# CONCURRENCE POINT 2A
# BRIDGING DECISIONS AND ALIGNMENT REVIEW

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

September 16, 2021

## Purpose of Meeting

Today's meeting is to discuss bridging decisions and review the project alignment for the proposed STIP Project HE-0001. Concurrence will be requested.

## Project Description

To address the lack of network connectivity between NC 191 and I-26 in southern Buncombe County, and to accommodate current and planned growth, NCDOT proposes to construct a new interchange on I-26 in the project study area (PSA). This new interchange would connect to NC 191 via a road that is currently under construction by a private developer but will later become a State road (i.e., Frederick Law Olmsted Way East) (**Figure 1**).

## Project Setting

The proposed project is located approximately 6 miles south of Asheville along I-26, north of the Blue Ridge Parkway (BRP) and south of the French Broad River (FBR) bridge (**Figure 1**).

Land use in the project vicinity is mixed and includes manufacturing/distribution facilities, single- and multi-family residential neighborhoods, open space, and commercial and recreational uses. I-26 is currently under construction for widening to 8 lanes (4 lanes in each direction of travel) and includes the widening/replacement of the I-26 bridges over the FBR and the replacement of the BRP bridge on new alignment, all under the NCDOT STIP Project I-4700. The posted speed limit is 60 mph. North of the Clayton Road (SR 3501) intersection, the NC 191 corridor is characterized by preserved open space in proximity to the FBR, Pisgah National Forest, and the BRP. The BRP crosses over NC 191 and is accessible via the signalized intersection with Frederick Law Olmstead Way and NC 191 at the west end of the proposed project. The NC Arboretum is also accessible via this intersection.

# Project Status and Schedule

The HE-0001 project is proposed to be federally funded, and NCDOT anticipates documentation as a NEPA Type III Categorical Exclusion (CE) in Spring 2022.

The proposed project was presented to the NCDOT Board of Transportation (BOT) in June 2021 and was approved by the BOT in July 2021. The STIP addition would initially include funding for preliminary engineering only. The Division is targeting right of way acquisition and construction for state fiscal years 2022 and 2023, respectively. The current total cost estimate range is between $20 and $35 million.

The French Broad River MPO is in the process of updating their Long-Range Transportation Plan (LRTP) and Metropolitan Transportation Plan (MTP) and will consider incorporating this project as well as other modifications necessary to the plans.

NCDOT hosted an External Scoping Meeting with relevant regulatory agencies on June 16, 2021. The CP 1-2 Meeting was conducted July 15, 2021.

# CP 1: Purpose & Need and Study Area Defined

The Merger Team concurred with the Project Need and Purpose and Study Area on July 15, 2021[1]. In summary:

## Study Area

The study area generally includes approximately 210 acres along and west of I-26, south of the FBR and north of the BRP (**Figure 1**). The study area encompasses enough area to explore interchange locations on I-26 and allowing NCDOT to accommodate current and planned growth by connecting to Frederick Law Olmsted Way East. The study area is north of the BRP and south of the FBR to avoid impacts to both features (inclusive of the bridge infrastructure associated with both), and to account for proposed ramp length requirements. The study area extends along the roadway under construction to NC 191 to account for the potential need to provide 4-lanes from I-26 to NC 191. This corridor extension is approximately 300 feet wide; the roadway under construction by a private developer was graded for a 4-lane roadway but is being constructed as a 2-lane roadway. NCDOT's proposed project would be graded for a 2-lane roadway; NCDOT anticipates the need for auxiliary lanes at intersection approaches (e.g., turn lanes) which would result in a wider project footprint near proposed intersections.

## Need for Project

The proposed project is needed to address the lack of network connectivity between NC 191 and I-26 in southern Buncombe County to accommodate current and planned growth.

## Project Purpose

The purpose of the project is to provide access to I-26 and improve east-west connectivity within the project vicinity to accommodate current and planned growth.

[1] All regulatory and resource agencies concurred except NCWRC who abstained from concurrence.

### *Secondary Benefit*

Other desirable outcomes of the proposed project are:

- improved traffic safety due to greater separation of local traffic from interstate traffic;
- improved emergency response times to the Pratt & Whitney (P&W) Manufacturing Center, Biltmore Park West (BPW) property, and sections of NC 191 and I-26;
- support for local and regional economic development initiatives in the project vicinity;
- improved access to anticipated regional employment opportunities at P&W Manufacturing Center and BPW; and
- improved access to tourist destinations.

## CP 2: Detailed Study Alternatives Carried Forward

The Merger Team concurred with the Detailed Study Alternatives (DSAs) to be carried forward on July 15, 2021[2]; these are summarized below. A CP 2 Update was developed to summarize the results of the Traffic Forecast for HE-0001 and NCDOT's decision to proceed with a 2-lane with shoulder typical section proposed roadway, noting the expected need for auxiliary lanes at proposed intersections. The CP 2 Update also revisited potential impacts reported at CP 1-2 to include verified jurisdictional resources in place of the GIS data sets.

Three build alternatives are being carried forward for detailed study (**Table 1**). The NCDOT will consider traffic operations in the final recommendation for the interchange ramp terminal treatment(s). A 2-lane typical section will be applied to the proposed roadway that would connect the proposed interchange and the road that is currently being constructed by a private developer (Frederick Law Olmsted Way East). Avoidance and minimization measures will continue to be evaluated throughout design development and in consultation with the Merger Team.

**Table 1. Build Alternative Description**

| Build Alternative | Description |
|---|---|
| **Alternative 1** | • left exit/entrance ramp<br>• Diamond configuration<br>• center of the I-26 bifurcated section |
| **Alternative 2** | • right-exit/entrance ramp<br>• Diverging diamond (DDI) configuration<br>• center of the I-26 bifurcated section |
| **Alternative 3** | • left exit/entrance ramp<br>• Diamond configuration<br>• North end of the I-26 bifurcated section |

[2] All regulatory and resource agencies concurred except NCWRC who abstained from concurrence.

## Bridging Decisions and Alignment Review

The flow regimes associated with the streams in the project study area are low and do not require a bridge or box culvert for water conveyance (i.e., greater, or equal to 72-inches). A preliminary hydraulic review of all proposed stream crossings concluded that a 66-inch pipe or less would adequately convey the streams. As a result, there are no bridging decisions to be evaluated for CP 2A. However, NCDOT would likely bridge stream "SDX" (I-4700 PJD) in Alternative 2 due to proximity of the stream to the I-26 travel lanes.

The horizontal and vertical design alignments have not changed from CP 2 (July 15, 2021).

## Potential Impacts Update

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

- Updated design to include a 2-lane with shoulder typical section for the proposed roadway, opposed to the 4-lane curb and gutter typical section used for CP 1-2 (and the CP 2 Update).
- 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 2** summarizes the potential impacts based on the above factors.

**Table 2. Potential Impacts for the 2-lane with shoulder typical section***

| | | Alternative 1 | Alternative 2 | Alternative 3 |
|---|---|---|---|---|
| Figure No. | | 3 | 4 | 5 |
| Streams[+, ^] (ft) | | 2,300 | 2,200 | 1,400 |
| Wetlands[+] (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 |

*Conceptual design slope stakes plus 40 feet with a 2-lane shoulder typical section for the proposed roadway.

[+] These potential stream and wetland impacts exclude I-4700 permitted permanent impacts.

[^]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.

## Avoidance and Minimization Discussion

Though stream flow in the study area will not require bridges or culverts for hydraulic reasons, bridges were evaluated to span the stream(s) and wetlands at three sites (one site per DSA) to avoid stream and wetland impacts within the I-26 bifurcated section to stream "SDX" (STIP I-4700) (**Table 3**).

| Table 3. Potential Crossing Sites | | | | | | | |
|---|---|---|---|---|---|---|---|
| Potential Crossing Site # | Alternative # | Figure # | Bridge Dimensions (L x W) | Bridge Size (sq ft) | Bridge Cost Estimate | Potential Stream Impact (ft) | Anticipated Mitigation Cost Estimate 2:01 ($)* |
| 1^ | 1 | 3 | 220' ± x 26'-3" | 5,800 | $870,000 | 300 | $362,322 |
| 2+ | 2 | 4 | 250' ± x 46'-3" | 11,600 | $1,425,000 | 300 | $362,322 |
| 3 | 3 | 5 | 250' ± x 26'-3" | 6,600 | $990,000 | 300 | $362,322 |

*Source: NCDEQ, Current Rate Schedules, DMS Rate per Credit (Effective through 6/30/2022), Statewide Standard, Stream = $603.87.

^ This crossing would span stream "SDX" and a wetland in the bifurcated section of I-26.

+Due to proximity, a single structure would span stream "SDX" and the I-26 westbound travel lanes.

Additional geotechnical investigations will be completed for the selected alternative and will provide the necessary information to determine the practicality of a bottomless culvert opposed to a bridge. A bottomless culvert may be preferred to a bridge if geologic conditions are favorable due to cost.

Due to proximity to the westbound I-26 travel lanes and constraints at Potential Crossing Site #2, a single structure would span the stream ("SDX") and the I-26 westbound travel lanes resulting in the large overall size of the bridge.

As information becomes available based on agency field visits, NCDOT will update these materials and/or bring additional information to the September 16, 2021, Merger Meeting for review and discussion.

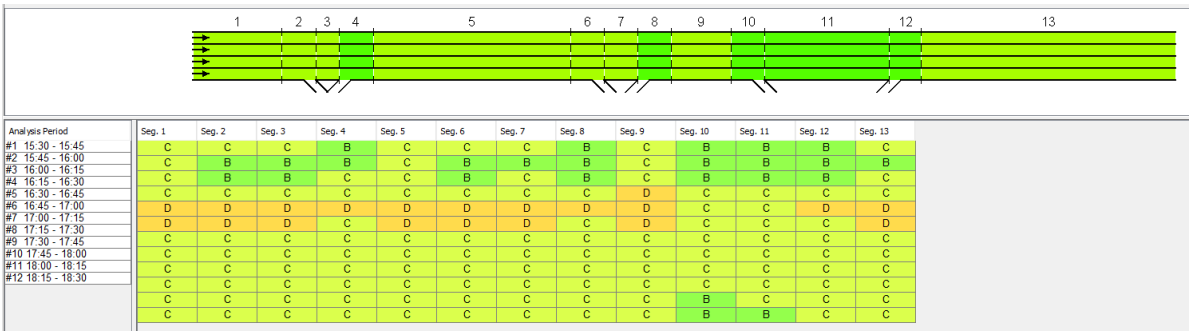
## Safety Update

NCDOT conducted a crash analysis for portions of I-26, NC 146 (Long Shoals Road), and NC 191 (Brevard Road) in the project vicinity for the five-year period from April 1, 2016, to March 31, 2021. The analysis determined that rear end, slow, or stop crashes were the primary crash types on I-26, NC 191, and NC 146; sideswipe, same direction crashes were also prevalent on the arterial roadways, i.e., NC 191 and NC 146. On an interstate and/or arterial facility, it is reasonable to assume that these rear end, slow, or stop crashes are congestion-related crashes caused by over and/or near capacity conditions at intersections and interchanges. Common causes of sideswipe, same direction crashes are distracted drivers, drivers failing to perform lane changes safely, and poor road conditions.

In the vicinity of the proposed project, I-26 is currently being widened to an 8-lane facility (4 lanes in each direction) which should increase the capacity of the facility and lessen the propensity for rear end, slow, or stop crash type on I-26. Further, the analysis of the proposed project interchange with the Frederick Law Olmsted Way East, currently under construction by a private developer, shows minimal queuing at the ramp junctions and would not be expected to increase the risk of this crash type, while improving traffic volume conditions of arterial roads and their interchanges with I-26. This proposed project is expected to reduce the volume of traffic on NC 191 and NC 146 in the 2045 Build scenario compared to the 2045 No Build scenario. The proposed project does not change access or facility design for NC 191 or NC 146 in the area around the existing I-26 interchanges. As such, the project is not expected to increase the risk of these crash types.

# Interstate Operations Summary

NCDOT is preparing an Interstate Access Report (IAR) for this project. Though in draft form, traffic operation results for I-26 in a 2040 Build scenario shows that all segments (north of NC 191/Exit 33 to south of NC 146/Exit 37) operate at LOS D or better (**Exhibit 2**).




| Analysis Period | Seg. 1 | Seg. 2 | Seg. 3 | Seg. 4 | Seg. 5 | Seg. 6 | Seg. 7 | Seg. 8 | Seg. 9 | Seg. 10 | Seg. 11 | Seg. 12 | Seg. 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #1 15:30 - 15:45 | C | C | C | B | C | C | C | B | C | B | B | B | C |
| #2 15:45 - 16:00 | C | B | B | B | C | B | B | B | C | B | B | B | B |
| #3 16:00 - 16:15 | C | B | B | C | C | B | C | B | C | B | B | B | C |
| #4 16:15 - 16:30 | C | C | C | C | C | C | C | C | D | C | C | C | C |
| #5 16:30 - 16:45 | D | D | D | D | D | D | D | D | D | C | C | D | D |
| #6 16:45 - 17:00 | D | D | D | C | D | D | D | C | D | C | C | C | D |
| #7 17:00 - 17:15 | C | C | C | C | C | C | C | C | C | C | C | C | C |
| #8 17:15 - 17:30 | C | C | C | C | C | C | C | C | C | C | C | C | C |
| #9 17:30 - 17:45 | C | C | C | C | C | C | C | C | C | C | C | C | C |
| #10 17:45 - 18:00 | C | C | C | C | C | C | C | C | C | C | C | C | C |
| #11 18:00 - 18:15 | C | C | C | C | C | C | C | C | C | B | C | C | C |
| #12 18:15 - 18:30 | C | C | C | C | C | C | C | C | C | B | B | C | C |

**EXHIBIT 1. 2040 BUILD PM PEAK LEVEL OF SERVICE – SOUTHEAST-BOUND (SOURCE: TABLE 23 FROM DRAFT IAR)**

# Environmental Studies Update

NCDOT is utilizing our standard processes to analyze community characteristics and direct, indirect and cumulative effects of this proposed project. These processes are founded upon many years of FHWA and regulatory coordination and are overseen by in-house experts within NCDOT's Environmental Analysis Unit (EAU) and Division offices. These analyses build upon one another, beginning with understanding the characteristics of the study area and working toward a qualitative and/or quantitative analysis of indirect and cumulative effects in support of our NEPA documentation and permit applications.

NCDOT and their consultants are in the process of completing a Short Form Indirect and Cumulative Effects Report which is intended to review and document the scope, purpose and need of the project, other projects proposed in the area, population and employment trends and forecasts, details on the study area's current and future development market, available land, and water and sewer service availability. The ICE report includes a site visit, interviews with local staff and stakeholders, and a review of the local and state development regulations. The ICE procedure determines whether indirect and cumulative effects are "possible" or "likely" because of project construction and any subsequent public and private development actions. This procedure also determines whether more detailed analysis in the form of a Land Use Scenario Assessment (LUSA) is warranted based on the results of the Indirect Effects Matrix and general conclusions. The LUSA will determine whether or not notable differences are anticipated between Build and No Build.

## *Resources*

- NCDOT PI, "Community Studies and Visualization Resources page", https://connect.ncdot.gov/resources/Environmental/EAU/PICSViz/Pages/default.aspx
- NCDOT, "Community Characteristics Guidance July 2019", https://connect.ncdot.gov/resources/Environmental/PDEA%20Consultants/CCR%20Guidance%20July%202019.docx
- NCDOT, "Guidance for Assessing ICE"

# Sources

NCDEQ, Current Rate Schedules, deq.nc.gov/about/divisions/mitigation-services/dms-customers/fee-schedules

NCDOT, “HE-0001 IAR Interim Report” (Draft), July 22, 2021.

---, “ICE Guidance March 2019”, connect.ncdot.gov/resources/Environmental/EAU/PICSViz/Pages/default.aspx

---, “Traffic Forecast for HE-0001, Buncombe County”, June 29, 2021.

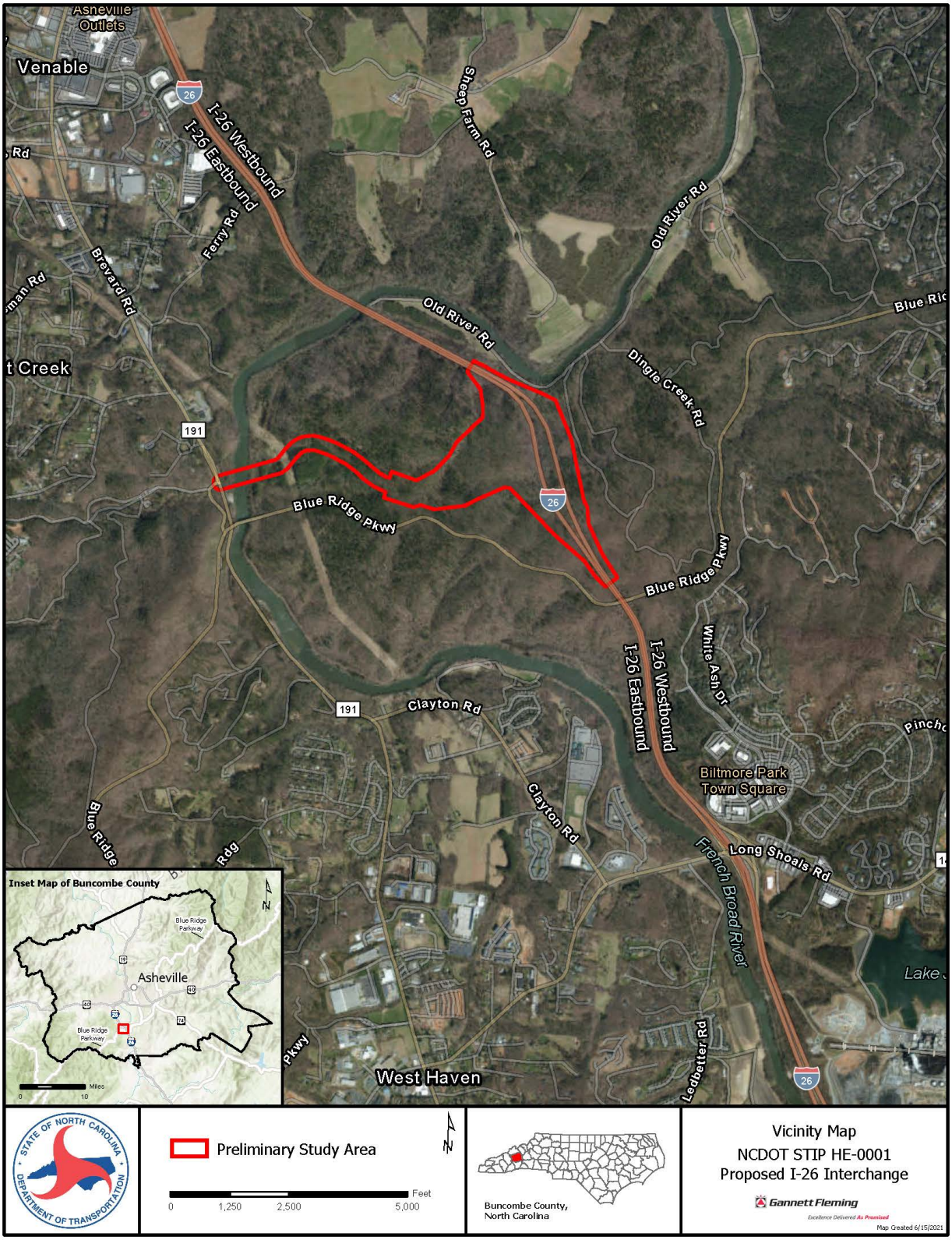
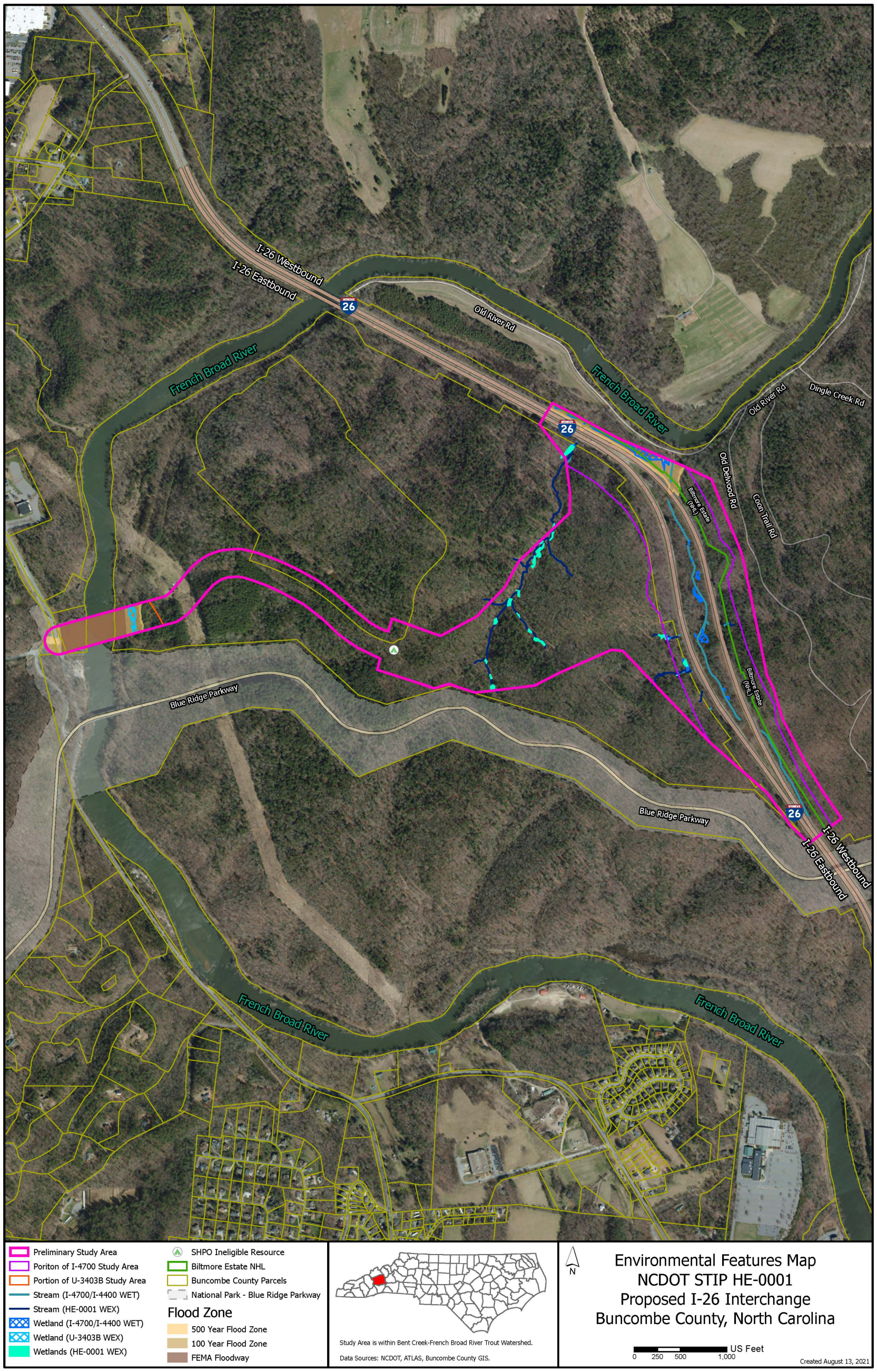



**FIGURE 1. VICINITY MAP**


I-26 Westbound
I-26 Eastbound
Old River Rd
French Broad River
Dingle Creek Rd
Old Deltwood Rd
Coon Trail Rd
Biltmore Estate (NHL)
Blue Ridge Parkway
Preliminary Study Area
Poriton of I-4700 Study Area
Portion of U-3403B Study Area
Stream (I-4700/I-4400 WET)
Stream (HE-0001 WEX)
Wetland (I-4700/I-4400 WET)
Wetland (U-3403B WEX)
Wetlands (HE-0001 WEX)
SHPO Ineligible Resource
Biltmore Estate NHL
Buncombe County Parcels
National Park - Blue Ridge Parkway
Flood Zone
500 Year Flood Zone
100 Year Flood Zone
FEMA Floodway
Study Area is within Bent Creek-French Broad River Trout Watershed.
Data Sources: NCDOT, ATLAS, Buncombe County GIS.
N
Environmental Features Map
NCDOT STIP HE-0001
Proposed I-26 Interchange
Buncombe County, North Carolina
US Feet
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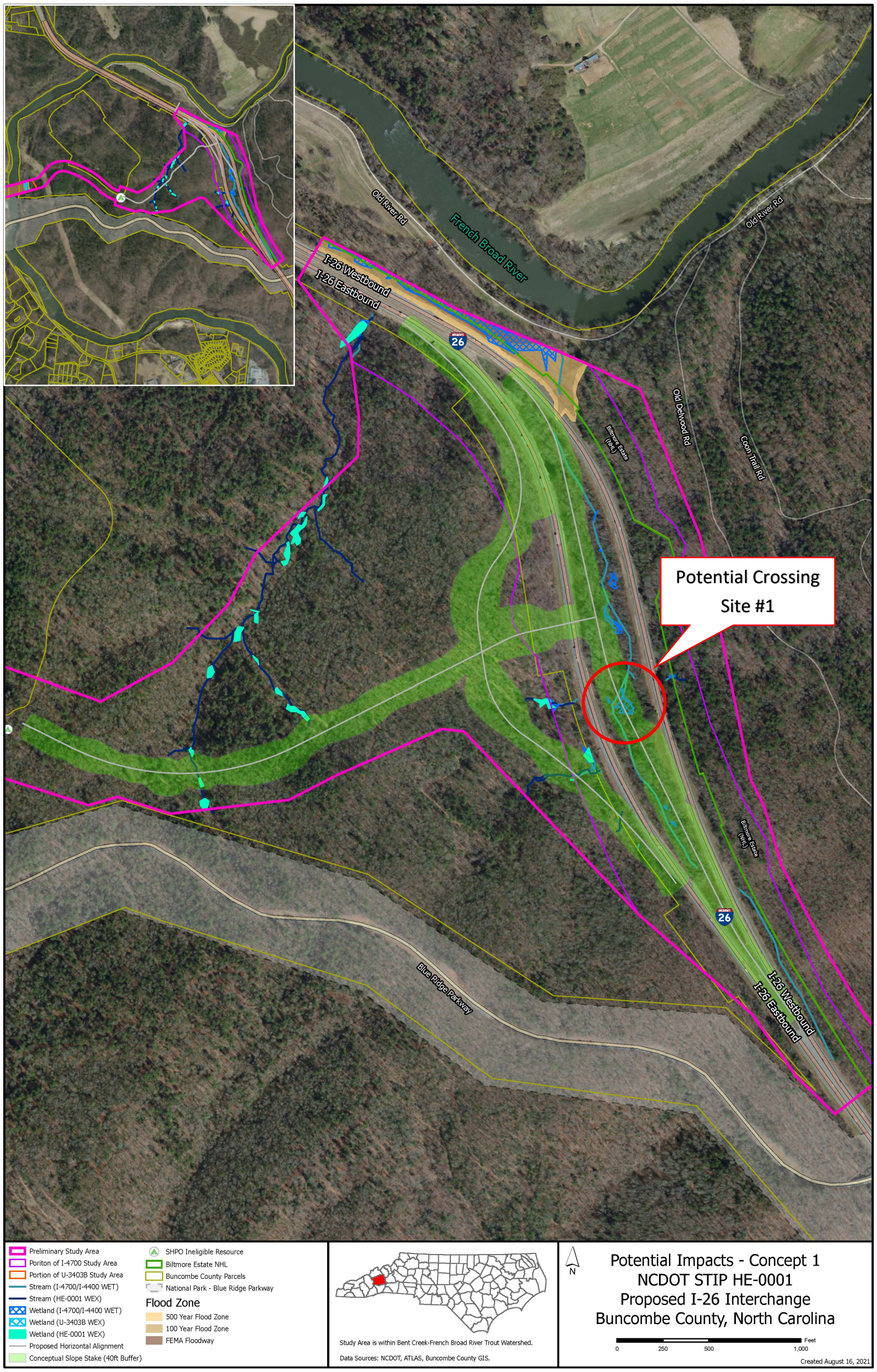
Created August 13, 2021

**FIGURE 2**


Old River Rd
French Broad River
Old River Rd
I-26 Westbound
I-26 Eastbound
26
Old Deiwood Rd
Coon Trail Rd
Biltmore Estate (NHL)
Potential Crossing Site #1
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Potential Impacts - Concept 1
NCDOT STIP HE-0001
Proposed I-26 Interchange
Buncombe County, North Carolina
Feet
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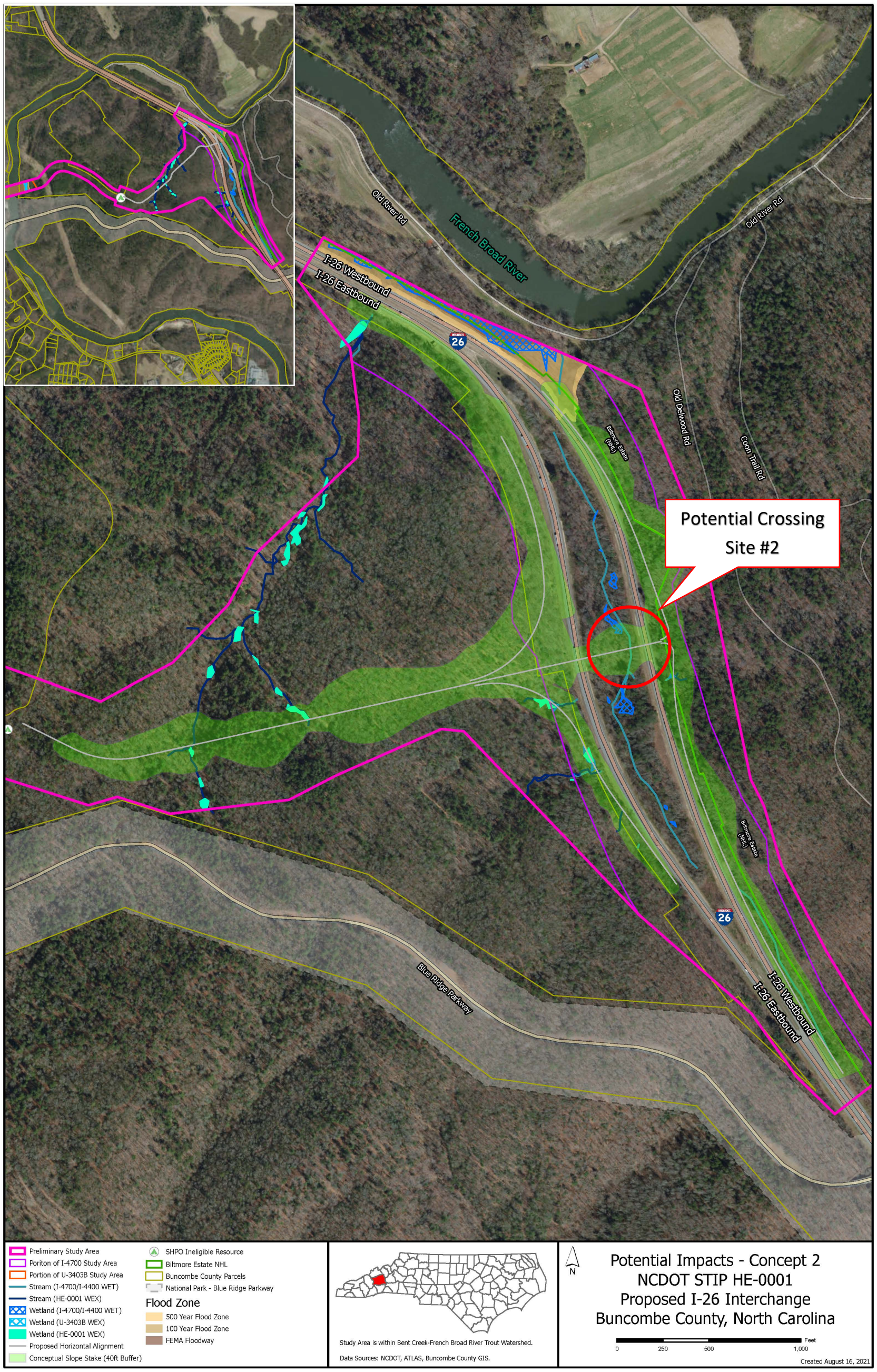
Created August 16, 2021

**FIGURE 3**


French Broad River
Old River Rd
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Old River Rd
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FEMA Floodway
Study Area is within Bent Creek-French Broad River Trout Watershed.
Data Sources: NCDOT, ATLAS, Buncombe County GIS.
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Potential Impacts - Concept 2
NCDOT STIP HE-0001
Proposed I-26 Interchange
Buncombe County, North Carolina
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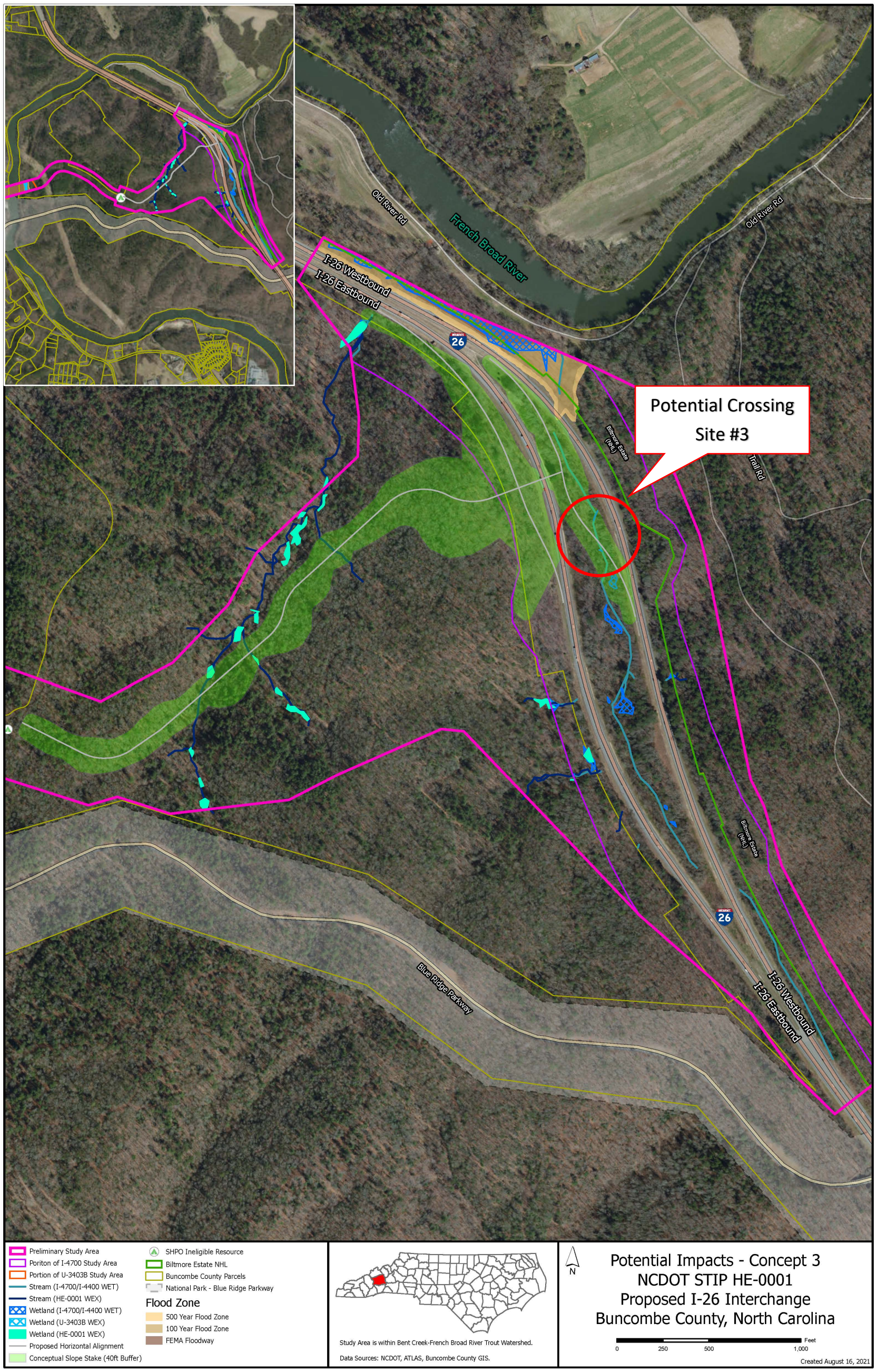
Created August 16, 2021

**FIGURE 4**


Old River Rd
French Broad River
Old River Rd
I-26 Westbound
I-26 Eastbound
26
Potential Crossing Site #3
Biltmore Estate (NHL)
Trail Rd
Blue Ridge Parkway
Biltmore Estate (NHL)
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I-26 Westbound
I-26 Eastbound
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Poriton of I-4700 Study Area
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N
Potential Impacts - Concept 3
NCDOT STIP HE-0001
Proposed I-26 Interchange
Buncombe County, North Carolina
Feet
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1,000
Created August 16, 2021

**FIGURE 5**

**Section 404/NEPA Merger Project Team Meeting Agreement**
**Concurrence Point 2A**
**Bridging Decisions and Alignment Review**

Project Name/Description: I-26, New Interchange (Future Exit 35), Buncombe County

STIP Project: HE-0001

*Project Need*: The proposed project is needed to address the lack of network connectivity between NC 191 and I-26 in southern Buncombe County to accommodate current and planned growth.

*Project Purpose*: The purpose of the project is to provide access to I-26 and improve east-west connectivity within the project vicinity to accommodate current and planned growth.

As agreed at the July 15, 2021, CP 1-2 Merger Meeting, NCDOT provided the Merger Team with a **CP 2 Update**. This update summarized the results of the Traffic Forecast for HE-0001 and NCDOT's decision to proceed with a 2-lane with shoulder typical section proposed roadway, noting the anticipated need for auxiliary lanes at proposed intersections to accommodate traffic operations. The CP 2 Update also revisited potential impacts reported at CP 1-2 to include verified jurisdictional resources in place of the GIS data sets.

The Project Team has concurred on this date, **September 16, 2021**, that there are no proposed hydraulic structures or major crossings requiring bridging decisions for STIP Project HE-0001. (However, NCDOT would likely bridge stream "SDX" [I-4700 PJD] in Alternative 2 due to proximity of the stream to the I-26 travel lanes.)

| |
|---|
| FHWA (lead federal agency) |
| USACE |
| NCDOT |
| USEPA |
| USFWS |
| NCWRC |
| NCDWR |
| SHPO |
| FBRMPO |