



# I-26 Widening

STIP Project Nos. I-4400 & I-4700



US 25 (exit 54) in Henderson County to I-40 in Buncombe County including Blue Ridge Parkway Bridge over I-26

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## Section 404/NEPA Merger Project Team Meeting Agreement

### Concurrence Point 4A

### Avoidance and Minimization

**Meeting Date:** October 11, 2017

**Time:** 10:00 a.m. to 12:00 p.m.

**Place:** NCDOT Century Center Building B, Hydraulic Design Conference Room

**Project:** I-26 Widening in Henderson and Buncombe Counties, Federal Aid Project No. NHF-26-1(62)23/IMNHF-026-1(86)9, WBS No. 34232.1.1/36030.1.1, STIP Project Nos. I-4400/I-4700, NCDOT Divisions 13 and 14

**Purpose:** Achieve Merger Team concurrence on Concurrence Point (CP) 4A, Avoidance and Minimization, for the proposed I-26 Widening

### Agenda

This meeting is being held to:

- Review the proposed improvements for the Least Environmentally Damaging Practicable Alternative (LEDPA)/ Preferred Alternative and summarize the impacts as disclosed in the Draft Environmental Impact Statement.
- Discuss proposed measures to Avoid and Minimize impacts of the proposed action.
- Reach concurrence on Avoidance and Minimization for the Project.

### Previous Merger Team Meetings and Concurrence Points Reached

The Merger Team reached concurrence on the Purpose and Need Statement (CP 1) and Detailed Study Alternatives (CP 2) on June 20, 2013; Bridging Decisions and Alignment Review (CP 2A) on February 11, 2015; and Least Environmentally Damaging Practicable Alternative (LEDPA)/Preferred Alternative (CP 3) on January 18, 2017.

## Project Study Area

State Transportation Improvement Program (STIP) Project I-4400 begins at US 25 (Exit 54) near Hendersonville and extends along I-26 west to NC 280 (Exit 40). STIP Project I-4700 extends along I-26 from NC 280 west to the I-40/I-240 interchange. **Figure 1** shows the general project vicinity.

## Project Description

The project proposes to improve a 22.2-mile segment of Interstate 26 (I-26). The project is located in Henderson and Buncombe Counties, beginning just south of Hendersonville and ending just south of Asheville.

## Purpose of the Proposed Action

The purpose of the proposed improvements to I-26 is to reduce congestion, with a goal of achieving an overall level of service (LOS) D in the design year (2040), and to improve the pavement structure.

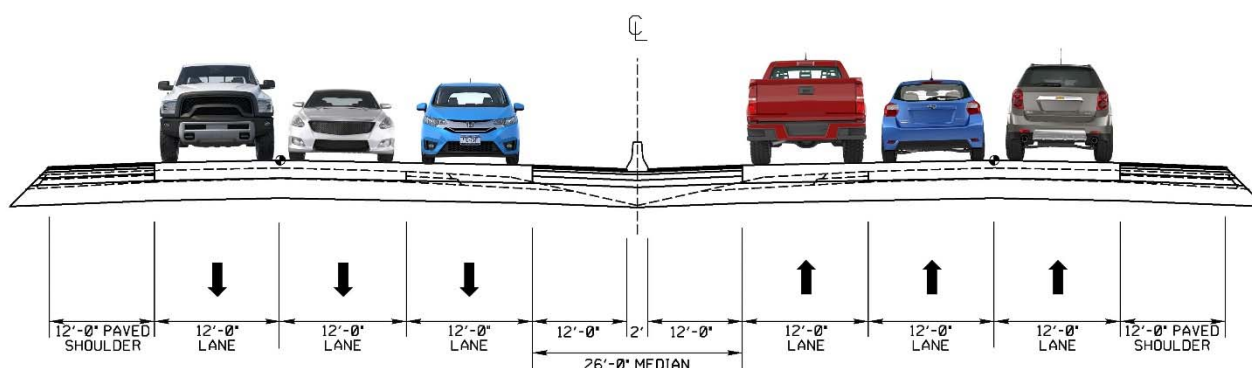
## Proposed Improvements

NCDOT proposes to widen I-26 to three lanes in each direction between US 25 and the US 25 (Asheville Highway) interchange and widen I-26 to four lanes in each direction from US 25 (Asheville Highway) to the I-40/I-240 interchange. This is also known as the Hybrid 6/8-Lane Alternative or the Preferred Alternative and was chosen as the LEDPA at the January 2017 Merger Meeting. The widening will be designed to best fit within the existing right of way limits for I-26 to the extent possible; however, some additional right of way will be required.

### *Typical Sections*

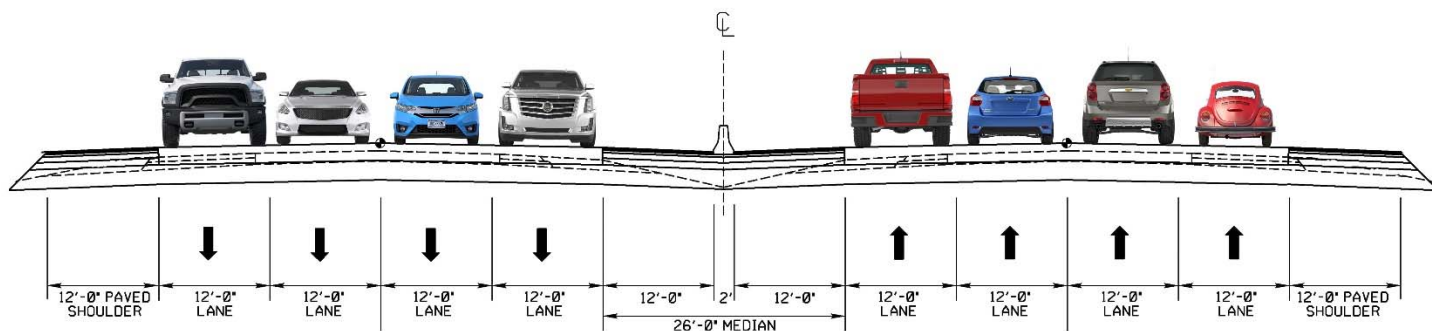
As shown on Inset 1, the proposed typical section for the six-lane section, from US 25 to US 25 (Asheville Highway), of the Preferred Alternative consists of three 12-foot travel lanes in each direction, with a 26-foot median that includes a median barrier wall.

#### **Inset 1. 6-Lane Typical Section**



As shown in Inset 2, the eight-lane section of the Preferred Alternative, from US 25 (Asheville Highway) to I-40/I-240, includes four lanes in each direction, with a 26-foot median that includes a median barrier wall. However, there are two areas where the northbound and southbound lanes separate and the median width varies.

## Inset 2. 8-Lane Typical Section



The typical width of the outside shoulders for both the six and eight-lane sections is 14 feet; 12 of the 14 feet will be paved. In locations with guardrail, the outside shoulder width is wider.

### Interchange Modifications

As part of the Preferred Alternative, the US 25 (Asheville Highway) interchange will be re-designed to a Diverging Diamond Interchange (DDI) type. The US 64 (Four Seasons Boulevard/Chimney Rock Road) interchange would also be improved as part of this project.

The majority of the interchanges along the project would not be modified in a notable way for the six-lane section of the Preferred Alternative; most modifications would be made on the eight-lane section. Ramp acceleration and deceleration lanes would be shifted outward to accommodate the widened roadway and will be tied back into existing ramp alignments.

### Blue Ridge Parkway Bridge

The columns supporting the bridge deck of the Blue Ridge Parkway bridge over I-26 are spaced in such a way that they do not accommodate widening of I-26. As a result, the bridge has been proposed for replacement by NCDOT and FHWA as part of this project. NCDOT and FHWA have coordinated with the National Park Service (NPS) in the development and evaluation of bridge replacement options. NPS has chosen Option 4, as its Preferred Option, which would replace the bridge to the south of the current bridge on new alignment, using a segmental concrete box girder bridge type with Caltrans Type 80 bridge rail. The bridge would have two ten-foot travel lanes, three-foot shoulders, and a five-foot sidewalk on the north side (Parkway west) to accommodate the Mountains-to-Sea Trail (MST) as noted in the *Blue Ridge Parkway Bridge Over Interstate 26 Technical Report* (NPS, July 2016).

### Structures

Of the 28 stream crossings along the study corridor, four are bridges, 15 are major culvert crossings (conveyance greater than or equal to a 72-inch pipe), and nine are 66-inch pipes. Of these 28 structures, 13 are recommended for replacement or modification, two crossings are no longer part of the project, and the remaining 13 sites will be retained. **Table 1** below shows structures recommended for replacement for the Preferred Alternative as agreed to at CP 2A.

There are also 13 structures, nine bridges and four interchanges, carrying roads over I-26 within the study area. Seven of the bridges will be replaced including: Crest Road, Clear Creek Road, Brookside Camp Road, Naples Road, Butler Bridge Road, Fanning Bridge Road, and the Blue Ridge Parkway.

**Table 1: Hydraulic Structures Concurred with at CP2A for the Hybrid 6/8-Lane Widening Alternative (Preferred Alternative/LEDPA)**

Site Number <sup>1</sup>	Station	Route	Stream Information							Existing Structure	Preferred Alternative	
			Stream Name NRTR Map ID	NCDWR Stream Index Number	Mitigation Ratio	Perennial/ Intermittent	Stream Length (ft)	Stream Class	Drainage Area (sq mi) [acres]	Number, Size, Structure Type (Existing Length)	Recommended Structure (Additional Length)	Cost Estimate – Culvert Extension (Bridge)
STIP Project Number I-4400A												
3	-L- 79+09	I-26	UT to Dunn Creek SV	6-55-8-1-1	2:1	P	725	C	0.28 [178]	1 @ 6' x 6' RCBC (240')	Retain and extend (18' [RT])/0' [LT])	\$100,000 (\$1,573,000)
4	-L- 90+32	I-26	Dunn Creek ST	6-55-8-1-1	2:1	P	845	C	2.58 [1,649]	2 @ 8' x 8' RCBC (354')	Retain existing; add supplemental pipe <sup>2</sup>	\$248,000 (\$1,501,000)
7	-L- 208+70	I-26	Devils Fork SAJ	6-55-8-2	2:1	P	2849	C	6.80 [4,351]	3 @ 9' X 10' RCBC (220')	Retain and extend (42' [RT])/20' [LT])	\$285,000 (\$1,645,000)
STIP Project Number I-4400B												
11	-L- 334+69	I-26	Clear Creek SBD	6-55-11-(5)	2:1	P	908	C	44.30 [28,352]	Dual 3 - Span RC Deck Bridges; L = 220.14'	Remove and replace; L (Min) = 230'	(\$3,577,000)
12	-L- 407+69	I-26	UT to Mud Creek SBG	6-55	1:1	P	1,433	C	0.46 [296]	1 @ 7' x 7' RCBC (266')	Retain and extend (18' [RT])/0'[LT])	\$40,000 (\$2,436,000)
14	-L- 500+94	I-26	Byers Creek SBU	6-55-13	2:1	P	1219	C	2.42 [1,550]	2 @ 8' x 8' RCBC (156')	Retain and extend; add supplemental pipe <sup>2</sup> (21' [RT])/16' [LT])	\$285,000 (\$1,070,000)
STIP Project Number I-4400C												
16	-L- 669+02	I-26	Cane Creek SCW	6-57-(9)	2:1	P	878	C	83.80 [53,632]	Dual 3 - Span RC Deck Bridges; L = 198.25'	Remove and replace; L (Min) = 210'	(\$3,876,000)
17	-L- 682+68	I-26	Kimsey Creek SCY	6-57-22	2:1	P	960	C	2.49 [1,594]	3 @ 7' x 7' RCBC (236')	Retain and extend; add supplemental pipe <sup>2</sup> (36' [RT])/48' [LT])	\$521,000 (\$2,151,000)
18	-Y12- 11+44	SR 1358	UT to French Broad River SDH	6-(54.5)	1:1	P	82	B	0.14 [88]	1 @ 6' x 5' RCBC - 66" RCP w/ HW (540')	Retain and extend (0' [RT])/8' [LT])	\$43,000
STIP Project Number I-4700A												
19	-L- 800+81	I-26	UT to French Broad River SDC	6-(54.5)	2:1	P	961	B	0.36 [228]	1 @ 6' x 6' RCBC (220')	Retain and extend; add supplemental pipe <sup>2</sup> (48' [RT])/27' [LT])	\$380,000 (\$2,236,000)
23	-L47001- 897+06	I-26	Powell Creek SDN	6-62	2:1	P	470	C	5.06 [3,240]	2 @ 10' x 10' RCBC (264')	Retain and extend (80' [RT])/24' [LT])	\$390,000 (\$2,322,000)
STIP Project Number I-4700B												
25	-L47002- 1076+40	I-26	French Broad River	6-(54.5)	2:1	P	893.5 <sup>3</sup>	B	678.00 [433,920]	Dual 6 - Span RC Deck Bridges; L1 = 440.9' L2 = 453.4'	Remove and replace; L (Min) = 460'	(\$8,074,000)
26 <sup>4</sup>	-L47002- 1151+85	I-26	Long Valley Branch SFN	6-75	1:1	P	44	C	0.25 [158]	1 @ 66" SPP w/ HW; 1 @ 14' x 14' RCBC [vehicle underpass] (220')	Retain and extend (20' [RT])/40' [LT])	\$171,000 (\$2,665,000)

<sup>1</sup> Minimum Supplemental Pipe Size is 48 inches.

<sup>2</sup> Site number referred to in the Hydraulic Technical Memorandum (HNTB, 2014).

<sup>3</sup> This is the average of the length of stream determined on both banks under the French Broad River bridge.

<sup>4</sup> Wetlands are only present at Site 26.



## Summary of Impacts from the Draft EIS

**Table 2** is a summary of impacts as shown in the Draft EIS (August 2016), which included a proposed partial cloverleaf design for the US 25 (Asheville Highway) interchange improvement. Following the publication of the Draft EIS, public meeting, and comment period, the Merger Team chose the Hybrid 6/8-Lane Widening Alternative as the LEDPA (January 2017) and NCDOT revised the US 25 (Asheville Highway) interchange to a DDI form.

**Table 2: Summary of Impacts for the Preferred Alternative in the Draft EIS (August 2016)**

IMPACT CATEGORY <sup>1</sup>	Hybrid 6/8-Lane Widening
<b>Human Environment</b>	
Residential Relocations (Minorities)	18 (6)
Business Relocations	1
Grave Site Relocations	0
Disrupts Neighborhood & Community Cohesion	No
Recurring Community / Neighborhood Impacts	Yes; minor relocation impacts to Brickton community. <sup>1</sup>
Low Income / Minority Populations	Yes; not disproportionately high and adverse.
Cultural Resources (Adverse Effect determined)	Yes; Blue Ridge Parkway and Cureton House <sup>2</sup>
Section 4(f)	Yes; Blue Ridge Parkway
Section 4(f) <i>de minimis</i>	Yes; Biltmore Estate, Hyder Dairy Farm, Camp Orr (Camp Pinewood), and Mountains to Sea Trail <sup>3</sup>
Visual Resources / Characteristics	No
Traffic Noise Impacts (# of receptors)	315 <sup>4</sup>
Air Quality	No
Farmland (acres)	11
Hazardous Materials	Minimal monetary and scheduling impacts.
<b>Natural Resources</b>	
Federal Listed Species Habitat	May affect but not likely to adversely affect the Northern long-eared bat (NLEB) <sup>5,6</sup> . No effect on other species in Henderson and Buncombe Counties. <sup>7</sup>
Jurisdictional Streams (linear feet) <sup>8</sup>	24,650
Jurisdictional Wetlands (acres) <sup>8</sup>	7.7
100-year Floodplain (acres) <sup>8</sup>	41.8
500-year Floodplain (acres) <sup>8</sup>	17.3

**Table 2: Summary of Impacts for the Preferred Alternative in the Draft EIS (August 2016)**

IMPACT CATEGORY <sup>1</sup>	Hybrid 6/8-Lane Widening
Ponds (acres) <sup>8</sup>	0.05
<b>Indirect and Cumulative Effects</b>	<p>Based on this assessment of the currently identified project alternatives, STIP Project I-4400/I-4700 is not expected to have a notable indirect effect on land use in the FLUSA. Potential land use effects as a result of STIP Project I-4400/I-4700 are somewhat tempered by the fact that the project is not expected to provide any new access or opportunities for traffic exposure to properties in the FLUSA, and will generate marginal travel time savings.</p> <p>Some amount of regional cumulative impacts can be expected for notable cultural, community, water quality, and natural habitat features. This is due to features having minimal incorporation in local planning protections and/or policies. The Cumulative Effects Tool indicated that cumulative effects were rated as a medium level of concern as a result of the reasonably-foreseeable transportation projects in the region.</p>

<sup>1</sup> Following the publication of the Draft EIS, NCDOT determined that the Brickton community will not be affected by the project as documented in the project file and the Final EIS/ROD.

<sup>2</sup> Following the decision to revise the US 25 (Asheville Highway) interchange design to a Diverging Diamond Interchange SHPO and FHWA agreed that the project would have “no effect” on this property.

<sup>3</sup> Following the publication of the Draft EIS, NCDOT was informed that the French Broad River Paddle Trail is a Section 4(f) resource.

<sup>4</sup> Following the publication of the Draft EIS, NCDOT adopted the 2016 Noise Policy and Guidance. An Updated Traffic Noise Report (HNTB, 2017) followed this guidance, and determined that there are 399 impacted noise receptors.

<sup>5</sup> NCDOT will follow NPS mitigation protocol for the NLEB as detailed in the Special Commitments (Green Sheets) and Section 3.8.6.2.2 of the Draft EIS.

<sup>6</sup> May affect, not likely to adversely affect; however, NCDOT has determined that the proposed action does not require separate Section 7 consultation because the proposed action is consistent with the final Section 4(d) rule.

<sup>7</sup> Following the publishing of the Draft EIS, a gray bat roost was found near the project by USFWS and NC WRC and NPS recorded potential Indiana bat calls in the vicinity of the Blue Ridge Parkway. NCDOT is preparing a Biological Assessment (BA) for the threatened and endangered species in the project area. This is documented in the project file and will be included in the Correspondence and Response to Comments in the appendices to the Final EIS/ROD.

<sup>8</sup> Impacts based on current design proposed slope stake limits plus 40 feet.

## **Avoidance and Minimization**

The following discussion and tables identify ways in which NCDOT has avoided and minimized to reduce impacts to the human and natural environment throughout the project development process.

Impacts are calculated based on preliminary design slope stakes plus 25 feet. Preliminary design for the I-26 Widening project was completed on LIDAR mapping and incorporates horizontal and vertical design elements and cross sections. The preliminary designs do not include hydraulic design or utilities design, which will be completed during the final design phase. Utility conflicts are mostly limited to interstate crossings, as opposed to parallel services.

The current designs presented at CP4A incorporate avoidance and minimization measures to the human and natural environment, including threatened and endangered species and jurisdictional streams and wetlands, for the entire project length. The following discussion and data tables quantify the reductions

of jurisdictional impacts from the incorporation of the avoidance and minimization measures summarized above. Once hydraulic design, utilities design, and geotechnical recommendations are complete, there may be further minor refinements at CP4B–30 Percent Hydraulic Review and CP4C–Permit Drawing Review for each project section.

The proposed project minimizes impacts to resources to the extent practicable based on current information and design. However, it is not feasible to completely avoid impacts to Waters of the US, cultural resources, and properties, as well as meet the purpose and need of the project. NCDOT is proposing a best fit widening that includes widening into the median to the maximum extent practicable, which results in avoidance and minimization of impacts and results in a reduced footprint for the overall project. By widening into the median, opportunities for vertical and horizontal changes and alignment shifts are limited and were determined not to be practicable. NCDOT has also reduced slope stake limits from the standard 4:1 to 2:1 slope stake limits to further avoid and minimize impacts. Further, NCDOT selected the DDI at the US 25 Interchange which has fewer impacts than the ParCloB and Synchronized Interchange (discussed below).

The reductions to jurisdictional impacts are as follows (*Note: Reductions to impacts are the difference between current design with 4:1 slope stake limits plus 40 feet and current design with 2:1 slope stake limits plus 25 feet. Slope stake limits plus 25 feet are used at CP4A*):

- By reducing the slope stake limits from 4:1 to 2:1, NCDOT:
  - o Minimized impacts to streams by approximately 10,000 feet,
  - o Avoided impacts to 19 wetlands (approximately 1.2 acres),
  - o Minimized impacts to wetlands by approximately 9.6 acres including approximately 2.6 acres to wetland WCH (Biltmore Bog), and
  - o Avoided impacts to two ponds (>0.1 acre).
- By selecting the DDI design at US 25 (Asheville Highway) instead of the ParClo B design, NCDOT:
  - o Minimized approximately 890 feet of stream impacts, and
  - o Minimized approximately 0.2 acre of wetland impacts.

Additional avoidance and minimization measures to the human environment include:

- NCDOT minimized the number of Residential Relocations from 18 (ParClo B) to 8 (DDI) and Business Relocations from 1 (ParClo B) to 0 (DDI).
- NCDOT minimized the design footprint at the US 25 (Asheville Highway) interchange was determined to have “no effect” to the Cureton House property under Section 106 of the National Historic Preservation Act.

NCDOT will continue to coordinate with the Section 404/NEPA Merger Team to identify avoidance and minimization measures to all waters of the U.S. and ensure that major hydraulic structures associated with the project are designed and installed to minimize negative impacts to stream stability (and therefore, water quality) to the extent practicable at CP4B and CP4C.

### *US 25 (Asheville Highway) Interchange*

Following the publication of the Draft EIS, the public and agencies expressed an interest in NCDOT considering other options that would reduce impacts compared with the current partial cloverleaf design for the US 25 (Asheville Highway) interchange. NCDOT conducted a Value Engineering Study following publication of the Draft EIS and a concept for a Synchronized Interchange was put forward. NCDOT chose to study the Synchronized Interchange and the DDI interchange types. Although the

Synchronized Interchange performed slightly better than the DDI in the traffic analysis, it would also require replacement of the current bridge, which would increase cost, and the Division felt that the U-turn movements would be undesirable for the heavy truck traffic at the interchange. Therefore, NCDOT chose to revise the interchange to a DDI interchange type. **Table 3** shows the impacts of the Partial Cloverleaf option presented in the Draft EIS and the DDI.

**Table 3: Potential Impacts for Preferred Alternative by Proposed US 25 (Asheville Highway) Interchange Design Concept**

Impact Type	ParClo B Interchange	DDI	Percent Difference
Stream (linear feet) <sup>1</sup>	1,966	1,075	-58.6
Wetland (acres) <sup>1</sup>	0.2	0	-100
Pond (acres) <sup>1</sup>	0	0	-
Natural Communities <sup>2</sup>			
Maintained / Disturbed (acres)	34.7	34.0	-2.0
Montane Oak-Hickory Forest (acidic subtype) (acres)	6.6	5.6	-15.2
Montane Oak-Hickory Forest (white pine subtype) (acres)	6.5	2.1	-67.7
Acidic Cove Forest (acres)	3.0	2.9	-3.3
Parcel (number/acres) <sup>3</sup>	41 / 21.3	11 / 1.6	-73.2 / -92.5
Relocations (number) <sup>3</sup>	11	0	-100
Signs (number) <sup>3</sup>	-	1	+100
Estimated Construction Cost <sup>4</sup>	\$8,800,000	\$6,500,000	-26.1
Estimated Right of Way Cost <sup>4</sup>	\$4,536,500	\$1,170,500	-74.2

<sup>1</sup> Impacts based on current design proposed slope stake limits plus 25 feet;

<sup>2</sup> Impacts based on current design proposed slope stake limits plus 40 feet;

<sup>3</sup> Impacts based on proposed right of way;

<sup>4</sup> Cost estimated by NCDOT: ParClo B estimate (8/2016) (included in Draft EIS); DDI estimate (4/26/2017 and 6/19/2017).

### *Cultural Resources*

The Cureton House property, located at 48 Cureton Place, was avoided with the DDI design type at the US 25 (Asheville Highway) interchange. The NC Historic Preservation Office (SHPO) and FHWA determined that the project would have “no effect” on this Section 106 resource.

### *Farmland Resources*

The Natural Resource Conservation Service (NRCS) requested that the farmland soils be recalculated in their comments on the Draft EIS. The farmland impacts were re-assessed for the alternatives. **Table 4** shows the reassessed farmland impacts based on current design proposed slope stake limits plus 40 feet.

**Table 4: Potential Farmland Impacts**

	<b>6-Lane Widening Alternative</b>	<b>8-Lane Widening Alternative</b>	<b>Preferred Alternative Hybrid 6/8-Lane Widening Alternative</b>
Prime Farmland	1.4	3.5	3.6
Farmland of Statewide Importance	1.4	3.2	2.3
Farmland of Local Importance	17.7	22.4	22.4
<b>Total:</b>	20.5	29.1	28.3

The Preferred Alternative may convert approximately 28.3 acres, based on current design proposed slope stake limits plus 40 feet, to non-farmable use. This area is approximately three percent of the project area, most of which is in an US Census Bureau designated Urban Area. This land is currently not farmland, and though heavily wooded, is not in timber production. It is expected that as the design is refined the amount of impacted farmland soils will be reduced. It is not expected that this project will affect the likelihood of future farming along the I-26 corridor. Furthermore, the assessed area received 48 points, which is below the 160-point threshold for recommended mitigation by NRCS.

### *Natural Resources*

#### Threatened and Endangered Species

There are no known occurrences of rusty-patched bumble bee, tan riffleshell, Spotfin chub, spreading avens, Carolina northern flying squirrel, rock gnome lichen, swamp pink, small whorled pogonia, spruce fir moss spider, bunched arrowhead, mountain sweet pitcher plant, white irisette, Blue Ridge goldenrod, or Virginia spiraea. Therefore, these species are not listed for minimization efforts.

**Appalachian elktoe (*Alasmidonta raveneliana*)** – Endangered – May Affect Likely to Adversely Affect – NCDOT is working with the US Fish and Wildlife Service (USFWS) and will submit a Biological Assessment (BA) under Section 7 of the Endangered Species Act. A recent survey of streams near the project study area found two individuals upstream and downstream of the I-26 bridge over the French Broad River. Three Oaks was contracted by NCDOT for both the field surveys and the species discussion in the BA.

**Bog turtle (*Glyptemys muhlenbergii*)** – Threatened due to similarity of appearance T(S/A) – The proposed current design attempted to reduce impacts to the Biltmore Bog by utilizing guardrail and 2:1 fill slopes. This minimization measure limits the extent of the project's slope stake limits to the greatest practicable extent. It is also important to note that the current impacts are based on current design proposed slope stake limits plus a 25-foot buffer. The actual impacts will be based on a more refined design's slope stake limits plus a 10-foot buffer. The greater refinement will reduce the calculated impact area in the Biltmore Bog.

**Northern long-eared bat (NLEB) (*Myotis septentrionalis*)** – Threatened – May Affect Not Likely to Adversely Affect – As noted in the *US 25 NRTR Addendum* and reviewed in the *NRTR Addendum 4*, the nearest NLEB hibernacula record is 11.5 miles away and no known NLEB roost trees occur within 150 feet of the project area. NCDOT has determined that the proposed action does not require separate consultation because the proposed action is consistent with the final Section 4(d) rule, codified at 50 CFR 17.40(o). However, NCDOT has agreed to limit tree clearing to between August 15 and May 15 within 0.25 mile of the Blue Ridge Parkway, as required by the agreement with the NPS and USFWS.

**Indiana bat (*Myotis sodalis*)** – May Affect Not Likely to Adversely Affect – The Indiana bat is not federally listed in Buncombe or Henderson County. However, NCDOT has agreed to avoid adverse impacts to Indiana bats within the boundaries of the Blue Ridge Parkway. This commitment is to conduct emergent and/or acoustic surveys prior to removal of trees if construction occurs between April 15 and August 15. Further, no significant tree removal can occur within 5 miles of known hibernacula between April 1 and November 15.

**Gray bat (*Myotis grisescens*)** – Endangered – May Affect Likely to Adversely Affect – NCDOT is working with the US Fish and Wildlife Service (USFWS) and will submit a Biological Assessment (BA) under Section 7 of the Endangered Species Act.

Calyx Engineers was contracted by NCDOT to perform a survey of the structures within the study area to determine if there was evidence of the gray bat. The field survey included 24 bridges and 18 culverts (at least 5 feet high and 200 feet long) within the project study area. The findings were reported in the Structures Survey Report, and determined that only one structure, the Long Shoals Road bridge over the French Broad River, is a bat roost. The evidence found at this structure indicates that bats may be using this bridge infrequently for night roosting. No maternity roosts were found during the survey.

In addition to the structure survey, Calyx has also performed an acoustic survey. The acoustic survey report will be finalized November 2017.

#### Streams and Wetlands

**Figure 2** shows streams and wetlands within the limits of the current design proposed slope stake limits. Impacts to streams and wetlands have also been developed based on current design proposed slope stake limits plus an additional 25 feet.

**Table 5** shows the reduction in impacts from reducing the US 25 (Asheville Highway) design footprint from a Partial Cloverleaf B (ParClo B) to a DDI. This comparison is based on current design proposed slope stake limits plus 25 feet.

**Table 5: Comparison of Potential Impacts to Jurisdictional Features for the Preferred Alternative by Interchange Type**

	Hybrid 6/8-Lane Widening with ParClo B Design (SS+25')	Hybrid 6/8-Lane Widening with DDI Design (SS+25')	Percent Difference
Jurisdictional Streams (linear feet)	19,415	18,541	-4.5
Jurisdictional Wetlands (acres)	4.82	4.66	-3.3
Ponds (acres)	0.05	0.05	0
FEMA Floodplain			
100-year Floodplain (acres)	30.4	30.4	0
500-year Floodplain (acres)	17.6	17.6	0

**Table 6** compares the individual stream impacts for the I-26 with ParClo B design at US 25 (Asheville Highway) and the I-26 with DDI at US 25 (Asheville Highway). The comparison is of the current design

proposed slope stake limits plus an additional 25-foot buffer. The table also includes a column that tabulates current design with 4:1 slope stake limits plus 40 feet; however, the jurisdictional impacts reported at CP4A are based on current design with 2:1 slope stake limits. Although a project commitment has been added for Beck Creek, implementing *Design Standards in Sensitive Watersheds*, no impacts to this stream or its tributaries are anticipated.



Table 6: Comparison of Stream Impacts for I-26 Widening

Stream	MAP ID	NCDWR Index Number	Perennial (P)/ Intermittent (I)	Best Usage Classification	Mitigation Ratio	Stream Impacts <sup>1</sup> (ft) (4:1 SS+40')	I-26 Widening Draft EIS Impacts Including ParCloB Design at US 25 (Asheville Highway)					I-26 Widening Updated Impacts Including DDI Design at US 25 (Asheville Highway)			
							Stream Impacts <sup>2</sup> (ft) (2:1 SS)	Mitigation Cost	Stream Impacts <sup>2</sup> (ft) (2:1 SS+25')	Mitigation Cost		Stream Impacts <sup>2</sup> (ft) (2:1 SS)	Mitigation Cost	Stream Impacts <sup>2</sup> (ft) (2:1 SS+25')	Mitigation Cost
STIP Project Number I-4400A															
Broad River Basin (HUC 03050105)															
UT to Beck Creek	SA	9-29-27	P	C-Tr	2:1	80.2	3.0	\$2,389	40.1	\$31,625		3.0	\$2,390	40.1	\$31,626
French Broad River Basin (HUC 06010105)															
UT to Dunn Creek	SS	6-55-8-1-1	P	C	1:1	318.7	151.6	\$59,722	250.5	\$98,686		151.6	\$59,721	250.5	\$98,686
UT to Dunn Creek	SQ	6-55-8-1-1	P	C	2:1	477.2	—	\$0	147.9	\$116,532		—	\$0	147.9	\$116,524
UT to Dunn Creek	SW	6-55-8-1-1	P/I	C	1:1	917.6	274.2	\$108,016	666.7	\$262,664		274.2	\$108,022	666.7	\$262,664
UT to Dunn Creek	SV	6-55-8-1-1	P	C	2:1	185.3	14.6	\$11,512	76.6	\$60,357		14.6	\$11,512	76.6	\$60,357
Dunn Creek	ST	6-55-8-1-1	P	C	2:1	27.7	—	\$0	0.6	\$494		—	\$0	0.6	\$494
UT to Dunn Creek	SY	6-55-8-1-1	I	C	1:1	163.0	—	\$0	—	\$0		—	\$0	—	\$0
UT to Dunn Creek	SZ	6-55-8-1-1	P/I	C	1:1	854.6	—	\$0	234.0	\$92,197		—	\$0	234.0	\$92,192
UT to Dunn Creek	SAA	6-55-8-1-1	I	C	1:1	173.5	63.6	\$25,059	143.5	\$56,555		63.6	\$25,058	143.5	\$56,554
UT to Bat Fork	SAH	6-55-8-1	P	C	2:1	34.6	—	\$0	14.8	\$11,699		—	\$0	14.8	\$11,700
UT to Devils Fork	SAE	6-55-8-2	P	C	1:1	111.6	22.2	\$8,763	111.6	\$43,965		22.2	\$8,762	111.6	\$43,965
UT to Devils Fork	SAB	6-55-8-2	P	C	1:1	1,768.6	144.6	\$56,966	1,581.2	\$622,980		144.6	\$56,960	1,581.1	\$622,973
UT to Devils Fork	SAI	6-55-8-2	I	C	1:1	54.7	14.1	\$5,545	39.5	\$15,559		14.1	\$5,545	39.5	\$15,559
UT to Devils Fork	SAC	6-55-8-2	P	C	1:1	92.9	25.0	\$9,846	77.1	\$30,368		25.0	\$9,846	77.1	\$30,368
UT to Devils Fork	SAL	6-55-8-2	P	C	1:1	138.4	26.0	\$10,250	94.3	\$37,144		26.0	\$10,250	94.3	\$37,144
UT to Devils Fork	SAO	6-55-8-2	P	C	1:1	113.4	10.9	\$4,280	59.8	\$23,553		10.9	\$4,280	59.8	\$23,553
Devils Fork	SAJ	6-55-8-2	P	C	2:1	1,793.1	75.0	\$59,098	1,091.1	\$859,821		75.0	\$59,096	1,091.1	\$859,811
UT to Devils Fork	SAM	6-55-8-2	I	C	1:1	25.9	—	\$0	—	\$0		—	\$0	—	\$0
UT to Devils Fork	SAN	6-55-8-2	P	C	2:1	12.4	—	\$0	—	\$0		—	\$0	—	\$0
UT to Devils Fork	SAP	6-55-8-2	P	C	2:1	76.7	—	\$0	—	\$0		—	\$0	—	\$0
UT to Devils Fork	SAW	6-55-8-2	P	C	1:1	75.5	34.1	\$13,445	60.5	\$23,826		34.1	\$13,445	60.5	\$23,826
UT to Devils Fork	SAV	6-55-8-2	P	C	1:1	24.2	—	\$0	7.4	\$2,917		—	\$0	7.4	\$2,917
UT to Devils Fork	SBW	6-55-8-2	I	C	1:1	75.4	—	\$0	75.4	\$29,692		—	\$0	75.4	\$29,692
UT to Devils Fork (West)	SAR	6-55-8-2	P	C	1:1	54.8	10.6	\$4,169	38.2	\$15,046		10.6	\$4,170	38.2	\$15,046
UT to Camp Branch	SAS	6-55-8-2-1	P	B	1:1	90.0	13.3	\$5,229	54.6	\$21,519		13.3	\$5,229	54.6	\$21,519
UT to Camp Branch	SBL	6-55-8-2-1	I	B	1:1	143.9	36.6	\$14,411	137.1	\$54,023		36.6	\$14,411	137.1	\$54,024
UT to Camp Branch	SAX	6-55-8-2-1	I	B	1:1	101.4	19.0	\$7,504	66.4	\$26,177		19.0	\$7,504	66.4	\$26,174
STIP Project Number I-4400B															
UT to Allen Branch	SAZ	6-55-11-14	P/I	C	2:1	251.7	84.9	\$66,919	236.7	\$186,482		84.9	\$66,921	236.7	\$186,481
UT to Allen Branch (West)	SBA	6-55-11-14	I	C	1:1	41.7	—	\$0	25.8	\$10,150		—	\$0	25.8	\$10,150
UT to Allen Branch (East)	SBA	6-55-11-14	I	C	2:1	26.0	—	\$0	10.7	\$8,405		—	\$0	10.7	\$8,405
Clear Creek - BRIDGED	SBD	6-55-11-(5)	P	C	2:1	555.8	—	\$0	422.1	\$332,631		—	\$0	422.1	\$332,628
UT to Mud Creek	SBG	6-55	P	C	1:1	1,154.3	79.5	\$31,332	449.0	\$176,911		79.5	\$31,326	449.0	\$176,911
UT to Mud Creek	SBF	6-55	P	C	1:1	261.7	36.4	\$14,331	169.0	\$66,593		36.4	\$14,330	169.0	\$66,593
Featherstone Creek	SBP	6-55-12	P	C	2:1	74.3	1.9	\$1,466	41.0	\$32,312		1.9	\$1,466	41.0	\$32,312
UT to Mud Creek	SBO	6-55	P	C	2:1	83.3	7.6	\$5,991	51.9	\$40,916		7.6	\$5,991	51.9	\$40,916

Table 6: Comparison of Stream Impacts for I-26 Widening

Stream	MAP ID	NCDWR Index Number	Perennial (P)/ Intermittent (I)	Best Usage Classification	Mitigation Ratio	Stream Impacts <sup>1</sup> (ft) (4:1 SS+40')	I-26 Widening Draft EIS Impacts Including ParCloB Design at US 25 (Asheville Highway)					I-26 Widening Updated Impacts Including DDI Design at US 25 (Asheville Highway)			
							Stream Impacts <sup>2</sup> (ft) (2:1 SS)	Mitigation Cost	Stream Impacts <sup>2</sup> (ft) (2:1 SS+25')	Mitigation Cost		Stream Impacts <sup>2</sup> (ft) (2:1 SS)	Mitigation Cost	Stream Impacts <sup>2</sup> (ft) (2:1 SS+25')	Mitigation Cost
UT to Mud Creek	SBI	6-55	P	C	2:1	193.1	28.2	\$22,260	88.5	\$69,737		28.2	\$22,260	88.5	\$69,737
UT to Mud Creek	SBS	6-55	I	C	1:1	55.4	55.4	\$21,811	55.4	\$21,811		55.4	\$21,811	55.4	\$21,811
UT to Byers Creek	SBV	6-55-13	P	C	2:1	225.1	41.8	\$32,977	176.2	\$138,870		41.8	\$32,978	176.2	\$138,872
Byers Creek	SBU	6-55-13	P	C	2:1	124.9	36.7	\$28,938	89.2	\$70,318		36.7	\$28,938	89.2	\$70,318
UT to Byers Creek	SBT	6-55-13	I	C	1:1	223.1	19.7	\$7,770	191.7	\$75,549		19.7	\$7,770	191.8	\$75,550
UT to Byers Creek	SCB	6-55-13	P	C	2:1	79.1	2.4	\$1,901	42.7	\$33,637		2.4	\$1,901	42.7	\$33,637
UT to Byers Creek	SCA	6-55-13	P	C	2:1	80.0	6.3	\$4,952	49.2	\$38,748		6.3	\$4,951	49.2	\$38,748
UT to Byers Creek	SCD	6-55-13	P	C	2:1	125.7	6.9	\$5,401	110.7	\$87,204		6.9	\$5,400	110.7	\$87,203
UT to Mud Creek	SCH	6-55	I	C	1:1	57.3	10.2	\$4,001	38.7	\$15,234		10.2	\$4,000	38.7	\$15,234
UT to Mud Creek	SCM	6-55	I	C	1:1	46.7	—	\$0	6.1	\$2,385		—	\$0	6.1	\$2,385
UT to Mud Creek	SCN	6-55	P	C	1:1	876.4	397.5	\$156,612	705.6	\$278,002		397.5	\$156,614	705.6	\$278,002
UT to Mud Creek	SCK	6-55	P	C	2:1	344.3	87.3	\$68,770	139.2	\$109,652		87.3	\$68,770	139.2	\$109,652
UT to Mud Creek	SCI	6-55	P	C	2:1	205.9	—	\$0	—	\$0		—	\$0	—	\$0
UT to Mud Creek	SCL	6-55	P	C	2:1	146.2	54.3	\$42,810	101.6	\$80,047		54.3	\$42,810	101.6	\$80,046
UT to Mud Creek	SCO	6-55	P	C	2:1	647.7	504.8	\$397,748	575.8	\$453,692		—	\$0	22.0	\$17,346
UT to Mud Creek	SCP	6-55	I	C	1:1	149.6	104.4	\$41,132	133.5	\$52,604		—	\$0	—	\$0
STIP Project Number I-4400C															
UT to Mud Creek	SEN	6-55	P	C	2:1	341.0	93.8	\$73,879	190.1	\$149,814		—	\$0	335.5	\$264,399
UT to Mud Creek	SCR	6-55	P	C	1:1	136.6	129.9	\$51,182	136.6	\$53,806		60.3	\$23,760	92.6	\$36,473
UT to Mud Creek	SCQ	6-55	P/I	C	2:1	595.6	546.2	\$430,383	576.4	\$454,235		408.7	\$322,070	433.7	\$341,761
UT to Mud Creek	SCT	6-55	P	C	2:1	386.3	201.0	\$158,384	354.0	\$278,955		75.8	\$59,729	191.1	\$150,625
UT to Cane Creek <sup>2</sup>	SCU	6-57-(9)	I	C	1:1	218.7	87.9	\$34,644	183.4	\$72,249		87.9	\$34,644	183.4	\$72,248
UT to Cane Creek <sup>2</sup>	SCX	6-57-(9)	P	C	2:1	789.1	107.3	\$84,578	738.9	\$582,262		107.3	\$84,564	738.9	\$582,261
Cane Creek <sup>2</sup> - BRIDGED	SCW	6-57-(9)	P	C	2:1	411.0	41.7	\$32,830	201.2	\$158,571		41.7	\$32,830	201.2	\$158,570
UT to Kimsey Creek	SCZ	6-57-22	P	C	2:1	96.7	15.2	\$11,965	40.6	\$31,990		15.2	\$11,965	40.6	\$31,990
Kimsey Creek	SCY	6-57-22	P	C	2:1	336.4	55.2	\$43,503	121.2	\$95,476		55.2	\$43,503	121.2	\$95,476
UT to Kimsey Creek	SDR	6-57-22	I	C	2:1	213.5	213.5	\$168,256	213.5	\$168,256		213.5	\$168,256	213.5	\$168,256
UT to French Broad River	SDH	6-(54.5)	P/I	B	1:1	624.7	273.2	\$107,628	483.1	\$190,356		283.0	\$111,518	500.3	\$197,131
UT to French Broad River	SDI	6-(54.5)	P/I	B	1:1	357.4	254.9	\$100,432	342.3	\$134,875		254.9	\$100,433	342.3	\$134,875
UT to Higgins Branch <sup>3</sup>	SZY	6-57-22-2	I	C	2:1	334.5	162.0	\$127,641	294.6	\$232,120		162.0	\$127,641	294.6	\$232,120
STIP Project Number I-4700A															
UT to French Broad River	SDD	6-(54.5)	P/I	C	1:1	587.7	135.1	\$53,247	587.7	\$231,571		135.1	\$53,244	587.7	\$231,571
UT to French Broad River	SDC	6-(54.5)	P	B	2:1	139.1	44.2	\$34,798	102.5	\$80,794		44.2	\$34,797	102.5	\$80,797
UT to French Broad River (West)	SDE	6-(54.5)	P	B	1:1	58.7	16.8	\$6,626	43.0	\$16,939		16.8	\$6,626	43.0	\$16,939
UT to French Broad River (East)	SDE	6-(54.5)	P	B	2:1	71.1	30.8	\$24,248	56.1	\$44,213		30.8	\$24,248	56.1	\$44,213
UT to French Broad River	SDF	6-(54.5)	P	B	2:1	106.8	61.9	\$48,740	91.0	\$71,731		61.9	\$48,740	91.0	\$71,732
UT to French Broad River	SDG	6-(54.5)	P	B	2:1	68.9	43.0	\$33,905	68.9	\$54,296		43.0	\$33,904	68.9	\$54,296
UT to French Broad River	SFX	6-(54.5)	I	B	2:1	84.0	47.3	\$37,302	72.6	\$57,185		47.3	\$37,301	72.6	\$57,184
UT to French Broad River	SDK	6-(54.5)	P	B	2:1	120.7	48.9	\$38,520	75.1	\$59,142		48.9	\$38,519	75.1	\$59,143

Table 6: Comparison of Stream Impacts for I-26 Widening

Stream	MAP ID	NCDWR Index Number	Perennial (P)/ Intermittent (I)	Best Usage Classification	Mitigation Ratio	Stream Impacts <sup>1</sup> (ft) (4:1 SS+40')	I-26 Widening Draft EIS Impacts Including ParCloB Design at US 25 (Asheville Highway)					I-26 Widening Updated Impacts Including DDI Design at US 25 (Asheville Highway)			
							Stream Impacts <sup>2</sup> (ft) (2:1 SS)	Mitigation Cost	Stream Impacts <sup>2</sup> (ft) (2:1 SS+25')	Mitigation Cost		Stream Impacts <sup>2</sup> (ft) (2:1 SS)	Mitigation Cost	Stream Impacts <sup>2</sup> (ft) (2:1 SS+25')	Mitigation Cost
Powell Creek	SDN	6-62	P	B	2:1	145.6	53.0	\$41,789	111.1	\$87,517		53.0	\$41,789	111.1	\$87,516
STIP Project Number I-4700B															
UT to French Broad River (West)	SDU	6-(54.5)	P	B	1:1	30.0	—	\$0	14.2	\$5,577		—	\$0	14.2	\$5,577
UT to French Broad River (East)	SDU	6-(54.5)	P	B	2:1	113.6	34.4	\$27,075	72.7	\$57,292		34.4	\$27,075	72.7	\$57,288
UT to French Broad River	SDV	6-(54.5)	P	B	2:1	72.4	25.5	\$20,082	55.3	\$43,592		25.5	\$20,082	55.3	\$43,591
UT to French Broad River	SDW	6-(54.5)	P	B	2:1	78.0	25.3	\$19,975	59.9	\$47,213		25.3	\$19,974	60.0	\$47,292
UT to French Broad River	SDX	6-(54.5)	P/I	B	1:1	2,207.1	399.6	\$157,444	1,043.2	\$411,017		399.6	\$157,443	1,043.2	\$411,014
UT to French Broad River	SEU	6-(54.5)	P	B	2:1	18.3	10.6	\$8,336	18.3	\$14,442		10.6	\$8,336	18.3	\$14,442
UT to French Broad River	SEW	6-(54.5)	P	B	2:1	107.4	12.8	\$10,109	37.9	\$29,828		12.8	\$10,109	37.9	\$29,828
UT to French Broad River	SEV	6-(54.5)	P	B	2:1	58.8	16.8	\$13,213	43.7	\$34,458		16.8	\$13,214	43.7	\$34,459
UT to French Broad River	SDY	6-(54.5)	P	B	2:1	72.0	2.3	\$1,815	22.5	\$17,764		2.3	\$1,815	22.5	\$17,764
UT to French Broad River	SEQ	6-(54.5)	P	B	2:1	146.5	24.2	\$19,070	74.5	\$58,671		24.2	\$19,070	74.5	\$58,671
UT to French Broad River	SED	6-(54.5)	P	B	2:1	130.6	9.4	\$7,425	66.7	\$52,526		9.4	\$7,425	66.7	\$52,526
UT to French Broad River	SEF	6-(54.5)	P	B	2:1	520.3	368.1	\$290,087	505.3	\$398,189		368.1	\$290,083	505.3	\$398,189
UT to French Broad River (West - roadside)	SEE	6-(54.5)	P	B	0.5:1	18.8	18.8	\$0	18.8	\$3,706		18.8	\$0	18.8	\$3,706
UT to French Broad River (East)	SEE	6-(54.5)	P	B	1:1	407.0	—	\$0	347.0	\$136,736		—	\$0	347.0	\$136,734
UT to French Broad River (West)	SEE	6-(54.5)	P	B	2:1	0.9	—	\$14,824	—	\$0		—	\$14,824	—	\$0
French Broad River - BRIDGED		6-(54.5)	P	B	2:1	355.3	178.7	\$140,813	279.2	\$220,015		178.7	\$140,813	279.2	\$220,013
UT to Dellwood Lake	SFG	6-69	P	C	2:1	2,733.8	495.8	\$390,719	2,010.0	\$1,583,848		495.8	\$390,715	2,010.0	\$1,583,846
UT to French Broad River	SFO	6-(54.5)	I	B	2:1	161.6	13.3	\$10,493	56.7	\$44,691		13.3	\$10,493	56.7	\$44,691
UT to Dellwood Lake	SFI	6-69	I	C	1:1	83.3	—	\$0	7.3	\$2,884		—	\$0	7.3	\$2,884
UT to Dellwood Lake	SFR	6-69	P	C	2:1	54.2	27.8	\$21,928	46.0	\$36,286		27.8	\$21,929	46.0	\$36,286
UT to Dellwood Lake	SFQ	6-69	P/I	C	1:1	235.7	43.7	\$17,233	96.8	\$38,133		43.7	\$17,233	96.8	\$38,133
UT to Dellwood Lake	SFY	6-69	P	C	2:1	36.8	—	\$0	—	\$0		—	\$0	—	\$0
UT to Long Valley Branch	SFP	6-75	P	C	1:1	80.0	22.7	\$8,934	50.0	\$19,711		22.7	\$8,934	50.0	\$19,712
Long Valley Branch	SFN	6-75	P	C	1:1	43.8	24.9	\$9,797	43.8	\$17,247		24.9	\$9,797	43.8	\$17,247
UT to Long Valley Branch	SFM	6-75	I	C	1:1	414.3	29.1	\$11,450	382.0	\$150,512		29.0	\$11,441	382.0	\$150,511
Total:						28,812	6,951	\$4,308,627	19,415	\$11,649,977		5,926	\$3,565,326	18,541	\$11,024,287

<sup>1</sup> Impacts calculated based on current design proposed 4:1 slope stake limits plus 40 feet (SS+40) to demonstrate a substantive avoidance and minimization measure implemented prior to the Draft EIS. This includes the ParClo B design at US 25 Interchange.

<sup>2</sup> Impacts calculated based on current design proposed 2:1 slope stake (SS) limits or current design proposed 2:1 slope stake limits plus 25 feet (SS+25).

<sup>3</sup> This stream is designated as a “cold water” stream for purposes of mitigation.

<sup>4</sup> No mitigation ratio has been provided or agreed to for this stream, therefore a 2:1 mitigation ratio was applied.

**Table 7** compares the individual wetland impacts for the I-26 with ParClo B design at US 25 (Asheville Highway) and the I-26 with DDI design at US 25 (Asheville Highway), chosen for the Final EIS and ROD. The comparison is of the current design proposed slope stake (SS) limits and current design proposed slope stake limits plus an additional 25-foot buffer. The table also includes a column that tabulates current design with 4:1 slope stake limits plus 40 feet; however, the jurisdictional impacts reported at CP4A are based on current design with 2:1 slope stake limits.

**Table 7: Comparison of Wetland Impacts for I-26 Widening**

Wetland ID	NCWAM Classification	Hydrologic Classification	NCDWR Wetland Rating	Wetland Impacts <sup>1</sup> (ac) (4:1 SS+40')	I-26 Widening Draft EIS Impacts Including ParCloB Design at US 25 (Asheville Highway)			I-26 Widening Updated Impacts Including DDI Design at US 25 (Asheville Highway)	
					Wetland Impacts <sup>2</sup> (ac) (2:1 SS)	Wetland Impacts <sup>2</sup> (ac) (2:1 SS+25')		Wetland Impacts <sup>2</sup> (ac) (2:1 SS)	Wetland Impacts <sup>2</sup> (ac) (2:1 SS+25')
STIP Project Number I-4400A									
WE	Headwater Forest	Riparian	29	0.02	<0.01	0.01		<0.01	0.01
WI	Headwater Forest	Riparian	33	0.02	—	0.01		—	0.01
WH	Headwater Forest	Riparian	27	0.07	—	0.02		—	0.02
WK	Bottomland Hardwood Forest	Riparian	79	0.38	—	0.02		—	0.02
WG	Non-tidal Freshwater Marsh	Riparian	34	0.09	0.01	0.06		0.01	0.06
WM	Headwater Forest	Non-Riparian	38	<0.01	—	<0.01		—	<0.01
WW	Headwater Forest	Riparian	34	0.07	—	0.07		0.05	0.07
WN	Headwater Forest	Riparian	30	<0.01	—	<0.01		—	<0.01
WP	Headwater Forest	Riparian	38	<0.01	—	—		—	—
WO	Headwater Forest	Riparian	34	0.04	0.01	0.04		0.01	0.04
WX	Bottomland Hardwood Forest	Riparian	16	0.01	—	<0.01		—	<0.01
WV	Bottomland Hardwood Forest	Riparian	16	0.01	—	<0.01		—	<0.01
WAA	Headwater Forest	Riparian	64	0.49	0.06	0.28		0.06	0.28
WAI	Headwater Forest	Riparian	32	0.05	<0.01	0.02		<0.01	0.02
STIP Project Number I-4400B									
WAJ	Headwater Forest	Riparian	32	0.12	—	—		—	—
WAG	Headwater Forest	Riparian	28	<0.01	—	—		—	—
WAH	Headwater Forest	Non-Riparian	47	0.01	<0.01	0.01		<0.01	0.01
WAM	Headwater Forest	Non-Riparian	47	0.01	—	0.01		—	0.01

**Table 7: Comparison of Wetland Impacts for I-26 Widening**

Wetland ID	NCWAM Classification	Hydrologic Classification	NCDWR Wetland Rating	Wetland Impacts <sup>1</sup> (ac) (4:1 SS+40')	I-26 Widening Draft EIS Impacts Including ParCloB Design at US 25 (Asheville Highway)			I-26 Widening Updated Impacts Including DDI Design at US 25 (Asheville Highway)	
					Wetland Impacts <sup>2</sup> (ac) (2:1 SS)	Wetland Impacts <sup>2</sup> (ac) (2:1 SS+25')		Wetland Impacts <sup>2</sup> (ac) (2:1 SS)	Wetland Impacts <sup>2</sup> (ac) (2:1 SS+25')
WAP	Headwater Forest	Non-Riparian	47	0.02	0.01	0.02		0.01	0.02
WAT	Headwater Forest	Riparian	28	0.01	—	<0.01		—	<0.01
WAY	Headwater Forest	Non-Riparian	38	0.01	—	—		—	—
<b>STIP Project Number I-4400C</b>									
WBC	Headwater Forest	Riparian	38	0.22	0.13	0.16		—	—
WBG	Headwater Forest	Riparian	51	0.55	0.18	0.44		0.18	0.44
WBF	Headwater Forest	Riparian	32	<0.01	—	<0.01		—	<0.01
WBI	Headwater Forest	Riparian	44	0.27	—	0.03		—	0.03
WBK	Headwater Forest	Riparian	30	<0.01	—	—		—	—
WBT	Headwater Forest	Riparian	42	0.05	<0.01	0.01		<0.01	0.01
WBL	Headwater Forest	Riparian	32	0.04	—	<0.01		—	<0.01
WBN	Headwater Forest	Riparian	32	0.05	—	—		—	—
WBP	Bottomland Hardwood Forest	Riparian	40	0.39	0.01	0.17		0.01	0.17
WBQ	Bottomland Hardwood Forest	Riparian	40	0.15	—	—		—	—
<b>STIP Project Number I-4700A</b>									
WFD	Headwater Forest	Riparian	24	0.01	—	—		—	—
WBV	Bottomland Hardwood Forest	Riparian	69	2.14	0.33	1.16		0.33	1.16
WBR	Headwater Forest	Riparian	77	0.23	0.14	0.20		0.14	0.20
WBU	Headwater Forest	Riparian	77	0.08	0.05	0.07		0.05	0.07
WBW	Non-tidal Freshwater Marsh	Riparian	65	0.09	0.07	0.09		0.07	0.09
WCB	Bottomland Hardwood Forest	Riparian	24	<0.01	—	—		—	—
WCC	Bottomland Hardwood Forest	Riparian	48	0.22	—	0.04		—	0.04
WCE	Bottomland Hardwood Forest	Riparian	48	0.11	<0.01	0.05		<0.01	0.05

**Table 7: Comparison of Wetland Impacts for I-26 Widening**

Wetland ID	NCWAM Classification	Hydrologic Classification	NCDWR Wetland Rating	Wetland Impacts <sup>1</sup> (ac) (4:1 SS+40')	I-26 Widening Draft EIS Impacts Including ParCloB Design at US 25 (Asheville Highway)		I-26 Widening Updated Impacts Including DDI Design at US 25 (Asheville Highway)	
					Wetland Impacts <sup>2</sup> (ac) (2:1 SS)	Wetland Impacts <sup>2</sup> (ac) (2:1 SS+25')	Wetland Impacts <sup>2</sup> (ac) (2:1 SS)	Wetland Impacts <sup>2</sup> (ac) (2:1 SS+25')
WCG	Bottomland Hardwood Forest	Riparian	78	0.46	—	—	—	—
<b>STIP Project Number I-4700B</b>								
WCH <sup>3</sup>	Bottomland Hardwood Forest	Riparian	78	3.36	0.04	0.39	0.04	0.39
WDV	Headwater Forest	Riparian	37	0.07	—	0.02	—	0.02
WCU	Headwater Forest	Riparian	43	<0.01	—	—	—	—
WCV	Headwater Forest	Riparian	43	0.01	—	<0.01	—	<0.01
WCT	Headwater Forest	Riparian	43	<0.01	—	—	—	—
WCS	Headwater Forest	Riparian	43	0.05	—	0.02	—	0.02
WCQ	Headwater Forest	Riparian	43	<0.01	—	<0.01	—	<0.01
WCW	Bottomland Hardwood Forest	Riparian	69	2.78	0.41	1.14	0.41	1.14
WDR	Headwater Forest	Riparian	30	<0.01	—	—	—	—
WCZ	Headwater Forest	Riparian	43	0.02	0.02	0.02	0.02	0.02
WDA	Bottomland Hardwood Forest	Riparian	69	1.16	—	0.05	—	0.05
WFG	Headwater Forest	Riparian	21	0.01	0.01	0.01	0.01	0.01
WEA	Headwater Forest	Riparian	51	0.01	—	—	—	—
WEL	Headwater Forest	Riparian	48	0.12	<0.01	0.04	<0.01	0.04
WDZ	Bottomland Hardwood Forest	Riparian	38	0.09	0.05	0.07	0.05	0.07
WDY	Bottomland Hardwood Forest	Riparian	38	<0.01	—	—	—	—
WEG	Bottomland Hardwood Forest	Riparian	31	0.11	—	<0.01	—	<0.01
WET	Headwater Forest	Riparian	52	0.08	<0.01	0.06	<0.01	0.06
WEU	Headwater Forest	Riparian	52	<0.01	—	—	—	—
WEV	Headwater Forest	Riparian	52	0.01	—	—	—	—
WEW	Headwater Forest	Riparian	52	0.11	—	—	—	—

**Table 7: Comparison of Wetland Impacts for I-26 Widening**

Wetland ID	NCWAM Classification	Hydrologic Classification	NCDWR Wetland Rating	Wetland Impacts <sup>1</sup> (ac) (4:1 SS+40')	I-26 Widening Draft EIS Impacts Including ParCloB Design at US 25 (Asheville Highway)		I-26 Widening Updated Impacts Including DDI Design at US 25 (Asheville Highway)	
					Wetland Impacts <sup>2</sup> (ac) (2:1 SS)	Wetland Impacts <sup>2</sup> (ac) (2:1 SS+25')	Wetland Impacts <sup>2</sup> (ac) (2:1 SS)	Wetland Impacts <sup>2</sup> (ac) (2:1 SS+25')
WER	Headwater Forest	Riparian	38	0.01	—	—	—	—
WEE	Non-tidal Freshwater Marsh	Riparian	47	0.30	—	0.01	—	0.01
WZZ	Headwater Forest	Riparian	N/A	0.01	0.01	0.01	0.01	0.01
Total Riparian:				14.75	1.52	4.78	1.44	4.62
Total Non-Riparian:				0.05	0.01	0.04	0.01	0.04
Total Impacts:				14.80	1.58	4.82	1.45	4.66
Riparian Mitigation				—	\$108,961	\$343,063	\$107,658	\$331,518
Non-Riparian Mitigation				—	\$12,946	\$12,946	\$12,946	\$12,946
Total Mitigation				—	\$121,907	\$356,009	\$120,604	\$344,464

<sup>1</sup> Impacts calculated based on current design with 4:1 slope stake limits plus 40 feet (SS+40) to demonstrate a substantive avoidance and minimization measure implemented prior to the Draft EIS. This includes the ParClo B design at US 25 Interchange.

<sup>2</sup> Impacts calculated based on current design proposed 2:1 slope stake (SS) limits or current design proposed 2:1 slope stake limits plus 25 feet (SS+25').

<sup>3</sup> WCH is also identified by USFWS and NCWRC as the Biltmore Bog, with habitat for the Bog Turtle (T(S/A)).

When using 4:1 slope stake limits plus a 40-foot buffer, two additional ponds are impacted. The amount of pond impacts increased by 0.02 acre to 0.07 acre, when using 4:1 slope stake limits plus a 40-foot buffer.



### Summary of Impact Avoidance and Minimization

**Table 8** shows a comparison of impacts determined in the Draft EIS and the minimization or avoidance of those impacts at the present time. As the designs are refined, it is expected that stream and wetland resource impacts, for example, will also be reduced.

**Table 8: Comparison Summary of Impacts for the Preferred Alternative from the Draft EIS to Present**

IMPACT CATEGORY <sup>1</sup>	Hybrid 6/8-Lane Widening in Draft EIS	Preferred Alternative Refined
<b>Human Environment</b>		
Residential Relocations (Minorities)	18 (6)	8 (2)
Business Relocations	1	0
Grave Site Relocations	0	0
Disrupts Neighborhood & Community Cohesion	No	No
Recurring Community / Neighborhood Impacts	Yes; minor relocation impacts to Brickton community. <sup>1</sup>	No
Low Income / Minority Populations	Yes; not disproportionately high and adverse.	Yes; not disproportionately high and adverse.
Cultural Resources (Adverse Effect determined)	Yes; Blue Ridge Parkway and Cureton House	Yes; Blue Ridge Parkway
Section 4(f)	Yes; Blue Ridge Parkway	Yes; Blue Ridge Parkway
Section 4(f) <i>de minimis</i>	Yes; Biltmore Estate, Hyder Dairy Farm, Camp Orr (Camp Pinewood), and Mountains to Sea Trail <sup>2</sup>	Yes; Biltmore Estate, Hyder Dairy Farm, Camp Orr (Camp Pinewood), French Broad River Paddle Trail, and Mountains to Sea Trail
Visual Resources / Characteristics	No	No
Traffic Noise Impacts (# of receptors)	315 <sup>3</sup>	399
Air Quality	No	No
Farmland (acres)	11	28 <sup>4</sup>
Hazardous Materials	Minimal monetary and scheduling impacts.	Minimal monetary and scheduling impacts.
<b>Natural Resources</b>		
Federal Listed Species Habitat	May affect but not likely to adversely affect the Northern long-eared bat (NLEB) <sup>5, 6</sup> . No effect on other species	May Affect, Likely to Adversely Affect the gray bat and Appalachian elktoe. Northern long-eared bat (NLEB) <sup>5, 6</sup> . No

**Table 8: Comparison Summary of Impacts for the Preferred Alternative from the Draft EIS to Present**

<b>IMPACT CATEGORY<sup>1</sup></b>	<b>Hybrid 6/8-Lane Widening in Draft EIS</b>	<b>Preferred Alternative Refined</b>
	in Henderson/Buncombe Counties. <sup>7</sup>	effect on other species in Henderson/Buncombe Counties. <sup>7</sup>
Jurisdictional Streams (linear feet) <sup>8</sup>	19,415	18,541
Jurisdictional Wetlands (acres) <sup>8</sup>	4.82	4.66
100-year Floodplain (acres) <sup>8</sup>	41.8	30.4
500-year Floodplain (acres) <sup>8</sup>	17.3	17.6
Ponds (acres) <sup>8</sup>	0.05	0.05
<b>Indirect and Cumulative Effects</b>	<p>Based on this assessment of the currently identified project alternatives, STIP Project I-4400/I-4700 is not expected to have a notable indirect effect on land use in the FLUSA. Potential land use effects as a result of STIP Project I-4400/I-4700 are somewhat tempered by the fact that the project is not expected to provide any new access or opportunities for traffic exposure to properties in the FLUSA, and will generate marginal travel time savings.</p> <p>Some amount of regional cumulative impacts can be expected for notable cultural, community, water quality, and natural habitat features. This is due to features having minimal incorporation in local planning protections and/or policies. The Cumulative Effects Tool indicated that cumulative effects were rated as a medium level of concern as a result of the reasonably-foreseeable transportation projects in the region.</p>	<p>STIP Project I-4400/I-4700 is not expected to have a notable indirect effect on land use in the FLUSA. Potential land use effects because of STIP Project I-4400/I-4700 are somewhat tempered by the fact that the project is not expected to provide any new access or opportunities for traffic exposure and will generate marginal travel time savings.</p> <p>Some amount of regional cumulative impacts can be expected for notable cultural, community, water quality, and natural habitat features. This is due to features having minimal incorporation in local planning protections and/or policies. The Cumulative Effects Tool indicated that cumulative effects were rated as a medium level of concern as a result of the reasonably-foreseeable transportation projects in the region.</p>

<sup>1</sup> Following the Draft EIS, NCDOT determined the Brickton community will not be affected. This will be fully documented in the Final EIS/ROD.

<sup>2</sup> Following the Draft EIS, NCDOT was informed that the French Broad River Paddle Trail is a Section 4(f) resource.

<sup>3</sup> Following the Draft EIS, NCDOT adopted the 2016 Noise Policy and Guidance. An Updated Traffic Noise Report (HNTB, 2017) followed this guidance, and determined that there are 399 impacted noise receptors.

<sup>4</sup> NRCS commented on the Draft EIS with request that farmland impacts be recalculated. Impacts were reassessed using the current preferred alternative design proposed slope stake limits plus 40 feet. Correspondence with NRCS will be included in the Final EIS/ROD.

<sup>5</sup> May affect, not likely to adversely affect; however, NCDOT has determined that the proposed action does not require separate Section 7 consultation because the proposed action is consistent with the final Section 4(d) rule.

<sup>6</sup> NCDOT will follow NPS mitigation protocol for the NLEB as detailed in the Special Commitments (Green Sheets) and Section 3.8.6.2.2 of the Draft

**Table 8: Comparison Summary of Impacts for the Preferred Alternative from the Draft EIS to Present**

IMPACT CATEGORY <sup>1</sup>	Hybrid 6/8-Lane Widening in Draft EIS	Preferred Alternative Refined
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EIS and the Indiana bat, which will be included in the Final EIS/ROD. Correspondence with NPS is in the project file and will be included in the Final EIS/ROD.

<sup>7</sup> Following the publishing of the Draft EIS, a gray bat roost was found near the project by USFWS and NC WRC and NPS recorded potential Indiana bat calls near the Blue Ridge Parkway. NCDOT is preparing a Biological Assessment (BA) for the threatened and endangered species in the project area. This is documented in the project file and will be included in the Correspondence and Response to Comments in the appendices to the Final EIS/ROD.

<sup>8</sup> Impacts based on current design proposed slope stake limits plus 25 feet.

**Merger Project Team Meeting Agreement  
Concurrence Point No. 4A – Avoidance and Minimization**

Project Name/Description:	I-26 Widening, US 25 in Henderson County to I-40/I-240 in Buncombe County
STIP Project No.:	I-4400/I-4700
WBS No.:	34232.1.1/36030.1.1
Federal Aid Project No.:	NHF-26-1(62)23/IMNHF-026-1(86)9

The Merger Team met on October 11, 2017 and concurs with the following avoidance and minimization measures for STIP Project No. I-4400/I-4700:

**Section 404 Avoidance and Minimization Measures**

- NCDOT reduced the slopes from 4:1 to 2:1. In so doing, NCDOT:
  - o Minimized impacts to streams by approximately 10,000 feet,
  - o Avoided impacts to 19 wetlands (approximately 1.2 acres),
  - o Minimized impacts to wetlands by approximately 9.6 acres including approximately 2.6 acres to wetland WCH (Biltmore Bog), and
  - o Avoided impacts to two ponds (>0.1 acre).
- NCDOT selected the DDI design at US 25 (Asheville Highway) instead of the ParClo B design. In so doing, NCDOT:
  - o Minimized approximately 890 feet of stream impacts, and
  - o Minimized approximately 0.2 acre of wetland impacts.

*(Note: Reductions to impacts are the difference between current design with 4:1 slope stake limits plus 40 feet and current design with 2:1 slope stake limits plus 25 feet. Slope stake limits plus 25 feet are used at CP4A.)*

**Human Environment Avoidance and Minimization Measures**

- NCDOT minimized the number of Residential Relocations from 18 (ParClo B) to 8 (DDI) and Business Relocations from 1 (ParClo B) to 0 (DDI).
- NCDOT minimized the design footprint at the US 25 (Asheville Highway) interchange was determined to have “no effect” to the Cureton House property under Section 106 of the National Historic Preservation Act.

**Additional Avoidance and Minimization Measures:**

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NCDOT will continue to coordinate with the Section 404/NEPA Merger Team to identify avoidance and minimization measures to all waters of the U.S. and ensure that major hydraulic structures associated with the project are designed and installed to minimize negative impacts to stream stability (and therefore, water quality) to the extent practicable at Concurrence Point 4B – 30 Percent Hydraulic Review and Concurrence Point 4C – Permit Drawing Review.

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October 11, 2017

Federal Highway Administration

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U.S. Army Corps of Engineers

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U.S. Environmental Protection Agency

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U.S. Fish and Wildlife Service

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N.C. Wildlife Resources Commission

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N.C. Division of Water Resources

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State Historic Preservation Office

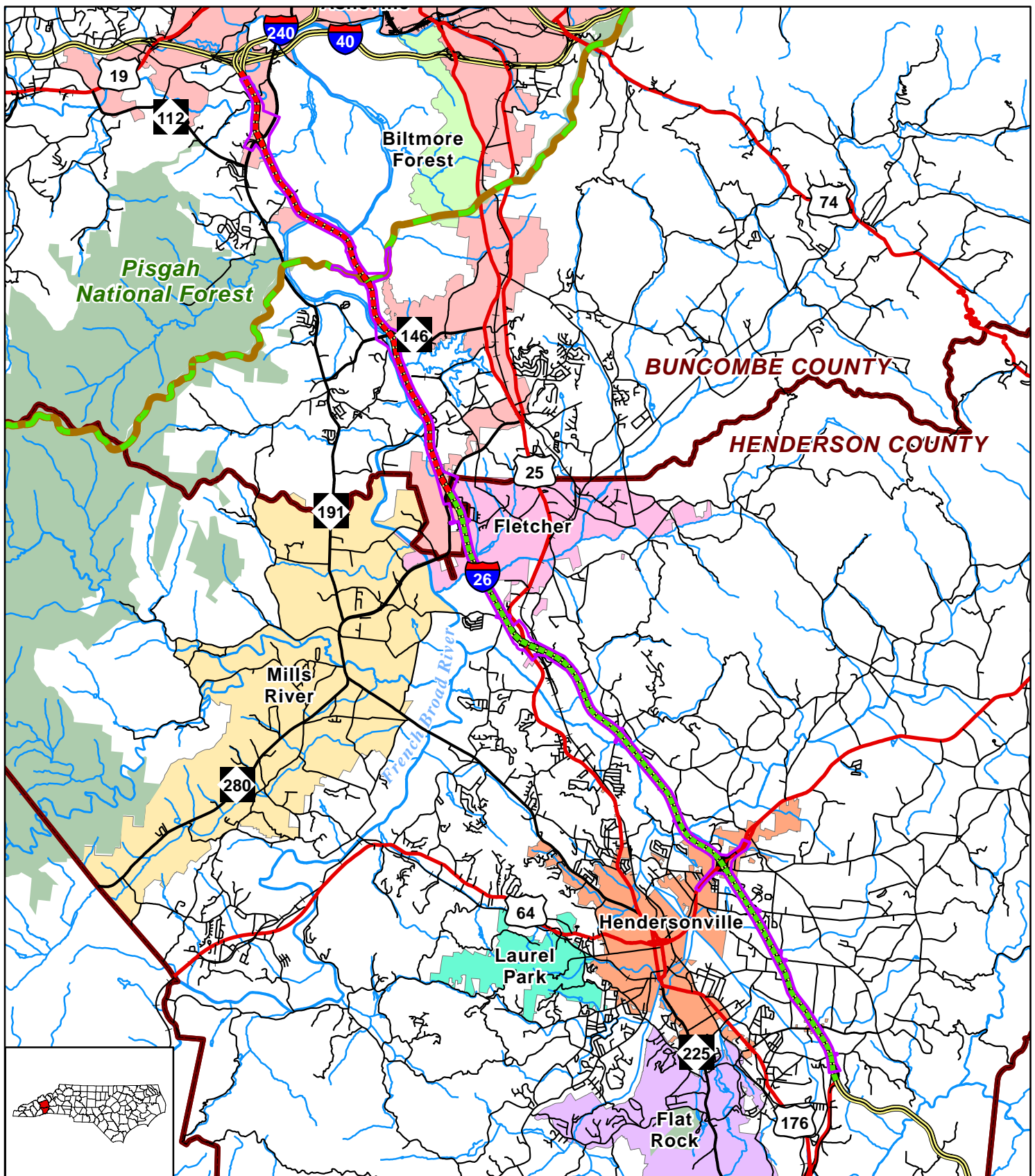
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French Broad River MPO

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N.C. Department of Transportation

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**Figure 1 - Study Area**  
**STIP Project No. I-4400/I-4700**  
**I-26 Widening**  
**Henderson and Buncombe Counties**

**Legend**

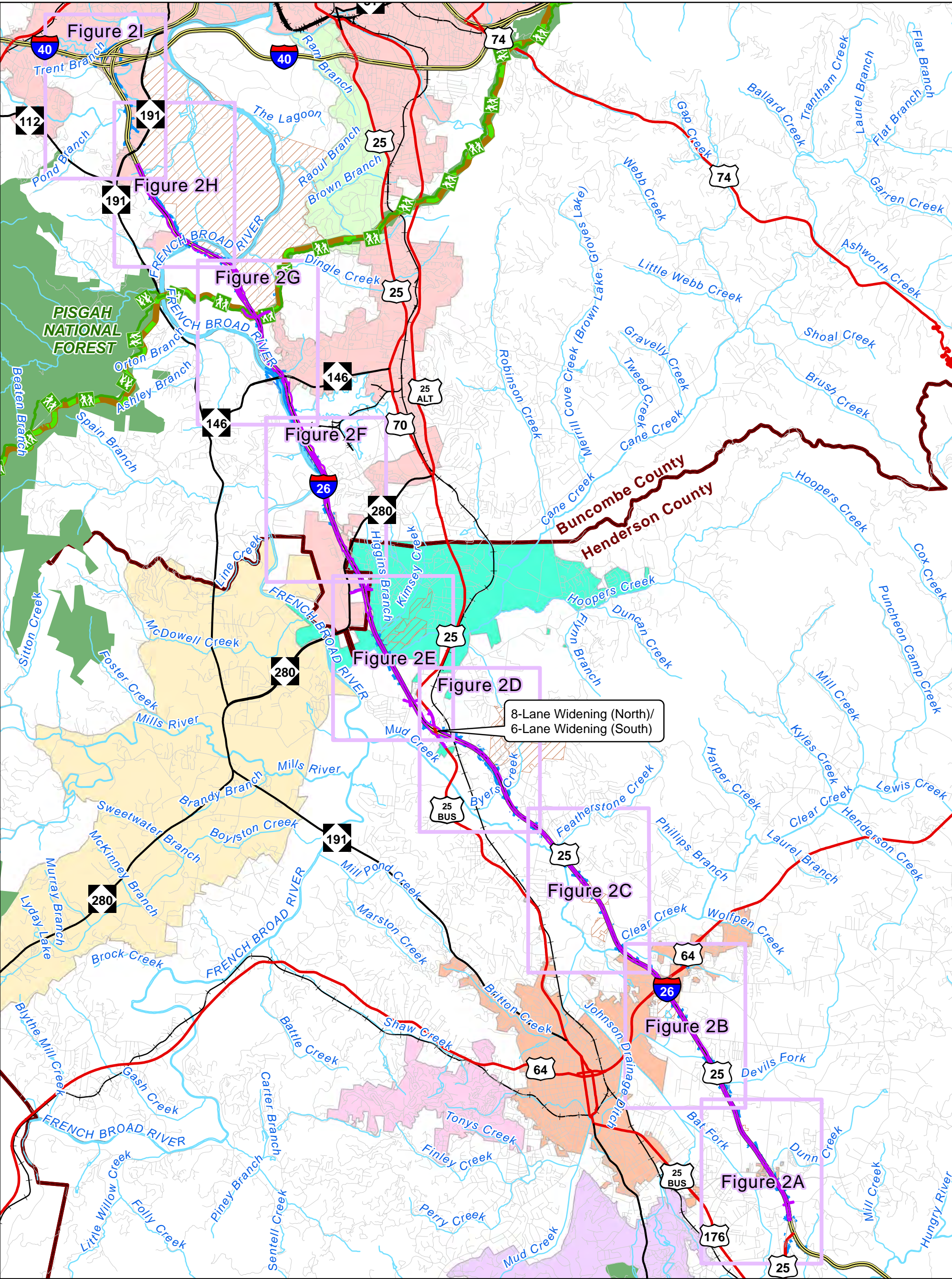
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| <span style="border-bottom: 2px dashed green; width: 20px;"></span> STIP I-4400                               | <span style="border-bottom: 2px dashed orange; width: 20px;"></span> Blue Ridge Parkway   |
| <span style="border-bottom: 2px dashed red; width: 20px;"></span> STIP I-4700                                 | <span style="border-bottom: 1px solid black; width: 20px;"></span> Railroad   |
| <span style="border-bottom: 3px solid brown; width: 20px;"></span> Interstate                                 | <span style="border-bottom: 1px solid blue; width: 20px;"></span> Stream  |
| <span style="border-bottom: 2px solid red; width: 20px;"></span> US Route                                     | <span style="background-color: lightblue; border: 1px solid blue; display: inline-block; width: 20px; height: 10px;"></span> Water Body |
| <span style="border-bottom: 2px solid black; width: 20px;"></span> NC Route                                   | <span style="border: 2px solid brown; display: inline-block; width: 20px; height: 10px;"></span> County Boundary                        |

0 1.25 2.5 5  
 Miles  
 1 inch = 2.5 miles

Sources: NCDOT, NCOneMap, HNTB

Date: 2017





Legend

- |                        |   |                 |
|------------------------|---|-----------------|
| Functional Slope Stake | Delineated Stream                             | County Boundary |
| Interstate             | Stream  | Asheville       |
| US Highway             | Delineated Wetland                            | Biltmore Forest |
| NC Highway             | Delineated Pond                               | Flat Rock       |
| Road                   | Water Body                                    | Fletcher        |
| Blue Ridge Parkway     | National Register of Historic Places Property | Hendersonville  |
| Mountains-to-Sea Trail | Pisgah National Forest                        | Laurel Park     |
| Railroad               |   | Mills River     |
|                        |   | Saluda          |

Figure 2 - Stream and Wetland Resources  
STIP Project No. I-4400/I-4700  
I-26 Widening  
Henderson and Buncombe Counties

0 0.75 1.5 3  
Miles  
1 in = 1.5 miles





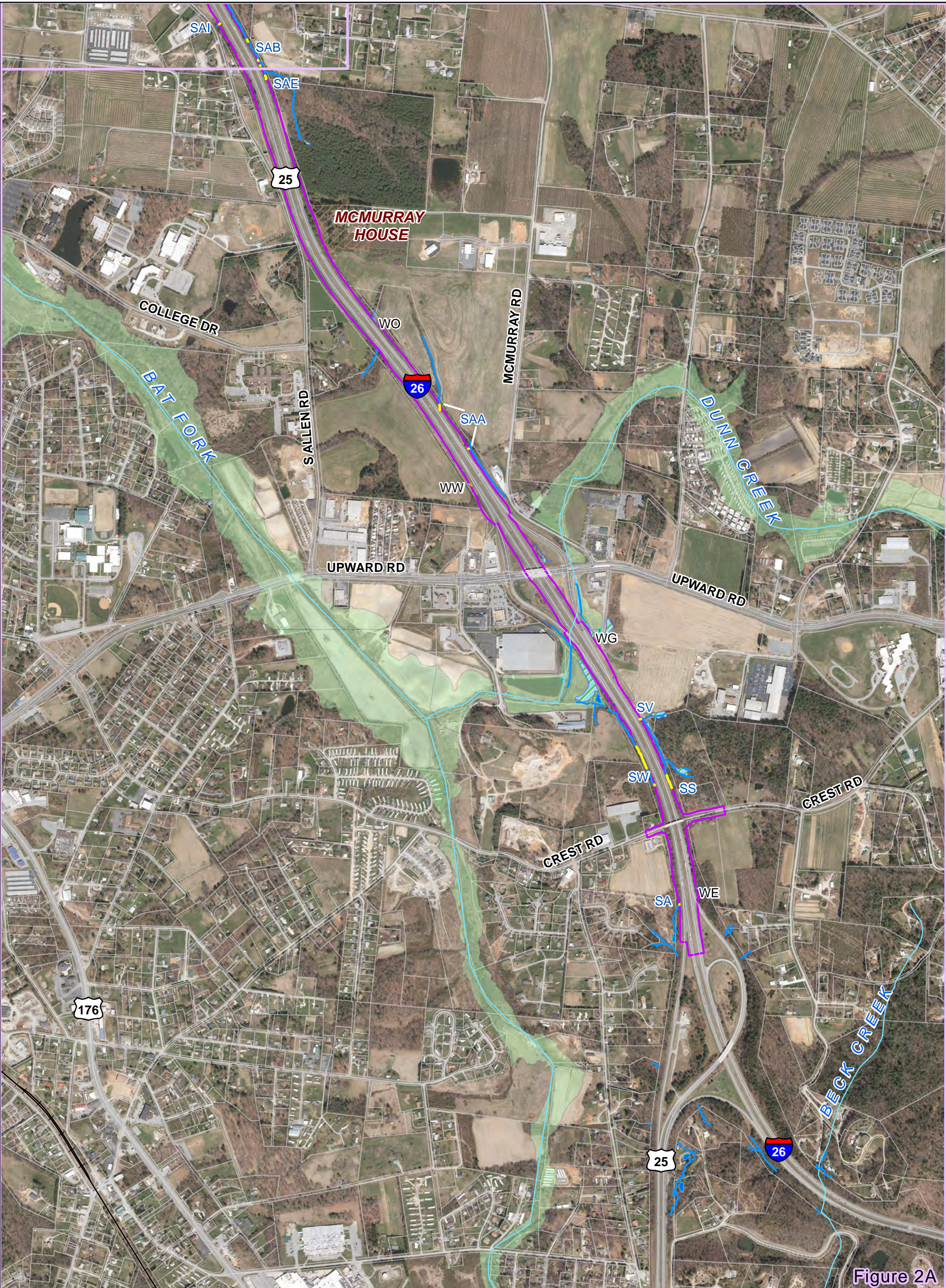


Figure 2A

Legend

- |   |                    |                              |
|---|--------------------|------------------------------|
| Functional Slope Stake                        | Delineated Stream  | Stream                       |
| SS Stream Impact                              | Delineated Wetland | Water Bodies                 |
| SS Wetland Impact                             | Delineated Pond    | <b>FEMA Flood Zone</b>       |
| Blue Ridge Parkway                            | Road               | Zone A, 100-year Floodplain  |
| National Register of Historic Places Property | Railroad           | Zone AE, 100-year Floodplain |
|   |                    | 500-year Floodplain          |

Figure 2A - Stream and Wetland Resources  
STIP Project No. I-4400/I-4700  
I-26 Widening  
Henderson and Buncombe Counties

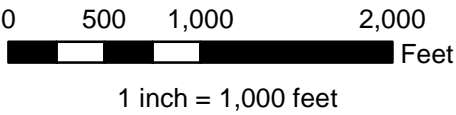




Figure 2B

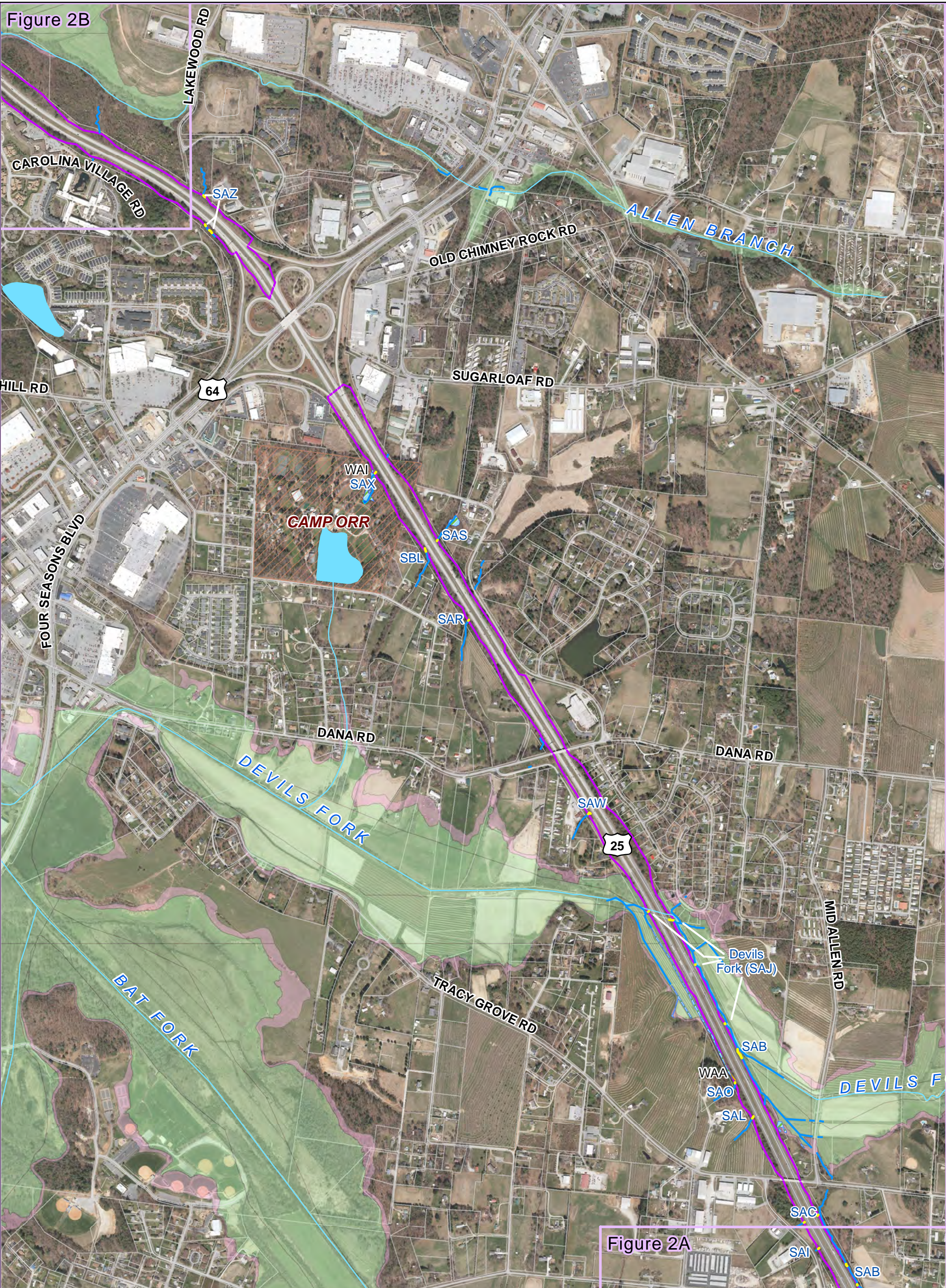


Figure 2A

Legend

- |   |                    |                              |
|---|--------------------|------------------------------|
| Functional Slope Stake                        | Delineated Stream  | Stream                       |
| SS Stream Impact                              | Delineated Wetland | Water Bodies                 |
| SS Wetland Impact                             | Delineated Pond    | FEMA Flood Zone              |
| Blue Ridge Parkway                            | Road               | Zone A, 100-year Floodplain  |
| National Register of Historic Places Property | Railroad           | Zone AE, 100-year Floodplain |
|   |                    | 500-year Floodplain          |

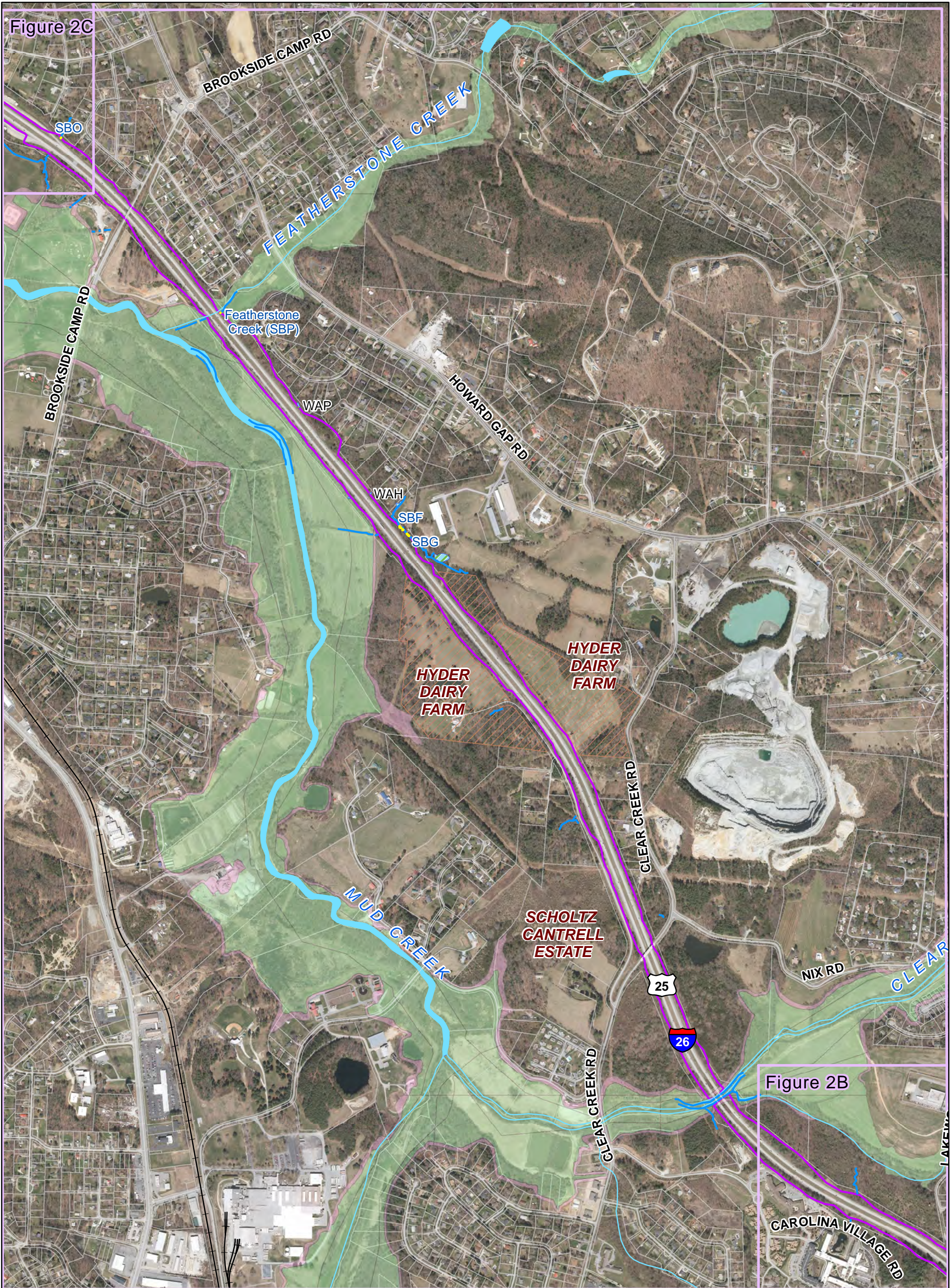
Figure 2B - Stream and Wetland Resources  
STIP Project No. I-4400/I-4700  
I-26 Widening  
Henderson and Buncombe Counties

0 500 1,000 2,000 Feet  
1 inch = 1,000 feet





Figure 2C



Legend

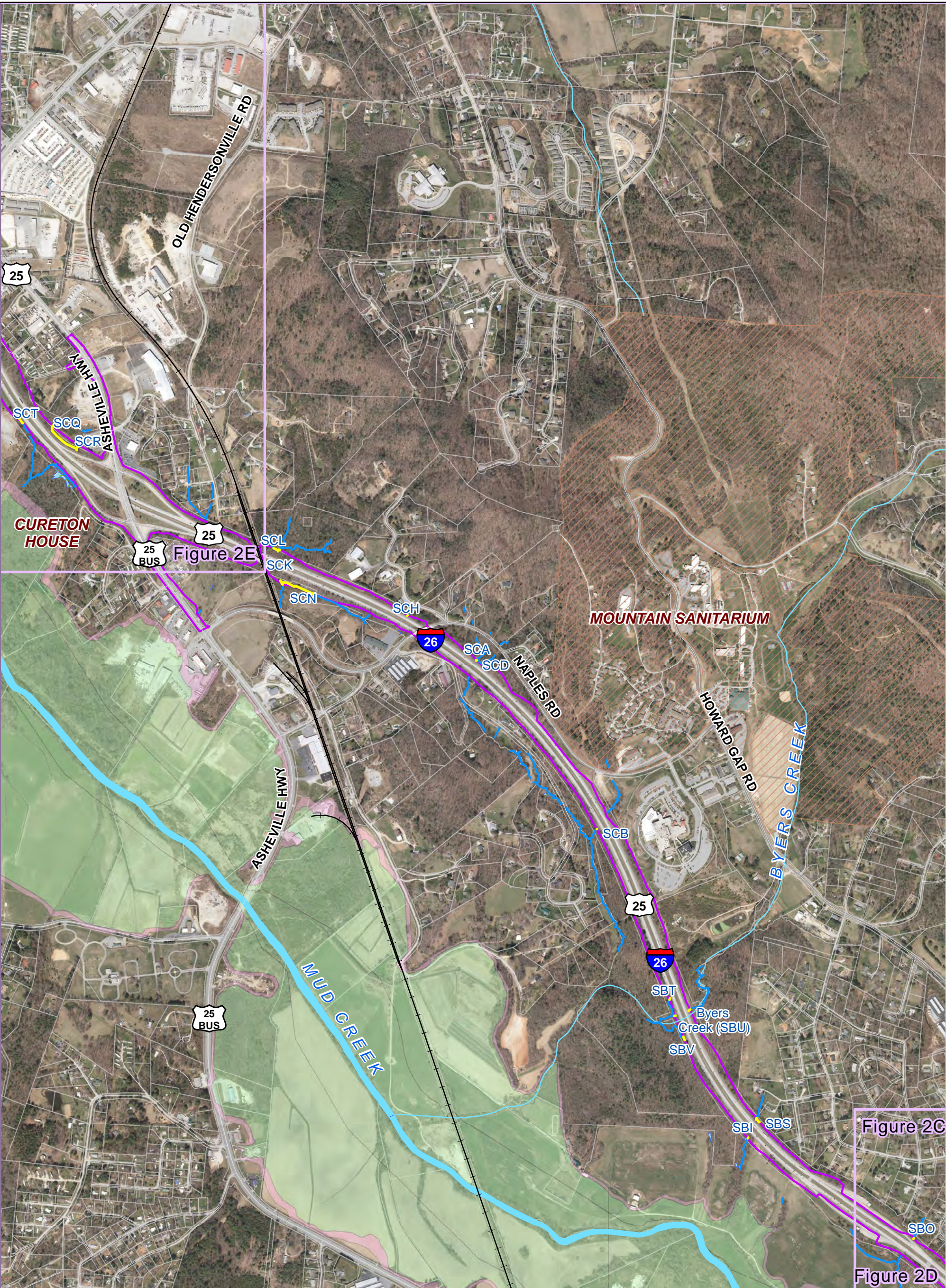
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|--|--------------------|---------------------------------|
| Functional Slope Stake                           | Delineated Stream  | Stream                          |
| SS Stream Impact                                 | Delineated Wetland | Water Bodies                    |
| SS Wetland Impact                                | Delineated Pond    | FEMA Flood Zone                 |
| Blue Ridge Parkway                               | Road               | Zone A,<br>100-year Floodplain  |
| National Register of<br>Historic Places Property | Railroad           | Zone AE,<br>100-year Floodplain |
|  |                    | 500-year Floodplain             |

Figure 2C - Stream and Wetland Resources  
STIP Project No. I-4400/I-4700  
I-26 Widening  
Henderson and Buncombe Counties

0 500 1,000 2,000  
Feet  
1 inch = 1,010 feet



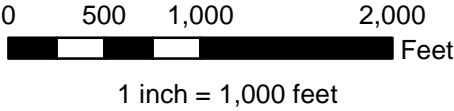




Legend

- |   |                    |                              |
|---|--------------------|------------------------------|
| Functional Slope Stake                        | Delineated Stream  | Stream                       |
| SS Stream Impact                              | Delineated Wetland | Water Bodies                 |
| SS Wetland Impact                             | Delineated Pond    | <b>FEMA Flood Zone</b>       |
| Blue Ridge Parkway                            | Road               | Zone A, 100-year Floodplain  |
| National Register of Historic Places Property | Railroad           | Zone AE, 100-year Floodplain |
|   |                    | 500-year Floodplain          |

Figure 2D - Stream and Wetland Resources  
STIP Project No. I-4400/I-4700  
I-26 Widening  
Henderson and Buncombe Counties



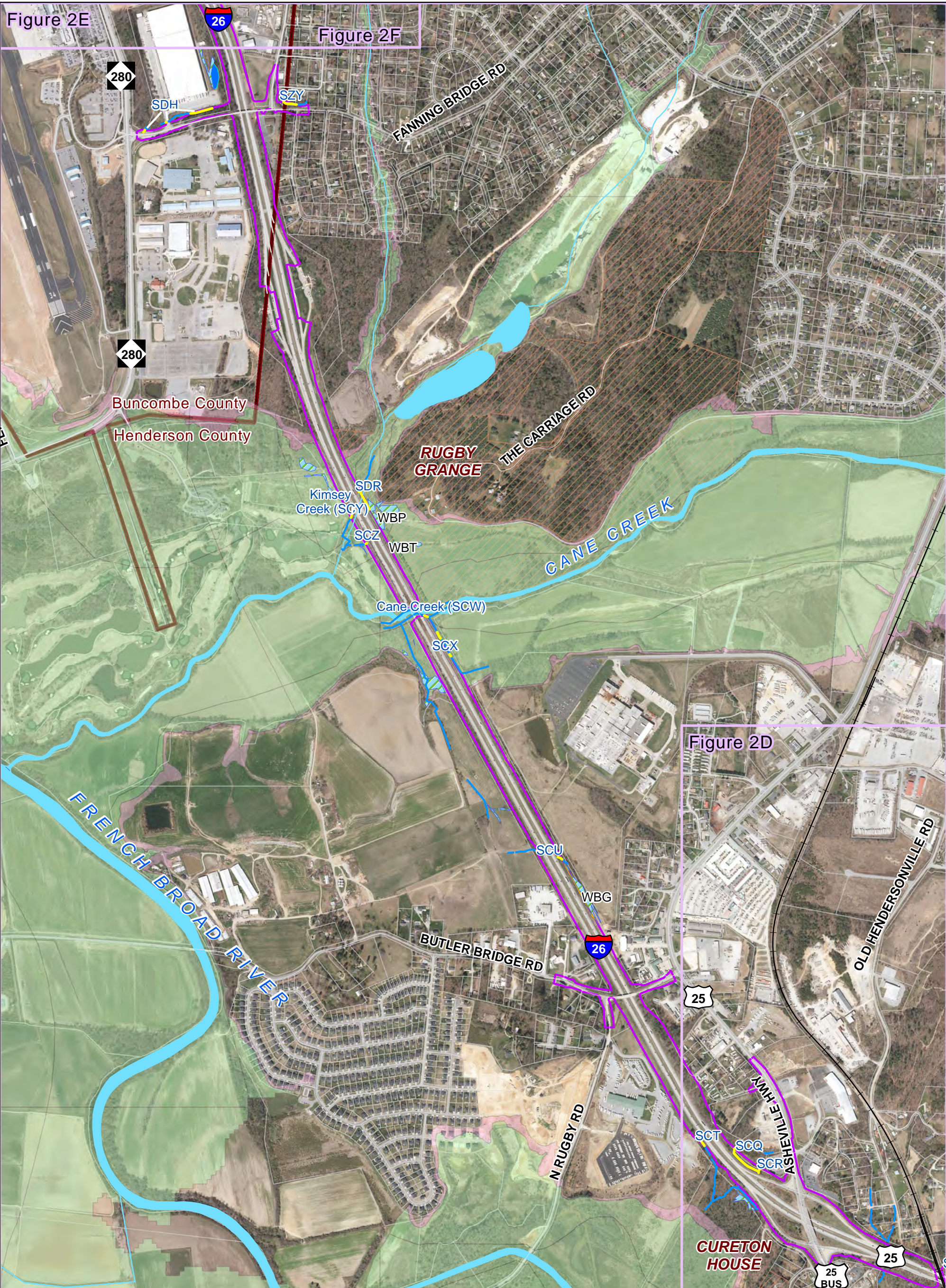
Sources: Buncombe and Henderson Counties, NCDOT, NCOneMap, HNTB Date: 2017



Figure 2E

Figure 2F

Figure 2D



Legend

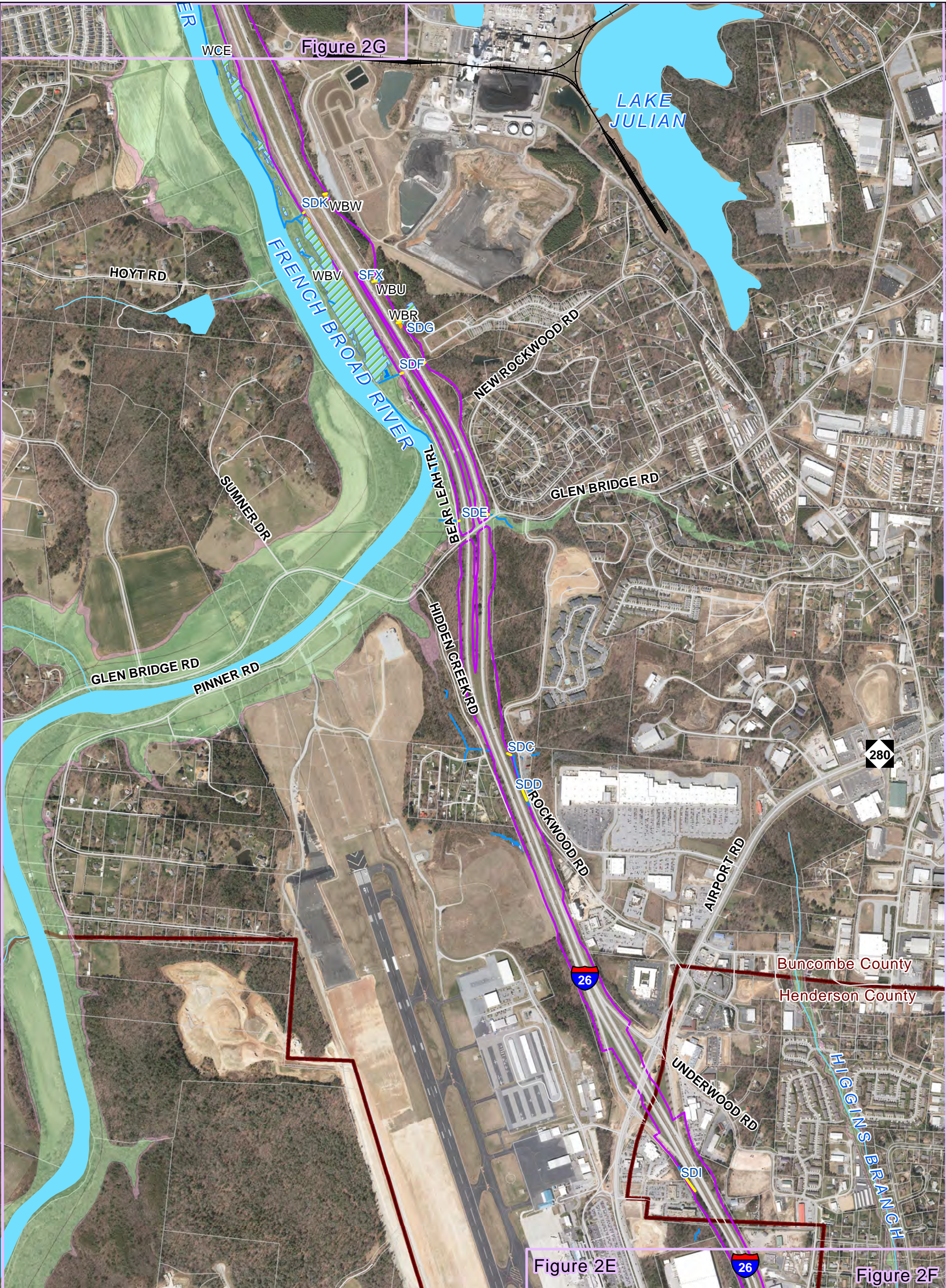
- |   |                    |                              |
|---|--------------------|------------------------------|
| Functional Slope Stake                        | Delineated Stream  | Stream                       |
| SS Stream Impact                              | Delineated Wetland | Water Bodies                 |
| SS Wetland Impact                             | Delineated Pond    | FEMA Flood Zone              |
| Blue Ridge Parkway                            | Road               | Zone A, 100-year Floodplain  |
| National Register of Historic Places Property | Railroad           | Zone AE, 100-year Floodplain |
|   |                    | 500-year Floodplain          |

Figure 2E - Stream and Wetland Resources  
STIP Project No. I-4400/I-4700  
I-26 Widening  
Henderson and Buncombe Counties

0 500 1,000 2,000  
Feet  
1 inch = 1,000 feet



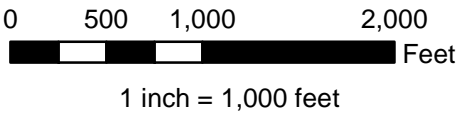




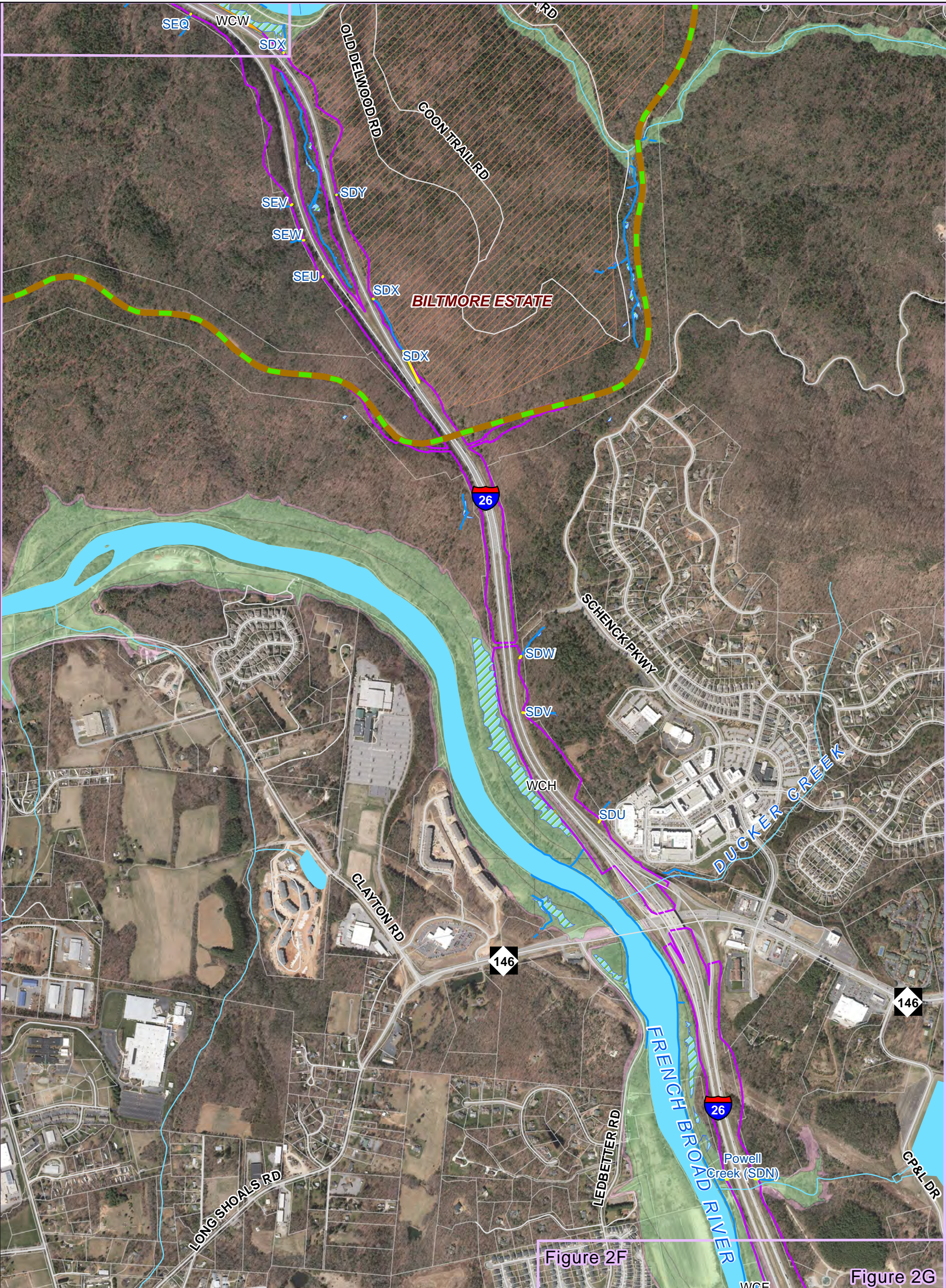
Legend

- |   |                    |                              |
|---|--------------------|------------------------------|
| Functional Slope Stake                        | Delineated Stream  | Stream                       |
| SS Stream Impact                              | Delineated Wetland | Water Bodies                 |
| SS Wetland Impact                             | Delineated Pond    | FEMA Flood Zone              |
| Blue Ridge Parkway                            | Road               | Zone A, 100-year Floodplain  |
| National Register of Historic Places Property | Railroad           | Zone AE, 100-year Floodplain |
|   |                    | 500-year Floodplain          |

Figure 2F - Stream and Wetland Resources  
STIP Project No. I-4400/I-4700  
I-26 Widening  
Henderson and Buncombe Counties







**Legend**

- |  |                    |                                 |
|--|--------------------|---------------------------------|
| Functional Slope Stake                           | Delineated Stream  | Stream                          |
| SS Stream Impact                                 | Delineated Wetland | Water Bodies                    |
| SS Wetland Impact                                | Delineated Pond    | <b>FEMA Flood Zone</b>          |
| Blue Ridge Parkway                               | Road               | Zone A,<br>100-year Floodplain  |
| National Register of<br>Historic Places Property | Railroad           | Zone AE,<br>100-year Floodplain |
|  |                    | 500-year Floodplain             |

**Figure 2G - Stream and Wetland Resources**  
**STIP Project No. I-4400/I-4700**  
**I-26 Widening**  
**Henderson and Buncombe Counties**

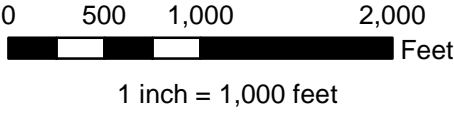




Figure 2H

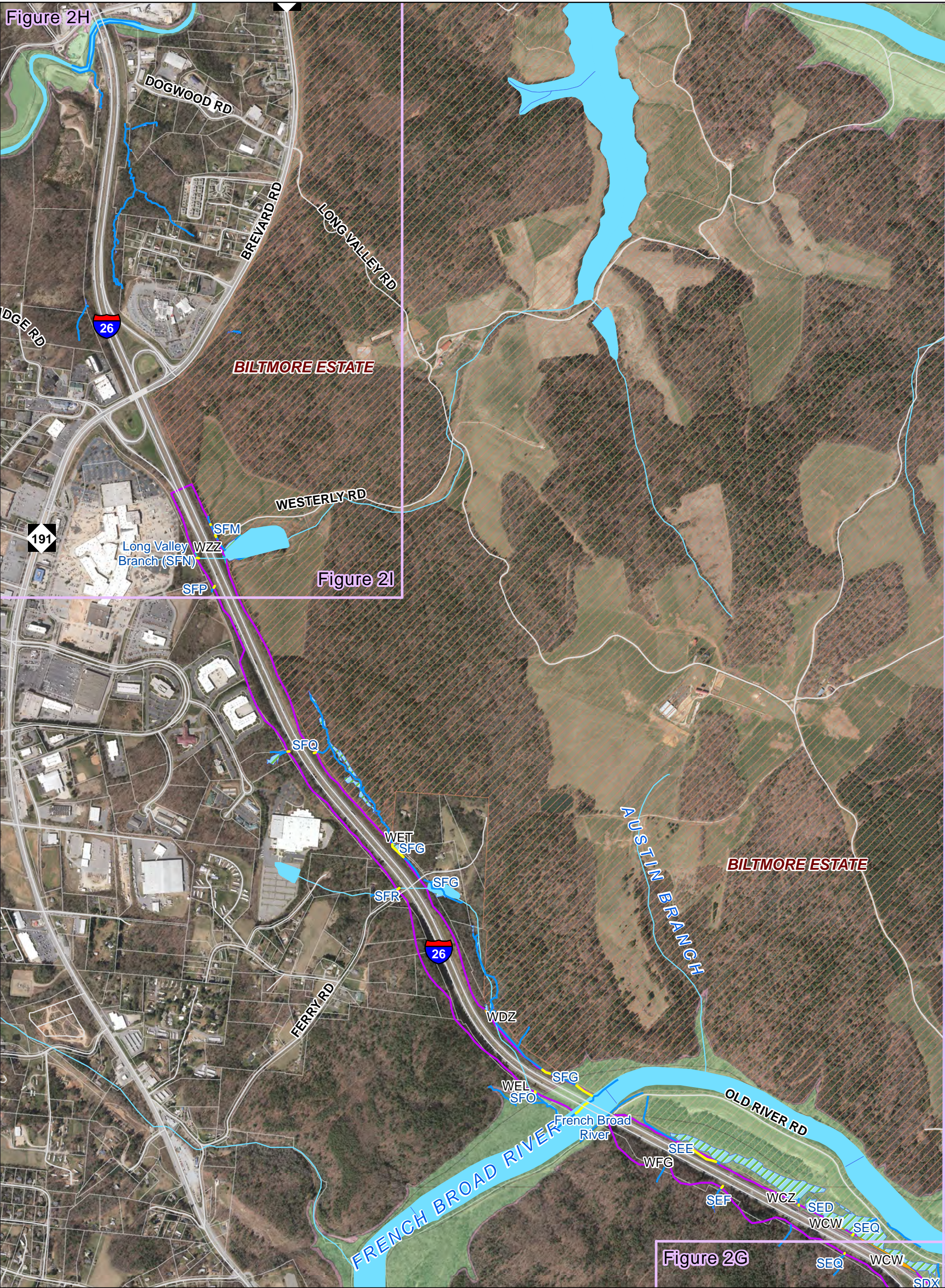


Figure 2I

Figure 2G

Legend

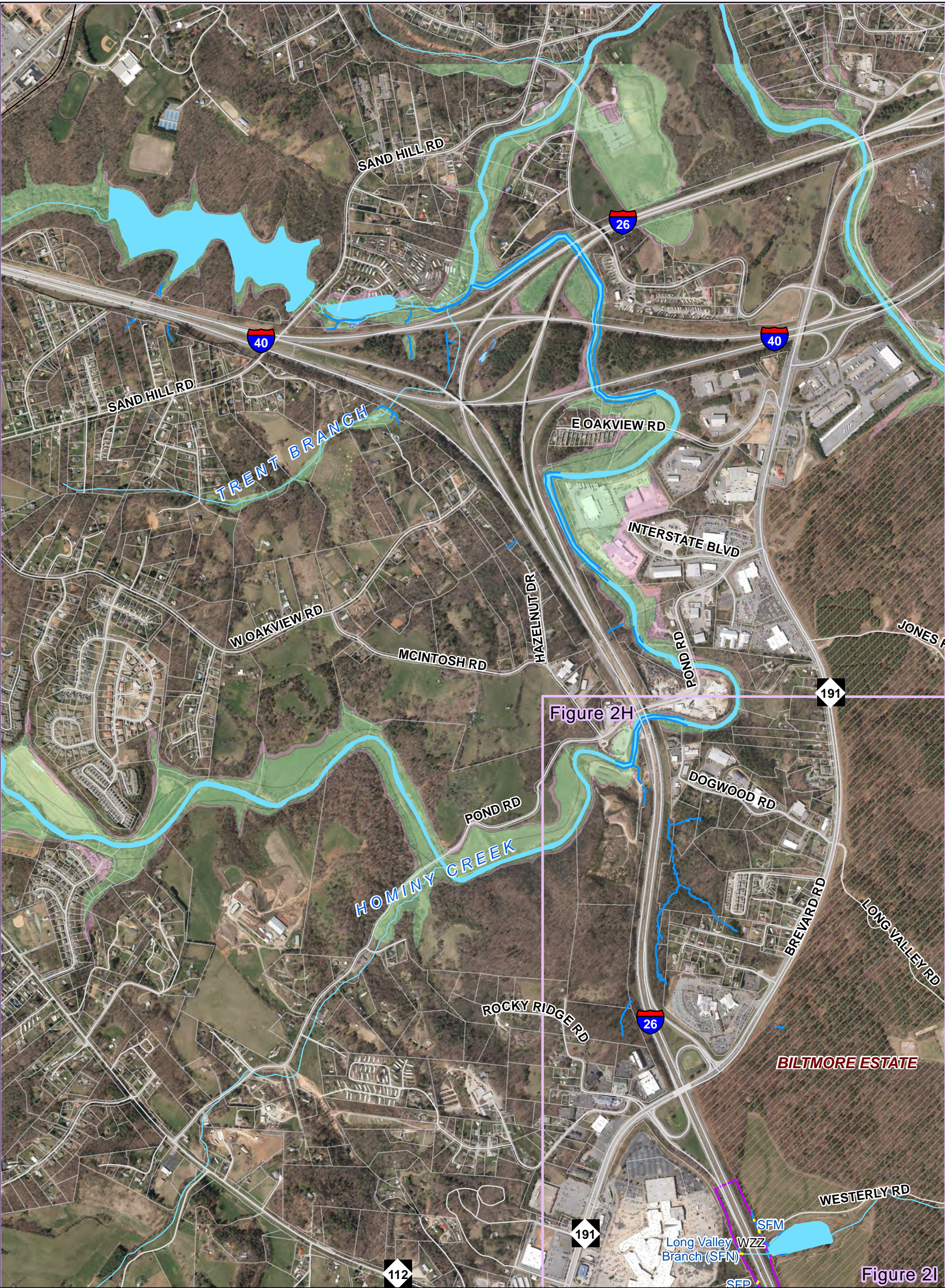
- |   |                    |                              |
|---|--------------------|------------------------------|
| Functional Slope Stake                        | Delineated Stream  | Stream                       |
| SS Stream Impact                              | Delineated Wetland | Water Bodies                 |
| SS Wetland Impact                             | Delineated Pond    | FEMA Flood Zone              |
| Blue Ridge Parkway                            | Road               | Zone A, 100-year Floodplain  |
| National Register of Historic Places Property | Railroad           | Zone AE, 100-year Floodplain |
|   |                    | 500-year Floodplain          |

Figure 2H - Stream and Wetland Resources  
STIP Project No. I-4400/I-4700  
I-26 Widening  
Henderson and Buncombe Counties

0 500 1,000 2,000  
Feet  
1 inch = 1,000 feet







Legend

- |   |                    |                              |
|---|--------------------|------------------------------|
| Functional Slope Stake                        | Delineated Stream  | Stream                       |
| SS Stream Impact                              | Delineated Wetland | Water Bodies                 |
| SS Wetland Impact                             | Delineated Pond    | FEMA Flood Zone              |
| Blue Ridge Parkway                            | Road               | Zone A, 100-year Floodplain  |
| National Register of Historic Places Property | Railroad           | Zone AE, 100-year Floodplain |
|   |                    | 500-year Floodplain          |

Figure 2I - Stream and Wetland Resources  
STIP Project No. I-4400/I-4700  
I-26 Widening  
Henderson and Buncombe Counties

