

SECTION 404/NEPA MERGER PROJECT TEAM MEETING AGREEMENT CONCURRENCE POINT 4A FOLLOW-UP AVOIDANCE AND MINIMIZATION ASHEVILLE I-26 CONNECTOR

T.I.P. No. I-2513
WBS No. 34165.1.2
Federal-Aid Project No. NHF 26-1 (53)
NCDOT Division 13

1.0 INTRODUCTION

The purpose of this meeting is to follow up with the I-2513 Merger Team on Concurrence Point (CP) 4A (Avoidance and Minimization) for the proposed I-26 Connector, as agreed upon at the July 18, 2018 CP 4A meeting. At the time of CP 4A, the I-2513 Biological Assessment had not yet been finalized, which was anticipated to include various avoidance and minimization efforts (including the Hill Street culvert system) of the French Broad River, Smith Mill Creek, Emma Branch, and Hominy Creek.

This packet includes a description of project changes that have occurred since the July 2018 CP 4A meeting, which includes updated project section boundaries, design modifications, and their associated updated impacts. The packet also contains the conservation measures and commitments as outlined in the Biological Opinion issued by the USFWS in June 2020. The original CP 4A meeting packet is attached.

Major milestones that have occurred since the July 2018 CP 4A meeting include:

- Design Public Hearing - December 2018
- Biological Assessment (BA) finalized - October 2019
- Final Environmental Impact Statement (FEIS) - published on January 10, 2020 and made available for public and agency review on February 4, 2020.
- Biological Opinion (BO) finalized – June 2020
- First draft of Record of Decision (ROD) submitted to FHWA for review – June 2020
- Section boundary change for project now includes 4 sections (A, B, C, and D) per updated STIP; Section D includes (Riverside Drive widening) as separate section instead of as part of Section B.

1.1 PROJECT STUDY AREA

The project study area extends from the western terminus of I-26 southwest of the City of Asheville around the western side of Asheville to existing US 19-23-70 north of Asheville. The study area, as shown in the FEIS, is shown on Figure 1.

1.2 PURPOSE OF PROPOSED ACTION

The purpose of the proposed improvements to I-26 is to upgrade the corridor, provide an improved system linkage, increase capacity of existing I-240, reduce traffic delays, and reduce traffic on the Captain Jeff Bowen Bridge.

1.3 PROJECT DESCRIPTION AND PROPOSED IMPROVEMENTS

The proposed I-26 Connector spans approximately 7 miles and is located on the west side of Asheville, North Carolina and improves the existing I-240 and US 19-23 corridors from the I-26/I-40/I-240 interchange to the US 19-23-70 interchange with SR 1781 (Broadway). Since publication of the FEIS and submittal of the first draft of the ROD, the project improvements are now defined in four separate sections, Section A, B, C, and Section D that must be combined to comprise the entire project. The preferred alternatives from each section are described below. The descriptions follow the order of each section from south to north (C-A-B-D). The updated sections are shown on Figure 2.

Section C

The preferred alternative in this section, Alternative F-1 (Figure 3), maintains the existing I-26/I-40/I-240 interchange configuration and adds a loop and a ramp (highlighted in orange) to provide all ramp movements. The updated Section C boundary no longer includes the addition of Ramp A at US 29/23 (Smokey Park Highway) and any improvements to I-40 between the I-26/I-40/I-240 interchange and US 19/23 (Smokey Park Highway) but does still include the remainder of the reconstruction of I-40/US 19-23-74A (Smoky Park Highway) interchange.

Section A

The preferred alternative in Section A, the I-240 Widening Alternative, includes a best-fit alignment for the widening and reconstruction of existing I-240 from a four-lane freeway to a six-lane freeway (Figure 4), and includes reconstruction of the I-26/I-240 and NC 191 (Brevard Road) and SR 3556 (Amboy Road) interchanges. It also includes the addition of Ramp A at US 29/23 (Smokey Park Highway) and initial improvements at the I-26/I-40/I-240 interchange and along I-40 between the I-26/I-40/I-240 interchange and US 19/23 (Smokey Park Highway), which were previously included in Section C. Section A no longer includes upgrades to the existing I-26/I-240 and US 19-23 Business (Haywood Road) interchange to a tight urban diamond interchange (TUDI) configuration, which have been added to Section B.

Section B

The preferred alternative in Section B, Alternative 4-B (Figure 5) includes the modification of the existing interchange of I-240 with US 19-23-74A/Patton Avenue and the extension of I-26 on new location across the French Broad River to US 19-23-70. This alternative creates three new crossings over the French Broad River: two bridges carrying I-240 traffic, and the third carrying I-26. Alternative 4-B separates I-240 traffic from Patton Avenue traffic across the Captain Jeff Bowen Bridges and includes construction on I-240 east of the French Broad River.

Section B now includes upgrades to the existing I-26/I-240 and US 19-23 Business (Haywood Road) interchange to a tight urban diamond interchange (TUDI) configuration, previously a part of Section A. It no longer includes the widening of Riverside Drive, now a part of Section D.

Section D

Section D includes improvements to Riverside Drive from SR 1517 (Hill Street) to SR 1781 (Broadway Street). The improvements along Riverside Drive include two vehicle lanes, a buffered bicycle lane in each direction, and a 10-foot multi-use path on the west side of the roadway.

2.0 SUMMARY OF IMPACTS

2.1 FINAL ENVIRONMENTAL IMPACT STATEMENT (JANUARY 2020)

Since the CP 4A meeting in July 2018, the FEIS was published in January 2020 and included a summary of the impacts for the preferred alternative as shown in Table 4. Impacts were calculated using slope stakes limits plus 25 feet for natural systems.

Table 4: Summary of Preferred Alternative Impacts Presented in the FEIS

| | Section C (I-26/I-40/I-240 Interchange) | Section A | Section B (New Location across French Broad) |
|--|---|----------------|--|
| Resource | Alternative F-1 | I-240 Widening | Alternative 4-B |
| Project Features | | | |
| <i>Length (miles)</i> | | | |
| I-26 | 2.2 | 2.0 | 2.5 |
| I-40/I-240 | 2.8 | 0.0 | 1.5 |
| Total | 5.0 | 2.0 | 4.0 |
| Interchanges (Number) | 3 | 3 | 3 |
| Railroad Crossings (Number) | 2 | 0 | 5 |
| Navigable Waterway Crossings (Number) | 1 | 0 | 4 |
| Construction Cost | \$200,570,000 | \$152,903,000 | \$448,193,000 |
| Right-of-Way Cost | \$12,423,000 | \$44,502,000 | \$95,374,000 |
| Utilities Cost | \$4,464,000 | \$2,036,000 | \$13,576,000 |
| Total Cost | \$217,457,000 | \$199,441,000 | \$564,943,000 |
| Socioeconomic Features | | | |
| Residential relocates | 14 | 71 | 29 |
| Business relocatees | 2 | 14 | 19 |
| Nonprofit relocatees | 0 | 1 | 1 |
| Total | 16 | 86 | 49 |
| Schools Relocated | 0 | 0 | 0 |
| Churches Relocated | 0 | 0 | 0 |
| Parks and Recreational Areas Impacted | 0 | 1 | 0 |
| Cemeteries Impacted | 0 | 0 | 0 |
| Physical Environment | | | |
| Impacted Noise Receptors (No-Build) | 140 | 131 | 123 |
| Noise Impacts (before abatement) | 171 | 112 | 134 |
| Noise Impacts (after abatement) | 72 | 17 | 99 |
| Hazardous Material Sites (moderate or high) Impacted | 0 | 0 | 1 |
| Floodplain Impacts (acres) | 14.2300 | 8.57 | 2.78 |
| Floodway Impacts (acres) | 1.74 | 1.04 | 0.57 |
| <i>Land Use Impacts by Zoning Category (acres)</i> | | | |
| Residential Single-Family Districts | 4.1 | 3.5 | 2.8 |

| | Section C (I-26/I-40/I-240 Interchange) | Section A | Section B (New Location across French Broad) |
|---|---|----------------|--|
| Resource | Alternative F-1 | I-240 Widening | Alternative 4-B |
| Project Features | | | |
| Residential Multifamily Districts | 5.4 | 15.5 | 12.4 |
| Neighborhood Business District | 0.0 | 0.0 | 0.0 |
| Community Business Districts | 0.0 | 0.0 | 0.0 |
| Industrial | 0.0 | 0.0 | 0.4 |
| Institutional District | 9.5 | 4.1 | 0.1 |
| Office | 0.0 | 0.0 | 0.0 |
| Highway Business District | 0.1 | 2.0 | 2.0 |
| Regional Business District | 0.3 | 0.0 | 6.9 |
| Central Business District | 0.0 | 0.0 | 0.1 |
| Commercial | 4.9 | 1.8 | 0.0 |
| Resort District | 0.0 | 0.0 | 16.9 |
| River District | 0.0 | 3.2 | 15.3 |
| Haywood Road | 0.0 | 4.8 | 0.0 |
| Total | 25.7 | 36.1 | 54.5 |
| Cultural Resources | | | |
| Historic Properties – Section 106 Effects | 0 | 0 | 1 Adverse Effect |
| Historic Properties Impacted | 1 | 1 | 1 |
| Archeological Sites Impacted | 4 | 2 | 0 |
| Natural Environment | | | |
| <i>Biotic Resources (acres)</i> | | | |
| Maintained/ disturbed | 157.1 | 81.3 | 121.8 |
| Mesic Mixed Forest | 105.4 | 42.7 | 32.7 |
| Alluvial Hardwood Forest | 3.7 | 1.4 | 3.8 |
| Open Water | .20 | 0.00 | 0.00 |
| Total | 266.40 | 125.40 | 158.30 |
| Impervious Surface Increase (acres) | 98.2 | 61.9 | 101.6 |
| Stream Impacts (#) | 12 | 5 | 7 |
| Stream Impacts (linear feet) | 1,376 | 640 | 2,171 |
| Wetland Impacts (#) | 6 | 1 | 1 |
| Wetland Impacts (acres) | 1.27 | 0.01 | 0.04 |
| Pond Impacts (#) | 0 | 0 | 0 |
| Pond Impacts(acres) | 0 | 0 | 0 |
| Protected Species Adversely Affected | 2 | 2 | 2 |

^a Stream, wetland, and pond impacts calculated using design slope stakes plus 25-foot buffer. All other impacts calculated using right-of-way.

2.2 IMPACT CHANGES AFTER FEIS

Historic Architectural Resources

It was noted in the FEIS that no changes would be made to the structure of the Great Smoky Mountain Park Bridge (Buncombe County Bridge No. 323) and therefore a finding of no effect was recorded to this resource. Since publication of the FEIS, the City of Asheville has requested revisions be made based upon recommendations of their Aesthetics Committee. As currently proposed, the non-contributing cantilevered sidewalk would be removed, and the bridge would be converted to a two-lane facility with a ten-foot sidewalk on the existing deck. The decorative architectural embellishments on the substructure will not be removed. The existing bridge rails and pedestrian lights will be replaced with designs that meet current safety standards and are congruent with the original “art moderne” style of the bridge. HPO concurred with NCDOT’s determination that the project will have no adverse effect upon the bridge following stipulations outlined in the MOA.

The Selected Alternative will have an adverse effect on Riverside Cemetery within the Montford Area Historic District. The Selected Alternative will have no effect on the remaining historic properties identified in or near the APE.

Protected Species

A Biological Opinion (BO) was issued by USFWS on June 19, 2020. The BO considers the effects of the proposed project on gray bat and Appalachian elktoe. The BO concluded that implementing the proposed project is not likely to jeopardize the continued existence of gray bat or Appalachian elktoe. No critical habitat for gray bat or Appalachian elktoe is present within the project study area; therefore, none will be affected.

Revised Impacts Summary

Subsequent to the publication of the FEIS, there were no significant design changes to the preferred alternative; however, the section boundaries were recently revised in the STIP as described previously. Table 5 includes a summary of the impacts for the preferred alternative based on the revised section boundaries.

Table 5: Summary of Impacts based on 2021 Section Boundaries

| | Section C (I-26/I-40/I-240 Interchange) | Section A | Section B (New Location across French Broad) | Section D |
|-----------------------|---|----------------|--|--------------------------|
| Resource | Alternative F-1 | I-240 Widening | Alternative 4-B | Riverside Drive Widening |
| Project Features | | | | |
| <i>Length (miles)</i> | | | | |
| I-26 | 1.3 | 2.4 | 2.9 | n/a |
| I-40/I-240 | 1.8 | 1.0 | 1.4 | n/a |
| Total | 3.1 | 3.5 | 4.3 | n/a |
| Interchanges (Number) | 3 | 1 | 5 | 0 |
| Railroad Crossings | 2 | 0 | 6 | 0 |

| | Section C (I-26/I-40/I-240 Interchange) | Section A | Section B (New Location across French Broad) | Section D |
|--|---|----------------|--|--------------------------|
| Resource | Alternative F-1 | I-240 Widening | Alternative 4-B | Riverside Drive Widening |
| Project Features | | | | |
| Navigable Waterway Crossings | 1 | 0 | 4 | 0 |
| Cost¹ | | | | |
| Construction Cost | \$185,002,000 | \$206,765,000 | \$646,492,000 | 15,900,000 |
| Right-of-Way Cost | \$4,300,000 | \$41,305,000 | \$100,114,000 | 23,400,000 |
| Utilities Cost | \$13,300,000 | \$5,700,000 | \$18,100,000 | 2,800,000 |
| Total Cost | \$202,602,000 | \$250,770,000 | \$764,706,000 | 42,100,000 |
| Socioeconomic Features | | | | |
| Relocations | TBD | TBD | TBD | TBD |
| Schools Relocated | 0 | 0 | 0 | 0 |
| Churches Relocated | 0 | 0 | 0 | 0 |
| Parks and Recreational Areas Impacted | 0 | 1 | 0 | 0 |
| Cemeteries Impacted | 0 | 0 | 0 | 0 |
| Physical Environment | | | | |
| Impacted Noise Receptors (No-Build) | TBD | TBD | TBD | TBD |
| Hazardous Material Sites (moderate or high) Impacted | 0 | 0 | 1 | -- |
| Floodplain Impacts (acres) | 9.21 | 11.48 | 2.70 | 12.86 |
| Floodway Impacts (acres) | 1.68 | 1.05 | 0.62 | 0.04 |
| <i>Land Use Impacts by Zoning Category (acres)</i> | | | | |
| Residential Single-Family Districts | 0.1 | 7.4 | 2.7 | 0.0 |
| Residential Multifamily Districts | 0.5 | 16.4 | 16.4 | 0.0 |
| Neighborhood Business District | 0.0 | 0.0 | 0.1 | 0.0 |
| Industrial | 0.0 | 0.0 | 0.4 | 0.0 |
| Institutional District | 1.1 | 12.3 | 0.3 | 0.0 |
| Office | 0.0 | 0.0 | 0.0 | 0.0 |
| Highway Business District | 0.0 | 0.1 | 4.5 | 0.0 |
| Regional Business District | 0.1 | 3.7 | 5.8 | 0.0 |
| Central Business District | 0.0 | 0.0 | 0.1 | 0.0 |
| Commercial | 4.3 | 3.1 | 0.0 | 0.1 |
| Resort District | 0.0 | 0.0 | 24.5 | 0.0 |
| River District | 0.0 | 3.2 | 14.2 | 1.1 |
| Haywood Road | 0.0 | 4.6 | 0.0 | 0.0 |
| Cultural Resources | | | | |
| Historic Properties – Section 106 Effects | 0 | 0 | 1 Adverse Effect | 0 |
| Archeological Sites Impacted | 4 | 2 | 0 | 0 |

| | Section C (I-26/I-40/I-240 Interchange) | Section A | Section B (New Location across French Broad) | Section D |
|--------------------------------------|---|----------------|--|--------------------------|
| Resource | Alternative F-1 | I-240 Widening | Alternative 4-B | Riverside Drive Widening |
| Project Features | | | | |
| Natural Environment | | | | |
| <i>Biotic Resources (acres)</i> | | | | |
| Maintained/ disturbed | 84.3 | 129.5 | 141.6 | 13.7 |
| Mesic Mixed Forest | 63.3 | 81.2 | 34.2 | 4.1 |
| Alluvial Hardwood Forest | 1.2 | 3.9 | 2.2 | 0.1 |
| Open Water | 0.0 | 0.1 | <0.0 | 0.0 |
| Total | 148.8 | 214.7 | 178.0 | 17.9 |
| Impervious Surface Increase (acres) | 98.2 | 61.9 | 101.6 | |
| Stream Impacts (#) | 6 | 13 | 7 | 0 |
| Stream Impacts (linear feet) | 474 | 1,545 | 1,697 | 0 |
| Wetland Impacts (#) | 3 | 4 | 1 | |
| Wetland Impacts (acres) | 0.08 | 1.22 | 0.04 | 0.0 |
| Pond Impacts (#) | 0 | 0 | 0 | 0 |
| Pond Impacts(acres) | 0 | 0 | 0 | 0 |
| Protected Species Adversely Affected | 2 | 2 | 2 | 2 |

¹Cost based on current NCDOT STIP as of March 2021.

The impact numbers calculated for the FEIS (Table 4) and the impact numbers based on the updated section boundaries (Table 5) are relatively similar since they are based on the same general design; however, there have been minor changes to the design since the FEIS based on additional retaining walls, and other minor refinements. This has caused the total number of stream impacts to go from 4,187 linear feet (lf) of impact as reported in the FEIS, to 3,716 lf currently, for an additional reduction of 471 lf. Wetland impacts stayed relatively the same, with an additional .02 acre of impact reported for the current designs. Impact reductions to streams and wetlands were calculated within the slope stakes of the current preliminary design plus 25 feet.

Updated relocation reports are currently being prepared by NCDOT for the updated section boundaries; however, it is likely the overall amount of relocations will be reduced slightly due to refinements to the design since publication of the FEIS.

3.0 SUMMARY OF AVOIDANCE AND MINIMIZATION

At the 2018 CP 4A meeting, the following Section 404 Avoidance and Minimization Measures were reported from the time of the DEIS to the time of the CP 4A meeting:

- o Overall reduced impacts to streams by 724 linear feet.
- o Overall reduced impacts to wetlands by 0.63 acre.
- o Reduced 543 linear feet of impacts to UT2C to Upper Hominy Creek by adding a retaining wall in Section C.

- Daylighting for Smith Mill Creek for approximately 440' of culvert in the southwest quadrant of the existing interchange.
- Eliminated longitudinal impacts to Upper Hominy Creek.
- Eliminated longitudinal impacts to Ragsdale Creek.

As noted previously, changes in design from the time of the CP 4A meeting in 2018 to the current designs include an additional reduction of 471 LF of stream impacts.

2.1.1 ADDITIONAL AVOIDANCE AND MINIMIZATION MEASURES

Following the completion of the FEIS, extensive coordination has continued between NCDOT, project stakeholders, potentially impacted property and business owners, and the I-26 Working Group. To further minimize and reduce impacts associated with the project, final designs will incorporate the following design revisions including design modifications to Patton Avenue east of the French Broad River.

As part of the stipulations outlined in the January 2021 MOA, NCDOT agreed to evaluate lessening impacts to the Riverside Cemetery within the Montford Historic District by modifying the preliminary design in proximity to the cemetery, specifically by lowering the U.S. 19-23-70 roadway adjacent to the property. These modifications were also developed to accommodate goals of the City of Asheville including lowering the profile of the flyover bridges over the French Broad River, reducing the project footprint, and expanded local road and pedestrian connections.

The resulting impacts from the proposed changes to the I-240/Patton Avenue design include an overall reduced highway footprint, overall reduction in residential relocations, minimized community impacts, reduced vertical profile along Riverside Drive, enhanced bicycle and pedestrian accommodations, and enhanced safety.

3.1 SUMMARY OF MINIMIZATION MEASURES FROM BRIDGE CONSTRUCTION EVALUATION, RIVER USE, AND SECTION 7 CONSULTATION

The project includes the addition of new location bridges for I-26 and I-240 over the French Broad River, the replacement of bridges on I-40 over the French Broad River, and replacement of bridges on I-240 over Hominy Creek. Two federally protected species were identified as occurring within the project study area, therefore NCDOT evaluated constraints associated with construction of these bridges as part of securing Section 7 compliance for the gray bat and Appalachian elktoe prior to issuance of the ROD.

The following commitments are outlined within the Biological Opinion:

- Measures to Avoid/Minimize Effects to Gray Bat during Culvert Roost Construction
 1. Timing of Construction
 - a. The RCBC portion of the culvert system, as well as the dual CMAP at the culvert outlet will remain in place. Work on this portion of the culvert system will not occur until bat activity ceases for the season (and bats are presumably no longer using the culvert for roosting). This time frame is approximately between November 15 and March 15. NCDOT will monitor the culvert with an acoustic detector and/or emergence counts to determine when bat activity ceases for the season. After bat activity ceases

for the season, a federally permitted bat biologist will enter the culvert to confirm no bats are present. This will determine when construction activity may safely begin, and/or when it should end to avoid effects to MYGR that may use the culvert system for roosting.

- b. NCDOT will conduct sleeving or replacement of the 60" CMP adjacent to Courtland Ave. and the entrance to Dickson Elementary School (that conveys flow under Hill Street to the RCBC) between October 15 and April 1.
- c. NCDOT will monitor bat activity at the culvert before, during, and after construction. Acoustic monitoring and/or emergence surveys will be conducted between March and November.

2. Vegetation Removal

- An operational work pad area will be established near the culvert outlets to complete the culvert rehabilitation process, as well as at the inlet near Courtland Avenue where the 60" CMP will be replaced or lined. Vegetation must be cleared to allow room for the work pad. NCDOT will cut plants in the work pad area in a way that will minimize impacts to bats and their activity by implementing the following measures: vegetation will not be removed if the area will be left bare for many months prior to construction; cutting of vegetation will be coordinated with USFWS and will not occur until all bats have left the culvert for the winter. This will be determined through emergence counts and/or acoustic monitoring and a physical check of the culvert for remaining bats; and limiting cutting to only what is necessary to complete the work and no more than 50 feet from culvert inlet/outlets.

3. Additional Commitments

- a. An equipment staging area will be established adjacent to the work pads near the culvert outlets and inlet areas near Courtland Avenue to complete the culvert rehabilitation process. NCDOT will attempt to use areas that are already cleared of vegetation whenever possible. This area will only be used for culvert rehabilitation activity staging and will not be used for any other project construction purposes.
 - b. NCDOT will maintain baseflow to the RCBC and CMAP portion of the culvert (non-stormwater sources) to provide a naturally occurring, continual water source.
 - c. NCDOT will either replace or install a liner in the 60" CMP located adjacent to Courtland Ave. and the entrance to Isaac Dickson Elementary School that conveys flow under Hill Street to the RCBC. NCDOT will complete this activity between October 15 and April 1.
 - d. NCDOT will install a barrier/baffle (from here referred to as a baffle) in the RCBC between the intersection with the 60" CMP (located adjacent to Courtland Ave. and the entrance to Isaac Dickson Elementary School that conveys flow under Hill Street) and the upstream end of the RCBC to buffer noise and light associated with the CMP replacements further upstream.
- Measures to Avoid/Minimize Effects to Gray Bat during Road Construction
The following measures are proposed by NCDOT to avoid/minimize potential impacts to MYGR during road construction activities.
 1. Preservation of Riparian Vegetation

- a. NCDOT will ensure the Contractor preserves riparian buffer trees where practicable and feasible.
- 2. Roadway Construction Lighting
 - a. Due to MYGR activity on the landscape, NCDOT will limit all construction-related lighting to whatever is necessary to maintain safety in active work areas closest to the French Broad River, Hominy Creek, Emma Branch, and Smith Mill Creek.
 - b. Construction-related lighting will be indirect in nature and will not project into adjacent forested areas or over the water surface of the French Broad River, Hominy Creek, Emma Branch, or Smith Mill Creek, whenever practicable.
- Measures to Avoid/Minimize Effects to Gray Bat during Bridge Construction
 - 1. Access Roads
 - a. NCDOT will revegetate all access roads created for bridge construction and replacement activities where practicable.
 - 2. Nighttime Construction Activities
 - a. NCDOT will limit the use of nighttime construction within 50' of the French Broad River, Hominy Creek, Emma Branch, or Smith Mill Creek between April 1 and October 15 to only the following activities: causeway construction, drilled shafts, concrete pours, beam setting, and traffic shifts.
 - b. NCDOT shall commit to restrict the Contractor to no night work at crossings of the French Broad River, Hominy Creek, Emma Branch, and Smith Mill Creek to minimize potential impacts to lactating females and their pups between June 1 and June 14. Between June 15 through August 1, NCDOT will also commit to restrict the Contractor to no more than 28 total nights of work, with no more than four consecutive nights. Lighting used for construction will be limited to what is necessary to maintain safety standards and will only be directed toward active work areas.
 - 3. Pre-Demolition Check for Bats
 - a. If bridge demolition is required between April 1 and October 15, NCDOT will conduct a check of all subject bridges within 30 days of demolition to determine if bats are present. See Term and Condition 12 for checks specific to culverts.
 - b. If bats are present, one of the following options will be implemented (options listed in order of preference). NCDOT will:
 - i. Wait for bats to leave for the season (approximately mid-October to early November) before beginning work; or
 - ii. A biologist will monitor the bridge and work will begin after bats leave the bridge for the evening, or
 - iii. A permitted biologist will exclude bats from work area immediately prior to the start of work using acoustic deterrents, or
 - iv. A permitted biologist will hand remove bats from work area immediately prior to the start of work.
 - v. If pre-demo check determines pups are present, NCDOT will refrain from bridge demolition until it can be determined by a biologist that the pups are volant, and then use the previous options to proceed with demolition.
 - 4. Red Safety Lighting

- a. As part of NCDOT's Communication Plan specific to the construction/demolition of the bridges over the French Broad River, NCDOT will place solar-powered, steady-state red lights on the causeways to alert river users to their locations. Generators will not be used to provide power.
- Measures to Avoid/Minimize Effects to Gray Bat and Appalachian Elktoe during Bridge Construction
 - 1. Contract Language
Contract language will include the following, or similar language as appropriate for bridges over the French Broad River
 - a. The Contractor will be required to prosecute the work in a continuous and uninterrupted manner from the time work begins until completion of each phase of structure construction, demolition, and completion. The Contractor will not be permitted to suspend operations except for reasons beyond their control or except where the Engineer has authorized a suspension of the Contractor's operations in writing.
 - 2. Causeways – French Broad River, Hominy Creek, and Smith Mill Creek
 - a. Causeways will not restrict more than 50% of the existing channel width of the French Broad River, Hominy Creek, and Smith Mill Creek. Potential additional restrictions of the channel may be necessary for short durations, and these additional restrictions will be coordinated with USACE and USFWS prior to permitting.
 - b. NCDOT will require the Contractor to use clean rock (free of debris and pollutants) for the construction of the causeways to minimize unnecessary sediment input into the river.
 - c. Causeway material will be removed to the extent practicable and either disposed of off-site or used in areas that require permanent stone protection after project completion. NCDOT will also require that concrete barriers (barrier rail) be placed along the downstream edge of each causeway to limit the downstream movement of causeway material during high flow events.
 - d. If the final causeway plan is staged, causeway material will be added/removed as needed for each stage to minimize the causeway footprint over the length of the project.
 - e. Construction fabric will not be used under the causeway material, as it tends to tear into tiny pieces and float downstream during removal.
 - f. Any equipment on the causeways will be removed any time throughout a work day when the water level rises, or is expected to rise overnight, to a point where the equipment could be flooded, or during periods of inactivity (two or more consecutive days). The only exception to this measure is that the drill rig and crane may be left in place for periods of inactivity; however, they must also be removed if the water rises, or is expected to rise, to a point where the drill rig and crane could be flooded.
 - g. NCDOT will require its Contractor to have clean, non-leaking equipment, diapers on-site for each causeway, and spill kits located at each causeway.
 - h. Causeways needed for the new bridges over the FBR will be designed so that during a 100year storm event there will not be a rise in water surface elevation outside the Action Area greater than normal seasonal variation.
 - 3. Containment

- a. All construction equipment shall be refueled above the 100-year base flood elevation plus a foot of freeboard and be protected with secondary containment. During crucial periods of construction and demolition, when the drill rig and crane cannot be moved, the drill rig and crane can be refueled while inside the 100-year floodplain provided that spill response materials (such as spill blankets and fueling diapers) are used during the refueling. Hazardous materials, fuel, lubricating oils, or other chemicals will be stored above the 100-year base flood elevation plus a foot of freeboard.
- b. Areas used for borrow or construction by-products will not be located within wetlands or the 100-year base flood elevation plus a foot of freeboard.
- c. When constructing drilled piers for the I-240, I-40 and I-26 French Broad River bridges, a containment system will be developed so material does not enter the river. Material byproduct will be pumped out of the shaft to an upland disposal area to the extent practicable and treated through a proper stilling basin or silt bag.
- d. Construction of all bridges will be accomplished in a manner that prevents uncured concrete from coming into contact with water entering or flowing in the river.
- e. Removal of existing bridges shall be performed so as not to allow debris to fall into the water. If debris is dropped in a waterway, it will be immediately removed.
- f. NCDOT will not place bridge bents in Smith Mill Creek or Emma Branch.
- Measures to Avoid/Minimize Effects to Gray Bat and Appalachian Elktoe during Road Construction and Bridge Replacement
 1. Erosion Control Measures
 - a. The Soil and Erosion Control (SEC) plan will be in place prior to any ground disturbance for all bridge replacements and construction. When needed, combinations of erosion control measures (such as silt bags in conjunction with a stilling basin) will be used to ensure that the most protective measures are being implemented.
 - b. NCDOT standard procedures dictate that when a project has both Environmentally Sensitive Areas and a requirement to follow DSSW, and uses the GP NCG01 permit, NCDOT will default to the most-restrictive SEC measure requirement (Appendix H of BO).
 2. Agency Coordination (Post-Biological Opinion Checkpoints)
 - a. NCDOT Requirements
 - i. NCDOT will revisit CP4A with the Merger Team after the BA is submitted to discuss any new avoidance and minimization efforts for major crossings of the French Broad River and Hominy Creek including those in the Biological Assessment.
 - ii. NCDOT will provide USFWS with the final roadway lighting plans and allow 15 days for review upon acknowledgement of receipt of notice.
 - iii. NCDOT will continue 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 greatest extent practicable.
- iv. NCDOT will provide USFWS with the total size of bridge footings in the water as project design progresses and the information becomes available.
 - v. NCDOT will provide USFWS with the results of the hydrology modeling (described below) as it becomes available, including change in French Broad velocity with causeways in place, and change in water surface elevation with causeways in place.
 - vi. Once ROW plans are developed where vegetation will be removed in riparian areas, NCDOT will meet with USFWS and NCWRC to discuss re-vegetation plans with the goal of establishing native forested buffers in all impacted areas (Hominy Creek, Smith Mill Creek, Emma Branch, and the French Broad River). NCDOT, USFWS and NCWRC will also discuss re-vegetation for acquired riparian ROW that was not forested when purchased. Additionally, NCDOT will coordinate with USFWS and NCWRC to develop a revegetation and invasive species management plan for these areas.
- b. Bid Build Contractor Requirements
- i. The Bid Build Contractor shall meet with NCDOT personnel and USFWS and regulatory agency representatives immediately after contract execution to review the project and project commitments. At this time, the USFWS shall be afforded the opportunity to meet with key Bid Build Contractor members and NCDOT employees to provide education on the effects of artificial lighting, noise, and construction on nearby wildlife habitat and behavior. The Bid Build Contractor shall coordinate with the NCDOT Environmental Analysis Unit to schedule these meetings. This meeting shall be made prior to submitting any required permit modification application.
 - ii. The Bid Build Contractor shall provide USFWS with the construction phasing plan for each bridge.
 - iii. The Bid Build Contractor and / or NCDOT shall contact USFWS if new information about MYGR is discovered, as it relates to the project.
 - iv. The Bid Build Contractor shall report any dead bats found on the construction sites to USFWS.
 - v. The Bid Build Contractor shall adhere to project commitments within the ROD and the Biological Opinion relating to Section 7 of the Endangered Species Act.
- c. Design-Build Team Requirements
- i. NCDOT will arrange a meeting between each shortlisted DBT, representatives of the USFWS, and other regulatory agencies prior to the due date for the submission of Technical and Price Proposals. The discussions and answers provided at these meetings are not contractually binding but intend to offer the shortlisted teams an opportunity to inquire as to the permitting process as well as specific team concepts.
 - ii. NCDOT will arrange a meeting with the selected Design-Build Team (DBT) to provide an opportunity for USFWS to convey their concern

about potential effects to protected species. The DBT shall meet with NCDOT personnel and USFWS and regulatory agency representatives immediately after contract execution to review the project and project commitments. At this time, the USFWS shall be afforded the opportunity to meet with key DBT members and NCDOT employees to provide education on the effects of artificial lighting, noise, and construction on nearby wildlife habitat and behavior. The NCDOT Design-Build Unit shall coordinate with the DBT and the NCDOT Environmental Analysis Unit to schedule this meeting. This meeting shall be made prior to submitting the permit application. This is prior to the standard pre-con environmental meeting.

- iii. The DBT shall adhere to project commitments within the ROD and the Biological Opinion relating to Section 7 of the Endangered Species Act. The DBT will be required to prepare information for any event in which NCDOT and FHWA reinitiate Section 7 consultation with the USFWS. It is possible that consultation be reinitiated prior to Concurrence Point 4B and again at Concurrence Point 4C.
- iv. NCDOT will continue 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 greatest extent practicable. As part of this process, NCDOT and the DBT will continue to coordinate with the Merger Team to identify avoidance and minimization measures and ensure that project impacts are minimized to every practicable extent, including impacts to federally protected species.
- v. The DBT shall invite USFWS and regulatory agency representatives to the pre-construction meeting for the proposed project, as well as to all subsequent field inspections prior to construction, to ensure compliance with all special project commitments.
- vi. The DBT shall provide USFWS with the sediment and erosion control plan and allow 15 days for review upon acknowledgement of receipt of notice.
- vii. The DBT shall provide regulatory agency representatives with the demolition plan for all bridges and allow 15 days for review upon acknowledgement of receipt of notice. All agencies will be notified prior to start of demolition so they may have a representative on site.
- viii. The DBT shall provide USFWS with the construction phasing plan for each bridge.
- ix. The DBT and / or NCDOT shall contact USFWS if new information about MYGR is discovered, as it relates to the project.
- x. The DBT shall report any dead bats found on the construction sites to USFWS.
- xi. The DBT shall include an Environmental Coordinator as a member of their Team who will be required to attend all design, merger, and

- preconstruction meetings, and who will consult bat and mussel experts, as needed.
- xii. Once ROW plans are developed where vegetation will be removed in riparian areas, NCDOT will meet with USFWS and NCWRC to discuss re-vegetation plans with the goal of establishing native forested buffers in all impacted areas (Hominy Creek, Smith Mill Creek, Emma Branch, and the French Broad River). NCDOT, USFWS and NCWRC will also discuss re-vegetation for acquired riparian ROW that was not forested when purchased. Additionally, NCDOT will coordinate with USFWS and NCWRC to develop a revegetation and invasive species management plan for these areas. Certain ROW areas will not be forested because they must be mowed or maintained at a low height for safety purposes.
- Measures to Avoid/Minimize Effects to Gray Bat and Appalachian Elktoe During Roadway Operation
 1. Stormwater Control Measures
 - a. NCDOT's stormwater commitment guidance, will apply at crossings of the French Broad River and its tributaries, and any portion of the NCDOT stormwater conveyance system draining to those waters within the right-of-way.
 - b. NCDOT will prepare a stormwater management plan (SMP) to implement post-construction stormwater best management practices (BMPs) to the maximum extent practical, consistent with the Department's National Pollutant Discharge Elimination System (NPDES) Post Construction Stormwater Program.
 - c. When preparing the SMP, NCDOT commits to using a hierarchical BMP selection process, optimized to treat silt, nutrients, and heavy metals.
 - d. At each discharge location outside of the 100-year floodplain, the hydraulics engineer will evaluate the feasibility of installing either an infiltration basin or a media filter as described in NCDOT's BMP Toolbox. If neither is feasible, the hydraulics engineer will select a feasible BMP.
 - e. NCDOT will commit to evaluating the use of emerging BMP technologies that the Department has not yet published in its BMP Toolbox:
 - i. Bioswales
 - ii. Bioembankments
 - iii. Biofiltration conveyances
 - iv. Soil improvement to maximize infiltration
 - f. The NCDOT hydraulics design engineer will consult with the State Hydraulics Engineer and obtain prior approval before proposing one of these BMP technologies in the SMP.
 2. Permanent Lighting

Crossing numbers in this section refer to Table 1 in Section 2.2.4 and Figures 4A-4D in Appendix A of the Biological Opinion.

 - a. General CM's for the entire project:
 - i. Use shorter poles, providing an overall LED light fixture mounting height of 35' above the pavement surface.
 - ii. Use LED light fixtures with a more rectangular light pattern as well as house side shields to minimize lighting outside of the pavement

- area.
- iii. Use LED light fixtures with a BUG rating of 1-0-3 or less
 - iv. Change the design standards to meet the AASHTO minimum requirements of an average of 0.6 fc at 4:1 uniformity at all crossing locations identified in the lighting document, from the original design of 0.8 fc at 4:1 uniformity.
 - v. At all identified crossings, the proposed high mast poles and 45' poles with GE Cobrahead (GE) fixtures (3-0-3 BUG) were redesigned with 35' poles with Cooper Cobrahead (Cooper) fixtures (1-0-3 BUG).
- b. Culvert Outlet – The current design near Southern States property results in zero calculated change to baseline light levels at the culvert opening and ditch leading to the FBR.
 - c. Culvert Outlet – NCDOT will meet with landowners adjacent to the roost culvert to discuss replacement or augmentation of existing lighting to reduce existing baseline conditions determined by the NCDOT Roadway Lighting Squad.
 - d. Culvert inlet – The original lighting design near the Hill Street culvert inlet had 80' high mast poles installed between the mainline and Hill Street behind the Isaac Dickson Elementary School. NCDOT is revising this design to replace them with GE light fixtures installed on twin arm poles on the mainline median barrier.
 - e. New French Broad Crossing (NFBC) – Use of single arm light poles mounted on the bridge and flyover barriers in place of the 120' and 100' high mast poles.
 - f. NFBC – 35' single arm poles with a narrow distribution light fixture and a house side shield will be used.
 - g. FBR-1 – The GE fixtures were replaced with the lower BUG rated Cooper fixtures.
 - h. FBR-1 – Fixtures were redesigned to have the outer ring (as shown in the figures within the lighting document) ending roughly 115' from the west bank of the FBR.
 - i. FBR-2, FBR-3, & FBR-4 – All high mast poles within the connector interchange were removed and replaced with Cooper fixtures mounted on the outer and/or center bridge barrier rail.
 - j. FBR-2, FBR-3, & FBR-4 – The Cooper fixtures are located so the crossings are centered between fixtures where the light level is the lowest.
 - k. HC-1 – Replacing the GE fixtures with the Cooper fixtures. The crossing is still centered between the Cooper fixtures, as it was for the GE fixtures.
 - l. HC-1 - Replacing the 120' high mast pole with an 80' high mast pole.
 - m. HC-2 & HC-3 – Removal of a 120' high mast pole and replaced with Cooper fixtures.
 - n. HC-2 & HC-3 - The Cooper fixtures are located so the crossings are centered between fixtures where the light level is the lowest.
 - o. HC-4 - The Cooper fixtures are located so the crossings are centered between fixtures where the light level is the lowest.
 - p. HC-5 & HC-6 – Removal of 80' high mast pole and replacing with Cooper

- fixtures along the mainline and ramp in both directions.
- q. HC-5, HC-6, HC-7 - The Cooper fixtures are located so the crossings are centered between fixtures where the light level is the lowest.
 - r. All SMC and EBC – Removal of all high mast poles within the connector interchange and replaces them with Cooper fixtures mounted on the outer and/or center bridge barrier.
 - s. All SMC and EBC - Cooper fixtures located so the crossings are centered as best as possible between fixtures where the light level is the lowest.
 - t. SMC culvert area – Existing high mast pole located within the interchange ramps will be removed.
- Conservation Measures to Benefit Gray Bat
 1. Monitoring for MYGR Return and Activity
 - a. NCDOT will conduct acoustic monitoring (or emergence counts, as appropriate) for MYGR at some locations immediately before, during and up to two years after construction. This monitoring may help determine changes in bat activity due to construction. NCDOT will coordinate the locations and time frame for monitoring with USFWS.
 - b. To help determine whether MYGR avoid active construction zones at night, NCDOT will investigate the use of night-vision video recordings, or other methods, in an attempt to monitor bat activity at locations where they may be most susceptible to disturbance.
 - c. NCDOT will conduct additional monitoring/research to at a minimum include additional telemetry, coordinated monitoring of roosts, monitoring of new panels, basin-wide acoustics to be conducted at key points during and after construction. This additional monitoring will be coordinated with USFWS, NCWRC and NCDOT. Please refer to Term and Condition 10 for clarification.
 2. Hill Street Culvert Roost Area
 - a. NCDOT will replace most, if not all the CMP within the culvert system upstream from the RCBC with RCBC and/or concrete pipe, which will effectively create additional bat roosting habitat.
 - b. NCDOT will meet with landowners adjacent to the roost culvert to discuss replacement or augmentation of existing lighting to reduce existing baseline conditions determined by the NCDOT Roadway Lighting Squad.
 - c. NCDOT will acquire a permanent drainage easement (PDE) or additional right of way at the culvert inlet (near Courtland Ave.) and outlets, where replanting with containerized, native, woody vegetation will occur. In addition, if NCDOT acquires additional right-of-way or conservation easements along the French Broad River or adjacent to the culvert, NCDOT will replant with native, woody vegetation to provide, in time, a buffer for noise, light, and surface water runoff. NCDOT will coordinate with USFWS and NCWRC to develop a revegetation and invasive species management plan for these areas.
 3. NCDOT-Sponsored Gray Bat Research Project
 - NCDOT, with the cooperation of the USFWS and NCWRC, committed to a three-year study on MYGR within the French Broad River Basin. This study will serve as a conservation measure for NCDOT projects within the Divisions 13 and 14 for a limited time. NCDOT will fund Indiana State

University \$900,000 to conduct the research project, to gather the information needed to allow NCDOT and USFWS to enter a programmatic consultation to cover MYGR for NCDOT Divisions 13 and 14, as well as help to develop species-specific avoidance and minimization measures. This agreement was reached, in part, for the I-4400/I-4700 (I-26 widening) project in Buncombe and Henderson Counties, but also benefits this project.

4. Protection of Culvert Roost Entrance
 - NCDOT will coordinate with USFWS to assess the need to deter trespassing/use of the culvert by humans, and install signage or barriers, as needed.
5. Gray Bat Conservation Funding
 - NCDOT will provide \$350,000 for measures consistent with the recovery objectives outlined in the MYGR recovery plan (Brady et al. 1982).
6. Installation of Temporary Bat Roost Panels on Bridges
 - NCDOT will provide modern bat roost panels or comparable structures that could serve as a temporary alternate roost for bats potentially disturbed by work on the culvert roost for the duration of construction of the I-2513 project. This will be in the place of the panels on four bridges NCDOT has committed to in the BA, which were to be placed on bridges with documented signs of bat use. These bridges are all relatively far from the Hill Street Culvert roost. The USFWS believes that panels placed on one bridge close to the Hill Street Culvert roost has greater potential to minimize take than panels placed on four bridges farther away (Reasonable and Prudent Measure 3). Refer to Term and Condition 9 for more details.
- Conservation Measures to Benefit Appalachian Elktoe
 1. Appalachian Elktoe Conservation Funding
 - a. NCDOT will provide \$500,000 to the North Carolina Nongame Aquatic Projects Fund for the French Broad River Conservation Plan (FBRCP) proposed by USFWS, which will aid in the recovery and conservation of Appalachian elktoe. The funding will be held by the NCWRC. A multi-agency/organization group of mussel species experts, including USFWS, will determine how to expend the funds.
 - b. The French Broad River Conservation Plan proposes to improve aquatic habitat and diversity and to mitigate risks in the French Broad River. It may include the following:
 - i. Species Reintroduction: Developing a normal cohort of companion species will benefit long-term Appalachian elktoe recruitment and survival; mussel species are healthier in dense multi-species mussel beds (Vaughn et al. 2008).
 - ii. Early Warning and Emergency Capacity: A monitoring network and propagation facility devoted to species introduction pairs an early warning system with emergency production capacity to immediately mitigate unforeseen effects to the Appalachian elktoe population should the need arise.
 - iii. Genetic Management Program: A study of the genetic health/potential genetic drift of the population will provide feedback to the previous two program aspects and will fine tune management of Appalachian elktoe.

- iv. Miscellaneous: Other projects could include development of technologies such as the use of passive integrated transponder (PIT) tags to locate mussels; radio tracking equipment to study movement of mussels during high flow; development of techniques to artificially stabilize habitat for the placement of propagated mussels; and/or a cost-benefit study of watershed improvement options.
2. French Broad River Geomorphology Monitoring
 - NCDOT is working with the US Geological Survey (USGS) to evaluate the impacts of construction and temporary causeways on river habitat. This monitoring project encompasses several Transportation Improvement Projects (I-2513, I-4400 and I-4700). Therefore, the monitoring project will span several years to accommodate the varying construction schedules.
 - a. Terrestrial Light Detection and Ranging (T-LiDAR) technology will be used annually to produce a laser scan of river banks. Bathymetric surveys will be conducted concurrently one to two times a year. Bathymetric data will be used to generate a gridded surface representation (digital elevation model, or DEM) of the channel bed for each survey. A similar approach will be applied to T-LiDAR data to evaluate stream bank position between successive surveys.
 - b. Water quality monitoring will include real-time (continuous) data collection of temperature, turbidity, and specific conductance. Discrete water-quality samples will be collected during a variety of flow conditions to measure total suspended sediment (TSS) and suspended sediment concentration (SSC).
 - c. Continuous streamflow, precipitation, and water-quality (temperature, conductance, and turbidity) data will be available online at <http://waterdata.usgs.gov/nc/nwis/rt/> and via text and email alerts. Yearly summaries for each monitoring site will be available on demand from the USGS National Water Information System web interface (NWISWeb). Real-time alerts will be available to NCDOT via the NWISWeb when temperature or turbidity concentrations spike or exceed a predetermined threshold.
 - d. If monitoring at the French Broad River reveals excessive bank erosion, bank instability, or sedimentation associated with the bridge replacement, NCDOT will work to identify the cause and will make improvements to address the problems in a timely manner.
 - Reasonable and Prudent Measures

The USFWS believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the gray bat and Appalachian elktoe. These non-discretionary measures include, but are not limited to, the commitments in the BA and the terms and conditions outlined in this Opinion.

 1. The USFWS must be notified of any project modifications.
 2. NCDOT will minimize impacts to roosting bats in the culvert roost to the extent possible through coordination with the USFWS for work that occurs between March 15th and November 15th.
 3. NCDOT will provide modern bat roost panels or comparable structures that could serve as a temporary alternate roost for bats potentially disturbed by work on the culvert roost for the duration of construction of the I-2513

project. This will be in the place of the panels on four bridges NCDOT has committed to in the BA, which were to be placed on bridges with documented signs of bat use. These bridges are all relatively far from the Hill Street Culvert roost. The USFWS believes that panels placed on one bridge close to the Hill Street Culvert roost has greater potential to minimize take than panels placed on four bridges farther away.

4. NCDOT will minimize permanent lighting on waterways in the final lighting design plan to the extent possible, as well as current permanent lighting at the Hill Street Culvert Roost. Current plans for new permanent lighting (Appendix J of the BO) are preliminary in nature.
 5. NCDOT will avoid and minimize potential take of bats roosting in culverts other than the Culvert Roost by conducting culvert checks before rehabilitation or repair work (see Term and Condition 12).
 6. NCDOT will adhere to all BMPs for soil and erosion control, and will report to the USFWS (described in Term and Condition 7) if failures occur.
- Terms and Conditions

In order for the exemption from the take prohibitions of section 9(a)(1) of the ESA, the NCDOT must comply with the following terms and conditions, which implement the reasonable and prudent measures described previously and outline required reporting and/or monitoring requirements. These terms and conditions are non-discretionary. As necessary and appropriate to fulfill this responsibility, the NCDOT must require any permittee, Contractor, or grantee to implement these Terms and Conditions through enforceable terms that are added to the permit, contract, or grant document.

 1. NCDOT will adhere to all measures listed in the Conservation Measures section of this Opinion and in the BA (if not revised in the BO).
 2. NCDOT will simultaneously notify USACE and USFWS of any permit modification requests.
 3. A USFWS biologist will be invited (at least seven days prior) to the preconstruction meeting(s) to review permit conditions and discuss any questions the Contractor has regarding implementation of the project. After the Contractor submits plans for various stages (outlined in post BO coordination Section 2.3.5.2) of the project, a USFWS biologist will review and provide comments (within 15 days upon acknowledgement of receipt of notice) on the plans and will be invited to attend any meetings to discuss implementation of the plans.
 4. During construction, culvert inlets and outlets will be evaluated by the resident engineer with regard to stream stability immediately following installation and quarterly for a period of one year at each location. Indicators of instability, such as head cutting, scour, aggradation, or degradation, will be used to determine the need for corrective actions.
 5. A final field inspection will be held with the Contractor to evaluate culvert placement and stream stability before the project is considered complete. If instability is detected during any of these reviews, corrective actions will be performed when deemed necessary by the engineer or by the conditions of any federal and state permits required by Section 404/401 of the Clean Water Act.
 6. NCDOT and NCDEQ-DEMLR (land quality) will meet with USFWS to evaluate and discuss erosion control effectiveness if requested.

7. In the event of any failure of erosion control devices, within 48 hours, NCDOT will send a report to USFWS detailing the cause of the failure, photographs of the failure, and a plan for repair of the erosion control devices and reasonable methods to avoid future failure. NCDOT will notify the USFWS when failures are repaired.
8. To carry out Reasonable and Prudent Measure 2, the USFWS must be notified before work starts in the culvert.
 - Work can only commence when the baffle is installed if work will occur from March 15th through November 15th.
 - NCDOT will coordinate with the USFWS to determine the best timing for installing the baffle.
 - The USFWS, or an individual approved by USFWS, must be present when trees are cleared near the culvert and when the baffle is installed if installation occurs when bats are present.
 - The USFWS may request that the baffle be moved, removed, or altered. It may be determined that disturbances from construction are less impactful than potential alterations to the culvert microclimate from the baffle, or noise levels no longer exceed the ambient level.
 - If the RCBC outlet is needed to access other portions of the culvert, it will only be used when bats are not present.
9. The alternate bat roost structure from Reasonable and Prudent Measure 3 will consist of modern bat modular roost panels or comparable structures installed on a bridge over water as close to the culvert roost as possible, but out of areas disturbed by construction. Panels should be constructed of fiber-reinforced concrete with additives to mimic thermal mass and should be mounted using metal. Bridge selection and panel placement/design should be informed by work currently being conducted by Indiana State University. Panels must be installed before work starts on the culvert roost and should be checked for bat use once in early summer and once in late fall for three years following placement. The details of the location, size, design, and installation of the bat panels will be decided by a committee to include USFWS, NCWRC, and NCDOT. This panel will be installed temporarily for the duration of construction.
10. NCDOT will monitor bat activity before, during, and post construction.
 - NCDOT has committed to conducting acoustic monitoring (and/or emergence counts, as appropriate) for MYGR at some locations immediately before, during and up to two years after construction. This monitoring may help determine changes in bat activity related to construction. NCDOT will coordinate the locations and time frame for monitoring with USFWS. This will include monitoring the culvert roost, including before and after the baffle is installed.
 - To investigate whether MYGR avoid active construction zones (including bridges and the Hill Street culvert roost) at night, NCDOT will explore the use of night-vision video recordings, or

- other methods, in an attempt to monitor bat activity at locations where they may be most susceptible to disturbance.
- NCDOT will conduct additional monitoring/research to include telemetry, coordinated monitoring of roosts, monitoring of new panels, basin-wide acoustics to be conducted at key points during and after construction. The details of additional monitoring will be decided by a committee to include USFWS, NCWRC and NCDOT. Information gathered will be used to increase our knowledge of impacts to bats to help inform future consultation, to learn more about gray bats in the project area, to better conserve the species, and to track movements of bats and hopefully determine where bats go if they abandon the culvert roost and/or the area.
11. As part of Reasonable and Prudent Measure 4, NCDOT will give the USFWS the opportunity to discuss/review/comment on the lighting design drafts and final design plans (and allow 15 days for review upon acknowledgement of receipt of notice), including on the Bowen Bridge.
- Bowen Bridge: This bridge is being downgraded to carry four lanes of local traffic on the center lanes, and bike and pedestrian paths on the outer lanes. Lighting will be altered to accommodate these changes.
 - New lighting for vehicle and bike/pedestrian traffic will not exceed the current level of illumination on the water (an average of 0.10 foot-candle over an area that goes from shore to shore and extends approximately 50' to the north and south from the structures) as determined by a lighting engineer, and every effort will be made to reduce the level of illumination on the water.
 - NCDOT will work with USFWS to avoid and minimize impacts of light, including:
 - Light will be 3000 K or below
 - Proposed aesthetic panel lighting will not illuminate the water surface when bats are present (March 15th through November 15th). NCDOT and the City of Asheville will work with the USFWS to determine acceptable light color and levels when bats are present.
 - Southern States: USFWS will be included in discussions about modifying the lights at Southern States to decrease light spill at the Hill Street culvert entrance. If the land owner does not agree to minimize lighting on their property, NCDOT will work with the USFWS to assess the effectiveness of and minimize light using a barrier (fence or vegetation) on their ROW easement.
12. In order to carry out Reasonable and Prudent Measure 5, NCDOT will conduct culvert checks for roosting bats within 30 days of rehabilitation or repair for any culverts five feet tall or higher, and 200 feet or longer, scheduled to occur from March 15th through November 15th. If bats are

found, a similar protocol will be used to the pre-demolition check for bats in bridges.

If bats are present, one of the following options will be implemented (options listed in order of preference). NCDOT will:

- Wait for bats to leave for the season (approximately mid-October to early November) before beginning work; or
- A biologist will monitor the culvert and work will begin after bats leave the culvert for the evening (if work occurs over multiple days, the culvert will need to be monitored each day work occurs), or
- A permitted biologist will exclude bats from work area immediately prior to the start of work using acoustic deterrents (if this method is employed, the culvert will need to be checked each day work occurs to determine efficacy), or
- A permitted biologist will hand remove bats from work area immediately prior to the start of work (the culvert will need to be checked each day work occurs to ensure bats do not return).
- If pre-work check determines pups are present, NCDOT will refrain from culvert work until it can be determined by a biologist that the pups are volant, and then use the previous options to proceed with work.

13. The nearest flyover bridge to the culvert roost will not be closer than 300 feet from the outlet.

- Monitoring and Reporting Requirements
 - In order to monitor the impacts of incidental take, the NCDOT must report the progress of the Action and its impacts on the species to the USFWS. This section provides the specific instructions for such monitoring and reporting. As necessary and appropriate to fulfill this responsibility, the NCDOT must require any permittee, Contractor, or grantee implement these Terms and Conditions through enforceable terms that are added to the permit, contract, or grant document. Such enforceable terms must include a requirement to immediately notify the NCDOT and USFWS if the amount or extent of incidental take specified in this Incidental Take Statement is exceeded during action implementation.
 - NCDOT will provide a final report and yearly bat monitoring summaries to the Service by January 31st of each year starting at the end of the bat monitoring season, and concluding up to two years after construction is completed.

- Reinitiation Notice
 Formal consultation for the I-2513 project is concluded. Reinitiation of consultation is required by law if:
 - a. the amount or extent of incidental take is exceeded
 - i. Gray Bats: If construction operations at the bridges cannot be completed after five years from the start of causeway construction without night operations, or culvert system work cannot be completed after four seasons when bats are not present, or 60" CMP work cannot be complete after one season when bats are not present, all work should stop, and the USFWS should be contacted immediately to reinitiate consultation.
 - ii. If a continuing NOV* is issued to NCDOT, the USFWS should be contacted immediately to determine if consultation should be reinitiated with the FHWA.

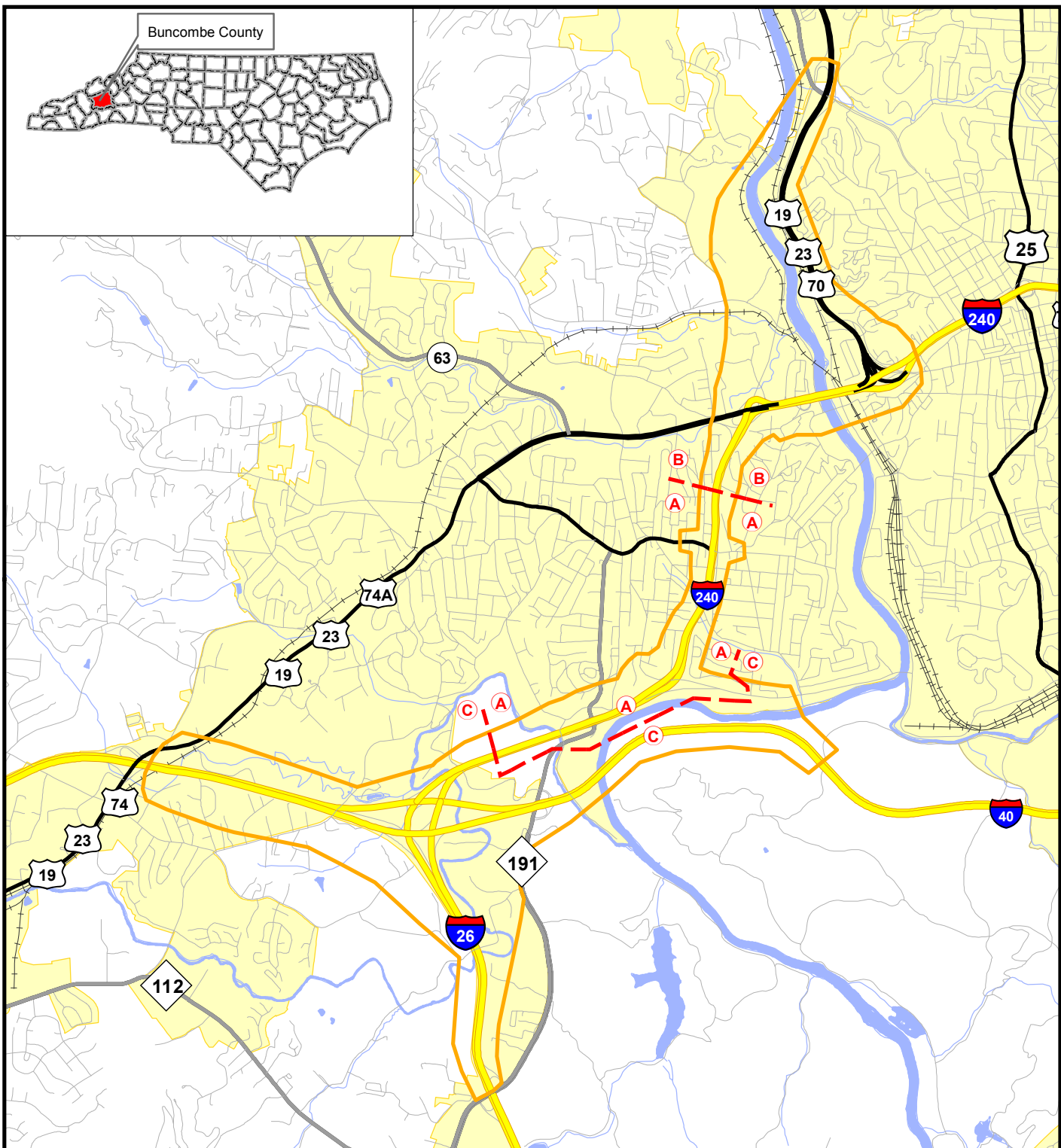
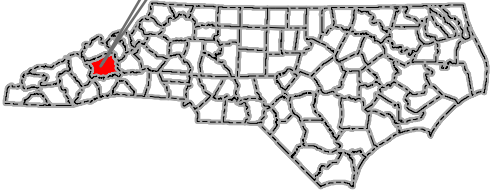
*If severe problems are found that may result in loss of sediment into waterbodies or onto adjacent property owners, a Notice of Violation (NOV) is issued by NCDEQ-Energy Mineral and Land Resources to NCDOT. Consequently, NCDOT and its contractors will react immediately to correct items noted in the NOV. If deficiencies are not corrected within the timeframe directed by the Energy, Mineral and Land Resources NOV, a Continuing NOV will be issued. A Continuing NOV indicates that sufficient progress has not been made to correct environmental deficiencies on a project.

- b. new information reveals that the Action may affect listed species or designated critical habitat in a manner or to an extent not considered in this BO;
 - c. the Action is modified in a manner that causes effects to listed species or designated critical habitat not considered in this BO; or
- a new species is listed or critical habitat designated that the action may affect.

SCHEDULE

Spring 2021: Record of Decision
 2022: I-2513 A ROW
 2023: I-2513 B and D ROW and Construction (Design Build)
 2024: I-2513 A Construction

Buncombe County



North Carolina
Department of Transportation



I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Original Project Study Area
- Interstate
- US Highway
- State Highway
- State Route
- Local Road
- Railroad
- Streams (non-delineated)
- Water
- Municipal Boundary

Date: May 2018

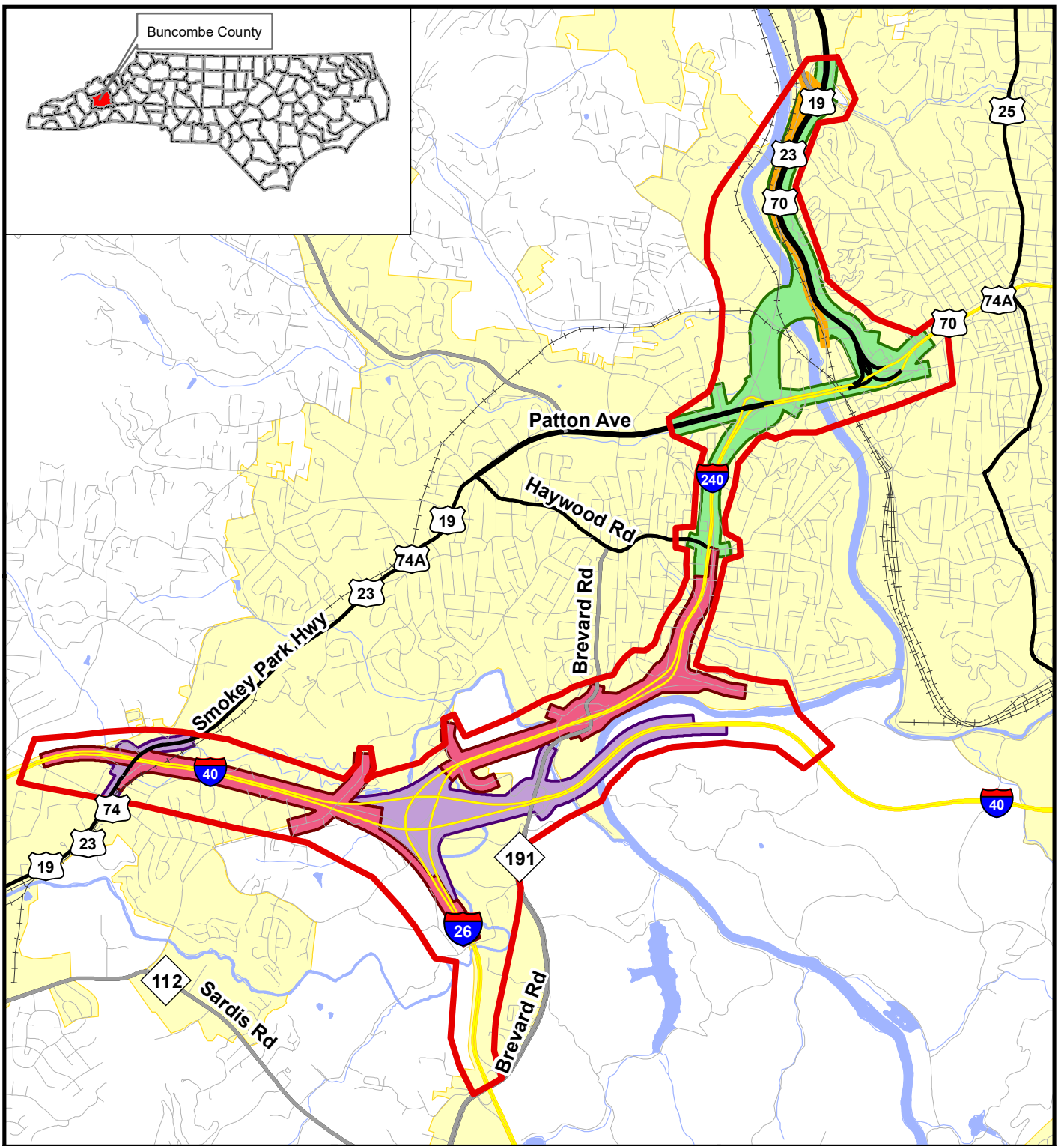
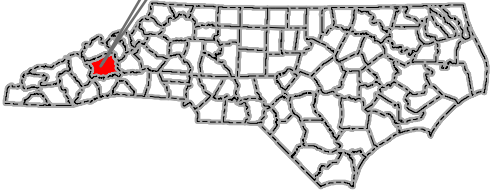


0 0.5 1 Miles

Figure 1

Project Study Area
(FEIS)

Buncombe County



North Carolina
Department of Transportation



I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Project Study Area
- Section A
- Section B
- Section C
- Section D
- Streams (non-delineated)
- Water
- Municipal Boundary
- Interstate
- US Highway
- State Highway
- State Route
- Local Road
- Railroad

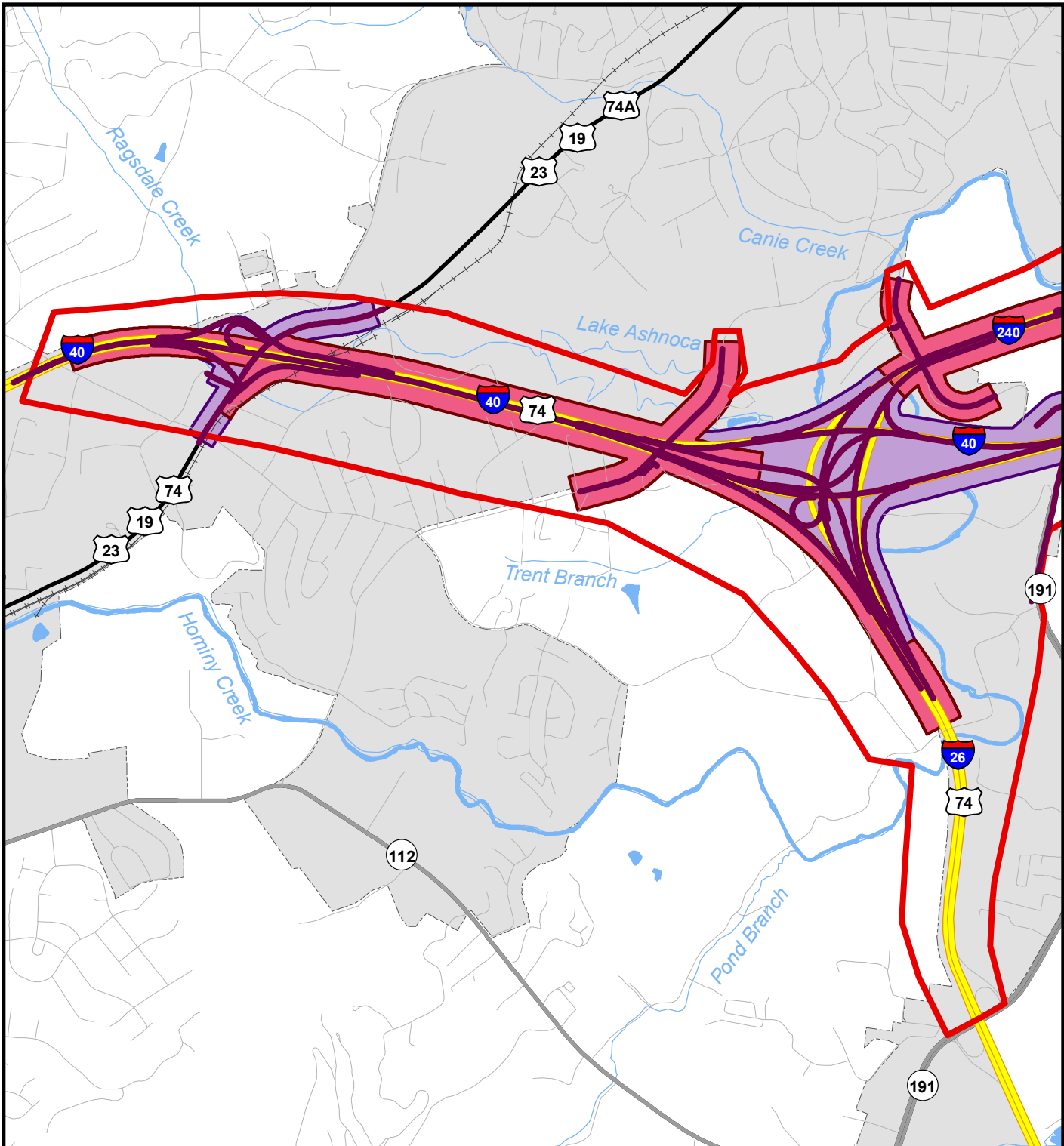
Date: March 2022



0 0.5 1 Miles

Figure 2

Project Study Area
and New Sections



North Carolina
Department of Transportation



I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Project Study Area
- Detailed Study Alternative
- Section A
- Section C
- Interstate
- US Highway
- State Highway
- State Route
- Local Road
- Railroad
- Streams (non-delineated)
- Water
- Municipal Boundary

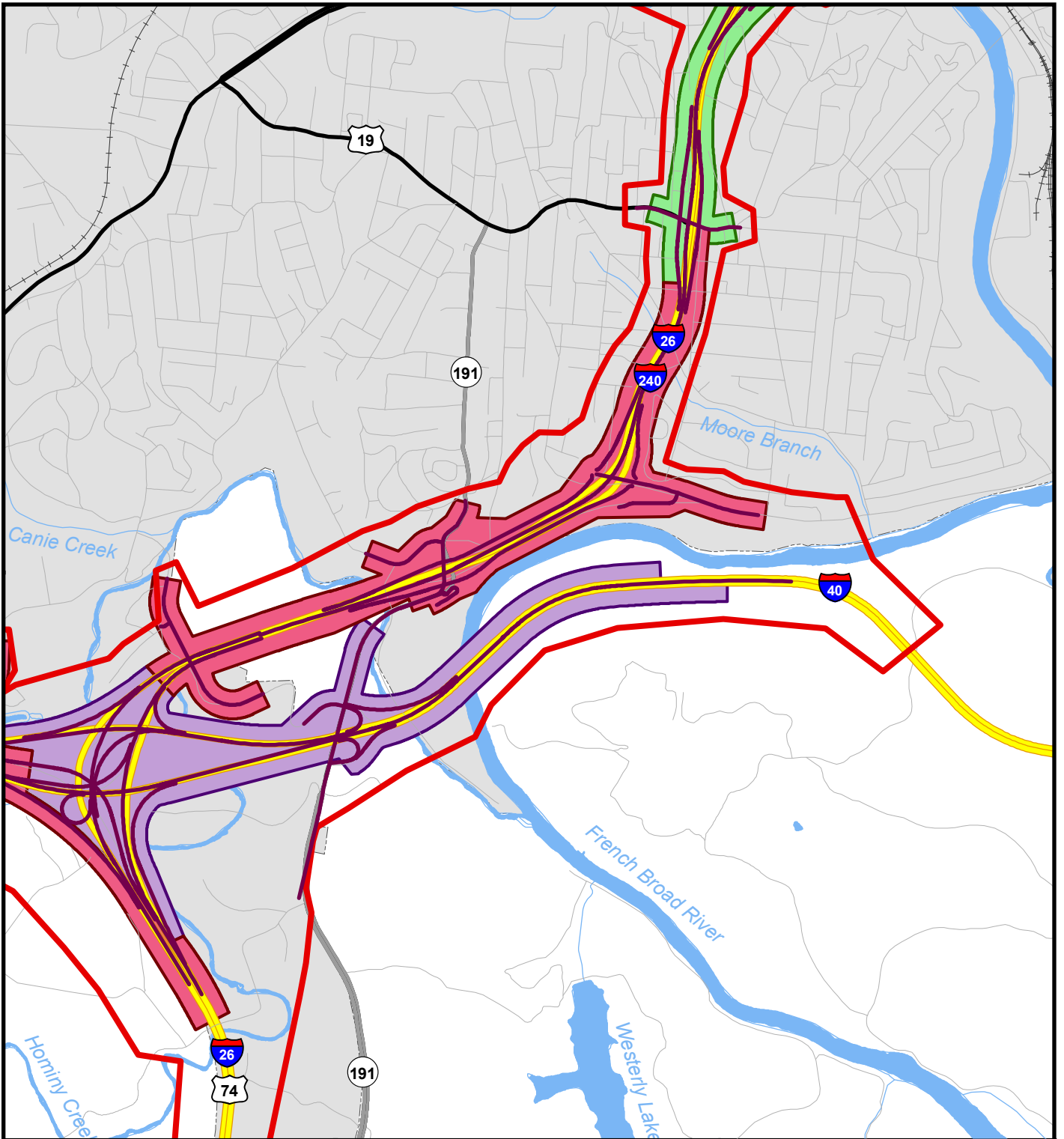
Date: March 2021



0 1,000 2,000
Feet

Figure 3

**Section C
Preferred Alternative**



North Carolina
Department of Transportation



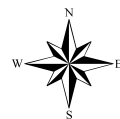
I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Project Study Area
- Detailed Study Alternative
- Section A
- Section B
- Section C
- Interstate
- US Highway
- State Highway
- State Route
- Local Road
- Railroad
- Streams (non-delineated)
- Water
- Municipal Boundary

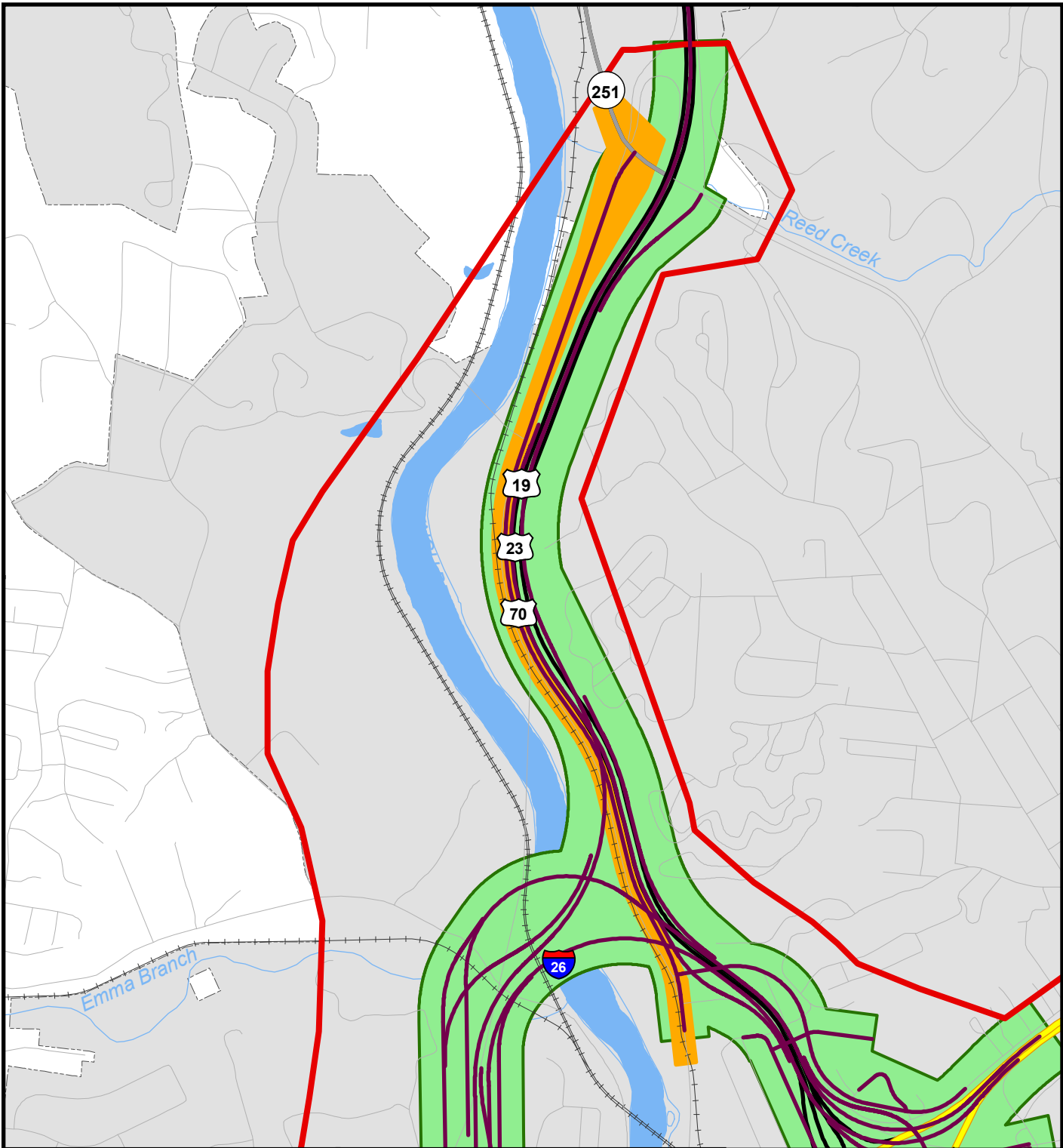
Date: March 2021



0 1,000 2,000
Feet

Figure 4

**Sections A and C
Preferred Alternative**



North Carolina
Department of Transportation



I-26 Asheville Connector
Buncombe County

STIP Project No. I-2513

Legend

- Project Study Area
- Detailed Study Alternative
- Section B
- Section D
- Interstate
- US Highway
- State Highway
- State Route
- Local Road
- Railroad
- Streams (non-delineated)
- Water
- Municipal Boundary

Date: March 2021



0 600 1,200
Feet

Figure 5

**Section D
Preferred Alternative**