane 2024)	88,100	90,000	129,000	137,000
	south of the proposed project (HE-0001)	4-lane (8-lane 2024)		89,900		135,900
	south of NC 146	4-lane (8-lane 2024)	85,700	86,300	125,400	126,400
NC 191	west of I-26	4-lane divided	30,700	25,500	46,600	33,600
	south of NC 112/north of SR 3479	4-lane divided or w/TWLTL	23,300	23,700	35,800	28,400
	north of BRP/south of SR 3484	4-lane divided or w/TWLTL	20,600	23,200	32,000	27,800
	south of BRP	2-lane	18,900	18,300	28,000	22,100
NC 146	west of I-26	4-lane divided	24,800	23,900	37,600	31,900
Proposed Project Roadway (HE-0001)	east of BPW^ RAB+	2-lane	N/A	9,100	N/A	19,500
	west of BPW^ RAB+	2-lane	N/A	7,300	13,800	13,300

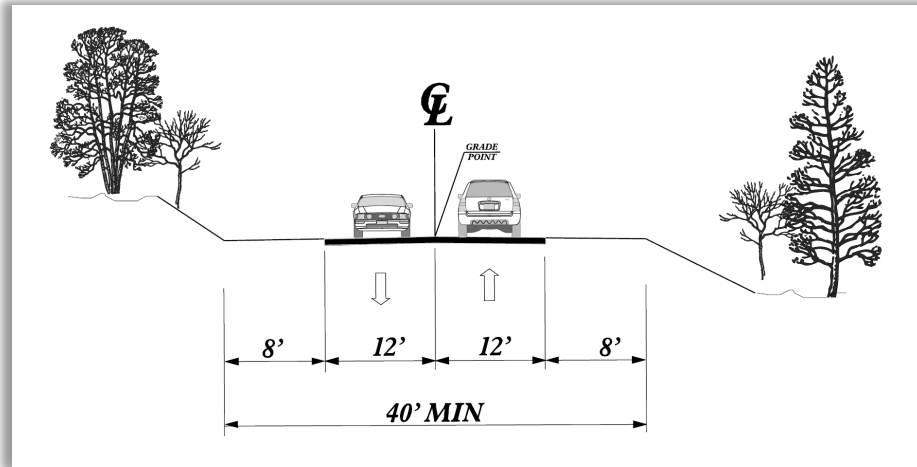
Notes: ^BPW = Biltmore Park West; \*RAB = roundabout.  
Source: NCDOT, Traffic Forecast for HE-0001, June 29, 2021

Land Use	Quantity (Unit)
Residential	1,218 dwelling units
Retail/Office	178,000 square feet
Hotel	120 rooms
Public Service/Institutional	60,000 square feet
Industrial	1,460,000 square feet

Source: Biltmore Farms, LLC (May 2021)

15% and 27% AADT in the 2045 Build scenario compared to the 2045 No Build. The 2045 No Build scenario assumes Frederick Law Olmsted Way East would be completed to the roundabout (currently under construction by private developer). In the 2045 No Build scenario Frederick Law Olmsted Way East is forecasted to carry 13,800 vpd. The 2045 Build scenario assumes Frederick Law Olmsted Way East would be extended to I-26 by the HE-0001 project. In the 2045 Build scenario, Frederick Law Olmsted Way East west of the roundabout would carry 13,300 vpd (or 500 vpd less/-4% than the No Build); the proposed project roadway would carry 19,500 vpd.

Based on the Traffic Forecast and preliminary traffic analysis, NCDOT has determined that a 2-lane shoulder typical section for the proposed project roadway will accommodate the projected traffic volumes (19,500 AADT in 2045 Build) (**Exhibit 1**). Auxiliary lanes (e.g., turn lanes, slip lanes) will be evaluated and included in preliminary designs for proposed intersections to facilitate traffic operations.



**EXHIBIT 1. PROPOSED PROJECT ROADWAY TYPICAL SECTION (PROPOSED 4-FOOT PAVED, 4-FOOT GRASSED SHOULDER)**

## Potential Impacts Update

NCDOT did not have field delineated water resources available for the entire study area at CP 1-2 in July 2021 but calculated potential impacts to jurisdictional waters with the best available data at that time, which included the I-4400/I-4700 PJD resources and NWI and ATLAS Hydrography GIS data sets. Further, NCDOT had not determined the proposed project roadway typical section at the July 15, 2021, CP 1-2 Merger Meeting but calculated potential impacts for a 4-lane with curb and gutter typical section because that represented a conservative, worst case scenario for the proposed project roadway footprint.

NCDOT field delineated water resources on July 13-15, 2021. Field delineations were verified by the USACE and DWR on August 27, 2021. For the purposes of this CP 2 Update, NCDOT re-calculated potential impacts for the 4-lane with curb and gutter typical section by replacing the GIS datasets with the HE-0001 field verified jurisdictional resources. For comparison purposes, **Table 3** (page 4) summarizes the differences between the potential impacts that were presented at the July 15, 2021, CP 1-2 meeting, which were based on the I-4400/I-4700 PJD resources and NWI and ATLAS Hydrography GIS data sets, and updated potential impacts that are based on the field delineation data.

Based on this review, potential impacts for the 4-lane with curb and gutter typical section generally remained the same or increased due to the updates based on field delineation data. This increase appears to be the result of updated resource mapping (field delineation) and rounding.

Table 3. Comparison of Potential Impacts, CP 1-2 (July 15, 2021) and CP 2 Update for the 4-lane C&G Typical Section							
		Alternative 1		Alternative 2		Alternative 3	
		CP 1-2 <sup>1</sup>	CP 2 Revisit <sup>2</sup>	CP 2 <sup>1</sup>	CP 2 Revisit <sup>2</sup>	CP 1-2 <sup>1</sup>	CP 2 Revisit <sup>2</sup>
Streams (ft)		2,600	2,600	2,900	3,300	2,000	2,000
Wetlands (ac)		0.2	0.3	0.2	0.4	0.2	0.2
FEMA Floodplain (ac)	Floodway	0		0		0	
	100-Year Floodplain	< 0.1		0.2		0	
	500-Year Floodplain	< 0.1		0.4		0	
Biltmore Estate NHL (ac)		0		6.8		0	
<p><sup>1</sup> This column summarizes the potential impacts included in Table 7 (pg. 11) of the July 15 CP 1-2 Meeting Packet. Potential impacts were calculated based on conceptual design slope stakes plus 40 feet with a 4-lane curb and gutter typical section for the proposed roadway. The sources for the water resources included I-4400/I-4700 PJD, NCDOT ATLAS Hydrography (GIS) and NWI (GIS).</p> <p><sup>2</sup> This column summarizes the potential impacts based on conceptual design slope stakes plus 40 feet with a 4-lane curb and gutter typical section for the proposed roadway. The sources for the water resources include I-4400/I-4700 PJD and HE-0001 PJD. The HE-0001 PJD replaces the GIS data sets.</p> <p>NOTE: Differences between the potential impacts reported at CP 1-2 and those calculated for the CP 2 Revisit appear to be the result of updated resource mapping.</p>							

Following the NCDOT decision that a 2-lane proposed roadway would accommodate future projected traffic volumes<sup>1</sup>, potential impacts to jurisdictional features were updated based on:

- Updated design to include a 2-lane with shoulder typical section for the proposed project roadway, opposed to the 4-lane curb and gutter typical section used for CP 1-2 (and the CP 2 Update comparison discussed above [Table 3]).
- Impacts based on field delineated jurisdictional resources (opposed to ATLAS/NWI GIS data).
- Existing culverts were removed from the jurisdictional resource totals.
- Impacts permitted for STIP I-4400/I-4700 within the project area were removed from the HE-0001 calculated potential impacts.

**Table 4** (page 5) summarizes the potential impacts for the 2-lane with shoulder typical section based on the above factors.

<sup>1</sup> As noted on pages 1 and 3, NCDOT expects that auxiliary lanes (e.g., turn lanes, slip lanes) will be needed to accommodate traffic operations, particularly at project intersections. Proposed intersections configurations and laneage will be further evaluated and included in preliminary designs.

<b>Table 4. Potential Impacts for the 2-lane with Shoulder Typical Section*</b>				
		<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
Figure No.		2	3	4
Streams <sup>+, ^</sup> (ft)		2,300	2,200	1,400
Wetlands <sup>+</sup> (ac)		0.3	0.2	0.1
FEMA Floodplain (ac)	Floodway	0	0	0
	100-Year Floodplain	< 0.1	0.2	0
	500-Year Floodplain	< 0.1	0.4	0
Biltmore Estate NHL (ac)		0	6.8	0
<p>*Conceptual design slope stakes plus 40 feet with a 2-lane shoulder typical section for the proposed roadway.</p> <p>+ These potential stream and wetland impacts exclude I-4700 permitted impacts.</p> <p>^The HE-0001 PJD delineated to 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) delineation was used and the I-4700 PJD feature removed from potential impact calculations. This overlap did not affect the I-4700 PJD in the bifurcated section of I-26.</p>				



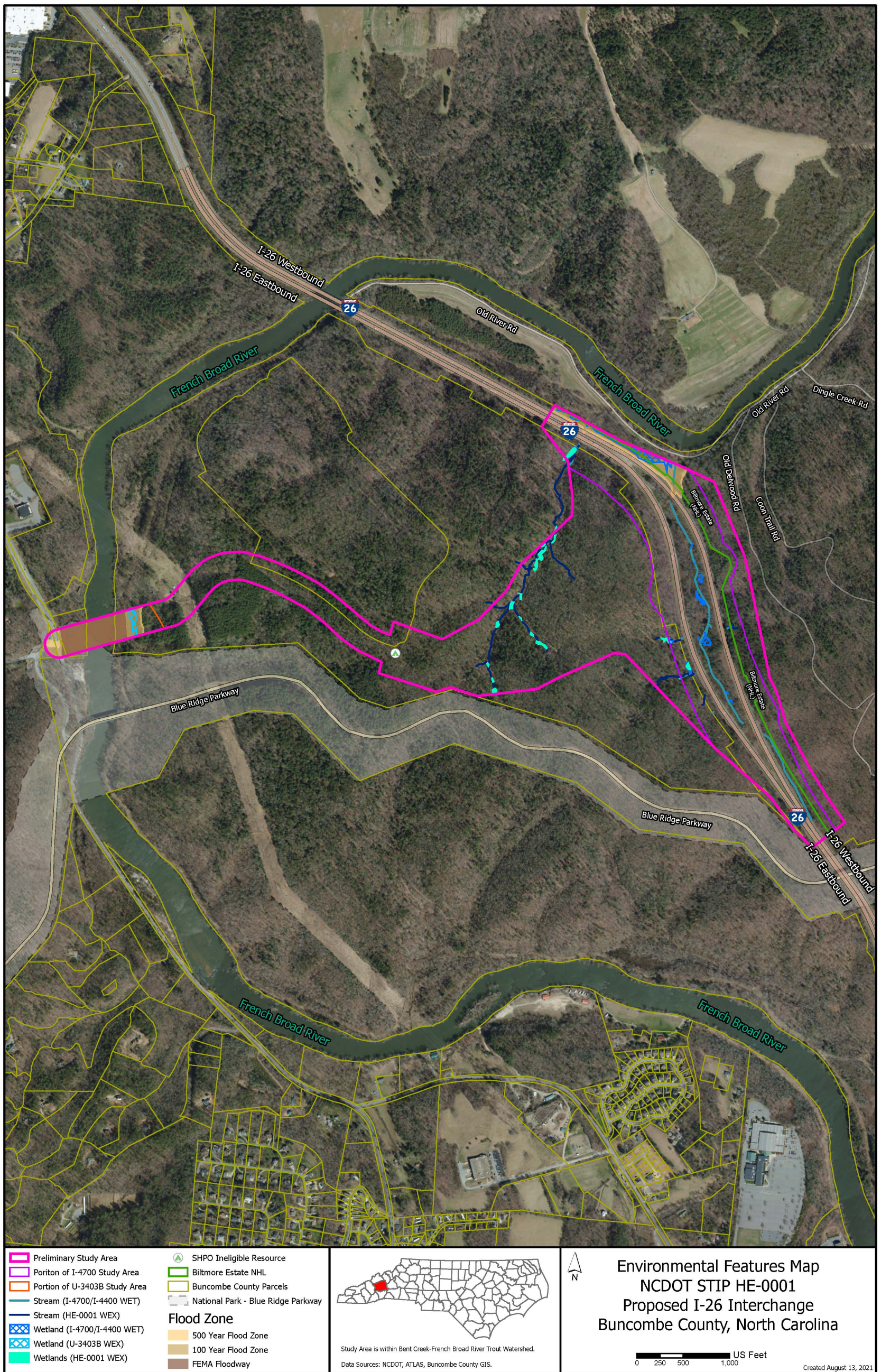


Figure 1



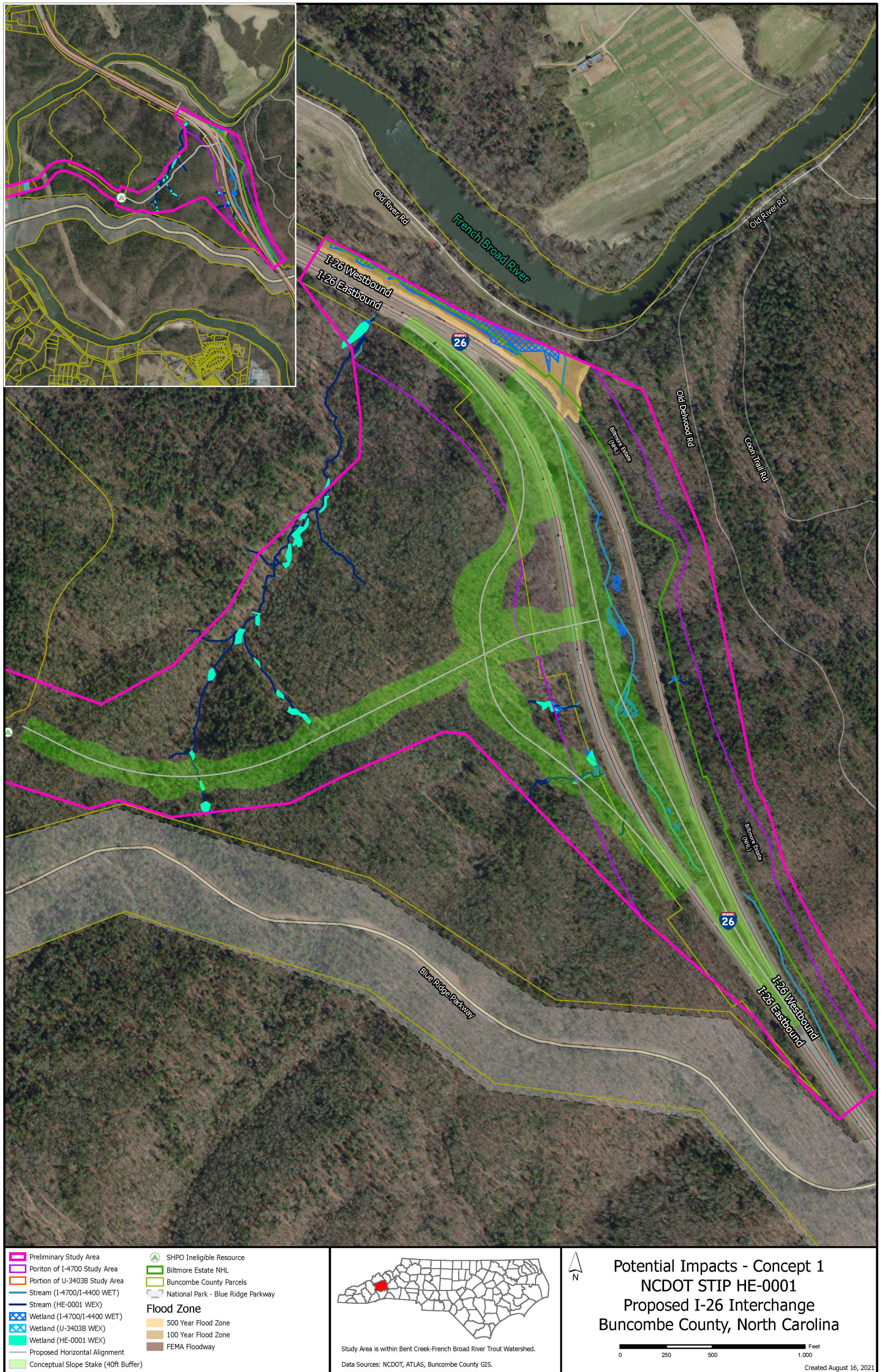


Figure 2



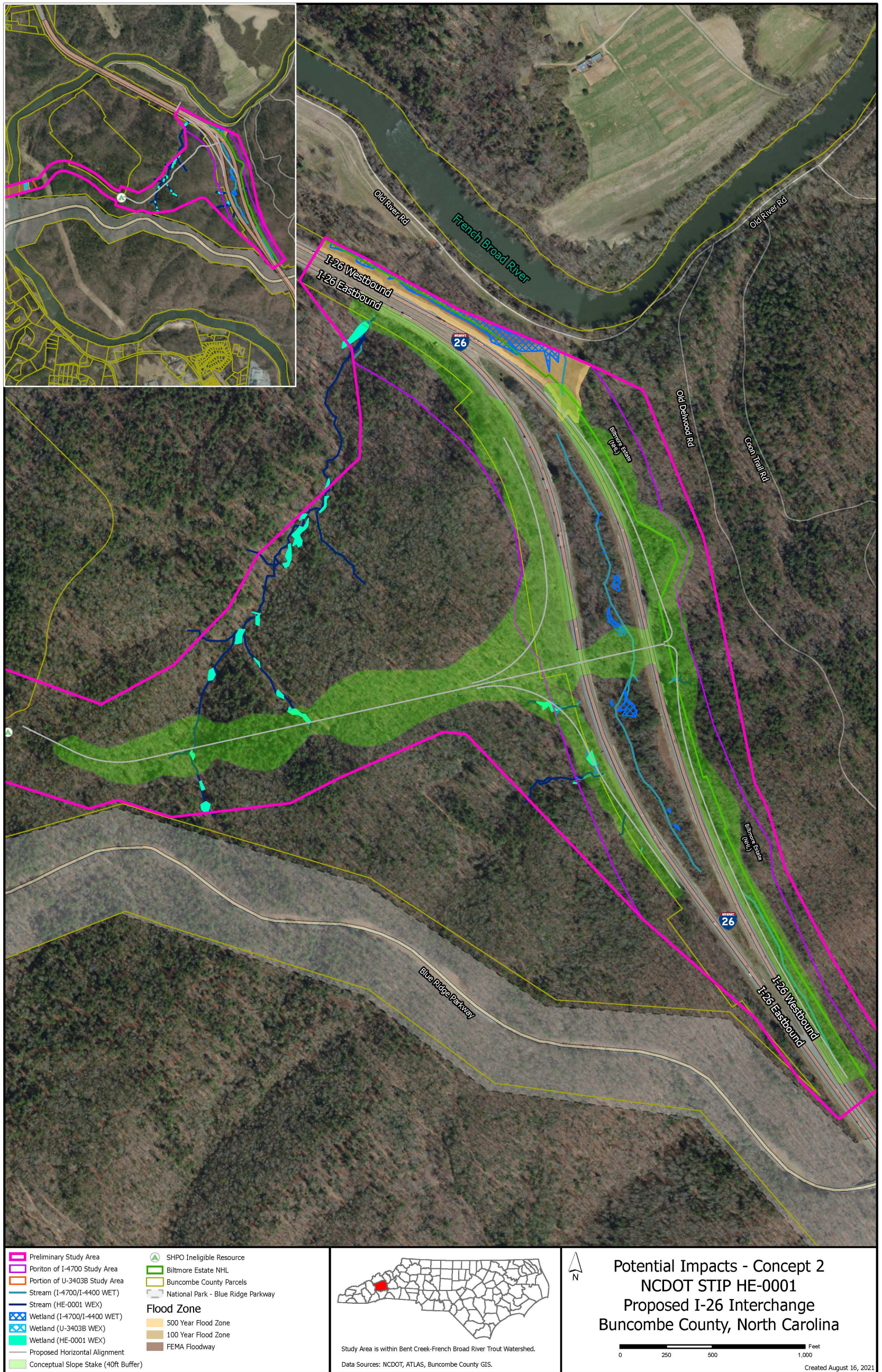


Figure 3



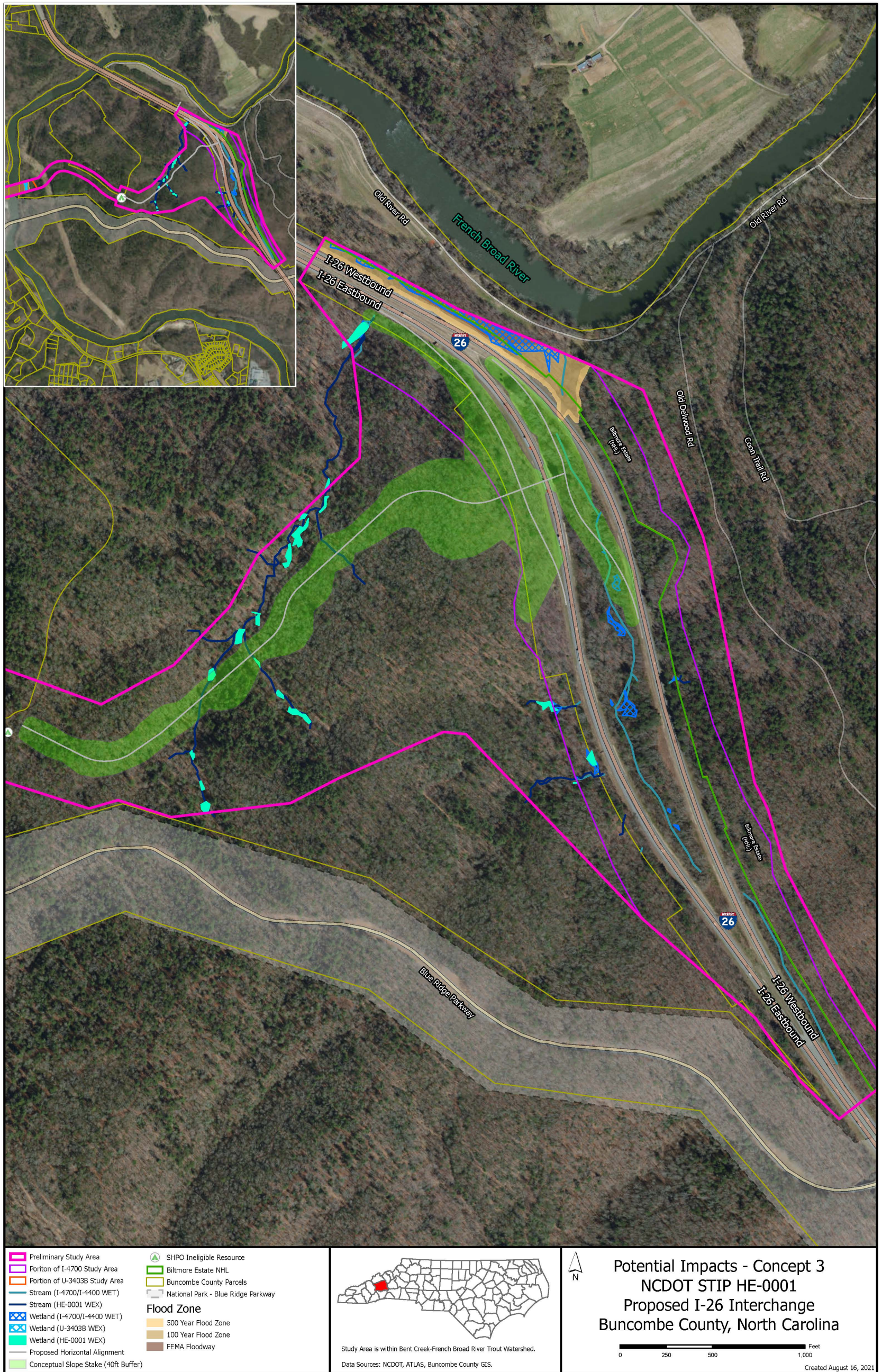


Figure 4