Federal Aid Project No. NHF-26-1(62)23/IMNHF-026-1(86)9

WBS No. 34232.1.1/36030.1.2

STIP Project No. I-4400/I-4700

ADMINISTRATIVE ACTION

FINAL ENVIRONMENTAL IMPACT STATEMENT

FINAL SECTION 4(f) EVALUATION

RECORD OF DECISION

March 2019

U.S. Department of Transportation
Federal Highway Administration
N.C. Department of Transportation

Cooperating Agency
National Park Service – Blue Ridge Parkway

Submitted Pursuant to the National Environmental Policy Act
23 CFR 771.124 and 42 USC 4332(2) (c)

APPROVED:

3/5/19 DERRICK WEAVER

Date **Derrick Weaver, P.E.**
Environmental Policy Unit
North Carolina Department of Transportation

3/5/2019 Edward T. Parker FOR

Date **John F. Sullivan III, P.E., Division Administrator**
Federal Highway Administration

The FHWA and NCDOT will issue a single document that consists of the Final Environmental Impact Statement and Record of Decision pursuant to Public Law 112-141, 126 Stat. 405, Section 1319(b) unless it is determined that statutory criteria or practicability considerations preclude issuance of such a combined document.

FHWA-EIS-16-01-F
Federal Highway Administration
North Carolina Division

I-26 WIDENING

Federal Aid Project No. NHF-26-1(62)23/IMNHF-026-1(86)9

WBS No. 34232.1.1/36030.1.2

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3/5/19 Beverly D. Robinson

Date

Beverly Robinson, CPM
Project Development Engineer
North Carolina Department of Transportation

5 Mar 19 Kat Bukowy

Date

Kat Bukowy, AICP
Project Manager
HNTB North Carolina, P.C.

3.5.19 Jennifer Harris

Date

Jennifer Harris, P.E.
Sr. Project Manager
HNTB North Carolina, P.C.

NORTH CAROLINA PROFESSIONAL SEAL 26972 ENGINEER JENNIFER H HARRIS
3.5.19

SPECIAL PROJECT COMMITMENTS

I-26 Widening
Henderson and Buncombe Counties
Federal Aid Project No. NHF-26-1(62)23/IMNHF-026-1(86)9
WBS No. 34232.1.1/36030.1.2
STIP Project No. I-4400/I-4700

This "Green Sheet" identifies the project commitments made to avoid, minimize, or mitigate project impacts beyond those required to comply with applicable federal and state requirements and regulations.

As part of the National Environmental Policy Act (NEPA) process, commitments are made to avoid, minimize, or mitigate project impacts. Commitments result from public comment or through the requirements of, or agreements with, environmental resource and regulatory agencies.

In addition to compliance with applicable federal and state requirements and regulations, such as Section 404 Individual Permit Conditions, Nationwide Permit Conditions, Regional Conditions, and State Consistency Conditions; North Carolina Department of Transportation (NCDOT) Guidelines for Best Management Practices for the Protection of Surface Waters; General Certification Conditions and Section 401 Conditions of Certification, and the Endangered Species Act (ESA), the following table lists special project commitments that have been agreed to by the NCDOT.

Item	Resource	Agency	Project Commitment	Project Stage
1	Noise	NCDOT Environmental Analysis Unit (EAU) – Human Environment Section (HES)	The *Traffic Noise Report* (HNTB 2017) for State Transportation Improvement Project (STIP) Nos. I-4400/I-4700 preliminarily identifies six noise walls for abatement of noise impacts for the preferred alternative (Hybrid 6/8-Lane Widening Alternative). The *Design Noise Report* will verify the final number and location of noise walls for the preferred alternative based on the NCDOT *Traffic Noise Policy* (October 6, 2016).	Final Design

2	Limited English Proficiency (LEP)	NCDOT EAU – HES	Because LEP populations within the Demographic Study Area (DSA) exceed the Department of Justice's Safe Harbor thresholds, written translations of vital documents should be provided for Spanish-speaking populations, in addition to other measures assuring meaningful language access, as determined by NCDOT Public Involvement to satisfy the requirements of Executive Order 13166.	Public Involvement
3	LEP	NCDOT EAU – HES	Because notable other Indo-European language-speaking populations requiring language assistance are located within the DSA, the Project Planning Engineer should consult with NCDOT Public Involvement to determine appropriate measures assuring meaningful public involvement to satisfy the requirements of Executive Order 12898.	Public Involvement
4	Protected Species	NCDOT EAU – NES and National Park Service (NPS)	Because the project includes construction on NPS land that might be within habitat that is suitable for the Northern long-eared bat (NLEB), tree clearing shall be allowed between August 15 and May 15. In the event that any NLEB roost trees are documented within 0.25 mile of the project area, regardless of the time of year, the NPS will seek consultation with the US Fish and Wildlife Service before work proceeds.	Prior to Construction Construction
5	Protected Species	NCDOT EAU – NES and NPS	Because the project includes construction on NPS land that might be within habitat that is suitable for the Indiana bat, emergent and/or acoustic surveys shall be conducted prior to removal of trees if the work would be conducted between April 15 and August 15. No significant tree removal within 5 miles of known hibernacula can occur between April 1 and November 15.	Prior to Construction Construction
6	Hydraulics	NCDOT Hydraulics	The NCDOT Hydraulics Unit will coordinate with the NC Floodplain Mapping Program to determine the status of the project with regard to the applicability of NCDOT's Memorandum of Agreement or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).	Post-Construction

7	Hydraulics	NCDOT Hydraulics	The Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structures and roadway embankments that are located within 100-year floodplains were built as shown in the construction plans, both horizontally and vertically.	Post-Construction
8	Utilities	NCDOT Division 13 and Roadway Design	NCDOT Roadway Design Unit will continue coordination with Duke Energy to avoid impacts to the dam and coal ash ponds located at the Asheville Plant.	Final Design
9	Blue Ridge Parkway and Mountains-to-Sea Trail	NCDOT Division 13, National Park Service (NPS), and Federal Highway Administration (FHWA)-Eastern Federal Lands (EFL)	Coordination between the NCDOT, NPS, and FHWA-EFL will continue during the design and construction of the project to minimize impacts to Blue Ridge Parkway operations and visitor experience as well as the Mountains-to-Sea Trail. These agencies will coordinate to ensure, to the extent possible, that temporary or nighttime closures necessary for construction of the Blue Ridge Parkway realignment and bridge replacement over I-26 will only be permitted from November 1 until April 31 and not during summer months. The NPS will provide detour signage to safely guide users of the Mountains-to-Sea Trail out of the construction area and into safe locations.	Construction
10	Blue Ridge Parkway and Mountains-to-Sea Trail	NCDOT Division 13, NPS, and FHWA- EFL	Coordination between the NCDOT, NPS, and FHWA-EFL will continue during the design and construction of the project to minimize impacts to Blue Ridge Parkway operations and visitor experience as well as the Mountains-to-Sea Trail. These agencies will coordinate to ensure, to the extent possible, that nighttime work (between dusk and dawn) shall only be allowed during bridge removal activities and installation of new piers and segments on the Blue Ridge Parkway. If other nighttime work is needed, park natural resource staff shall be consulted to determine if further mitigations are necessary.	Construction

11	Blue Ridge Parkway and Mountains-to-Sea Trail	NCDOT Division 13, NPS, and FHWA- EFL	Coordination between the NCDOT, NPS, and FHWA-EFL will continue during the design and construction of the project to minimize impacts to Blue Ridge Parkway operations and visitor experience as well as the Mountains-to-Sea Trail. These agencies will coordinate to ensure, to the extent possible, that a re-vegetation/landscaping plan shall be developed and implemented to re-establish native vegetation and provide for a continuous visual experience for the trail and Blue Ridge Parkway user.	Construction
12	Blue Ridge Parkway and Mountains-to-Sea Trail	NCDOT Division 13, NPS, and FHWA- EFL	Coordination between the NCDOT, NPS, and FHWA-EFL will continue during the design and construction of the project to minimize impacts to Blue Ridge Parkway operations and visitor experience as well as the Mountains-to-Sea Trail. These agencies will coordinate to ensure, to the extent possible, that the proposed demolition of the bridge shall include appropriate measures to avoid destroying active nests or killing birds that are protected by the Migratory Bird Treaty Act.	Construction
13	French Broad River Paddle Trail	NCDOT Division 13, NC Department of Parks and Recreation (NCDPR), and USACE	NCDOT will place signage at the Bent Creek River Park and along the French Broad River notifying users of construction. In addition, a safe passage lane under the French Broad River and I-26 bridge will be provided for the duration of construction. NCDOT will work with NCDPR partner organizations to alert boaters of construction.	Construction
14	Blue Ridge Parkway	NCDOT Division 13, FHWA NC Division, NPS, and FHWA- EFL	Eastern Federal Lands (EFLHD) will provide 70 percent and 100 percent construction drawings for the Undertaking to BRP. BRP shall provide their comments to EFLHD staff within 30 calendar days of receipt. EFLHD shall revise drawings and plans to address the BRP comments and provide revised drawings to BRP within 30 calendar days after receiving comments. The revised drawings shall be submitted by BRP to the NC Historic Preservation Office (HPO). The HPO shall provide their comments to BRP within 15 calendar days of receipt. Comments provided by the HPO will be sent to EFLHD by BRP within 5 calendar days to be incorporated	Final Design

			into the bridge design. If HPO does not respond within 15 days, concurrence is assumed.	
15	Blue Ridge Parkway	NCDOT Division 13, FHWA NC Division, NPS, and FHWA- EFL	EFLHD shall provide parking pull-off and re-vegetation/landscaping plans to BRP who will provide their comments to EFLHD staff within 30 calendar days of receipt. EFLHD shall revise the plan and design to address BRP comments and provide revised plans to BRP within 30 calendar days after receiving comments. These plans shall be submitted by BRP to the HPO. The HPO shall provide their comments to BRP within 15 calendar days of receipt. Comments provided by the HPO will be sent to EFLHD by BRP within 5 calendar days to be incorporated into the plans. If HPO does not respond within 15 days, concurrence is assumed.	Final Design
16	Blue Ridge Parkway	NCDOT EAU – Historic Architecture, FHWA NC Division, NPS, and FHWA- EFL	Historic American Engineering Record (HAER) documentation will be submitted by NCDOT to BRP. BRP will within seven days forward to the NPS Southeast Regional Office will provide their comments to BRP and NCDOT within 30 calendar days of receipt. NCDOT shall revise the documentation to address NPS comments and provide revised documentation to BRP within 60 calendar days after receiving comments. BRP shall forward revised documentation to the NPS Southeast Regional Office who will review for acceptance to the Heritage Documentation Program Collection of the Library of Congress. Upon acceptance of the HAER documentation by the NPS, the BRP shall notify NCDOT so that copies of all documents resulting from the HAER documentation, including pertinent field records, notes, site sketches, superintendent reports, and construction reports shall be provided to the HPO, the Library of Congress and the permanent collection of BRP. The NCDOT shall provide all said copies to all parties within 45 calendar days of notification of acceptance.	Preconstruction

17	Blue Ridge Parkway	NCDOT Division 13, FHWA NC Division	If previously unknown cultural resources are discovered during construction, all work in the immediate vicinity (600 feet) of the discovery shall be halted and BRP Cultural Resources Manager shall be notified immediately. Work shall not resume until the NPS determines the resources have been identified and documented and an appropriate mitigation strategy developed, if necessary, in accordance with pertinent laws and regulations, including the stipulations of the "2008 Programmatic Agreement Among the National Park Service (U.S. Department of the Interior), the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers." THPOs will be consulted in the event cultural resources or human remains are discovered during the project.	Construction
18	Protected Species	NCDOT, NCDOT Divisions 13 and 14	NCDOT will carry out all activities for which it has been assigned responsibility in the Biological Opinion I-26 Widening from US 25 Near Hendersonville to I-40/I-240 South of Asheville (January 2019).	Final Design and Construction

PREFACE

Why did we prepare this Final Environmental Impact Statement?

This *Final Environmental Impact Statement* (*EIS*) and *Record of Decision* (*ROD*) was prepared to satisfy (in part) the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended. NEPA requires the preparation of an EIS for all major Federal actions significantly affecting the environment. An EIS may also be prepared if a project is environmentally controversial. An EIS is first prepared and published as a "draft" document before the "final" EIS is prepared. The *Draft EIS* was prepared by the North Carolina Department of Transportation (NCDOT) in coordination with the Federal Highway Administration (FHWA) and signed on August 9, 2016. The *Reevaluation of the Draft EIS* (*Reevaluation*) was also prepared by NCDOT in coordination with FHWA and signed in February 2019. This *Final EIS* includes comments made by federal and state agencies, local governments, organizations, and citizens during the comment period for the *Draft EIS*.

Replacing the Blue Ridge Parkway (BRP) bridge over I-26, as part of this project, will require approval from the National Park Service (NPS). Therefore, this *Final EIS* was also prepared in cooperation with the NPS, which has been designated as a "cooperating agency". NPS will adopt this *Final EIS* and issue their own decision document. The EIS is also prepared in accordance with the NPS Organic Act of 1916 and *NPS Management Policies 2006*. This decision document will be a separate ROD requiring approval from the NPS Southeast Regional Director.

What is NEPA?

*NEPA is the **National Environmental Policy Act of 1969**, which established a broad national framework for protecting the environment. NEPA requires federal agencies to consider the environmental consequences of their proposals, document the analysis, and make this information available to the public prior to implementation (FHWA 2014).*

*NEPA is implemented through regulations of the **Council on Environmental Quality (CEQ)** (40 CFR 1500-1508).*

For more information: NEPA.GOV, https://ceq.doe.gov/

What information is included in this Final EIS and ROD?

This *Final EIS* includes information from the *Draft EIS* and addresses comments made by agencies, governments, and organizations regarding the project and includes new information received since the *Draft EIS* was published. This document also reaffirms the Preferred Alternative stated in the *Draft EIS* and gives additional details on this determination. The Table of Contents is a guide to the overall organization of the report and is followed by a list of acronyms used in the document.

Throughout this document, applicable regulations, guidelines, and definitions are presented in the right margin. Applicable technical studies are also listed in the right margin at the end of each chapter. All technical studies appended by reference are included as **Appendix A**.

This document is organized by the following Chapters:

Summary. The Summary provides an overview of the project and its potential impacts. It also includes a table listing potential impacts for the Preferred Alternative.

Chapter 1: Introduction. This chapter introduces the I-26 improvement project and presents an overview of the project and its location. This chapter states the primary purpose of the project and documents the needs that the

project proposes to address. Information to support the project needs is also presented.

Chapter 2: Alternatives. This chapter notes the alternatives mentioned in the *Draft EIS* and identifies the Preferred Alternative, the Least Environmentally Damaging Practicable Alternative (LEDPA), and the Preferred Alternative design.

Chapter 3: Environmental Resources and Impacts. This chapter describes the existing conditions in the project study area and presents analyses of the anticipated benefits and potential adverse environmental effects of the Preferred Alternative. The discussion is organized by resource (e.g., land use, water resources, air quality, etc.). This chapter also presents an evaluation of potential cumulative effects. A summary of all potential impacts is included at the end of this chapter.

Chapter 4: Comments and Coordination. This chapter presents a summary of the public outreach activities and agency coordination undertaken to prepare the *Draft* and *Final EIS*.

Chapter 5: References. Full citation information for all references cited within this document is included in this chapter.

Chapter 6: Final Section 4(f) Evaluation. This chapter introduces Section 4(f) of the Department of Transportation Act of 1966 and evaluates each of the resources identified in **Chapter 3, Section 3.2**.

Chapter 7: Record of Decision. This chapter identifies the Selected Alternative based on the Preferred Alternative in the *Draft EIS* and *Final EIS* for the proposed action. It summarizes all of the alternatives considered for the project and it describes the measures adopted to avoid and/or minimize harm. Finally, it identifies monitoring and enforcement programs for the implementation of mitigation measures.

Figures and Appendices. Figures and Appendices follow **Chapter 7**. The appendices include supporting documentation, such as a List of Technical Studies Appended by Reference, Relocation Reports, Merger Concurrence Forms, and others. The Table of Contents lists the appendices.

MAP-21, the Moving Ahead for Progress in the 21st Century Act *(P.L. 112-141), was signed into law by President Obama on July 6, 2012. MAP-21 is the first long-term highway authorization enacted since 2005.*

By transforming the policy and programmatic framework for investments to guide the transportation system's growth and development, MAP-21 creates a streamlined and performance-based surface transportation program and builds on many of the highway, transit, bike, and pedestrian programs and policies established in 1991.

For more information:
http://www.fhwa.dot.gov/map21/

What are the next steps?

Section 1319(b) of Moving Ahead for Progress in the 21st Century Act (MAP-21) directs the lead agency, to the maximum extent practicable, to combine the Final EIS and ROD unless:

1. The Final EIS makes substantial changes to the proposed action that are relevant to environmental or safety concerns; or

2. There are significant new circumstances or information relevant to environmental concerns and that bear on the proposed action or the impacts of the proposed action.

The proposed project does not meet either of the conditions listed above. This *Final EIS/ROD* does not make any changes to the proposed action as presented in

the *Draft EIS* and there are no significant new circumstances or information that would change the proposed action or its impacts as presented in the *Draft EIS*. Therefore, this document is a combined Final EIS and ROD.

The NPS will issue a separate ROD following the issuance of this *Final EIS*/*ROD*.

SUMMARY

What is the proposed project and where is it located?

Although I-26 as a whole is considered a west-to-east corridor, running from Kingsport, Tennessee to Charleston, South Carolina, in the area of this project, it appears to run south-to-north. Therefore, I-26 in the context of this project will be referred to in terms of south-to-north. The project is in western North Carolina in southeastern Henderson County, just south of Hendersonville, and continues north to just south of Asheville in southern Buncombe County. Buncombe and Henderson Counties are in western North Carolina in the Blue Ridge Mountains. The project passes through the Town of Fletcher and the City of Hendersonville in Henderson County, and the southern portion of the City of Asheville in Buncombe County. Western North Carolina contains very few major urban centers. Asheville is the seat of Buncombe County's government and is western North Carolina's largest city and most prominent economic engine. I-26 is a major transportation route in western North Carolina and the southeastern United States for the movement of both people and goods.

The project proposes improvements to a 22.2-mile segment of I-26 from US 25 near Hendersonville to I-40/I-240 south of Asheville. This project is included in the 2018 – 2027 State Transportation Improvement Program (STIP) as two projects, I-4400 and I-4700. STIP Project I-4400 begins at US 25 (Exit 54) south of Hendersonville and extends along I-26 north to NC 280 (Airport Road) (Exit 40). STIP Project I-4700 extends along I-26 from NC 280 (Airport Road) north to the I-40/I-240 interchange. **Figure 1** shows the general project vicinity.

The project study area boundaries consist of a generally 1,400-foot wide corridor along existing I-26 from US 25 to the I-40/I-240 interchange. The study area boundary is expanded around interchanges that are included in this project and around the BRP bridge over I-26.

Why is the project needed and what is its purpose?

The project is needed to:

- improve existing and projected roadway capacity deficiencies, and
- improve insufficient pavement structure and deteriorating existing road surface conditions.

The purpose of the project is to reduce congestion, with a goal of achieving an overall Level of Service (LOS) D in the design year (2040) and improve the pavement structure.

What is the schedule for the project?

According to the NCDOT 2018 – 2027 STIP, right of way acquisition for I-4700 and a portion of I-4400 (US 25 (Asheville Highway) to NC 280 (Airport Road)) was scheduled for FY 2018 and construction is scheduled to begin in FY 2019. I-4400 from US 64 (Four Seasons Boulevard/Chimney Rock Highway) to US 25 (Asheville Highway) is scheduled for right of way and construction in 2019. The US 64 interchange with I-26 is scheduled for right of way acquisition in

*The development of a **Purpose and Need Statement** is a required component of the NEPA process. The Purpose and Need Statement identifies the problems that a proposed project is intended to address and ensures that the project's purpose is clearly stated. The Purpose and Need Statement also helps to define a range of acceptable alternatives.*

*The **State Transportation Improvement Program** (STIP) includes NCDOT's priority projects and is the document NCDOT uses to schedule construction funding.*

2019 and construction in 2023. The remaining portion of I-4400 (US 25 to US 64 (Four Seasons Boulevard/Chimney Rock Highway)) is currently unfunded.

The replacement of the BRP bridge over I-26 will be completed in conjunction with STIP Project I-4700.

Wasn't widening I-26 previously studied?

An Environmental Assessment (EA) was completed for STIP I-4400 (the 13.6-mile segment from US 25 to NC 280 (Airport Road)) in May 2001. The decision document, a Finding of No Significant Impact (FONSI), was completed in January 2002. A lawsuit and resulting judgment in 2003 found that NCDOT should conduct a broader analysis of the cumulative impacts and logical termini, or project limits, of the overall expansion of the I-26 corridor. To address the 2003 judgment, the NCDOT added the analysis of the adjacent I-26 improvement project, the 8.6-mile segment between NC 280 (Airport Road) and I-40/I-240 (STIP I-4700), into one comprehensive analysis. In addition, per the 2003 court ruling, an *Asheville Regional Cumulative Effects Study* (*CES*) was completed in June 2014, by URS. The *CES* evaluated five STIP projects in the Asheville region, which were determined to have the highest potential for contributing to regional cumulative effects. The five projects were A-0010A, I-2513, I-4400/I-4700, I-4759, and I-5504.

Which alternative is the Preferred Alternative?

Three Build Alternatives were considered in the *Draft EIS* for implementation:

- **Build Alternative 1: 6-Lane Widening.** The 6-Lane Alternative would widen I-26 to three lanes in each direction from US 25 to I-40/I-240.
- **Build Alternative 2: 8-Lane Widening.** The 8-Lane Alternative would widen I-26 to four lanes in each direction from US 25 to I-40/I-240.
- **Build Alternative 3: Hybrid 6/8-Lane Widening.** The Hybrid 6/8-Lane Alternative would widen I-26 to three lanes in each direction between US 25 and the US 25 (Asheville Highway) interchange and then widen I-26 to four lanes in each direction from the US 25 (Asheville Highway) interchange to the I-40/I-240 interchange.

The Hybrid 6/8-Lane Widening Alternative chosen as the Preferred Alternative in the *Draft EIS* was confirmed as the Preferred Alternative by NCDOT and FHWA. This decision was reached following a thorough review of the results of the impact assessment for the three widening alternatives, as documented in the *Draft EIS* and reaffirmed in the *Reevaluation*. The decision was also based on an assessment of the comments made on the *Draft EIS* by local governments, government agencies, non-government organizations, and the public.

In conjunction with federal and state environmental agency partners, the Hybrid 6/8-Lane Widening Alternative was also determined to be the LEDPA.

The Preferred Alternative is discussed in more detail in **Chapter 2** and analyzed in **Chapter 3**.

The columns supporting the bridge deck of the BRP bridge over I-26 are spaced in such a way that they do not accommodate widening of the I-26 facility. 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 NPS in the development and evaluation of bridge replacement options. NPS has confirmed Option 4 as its preferred option following its review of comments on the *Draft EIS*.

During the public comment period for the *Draft EIS*, NCDOT heard from citizens that the proposed interchange improvements at US 25 (Asheville Highway), a partial cloverleaf design, resulted in a footprint that had too many impacts to homes and businesses. NCDOT studied two alternatives, a Diverging Diamond Interchange (DDI) and a Synchronized Interchange, that would reduce the footprint while improving the operation of the interchange. The DDI interchange design was recommended, as shown on **Figures 4D** and **4E**.

US 64 (Four Seasons Boulevard/Chimney Rock Highway) was also mentioned as a concern by local officials and the public during the public comment period. NCDOT reviewed the operation of this interchange and determined that a partial cloverleaf with enhanced left turns would operate more efficiently and provide a safer route for pedestrians.

In addition, NCDOT determined that the rest areas along I-26, near Fanning Bridge Road overpass, are undersized for current and anticipated future usage. As part of this project the rest areas will be redesigned to accommodate more travelers.

How much will the project cost?

The Preferred Alternative is estimated to cost between $716.1 million and $764.5 million in anticipated year-of-expenditure dollars. This increase from the *Draft EIS*, which showed a planning-level estimate of $454.7 million, is a result of updated design plans, which led to updated cost estimates for construction, right of way, utility relocations, and environmental mitigation. In addition, the cost shown in the *Draft EIS* is in current year dollars, whereas the Preferred Alternative is in year-of-expenditure dollars, accounting for inflation.

The Preferred Option for the Blue Ridge Parkway is expected to cost $24.1 million, an increase of approximately $5 million. This difference is also based on more refined design plans.

What impacts are expected?

The Preferred Alternative would result in impacts to resources in the study area. **Table S-1** below indicates anticipated impacts to the human environment and natural resources as a result of the Preferred Alternative (including the US 25 (Asheville Highway) interchange modifications).

Table S-1. Summary of Impacts

IMPACT CATEGORY	Preferred Alternative
Human Environment Impacts:	
Residential Relocations (Minorities)	8 (2)
Business Relocations	0
Grave Site Relocations	0
Disrupts Neighborhood & Community Cohesion	No
Recurring Community / Neighborhood Impacts	No
Low Income / Minority Populations	Yes; not disproportionately high and adverse.
Cultural Resources (Adverse Effect determined)	Yes; Blue Ridge Parkway
Section 4(f) Impacts	Yes; Blue Ridge Parkway
Section 4(f) *de minimis*	Yes; Biltmore Estate, Hyder Dairy Farm, Sholtz-Cantrell Estate; Camp Orr (Camp Pinewood), French Broad River Paddle Trail, and Mountains to Sea Trail
Visual Resources / Characteristics	No
Traffic Noise Impacts (# of receptors)	399
Air Quality	No
Farmland (acres)	7.6
Hazardous Materials	Minimal monetary and scheduling impacts.
Natural Resources Impacts[1]:	
Federal Listed Species Habitat	May Affect, Likely to Adversely Affect the gray bat and Appalachian elktoe. May Affect Not Likely to Adversely Affect Northern long-eared bat[2, 3] and Indiana bat[2, 4]. No effect for other listed species in Henderson and Buncombe Counties.
Jurisdictional Streams[1] (linear feet)	17,900
Jurisdictional Wetlands[1] (acres)	4.2
Ponds[1] (acres)	0.00008
Floodplains:	
100-year Floodplain[1] (acres)	31.3
500-year Floodplain[1] (acres)	16.7

Table S-1. Summary of Impacts

IMPACT CATEGORY	Preferred Alternative
Indirect and Cumulative Effects	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. 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.

[1] Impacts based on functional proposed slope stake limits plus 25 feet.
[2] NCDOT will follow NPS mitigation protocol for the Indiana bat and NLEB as detailed in the Special Commitments (Green Sheets) and **Section 3.8.7.2.1.**
[3]Although there is no known presence of Northern long-eared bat within the study area, because some tree clearing will be necessary on Parkway property, NPS prefers to exercise caution and assume presence. Therefore, under Section 7 consultation the May Affect Not Likely to Adversely Affect conclusion was given.
[4]Indiana bat is not listed in either Henderson or Buncombe County. Because some tree clearing will be necessary on Parkway property, and NPS believes Indiana bat to be present on Parkway property based on their acoustic surveys, the NPS prefers to exercise caution and assume presence of Indiana bat on Parkway property. Therefore, under Section 7 consultation the May Affect Not Likely to Adversely Affect conclusion was given.

Table of Contents

ACRONYMS

AASHTO	American Association of State and Highway Transportation Officials
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
AADT	Annual Average Daily Traffic
AVL	Asheville Regional Airport
BA	Biological Assessment
BO	Biological Opinion
BLRI	Blue Ridge Parkway
BMP	Best Management Practices
BRP	Blue Ridge Parkway
CEQ	Council on Environmental Quality
CES	*Asheville Regional Cumulative Effects Study*
CD	Compact Disc
CFR	Code of Federal Regulations
CLI	Cultural Landscape Inventory
CLOMR	Conditional Letter of Map Revision
CMC	Carolina Mountain Club
dB	decibel
dBA	Hourly equivalent A-weighted sound level
DCIA	Direct Community Impact Area
DDI	Diverging Diamond Interchange
DES	NC Department of Commerce, Division of Employment Security
DLT	Displaced Left Turns Interchange
DOI	Department of the Interior
DSA	Demographic Study Area
EA	Environmental Assessment
EAU	Environmental Analysis Unit
EFL	Eastern Federal Lands
EIS	Environmental Impact Statement
ESA	Endangered Species Act
EVAD	Enhanced Voluntary Agriculture District
FBRMPO	French Broad River Metropolitan Planning Organization

FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FLUSA	Future Land Use Study Area
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FY	Fiscal Year
HPO	North Carolina Historic Preservation Office
HUC	Hydrologic Unit Code
LEDPA	Least Environmentally Damaging Practicable Alternative
LEP	Limited English Proficiency
LRTP	Long Range Transportation Plan
LOMR	Letter of Map Revision
LOS	Level of Service
MAP-21	Moving Ahead for Progress in the 21st Century Act
MHP	Manufactured Housing Park
MOA	Memorandum of Agreement
mph	miles per hour
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
MST	Mountains to Sea Trail
NAC	Noise Abatement Criteria
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NLEB	Northern long-eared bat
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NRTR	Natural Resources Technical Report
NCDEQ	North Carolina Department of Environmental Quality
NCDOT	North Carolina Department of Transportation
NCDMS	North Carolina Division of Mitigation Services
NCDPR	North Carolina Division of Parks and Recreation
NCDWR	North Carolina Division of Water Resources

NCNHP	North Carolina Natural Heritage Program
NCOSBM	North Carolina Office of State Budget and Management
NCWRC	North Carolina Wildlife Resources Commission
NPS	National Park Service
NSA	Noise Study Areas
NLEB	Northern long-eared bat
OSA	North Carolina Office of State Archaeology
ROD	Record of Decision
SELC	Southern Environmental Law Center
SI	Synchronized Interchange
SR	Secondary Route
STC	Strategic Transportation Corridor
STIP	State Transportation Improvement Program
TDM	Travel Demand Model
TMP	Transportation Management Plan
TNM 2.5	Traffic Noise Model 2.5
UST	Underground Storage Tank
USACE	US Army Corps of Engineers
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
VAD	Voluntary Agricultural District
VMT	Vehicle Miles Traveled

Chapter 1 INTRODUCTION

1.1 Proposed Project

The North Carolina Department of Transportation (NCDOT), in cooperation with the Federal Highway Administration (FHWA), 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 in Henderson County and ending just south of Asheville, in Buncombe County. Although I-26 is an east to west interstate corridor, it primarily runs south to north through the study area and is described this way throughout the document. **Figure 1** shows the general project vicinity.

The proposed project is included in the current, federally-approved 2018 – 2027 State Transportation Improvement Program (STIP) as project numbers I-4400 and I-4700. STIP Project I-4400 proposes to widen I-26 from US 25 (Exit 54) north to NC 280 (Airport Road) (Exit 40); a distance of 13.6 miles. STIP Project I-4700 proposes to widen I-26 from NC 280 (Airport Road) north to the I-40/I-240 interchange; a distance of 8.6 miles.

*The **State Transportation Improvement Program** (STIP) includes NCDOT's priority projects and is the document NCDOT uses to schedule construction funding.*

The project study area boundaries consist of a generally 1,400-foot wide corridor that follows existing I-26 from US 25 in Henderson County, north to I-40/I-240 in Buncombe County. The study area boundary is expanded around interchanges that are included in this project and around the Blue Ridge Parkway (BRP) bridge over I-26, which is also included in the project study area. **Figure 2** illustrates the project study area.

Both sections were programmed for right of way acquisition to begin in fiscal year (FY) 2018. Construction is scheduled to begin in FY 2019 for I-4400 and FY 2019 for I-4700. According to the 2018 – 2027 STIP (July 2018), the total programmed funding is $540,895,000. For I-4400, the STIP has allocated $10,000,000 for right of way acquisition and $238,000,000 for construction, with $79,900,000 unfunded. For I-4700, the STIP has allocated $4,000,000 for right of way acquisition and $201,000,000 for construction. The remainder of the programmed funding is for prior years' costs associated with the project. An updated cost analysis was developed after selection of the preferred alternative. Project costs for the Preferred Alternative are described in **Section 2.4.5** and detailed cost estimates are found in **Appendix D**.

Purpose and Need

*The development of a **Purpose and Need Statement** is a required component of the NEPA process. The Purpose and Need Statement identifies the problems that a proposed project is intended to address and ensures that the project's purpose is clearly stated. The Purpose and Need Statement also helps to define a range of acceptable alternatives.*

*The legal basis for the Purpose and Need Statement comes from the **NEPA Council on Environmental Quality regulation 40 CFR 1502.13.***

1.2 Need for the Project

The needs to be addressed by the project are:

Improve existing and projected roadway capacity deficiencies. Sections of I-26 currently operate at levels of congestion characterized by unstable travel speeds with a high level of discomfort to the driver. As projected traffic volumes increase, more sections of I-26 are projected to operate at similar levels of congestion. I-26 is anticipated to operate over capacity by 2040 (design year), hindering its ability to serve high-speed regional travel.

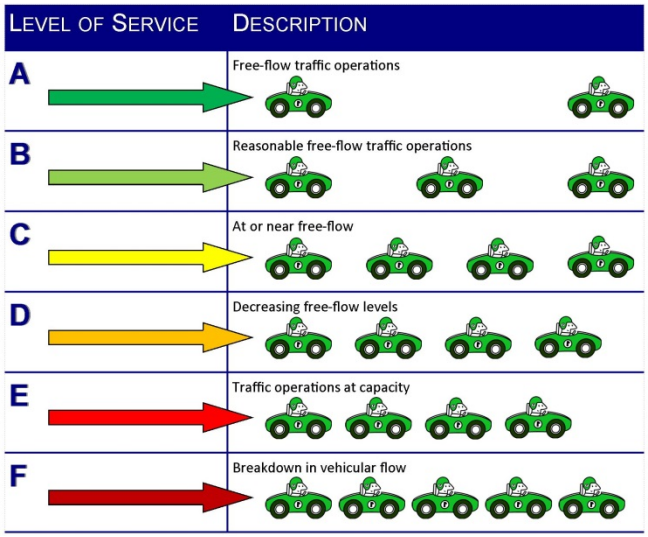
Improve insufficient pavement structure and deteriorating existing road surface conditions. The existing I-26 roadway surface has undergone major

rehabilitation twice, most recently in 2011. During past rehabilitation efforts, NCDOT Divisions 13 and 14 also replaced slabs and repaired joints. With the current load and volume of traffic, the roadway is again showing signs of deterioration. Additional rehabilitation will not be sufficient to provide a quality roadway because of the lack of depth of remaining concrete. Reconstruction of I-26 in the project study area is needed for safe and efficient high-speed travel.

These needs are specific to STIP Project I-4400/I-4700 and will be a reasonable expenditure even if no additional transportation improvements are made in the area.

1.3 Project Purpose

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. LOS D is the standard performance goal target used by NCDOT for environmental studies where congestion is one of the needs being addressed.



Level of Service Descriptions

What is Level of Service?

Level of Service (LOS) *is a qualitative measure used to describe the operating conditions of a roadway. Traffic planners and engineers generally measure LOS in terms of factors such as speed, travel time, freedom to maneuver, traffic interruptions, driver comfort and convenience, and safety. Like a school report card, LOS describes traveling conditions on a scale ranging from "A" to "F", with "A" representing best possible conditions and "F" representing worst possible performance.*

1.4 Project History

An Environmental Assessment (EA) was completed for STIP I-4400 (the 13.6-mile segment from US 25 to NC 280) in May 2001. Following completion of the Finding of No Significant Impact (FONSI) decision document, in January 2002, the project was advertised as a Design-Build project by NCDOT. A lawsuit and resulting judgment in 2003 found that NCDOT should conduct a broader analysis of the cumulative impacts and logical termini, or project limits, of the overall expansion of the I-26 corridor. The project was subsequently placed on hold due to financial constraints. However, the growing need for improvements to the I-26 corridor was recognized and the project was reinitiated and included in the Draft NCDOT 2013 – 2023 STIP. To address the 2003 judgment, the NCDOT combined the analysis of STIP I-4400

and STIP I-4700 (the 8.6-mile segment from NC 280 (Airport Road) to I-40/I-240) into one comprehensive Environmental Impact Statement (EIS).

1.5 Project Termini

FHWA regulations require transportation improvement projects to have logical beginning and end points and guided decisions regarding the project limits. The southern terminus for this project is proposed just north of the interchange of I-26 with US 25, just south of Hendersonville. Ending the improvements to I-26 at this point would allow existing and projected traffic traveling north on US 25 to merge with existing traffic traveling west on I-26, providing a more free-flowing facility. Conversely, the improvements to I-26 are proposed to end at the US 25 (Asheville Highway) interchange due to a portion of traffic that will diverge from I-26 and continue traveling on US 25 (Asheville Highway).

The northern terminus for the project is just south of the I-40/I-240 interchange. This interchange is not included in this project because it is included in the I-26 Asheville Connector project (STIP Project I-2513).

As explained in the *Traffic Forecast Comparison for STIP Projects I-4400/I-4700 and I-2513 Memorandum* (HNTB, 2016) (**Appendix A**), increasing capacity on I-26 will not overburden I-26 at the I-40/I-240 interchange, even with no improvements to this interchange as part of STIP Project I-4400/I-4700. The additional lanes proposed on I-26 will allow for the dispersal of traffic leaving I-26 to travel east or west along I-40.

In summary, the project limits represent rational beginning and end points for the following reasons:

- The project would address an identified need(s) and stands on its own.
- The project would not force immediate improvements on the remainder of I-26 (i.e. it would not substantially increase congestion or safety problems beyond the problems identified under the No-Build Alternative).
- Alternative selection would still allow flexibility for other reasonably foreseeable transportation improvements in the area.

The factors that helped to frame this project are discussed in the following sections. Agency and public involvement in developing the project purpose and need is described in **Chapter 4**.

Improvements to other facilities (**Section 1.10**) do not restrict consideration of alternatives for the widening of and improvements to I-26 as a stand-alone project as proposed in STIP Project I-4400/I-4700. I-26 corridor projects would individually contribute to the improvement of the traffic problems in Asheville.

1.6 Existing Roadway Characteristics

In the project study area, I-26 is a four-lane, median-divided, full control-of-access facility. This section of I-26 also carries the US 74 designation. The

What are logical termini?

The proposed project is required to have rational end points, or "logical termini."

FHWA regulations [23 CFR 771.111(f)] outline three general principles that are to be used to frame a highway project.

The action evaluated in each EIS shall:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope;

2. Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and

3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

For more information:
http://environment.fhwa.dot.gov/projdev/tdmtermini.asp

More information about the I-26 logical termini is included in the following technical report included in ***Appendix A:***

***I-26 Improvements (NCDOT Project No. I-4400/I-4700) Logical Termini and Independent Utility**, 2014*

project area includes eleven existing grade-separated crossings and eight existing interchanges.

In Henderson County, I-26 has interchanges with:

- US 25,
- Upward Road (SR 1722),
- US 64,
- US 25 (Asheville Highway), and
- NC 280 (Airport Road)*.

In Buncombe County, I-26 has interchanges with:

- NC 280 (Airport Road)*,
- NC 146 (Long Shoals Road),
- NC 191 (Brevard Road), and
- I-40/I-240.

*The NC 280 (Airport Road) interchange is partially located in both Henderson and Buncombe Counties.

The existing section of I-26 within the study area in Henderson County from US 25 north to approximately mile marker 50.3 is asphalt, while the portion north to NC 146 in Buncombe County is concrete. The remaining section north to I-40/I-240 is concrete overlaid with asphalt.

The speed limit on I-26 varies from 65 miles per hour (mph) in southern Henderson County to 60 mph in northern Henderson County, near the US 25 (Asheville Highway) and I-26 interchange, into Buncombe County, and up to I-40/I-240.

The BRP has a grade separated crossing, but no direct access to I-26. The Parkway bridge is located over a section of I-26 that is a popular commuter corridor. The posted speed limit on the BRP is 45 mph.

1.7 Existing Road Network

The I-26 corridor not only serves as a vital corridor within the region and state, it connects to other important corridors that are critical to regional and state commerce.

1.7.1 Strategic Transportation Corridors

Because of its statewide and regional importance, I-26 has been designated a Strategic Transportation Corridor (STC) by NCDOT and was formerly part of the North Carolina Intrastate System (repealed in July 2013 by NC Session Law 2013-183 as part of the Strategic Prioritization Funding Plan for Transportation Improvements). The STC designation calls for this corridor to serve high-speed regional travel. The corridor is also considered to be of great importance on a statewide basis for long-distance movement of people and freight.

The interchange of I-26 and I-40/I-240 in Buncombe County forms the center of the region's transportation system. These two important freeways interconnect the region and carry the highest percentage of trips passing

What is a Strategic Transportation Corridor?

Adopted by the North Carolina Board of Transportation in March 2015, the purpose of the ***Strategic Transportation Corridors*** *concept is to "identify from existing facilities a network of multimodal high priority strategic transportation corridors which will form the state's core network of highly performing facilities for movement of high volumes of people and freight". I-26 is designated as a Strategic Transportation Corridor, meaning it is critical to statewide mobility and regional connectivity.*

through the area, while their locations in proximity to populated areas, commercial areas, and the Asheville Regional Airport also serve a large portion of the local travel demands.

1.7.2 Regional Corridors

In addition, two other highways are connected via interchanges with I-26. US 25 serves the region as a north-south connection between Asheville, North Carolina and Greenville, South Carolina. US 64 serves the region as an east-west connection between I-77 in Statesville, NC, and I-75 near Chattanooga, Tennessee.

With the region's topography, national forests, and the Biltmore Estate property restricting the transportation system to follow river valley basins south of Asheville, constraints are placed on the regional transportation system that limit its expansion and make parallel alternate routes or grid patterns difficult to nearly impossible to develop.

1.7.3 Blue Ridge Parkway

The legislated purpose of the Blue Ridge Parkway, authorized by an act of Congress on June 30, 1936, is to link Shenandoah National Park in Virginia and Great Smoky Mountains National Park in North Carolina and Tennessee by way of a recreation-oriented motor road intended for public use and enjoyment free from commercial traffic. The parkway extends 469 miles through the Blue Ridge, Black, Great Craggy, Great Balsam, and Plot Balsam Mountains and provides a continuous series of views of scenic Appalachian landscapes. As its All-American Road status in North Carolina and Virginia State Scenic Byway status indicate, it is one of the most diverse and high quality recreational driving experiences in the world. Located at Milepost 391.79, the BRP bridge over I-26 is located within the extended Asheville corridor of the Parkway (roughly between Milepost 355 to 409). Due to its location near Asheville, the bridge over I-26 is located in the middle of a popular commuter route and visitation of this section of the parkway is a mix of recreational and commuter travel.

1.8 Traffic Conditions

Along with other reports listed in **Appendix A**, the *Purpose and Need Traffic Analysis* (HNTB, 2013) and *Purpose and Need Traffic Analysis Addendum* (HNTB, 2014) document the purpose and need for the proposed action. Due to its predominately south to north alignment, I-26 serves south to north traffic through the region. With limited alternate south to north routes, automobile and truck-freight through traffic utilizing I-26 are forced to share the facility with local traffic, creating several areas of congestion during peak travel periods on I-26. Trucks comprise approximately 10 to 15 percent of the overall traffic in both the 2011 No-Build Alternative and 2040 Hybrid 6/8-Lane Widening Alternative scenarios. The I-26 corridor in the study area also experiences a seasonal increase in traffic volume during the summer and fall months as tourists visit the region for recreational activities and fall foliage viewing.

The segment in Henderson County (US 25 to NC 280) is currently operating at an acceptable LOS D or better. The 2011 No-Build LOS is illustrated in **Figure 3A**. However, current traffic volumes indicate that demand exceeds the available capacity of I-26 in Buncombe County (NC 280 [Airport Road] to just south of I-40/I-240), with this segment of the roadway operating at LOS F. Taking regional population and employment growth into account, the entire roadway corridor from US 25 to just south of I-40/I-240 is projected to operate over capacity (LOS F) in 2040, as shown in **Figure 3B**.

1.9 Crash Data

I-26 currently carries substantial traffic volumes and is projected to carry higher traffic volumes in the future. Therefore, the number of congestion-related crashes is expected to increase. Within the project study area there were 2,072 crashes during the five-year time period of March 2011 through February 2016. This crash rate is below the statewide average for similar facility types, when considering total and non-fatal injury crash type categories, but above the statewide average for the fatal crash category. Based on the crash data, the most predominant types of crashes are rear-end (50 percent), road departure (21 percent), and sideswipe (17 percent). Approximately 66 percent of all crashes occurred during the 11 a.m. to 7 p.m. timeframe.

Rear-end and sideswipe type crashes are often a characteristic of congested corridors. A purpose of this project is to improve capacity deficiencies along I-26. By building the project, the frequency of crashes during periods of recurring congestion should decrease when compared to a no build alternative. However, some amount of rear-end and sideswipe type crashes will still exist once the project is built, due to a variety of factors including intermittent congestion, weather, driver behavior, and other factors.

1.10 Transportation Plans

French Broad River Metropolitan Planning Organization (MPO). The French Broad River MPO *Comprehensive Transportation Plan* (2008) listed the I-26 corridor from US 25 in Henderson County to I-40/I-240 in Buncombe County as a High Priority project for the area. The recommendations in the MPO's Plan are based on forecasts of growth and development expected to occur in and around the MPO's planning area over the next 25 years.

The *2040 Metropolitan Transportation Plan* (adopted 2015) for the French Broad River MPO anticipates the I-26 corridor south of I-40 in Buncombe and Henderson Counties to have major capacity deficiencies in the year 2030. This plan includes I-4400 in the 2016 – 2025 time frame (Tier II) and I-4700 in the 2026 – 2035 time frame (Tier III).

The traffic forecast modeling for STIP Project I-4400/I-4700 is based on the 2035 Regional Transportation Demand Model developed locally by the French Broad River MPO.

*The **Comprehensive Transportation Plan** (CTP) provides a "wish list" for future transportation projects. This plan projects needs 30 years into the future without any commitment of funding. Therefore, the CTP is not fiscally constrained.*

*The **Metropolitan Transportation Plan** (MTP), formerly known as the **Long Range Transportation Plan** (LRTP) selects priority projects based on available funding over a 25-year construction time frame. Therefore, the LRTP is fiscally constrained. The LRTP is a federally required long-term planning document.*

Projects are prioritized at the state level and are considered for inclusion in the STIP. The STIP is mandated under federal law to cover at least four years. (www.fbrmpo.org/home/get-ahead/)

NCDOT STIP. The following STIP projects are located in the area:

- STIP Project I-2513 (I-26 Connector) would tie into the western terminus of STIP Project I-4700 in Asheville at the I-26/I-40/I-240 interchange. The I-26 Connector is a proposed widening and new location multi-lane interstate highway project to connect I-26 from the I-26/I-40/I-240 interchange to US 19/US 23/US 70 north of Asheville. The 2018 – 2027 STIP indicates that right of way acquisition will begin in FY 2020 and construction will begin in FY 2020; however, only a portion of the project is funded.
- STIP Project B-5178 was the replacement of Bridge Nos. 235 and 238 on I-26 over Pond Road (SR 3431) and Hominy Creek. This project is located in Buncombe County just south of the I-26 interchange with I-40/I-240 and was completed in 2017.
- STIP Project I-5504 is the proposed modification to the I-26/NC 191 (Brevard Road) interchange in Buncombe County, which includes improvements to the traffic operations and access control along NC 191. NCDOT's 2018 – 2027 STIP indicates that this is a Design-Build project and construction began in 2017. It should be noted that I-5504 overlaps with the northern portion of STIP Project I-4700. The section of I-4700 located in the I-5504 study area (from just south of NC 191 (Brevard Road) to the Pond Road (SR 3431) overpass) will be constructed with STIP Project I-5504. In this area, the median of I-26 will be paved and median barrier installed as part of STIP Project I-5504 so that traffic can be maintained during construction. The limits of median paving extend in both directions on I-26 to where ramp tapers will match existing pavement. The construction of I-5504 is expected to finish just before STIP Project I-4700 is anticipated to begin so the NCDOT requested and received approval from the FHWA to build full-depth pavement in the median and travel lanes on I-26. The benefit will be cost savings from building pavement that does not have to be removed. Another benefit is to reduce the total amount of time of construction on I-26, which will save motorist delays and the associated cost of delay. The additional pavement on I-26 will be "striped out" until the remaining portion of I-4700 is constructed.
- Just outside the eastern study area boundary and parallel to I-26, STIP Project R-5207 is the proposed upgrade to approximately seven miles of Howard Gap Road (SR 1006) in Henderson County from Jackson Road (SR 1539) in Fletcher to US 64 near Hendersonville. The project will widen the existing two lanes to 12-foot lanes, add bike lanes, improve the road geometry (curves and vertical changes), replace four bridges, and add turn lanes at several key intersections. The 2018 – 2027 STIP indicates that the portion of R-5207 from US 64 to US 25 in Fletcher, NC is currently under construction.
- Located north of the study area boundary, STIP Project A-0010AA proposes improvements to US 19/US 23 (Future I-26) to address traffic congestion, bridge conditions and pavement conditions from

For more information:

NCDOT Construction Progress Reports (projects under construction)
https://apps.dot.state.nc.us/traffictravel/progloc/ProgLocSearch.aspx

I-2513 (I-26 Connector)
www.ncdot.gov/projects/I26Connector/

NCDOT STIP
https://connect.ncdot.gov/projects/planning/Pages/default.aspx#0

just north of I-240 in Asheville to just south of Stockton Road (Exit 13) near Mars Hill in Buncombe County. The project may include adding lanes to portions of US 19/US 23, replacing bridges, and repaving sections of the highway. The 2018-2027 STIP indicates that right of way and construction are scheduled to begin in FY 2020 for the portion of the project nearest to I-240 with some portions currently unfunded.

- Located west of the study area, STIP Project I-4759 proposes to convert the grade separation of Liberty Road (SR 1228) and I-40 to an interchange. The project would also construct a two-lane roadway from US 19/US 23/NC 151 (Pisgah Highway) to Monte Vista Road (SR 1224) partially on new location. The 2018 – 2027 STIP states that planning/design is in progress and the project is funded; right of way acquisition is scheduled to begin in FY 2019 and construction in FY 2022.
- The *Draft EIS* included STIP Project B-5409, which was the proposed replacement of Bridge No. 58 on Mid Allen Road (SR 1893) over Devils Fork Creek near Hendersonville. This project is located just east of the I-26 corridor along the eastern study area boundary. This project is no longer in the STIP but will be completed with state funding. Construction is scheduled to begin in FY 2021.

1.11 Population and Employment Trends

The region has experienced a unique economic transition over the past several decades as its traditional focus on the service and tourism industry has been accompanied by a focus on niche businesses as well as a growing influx of retirees drawn to the region's high quality of life and natural and cultural amenities. The region is still a popular tourist destination, as it is home to many points of interest including the 8,000-acre Biltmore Estate that attracts approximately one million visitors a year (Biltmore, 2015), Pisgah National Forest, the Blue Ridge Parkway, the North Carolina Arboretum, and the Great Smoky Mountains National Park.

Both Henderson and Buncombe Counties have experienced steady growth over the past 15 years. According to the North Carolina Office of State Budget and Management (NCOSBM), the annualized population growth rate between 2015 and 2035 in Henderson and Buncombe Counties (0.93 percent and 1.1 percent, respectively) is expected to slow slightly over the next 20 years but is in line with the State's projected annual rate (0.96 percent).

Data from the NC Department of Commerce – Division of Employment Security (DES) indicates that Buncombe County gained jobs at an annual rate

of 0.5 percent between 2001 and 2011, while Henderson County lost jobs at an annual rate of 0.4 percent during the same time frame. The DES projects a 0.9 percent annual increase in jobs between 2008 and 2018 is projected for the area (Buncombe County, Henderson County, Madison County, and Transylvania County), with most jobs anticipated in either Asheville or Hendersonville. The I-26 corridor provides the main link for commuting patterns. The French Broad River MPO *2040 Metropolitan Transportation Plan* anticipates continued residential and commercial growth in Asheville and along the I-26 corridor south of Asheville.

The following I-4400/I-4700 technical studies provided information for ***Chapter 1*** *and are appended by reference:*

Purpose and Need and Alternatives Considered for I-26 Improvements, Merger Concurrence Points 1 and 2*, 2013*

I-26 Improvements (NCDOT Project No. I-4400/I-4700) Logical Termini and Independent Utility*, 2014*

Purpose and Need Traffic Analysis Technical Memorandum*, 2013*

Purpose and Need Traffic Analysis Technical Memorandum Addendum, 2014

Chapter 2 ALTERNATIVES

Chapter 2 of the *Draft EIS* includes detailed information on the identification and analysis of alternatives that meet the project purpose and need. This chapter summarizes the consideration and elimination of various alternatives leading up to the identification of the Preferred Alternative in the *Draft EIS*, confirmation of the Preferred Alternative in the *Reevaluation* and this *Final EIS*, and the selection of the Least Environmentally Damaging Practicable Alternative (LEDPA).

An EIS must discuss all reasonable alternatives or if there are too many variations, a reasonable range of alternatives. (FHWA 2010)

2.1 Alternatives Considered but Eliminated

As documented in the *Draft EIS*, the following alternatives were eliminated from further consideration and further study because they would not fully meet the project's purpose and need:

- No-Build Alternative,
- Mass Transit Alternative,
- Transportation Systems Management Alternative, and
- Transportation Demand Management Alternative.

While the No-Build Alternative was eliminated, it provided a baseline for comparing the adverse impacts and benefits of the Build Alternatives.

2.2 I-26 Widening Detailed Study Alternatives

The following Build Alternatives were included in the *Draft EIS* for further analysis. The additional traffic lanes would reduce congestion in general and all alternatives include pavement reconstruction.

Build Alternative 1: 6-Lane Widening. The 6-Lane Alternative would widen I-26 to three lanes in each direction from US 25 to I-40/I-240.

Build Alternative 2: 8-Lane Widening. The 8-Lane Alternative would widen I-26 to four lanes in each direction from US 25 to I-40/I-240.

Build Alternative 3: Hybrid 6/8-Lane Widening. The Hybrid 6/8-Lane Alternative would 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 the US 25 (Asheville Highway) to the I-40/I-240 interchange.

All alternatives would be designed to best fit within the existing right of way limits for I-26.

2.3 Preferred Alternative

The *Draft EIS* identified and the *Reevaluation* confirmed the Hybrid 6/8-Lane Widening Alternative as the Preferred Alternative. After reviewing agency and public comments, NCDOT and FHWA confirmed that the Hybrid 6/8-Lane Widening Alternative is the Preferred Alternative for the I-26 widening project.

As part of the Preferred Alternative, the US 25 (Asheville Highway) interchange will be a Diverging Diamond Interchange (DDI) type. The US 64

interchange would be modified to a Partial Cloverleaf B (ParClo B) with Enhanced Left Turns. The Preferred Alternative is designed to best fit within the existing right of way limits for I-26. The best fit alignment is shown on **Figures 4A through 4I**. The best fit alignment generally follows the existing alignment, widening to the inside median as much as possible and shifting to the east or west when necessary to avoid impacts to resources where possible. The impacts of the Preferred Alternative, including avoidance and minimization measures are discussed in **Chapter 3**.

2.3.1 Least Environmentally Damaging Practicable Alternative

As discussed in Section 2.5.1.1 of the *Draft EIS*, the 6-Lane Widening Alternative does not meet the Purpose and Need of an overall performance goal of LOS D in 2040 in the I-4700 portion of the project. Thus, the 6-Lane Widening Alternative was eliminated from further study within the *Draft EIS* because it does not fully meet the project purpose and need. The 8-Lane Widening Alternative and the Hybrid 6/8-Lane Widening Alternative meet the performance goal of LOS D in 2040. The LOS for the three widening alternatives in the design year 2040 is depicted in **Figure 3C through 3E**. However, the Hybrid 6/8-Lane Widening Alternative had fewer overall impacts and cost than the 8-Lane Widening Alternative.

Based on the analyses presented in the *Draft EIS* and public and agency comment, the Merger Team concurred on January 18, 2017 that the Hybrid 6/8-Lane Widening Alternative is the Least Environmentally Damaging Practicable Alternative (LEDPA). The information provided for this decision and the Merger Team concurrence signature page is found in **Appendix J**.

*In accordance with the Guidelines of **40 CFR 230.10(a)** and the **1990 Memorandum of Agreement between the US Environmental Protection Agency (USEPA) and the US Army Corps of Engineers (USACE)**. The USACE cannot issue a Section 404 Water Quality Permit under the Clean Water Act (discussed further in Section 3.8.7) if a practicable alternative exists that would have a less adverse impact on the aquatic system, provided that the LEDPA does not have other significant adverse environmental consequences to other natural ecosystem components.*

2.3.2 Interchange Modifications

As stated in the *Draft EIS*, 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 of the Hybrid 6/8-Lane Widening Alternative where the ramp acceleration and deceleration lanes have to be shifted outward to make way for the widened roadway. The reconstruction would be limited only to the areas required to tie back into the existing ramp alignments.

2.3.2.1 US 64 (Four Seasons Boulevard/Chimney Rock Highway)

As shown in the *Purpose and Need Traffic Analysis,* the interchange at US 64 and I-26 operates at LOS B or better on I-26 in 2011 (No Build) and LOS C or worse in 2040 (No Build). Although no traffic analysis was performed on US 64, improving the interchange to allow travel time savings on US 64 is desired by NCDOT and the FBRMPO and is considered a priority project. As part of this project, a Partial Cloverleaf B ("ParClo B") is proposed that would remove two loops and eliminate the back-to-back weave condition on I-26 and US 64, thereby improving the operation of the interchange. In addition, the interchange will introduce enhanced left turns, that will move left turning traffic into the center, opposite normal traffic flow. The early decision required to move into the left turn lane removes these vehicles from through travel lanes, improving the flow of traffic on US 64. The ParClo B interchange

would also improve conditions for pedestrians and bicyclists on US 64. Reconfiguring this interchange to a ParClo B requires an Interchange Access Report (IAR), which will be completed prior to construction. The IAR will include a traffic analysis of US 64.

2.3.2.2 US 25 (Asheville Highway)

As part of this project, the *Purpose and Need Traffic Analysis Technical Memorandum* (HNTB, 2013) determined that the US 25 (Asheville Highway) interchange would operate poorly in the 2040 design year. Four interchange types, Partial Cloverleaf, Partial Cloverleaf with Design Exception, Diverging Diamond Interchange (DDI), and Displaced Left Turn (DLT), were analyzed and included in the *Draft EIS*. All the interchange types operated at an acceptable level, with the Partial Cloverleaf operating the best. Based on operation, the Partial Cloverleaf was included for analysis in the *Draft EIS*. The Partial Cloverleaf had the largest impacts of all the interchange types and NCDOT sought to reduce these impacts while improving operations with an interchange design that has a smaller footprint.

During its Value Analysis of the project, after the approval of the *Draft EIS*, NCDOT designed a fifth interchange type, the Synchronized Interchange (SI). This interchange option requires motorists to turn right at each of the ramp termini from I-26. The motorist must then continue straight or make a U-turn at the signalized intersection if he or she wishes to go in the opposite direction on US 25 (Asheville Highway). If the motorist is on westbound US 25 (Asheville Highway) he/she may turn right to travel north on I-26. A traveler on eastbound US 25 (Asheville Highway) may turn right to travel south on I-26. The westbound and eastbound motorist may turn left to travel southbound and northbound, respectively, on I-26.

Based on internal review and public comment (**Appendix J**) following the *Draft EIS*, NCDOT decided to move forward with the analysis of the DDI and SI. Following this analysis, NCDOT chose the DDI as the preferred interchange design due to its lower cost, fewer impacts, and public familiarity.

2.3.3 Blue Ridge Parkway Bridge Replacement

Several options were analyzed in the *Blue Ridge Parkway Bridge over Interstate 26 Technical Report* (NPS-Blue Ridge Parkway (BLRI) and FHWA-EFL, 2016) (**Appendix H**) for the realignment and replacement or reconstruction of the BRP bridge over I-26 and were presented in the *Draft EIS*. **Figure 5** shows the alignment options. Construction of the new bridge would most likely be from the top down, using segmental construction. The bridge would have two ten-foot travel lanes, three-foot shoulders, and a five-foot sidewalk on the north side to accommodate the Mountains-to-Sea Trail (MST).

Caltrans Type 80

Following the *Draft EIS* and comment period, the NPS confirmed Option 4, using a segmental concrete box girder bridge type with Caltrans Type 80 bridge rail as its Preferred Option. A parking pull-off area will also be constructed northeast of the replacement BRP bridge, at Parkway milepost 392.1.

2.3.4 Rest Areas

The rest areas along I-26, south of Fanning Bridge Road (SR 3539) overpass in Henderson County, will also be reconstructed as part this project. The conceptual design is shown on **Figure 6**. The rest areas are currently undersized based on the current and projected use they receive and the ramps need to be upgraded to current interstate standards. The renovations will include the reconfiguration and expansion of the site, parking areas, and primary building site. Although the rest areas were added to the project after the concurrence of the LEDPA, the decision would not have been different because the Hybrid 6/8-Lane Alternative had fewer impacts than the 8-Lane Alternative as stated in Section 2.3.1.

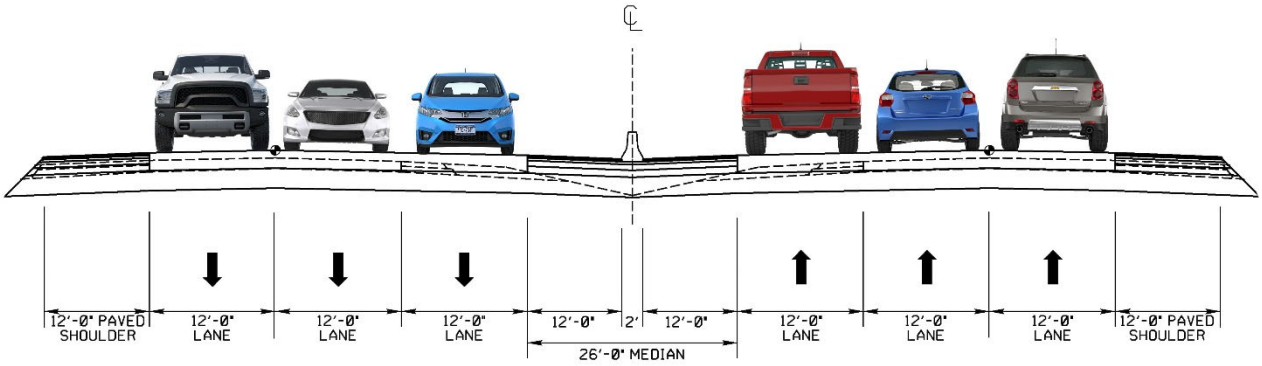
2.4 Preferred Alternative Design

2.4.1 Right of Way and Typical Section

Right of way requirements for I-26 within the project study area vary between approximately 240 feet and 430 feet. Additional easements may also be required for drainage, utilities, and construction.

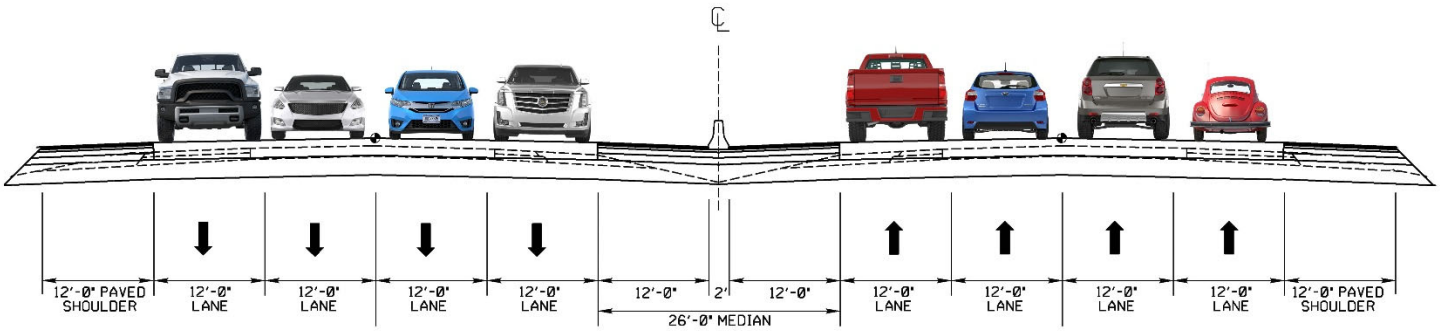
As shown on **Inset 1**, the proposed typical section for the six-lane section, from US 25 to US 25 (Asheville Highway), of the Preferred Alternative consists of three 12-foot travel lanes in each direction, with a 26-foot median that includes a median barrier wall. The typical width for the inside paved shoulder is 12 feet. The outside paved shoulder width is 12 feet, with an additional two feet of graded shoulder.

Inset 1. 6-Lane Typical Section



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. The typical width for inside and outside paved shoulders is 12 feet throughout this typical section. The outside paved shoulder has an additional two feet of width beyond the pavement. This is shown on **Inset 2**.

Inset 2. 8-Lane Typical Section



The typical width of the I-26 median is 26 feet, including a median barrier wall. However, there are two areas where the northbound and southbound lanes separate and the median width varies. The typical shoulder type along I-26 is a 12-foot inside paved shoulder in the median and a 12-foot paved with 14-foot graded outside shoulder.

2.4.2 Speed

The functional design for the Preferred Alternative utilized specific design criteria suitable for interstate facilities at various speeds.

The proposed signed speed limit in the beginning of the project at the US 25 interchange to the US 25 (Asheville Highway) is 65 mph. The speed limit would be reduced to 60 mph from US 25 (Asheville Highway) to the northern project terminus at the I-40/I-240 interchange.

The majority of the interchange designs will stay the same or have minor design adjustments that will not affect the speed on the ramp. However, the US 25 (Asheville Highway) interchange will be redesigned to a DDI type and speeds through the interchange are expected to be reduced to 25 mph.

The speed of each secondary road that crosses the mainline (ex. US 25 (Asheville Highway), NC 146 (Long Shoals Road), and BRP) will vary.

2.4.3 Bridges and Drainage Structures

Structure recommendations for major drainage crossings are documented in the *Hydraulic Technical Memorandum* and the *Addendum to the Hydraulic Technical Memorandum* (HNTB, 2014 and 2014, respectively). 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. **Appendix F** identifies recommended major drainage structures for the Preferred Alternative. Detailed drainage studies will be completed for the Preferred Alternative final hydraulic designs for the crossing sites that were evaluated in the preliminary hydraulic study. Final crossing designs will be developed prior to project permitting. Additional information on Federal Emergency Management Agency (FEMA) floodplains in the project study area is found in **Section 3.9**.

2.4.3.1 I-26 Bridge over the French Broad River

Due to the presence of the federally-protected gray bat (*Myotis grisescens*) and Appalachian elktoe (*Alasmidonta raveneliana*) (further discussed in Section 3.8.9) in the French Broad River, NCDOT, in coordination with the US Fish and Wildlife Service (USFWS), US Army Corps of Engineers (USACE), FHWA, NC Department of Water Resources (NCDWR), and the NC Wildlife Resources Commission (NCWRC), accelerated the design process of the I-26 bridge over the French Broad River to better determine potential impacts on these protected species. As noted in the Biological Assessment (BA) (**Appendix A**), NCDOT's preferred replacement structure for the bridge over the French Broad River is a three-span bridge. The three spans for this design are anticipated to have lengths of approximately 151 feet, 170 feet, and 143 feet from east to west, and will require two bents in the river. Each bent will require ten drilled shafts. The center span length exceeds the standard concrete girder length typically utilized by NCDOT, so it is likely that final design specifications will call for steel girders. It is expected that this bridge will require approximately three to four years to complete. The proposed design for the bridge over the French Broad River will include shoulders sufficient to convey runoff into adjacent stormwater control devices and eliminate direct discharge into the river.

2.4.4 Traffic Capacity

As discussed in the *Draft EIS*, the STIP Project I-4400/I-4700 traffic capacity analysis was completed to evaluate existing and future peak hour traffic operations along I-26 and its interchanges to determine if initial study alternatives met the purpose and need for the project. Results from the analysis are shown on **Figures 3C through 3E** and indicate that peak hour congestion along I-26 negatively contributes to the existing traffic operations between the I-40/I-240 and NC 280 (Airport Road) interchanges. The extent and duration of this congestion is expected to increase by the 2040 design year. Analysis of I-26 concluded that the majority of the project length provided adequate (LOS D or better) operation during both peak hours of the base year (2011). However, analysis of the No-Build Alternative in 2040 determined that only one-third of the project length would operate at LOS D or better in 2040. This is due to the projected peak hour traffic volume increases along the I-26 corridor.

Capacity analysis results for the Preferred Alternative indicate that the proposed improvements of an eight-lane widening north of US 25 (Asheville Highway) and six-lane widening south of the interchange will provide a LOS D or better for all freeway segments in the project study area in both the 2011 base year and 2040 design year.

2.4.5 Cost Estimate

The Preferred Alternative is estimated to cost between $716.1 million and $764.5 million in anticipated year-of-expenditure dollars. This increase from the *Draft EIS*, which showed a planning-level estimate of $454.7 million, is a result of updated design plans, which led to updated cost estimates for construction, right

of way, utility relocations, and environmental mitigation. In addition, the cost shown in the *Draft EIS* is based on 2016 dollars, whereas the Preferred Alternative is in year-of-expenditure dollars, accounting for inflation.

The Preferred Option for the Blue Ridge Parkway is expected to cost $24.1 million, an increase of approximately $5 million. This difference is also based on more refined design plans.

2.4.5.1 Risk Assessment Cost Estimate Review Draft Findings

Due to the magnitude of anticipated costs associated with this project, a risk-based cost estimate review was conducted for the Preferred Alternative by the FHWA Local and Headquarter Offices (*Cost Estimate Review,* **Appendix D**) to verify the accuracy and reasonableness of the total cost estimate and schedule, and to develop a probability range for the cost estimate. This range of probability cost includes costs for: construction, right of way acquisition, utilities, construction engineering and inspection, design, landscaping, agency expenses and reserve funds, inflation rates ranging from 2 percent to 4 percent, project development, Section 7 of the Endangered Species Act mitigation, railroad coordination and flagging, and prior expenditures.

***Major Projects**, which are defined by FHWA as projects requiring Federal assistance that are over $500 million in cost (23 USC § 106(h)).*

These projects require Cost Estimation Review, Financial Plans, and Project Management Plans to be updated throughout the life of the project.

The results of the draft cost estimate review indicate that the project is likely to cost between $716.1 million and $764.5 million, with a planning level estimate of $750.8 million in anticipated year-of-expenditure dollars. The planning level cost represents the 70 percent probability that the project will cost less than this amount; accordingly, there is a 30 percent chance that the project will cost more.

2.4.6 Project Schedule, Phasing and Funding

According to the NCDOT 2018 – 2027 STIP, right of way acquisition for I-4700 and a portion of I-4400 (US 25 (Asheville Highway) to NC 280 (Airport Road)) is scheduled in FY 2018 and construction is scheduled to begin in FY 2019. I-4400 from US 64 (Four Seasons Boulevard/Chimney Rock Highway) to US 25 (Asheville Highway) is scheduled for right of way and construction in 2019. The US 64 interchange with I-26 is scheduled for right of way acquisition in 2019 and construction in 2023. The remaining portion of I-4400 (US 25 to US 64 (Four Seasons Boulevard/Chimney Rock Highway)) is unfunded.

As previously noted in **Section 1.10**, STIP Project I-5504 overlaps with the northern portion of STIP Project I-4700; therefore, the section of I-4700 located in the I-5504 study area (from just south of NC 191 (Brevard Road) to the Pond Road (SR 3431) overpass) will be constructed as part of STIP Project I-5504. The additional pavement on I-26 will be "striped out" until the remaining portion of I-4700 is constructed. Right of way acquisition and construction began in FY 2016.

Specific work zone, traffic control, and construction phasing plans will be prepared in future phases of the project.

Chapter 3 ENVIRONMENTAL RESOURCES AND IMPACTS

40 CFR § 1502.15: Impacts shall be discussed in proportion to their significance. There shall be only brief discussion of other than significant issues. As in a finding of no significant impact, there should be only enough discussion to show why more study is not warranted.

www.gpo.gov/fdsys/pkg/CFR-2012-title40-vol34/xml/CFR-2012-title40-vol34-part1502.xml

This chapter describes the existing conditions within the project study area, including the human, cultural, natural, and physical environments, along with discussions of potential impacts of the Preferred Alternative to these notable features, which are shown on the **Figure 7A through 7I**.

Potential impacts associated with the No-Build Alternative are included for comparative purposes, as appropriate. A discussion of avoidance, minimization, and/or mitigation measures for identified impacts is included where appropriate.

Where appropriate, detailed study alternative impacts have been updated or further assessed from the *Draft EIS*. Additional information on the affected environment and the impacts of the detailed study alternatives is presented in a series of technical reports listed in and referred to as **Appendix A**. The reports are contained on the compact disc (CD) that accompanies this document, at public review locations identified in **Appendix C**, and on the NCDOT website at www.ncdot.gov/projects/i26Widening/.

Impacts to the BRP are described under each impact topic. Additional impact topics required for consideration for the BRP, in accordance with NPS *Directors Order #12*, but not applicable to the rest of the project include visitor use, visitor experience, and parkway operations under **Sections 3.4** and **3.14**.

3.1 Human Environment

Direct Community Impact Area (DCIA) *is the area surrounding a transportation project that is likely to be directly affected in any way during, throughout, and after project completion. This study area encompasses all of the areas examined for potential community impacts as a result of STIP Project I-4400/I-4700.*

This section includes a discussion on the potential effects on the human environment, including impacts to land use and consistency with planning documents, impacts to community resources/facilities, and impacts to communities and neighborhoods. Where new information was obtained after the issuance of the *Draft EIS*, it has been included for all alternatives.

3.1.1 Existing Land Use and Community Features

Land use throughout the study area is mixed, consisting of large sections of residential areas, commercial and industrial stretches, and agricultural tracts. Residential areas generally consist of single family homes on individual parcels or within subdivisions. Commercial development is largely concentrated near the I-26 interchanges with US 64 (Four Seasons Boulevard/Chimney Rock Road), US 25 (Asheville Highway), NC 280 (Airport Road), NC 146 (Long Shoals Road), and NC 191 (Brevard Road).

Community resources located within or near the project study area are shown on **Figures 7A through 7I**. These resources are listed below and are further described in the *Draft EIS* and *Community Characteristics Report* (HNTB, 2013).

- Blue Ridge Community College (Flat Rock Campus);
- Carolina Village Retirement Community;

- NCDOT truck weigh station;
- Park Ridge Hospital;
- Brickton residential community;
- Rugby Grange house and property (National Register of Historic Places (NRHP) (see **Section 3.2**));

The NCDOT rest areas on both sides of I-26 will be replaced as part of this project, as discussed previously in Section 2.3.4;

- Western North Carolina Agriculture Center;
- Boiling Springs Baptist Church;
- Asheville Regional Airport (AVL);
- Duke Energy – Asheville Plant;
- The French Broad River runs adjacent to I-26 and is a designated State Paddle Trail. The Long Shoals Campsite is located between I-26 and the river, just south of NC 146 (Long Shoals Road) at river mile 56.75, and is owned and maintained by Riverlink. Firefighter Island Campsite is owned and maintained by MountainTrue and is located at river mile 58.5. The campsites are only accessible from the river. The campsites, boat launch access at Bent Creek River Park, and the French Broad River are all part of the French Broad River Paddle Trail Section 4(f) resource (see **Section 3.3**);
- BRP (the NPS is in the process of nominating the BRP for designation as a National Historic Landmark (NHL) (see **Section 3.2**));
- MST, located along the BRP;
- Biltmore Estate (listed on the NRHP and designated as a NHL (see **Section 3.2**)); as well as
- Sidewalks and bicycle routes.

3.1.2 Future Land Use and Development

Interviews with Henderson County and Buncombe County planners indicated that there are no known plans for residential, industrial, or commercial development along the I-26 corridor. The I-26 corridor is expected to largely maintain its current mix of residential and commercial characteristics, except for potential changes to land uses within the project area in proximity to Upward Road (SR 1783) and Howard Gap Road (SR 1006). Planners anticipate improvements to these facilities will encourage increased use by local travelers, thereby leading to increased development pressure. An increase in development may lead to more traffic using I-26. Future land use plans for Henderson County indicate an increase in commercial and industrial development along the I-26 corridor. Although constrained by Biltmore Estate, French Broad River, BRP, Duke Energy – Asheville Power Plant, and the Asheville Regional Airport, the Buncombe County land use plans indicate future growth to be largely residential with some commercial along the I-26 corridor.

The *Bent Creek-Lake Julian Greenway Feasibility Study* (HNTB, 2015), included on the CD that accompanies this document, was initiated by the NCDOT Bicycle and Pedestrian Division at the request of Buncombe County Recreation Services to identify a preferred route for a multi-use/multi-modal, paved greenway along the I-26 corridor near STIP Project I-4700. The feasibility study produced a preferred alignment, shown on **Figures 7A through 7I** and **Figure 8**.

3.1.3 Community Impacts

The potential community impacts of the project addressed in the *Community Impact Assessment* (HNTB, 2015) were summarized in the *Draft EIS* and are updated for the Preferred Alternative in the following sections. As previously noted, the Preferred Alternative will use a best fit alignment, as described in **Section 2.3**, to minimize adverse community impacts as much as possible. However, some impacts may be unavoidable.

3.1.3.1 Physical/Relocations

Eight residential relocations are anticipated as a result of the Preferred Alternative. No business, grave, or church/non-profit relocations will result from the Preferred Alternative. Reduction in relocations are a result of the using the DDI type instead of the ParClo B interchange type at the US 25 (Asheville Highway) interchange. This is a 100 percent reduction in business relocation and an approximate 44 percent reduction in residential relocations. The full NCDOT Relocation Report and Right of Way Cost Estimate is located in **Appendix E**.

The Preferred Alternative may result in the acquisition of some portion of 128 parcels and approximately 26 acres for right of way. Although this is an increase from the 103 parcels reported in the *Draft EIS*, it is expected that the number will decrease during final design.

3.1.3.2 Land Use and Development Plans

STIP Project I-4400/I-4700 is included in local land use and transportation plans and is consistent with local planning goals for improved mobility along the I-26 corridor and infill development near interstate interchanges with major arterials. Since the Preferred Alternative intends to widen I-26 within existing right of way, to the extent practicable, it is consistent with the development goals of local plans.

3.1.3.3 Neighborhood and Community Cohesion

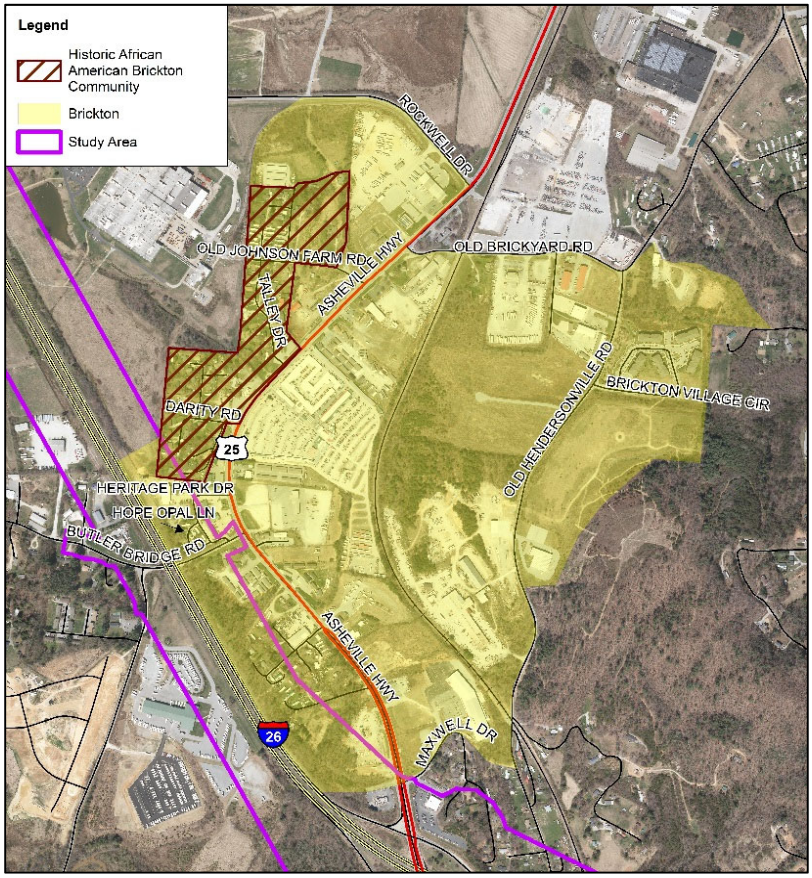
Permanent negative impacts to community cohesion and stability are not anticipated as a result of STIP Project I-4400/I-4700. Since the project proposes to widen an existing interstate facility mostly within existing right of way using best fit widening, it would not bisect any existing communities or create any new barriers, and minimal residential relocations are anticipated as a result of the project.

3.1.3.4 Recurring Community/Neighborhood Impacts

The *STIP Project I-4400 EA* (2001) (see **Section 1.4**) discussed the predominantly African American Brickton community (located at I-26 and US 25 (Asheville Highway)), which was split when the original I-26 corridor was constructed in the late 1960's and early 1970's. Brickton remains a functional community east of I-26.

In further conversation, following the publication of the *Draft EIS*, the Henderson County planners clarified that the area of land known as "Brickton" includes the area along US 25 (Asheville Highway) from Rockwell Drive to I-26 north of US 25 (Asheville Highway) and from Old Brickyard Road between US 25 (Asheville Highway) and along Old Hendersonville Road to Maxwell Drive, as shown by the yellow shading in **Inset 3** below. However, the African American Brickton community refers to those who live in the predominantly single-family homes on Thomas Street, Lantern Walk Lane, Darity Road, Jim Mills Drive, Collins Road, Andy Darity Drive, Talley Drive, Old Johnson Farm Road, W Johnson Farm Court, E Johnson Farm Court, and October Trail. This area is shown in the brown diagonal hatching in the figure. Many of the community members attend the Greater New Zion Baptist Church at the corner of Talley Drive and US 25 (Asheville Highway). The

Inset 3. Brickton Land Area and the Brickton Community



Brickton community does not include the Shady Oak manufactured home park (MHP) or the businesses between I-26 and US 25 (Asheville Highway), Butler Bridge Road and Heritage Park Drive.

The Brickton land area will experience some right of way encroachment at the northeast quadrant of I-26 and Butler Bridge Road due to the replacement and realignment of the Butler Bridge Road bridge over I-26. This will impact the southwest corner of the Shady Oak MHP. Because this area is outside of the Brickton community, no adverse impacts to the community are expected.

Buncombe County planning staff indicated that the Hidden Creek Village neighborhood (located west of I-26 and north of Asheville Regional Airport) was impacted by construction of retail development near the airport. Although this retail development is located on the opposite side of I-26 (east side) from Hidden Creek Village, the community is taking on stormwater from the development.

The Preferred Alternative will widen I-26 within the existing right of way in the vicinity of the Hidden Creek Village neighborhood. It is not expected that the widening would direct increased stormwater to the community. Therefore, no adverse impacts are anticipated to the Hidden Creek Village neighborhood.

3.1.3.5 Indirect Land Use Impacts

After the *Draft EIS* was issued, notable environmental features were found within the project study area and the *Indirect Screening Report* (2013) was updated. In September 2016, the NCWRC found the gray bat and in follow up protected species surveys, the Appalachian elktoe was found in October 2017. The Future Land Use Study Area (FLUSA) boundary was updated to include the land area between the French Broad River and I-26. The Indirect Screening Matrix was updated to reflect the expansion of the FLUSA and modified the Natural Environmental Features from a moderate level of concern to a high level of concern. The result of this modification was a "Possible" need for a Land Use Scenario Assessment.

However, as explained in the *Draft EIS*, there is a low to moderate concern for indirect and cumulative effects as a result of STIP Project I-4400/I-4700. Due to topographic and other natural feature constraints, potential development is limited. The extent of potential indirect land use effects as a result of STIP Project I-4400/I-4700 will depend on the following variables: future local economy and development market, public infrastructure projects, and completion of other proposed transportation projects in the area.

It is anticipated that the project would be constructed in phases with partial lane closures and would not require total closure of I-26. However, temporary closure of some interchange ramps may be necessary during construction, and there is potential for neighborhoods adjacent to I-26 to experience increased exposure to local traffic due to motorists using local streets to avoid detour routes. This may result in temporary noise and air quality impacts as well as increased travel times.

What is Environmental Justice?

***Executive Order 12898**, signed in 1994, directs each federal agency to address, as appropriate, "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations."*

There are three fundamental environmental justice principles:

- *To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.*
- *To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.*
- *To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.*

A number of other laws, regulations, and policies also express the need to consider environmental justice. (FHWA, 2000)

Additional discussion of this topic is presented in **Section 3.16**.

3.1.4 Race and Ethnicity

To ensure full and fair participation under Title VI of the Civil Rights Act and Environmental Justice, demographics for race, ethnicity, income and language were analyzed. The Demographic Study Area (DSA) for this project included 14 Census block groups in Henderson County and six Census block groups in Buncombe County. The DSA area is shown in **Figure 9**.

As explained in the *Draft EIS*, as of the 2010 Census, no minority populations within any block group equal or exceed 50 percent of the total population of that block group. However, four block groups exceed the Environmental Justice threshold for a non-white population: Census Tract 9310, Block Groups 1 and 2 and Census Tract 9314, Block Group 2 in Henderson County and Census Tract 12, Block Group 5 in Buncombe County.

Henderson County planners identified neighborhoods along Crest Road (SR 1803), Dana Road (SR 1525), Upward Road (SR 1783), and the previously mentioned Brickton area (**Section 3.1.3.4**) as having predominantly minority concentrations/populations. There are no minority concentrations/ populations near I-26 in Buncombe County.

As of the 2010 Census, the proportion of residents in the DSA who described themselves as Hispanic or Latino was 11.6 percent. This amount is higher than those recorded in both Henderson and Buncombe Counties (9.8 percent and 6.0 percent, respectively). Four block groups within the DSA had a Hispanic or Latino population percentage of more than 10 percentage points higher than their respective County. They include Census Tract 9303, Block Group 3 (20.7 percent), Census Tract 9310, Block Group 2 (35.6 percent), and Census Tract 9314, Block Group 2 (33.5 percent) in Henderson County; and Census Tract 12, Block Group 5 (22.6 percent) and Census Tract 22.03, Block Group 2 (16.8 percent) in Buncombe County.

The demographic data prepared for this project indicate the presence of a Spanish language group that exceeds the Department of Justice's Limited English Proficiency (LEP) Safe Harbor threshold of five percent or 1,000 persons that speak English less than "very well". In accordance with the Safe Harbor provisions, written translations of vital documents were provided for the LEP language group, in addition to other measures, which include notice of Right of Language Access for future meetings for this project to ensure meaningful access. Coordination with the NCDOT Public Involvement and Community Studies Group ensured all public involvement activities and outreach materials developed for the project appropriately targeted LEP populations and meet all regulatory guidelines. Efforts to include Spanish speaking communities are documented in **Chapter 4, Agency and Public Involvement**.

Census data also indicates an Indo-European language-speaking population that exceeds 50 persons within the DSA that may require language assistance. Efforts to include this community are also further described in **Chapter 4**.

What is Title VI of the Civil Rights Act?

Title VI of the Civil Rights Act of 1964 *makes it illegal to show discrimination in the conduct of any Federal activity. Title VI states "No person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." (FHWA, 2000)*

As recommended in the *Community Impact Assessment* (HNTB, 2015), NCDOT Public Involvement coordinated with potentially impacted communities to ensure full and fair participation in the transportation decision-making process. These efforts are further described in **Chapter 4**.

3.1.5 Economic Characteristics

In general, the populations of the DSA living below poverty level in the 2010 Census were less than their respective county. The portion of the DSA within Henderson County living below poverty was 12.0 percent; slightly less than the 12.7 percent of the County. However, two of the block groups had notable low-income populations, meeting the criteria for Environmental Justice. Similarly, the portion of the DSA in Buncombe County had fewer people living below poverty level at 8.3 percent compared to 14.7 percent for the County. However, two block groups within the Buncombe County portion of the DSA also have notable low-income populations meeting the criteria for Environmental Justice.

Low-income communities were identified by local planners and include those along Upward Road (SR 1783), Dana Road (SR 1525), and Crest Road (SR 1803), as well as the previously mentioned Hidden Creek Village and Brickton communities.

3.1.6 Summary of Impacts

Based on available data and information, no EJ population areas would be impacted by construction of the project. Therefore, impacts to minority and low-income populations would not be disproportionately high and adverse. Benefits and burdens resulting from the project are anticipated to be equitably distributed throughout the community. No disparate impacts are anticipated under Title VI of the Civil Rights Act and related statutes.

The Brickton land area will experience some right of way encroachment in the northeast quadrant of I-26 and Butler Bridge Road (SR 1351) due to the replacement and realignment of the Butler Bridge Road bridge over I-26 for the Preferred Alternative. Two manufactured home units in the Shady Grove MHP on the northeast quadrant of I-26 and Butler Bridge Road may be displaced. Impacts to the African American Brickton community are not anticipated. The impacts to the two manufactured homes in the Shady Grove MHP will not affect critical services (e.g. water/sewer, business access, etc.) or access.

The Brickton area, located adjacent to I-26, already experiences noise levels approaching or exceeding the Noise Abatement Criteria threshold of 67 dBA (**Section 3.10**). Based on the *Traffic Noise Report* (HNTB, 2017) residences on Hope Opal Lane may benefit from noise abatement measures. Traffic noise is further discussed in **Section 3.10** and the *Traffic Noise Report* (HNTB, 2017).

The Preferred Alternative will widen I-26 within the existing right of way near the Hidden Creek Village neighborhood. Therefore, disproportionately high and adverse effects to the Hidden Creek Village neighborhood are not anticipated as a result of the project.

How are disproportionate effects determined under environmental justice?

According to the FHWA, a disproportionately high and adverse effect on minority and low-income populations means an adverse effect that:

1) Is predominately borne by a minority population and /or a low-income population, or

2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population. (2000)

*The following I-4400/I-4700 technical studies provided information for **Chapter 3 Sections 3.1.1 to 3.1.7** and are appended by reference:*

***Community Impact Assessment**, 2015*

***Indirect Effects Screening Report**, 2013*

***Community Characteristics Report**, 2013*

***Bent Creek-Lake Julian Greenway Feasibility Study,** 2015*

***Indirect Effects Screening Report (2013) – Update Memo,** 2017*

The Preferred Alternative is anticipated to displace eight residences, two of which have minority residents or tenants.

3.1.7 Farmland

3.1.7.1 Farmland Soils and Farming Operations

As noted in the *Draft EIS*, both Henderson and Buncombe County have a rich and varied agriculture industry. In addition, Henderson and Buncombe Counties each have a Voluntary Agriculture District (VAD) program with numerous participating farms. Within the study area, there are four VADs in Henderson County.

3.1.7.2 Farmland Impacts

As stated in the *Draft EIS*, the Farmland Protection Policy Act (FPPA) and North Carolina Executive Order Number 96 require all federal and state agencies, respectively, to consider the impacts of projects on farmland and farmland soils. Farmland soils are defined by the Natural Resources Conservation Service (NRCS), which administers the FPPA. These soils may include those identified as prime, unique, and/or of statewide or local importance. Areas identified as "urban" by the U.S. Census Bureau are not included. As shown in the inset on **Figure 9**, the majority of STIP Project I-4400/I-4700 is within a U.S. Census designated Urban Area. Following the *Draft EIS*, the impacts, using slope stake limits plus 40 feet, were reassessed and it was determined that 37 acres of impacts would occur, as shown on **Figure 9**. As required by the FPPA, the form NRCS-CPA-106 (for corridor projects) was completed for the Preferred Alternative (see **Appendix G**) according to FHWA guidelines. The Preferred Alternative received 48 out of 160 points, and therefore falls below the NRCS minimum criteria and will not be evaluated further for farmland impacts. For this document, impacts were again evaluated using slope stake limits plus 25 feet, and the Preferred Alternative may convert approximately 7.6 acres to non-farmable use. This amount is approximately 29 acres less than the reassessed amount following the *Draft EIS* and was therefore not evaluated further.

In addition, using slope stake limits plus 25 feet, the Preferred Alternative may impact two VADs in Henderson County. One of the properties is part of Hyder Dairy Farm, which is a Section 4(f) resource and discussed in the next sections. Approximately 0.7 acre may be taken for right of way use from either side of I-26. This is a 0.9-acre reduction from the impacts presented in the *Draft EIS*. The second VAD is also located on both sides of I-26, just north of and adjacent to McMurray House, and may require 0.03 acre for right of way. This is 0.47 acre less than the amount presented in the *Draft EIS*. A third VAD, located just south of Upward Road (SR 1722), is unlikely to be impacted by the Preferred Alternative.

What is the Farmland Protection Policy Act?

*The **Farmland Protection Policy Act of 1981** requires all federal agencies or their representatives to identify and consider the adverse effects of their programs on the preservation of farmland; to consider alternative actions to lessen adverse effects; and to ensure that programs are compatible with State and local government programs and policies to protect farmland.*

For purposes of the Farmland Protection Policy Act, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland does not have to be currently used for cropland and does not include land already in or committed to urban development or water storage.

3.2 Cultural Resources

Surveys for historic resources were conducted in March and July 2014 and in March 2016. The results are documented in two *Historic Architectural Resources Survey Report* (MdM Historical Consultants, 2014; 2016) included in

Appendix A. A 600-foot wide corridor, considered the project's area of potential effect (APE), was evaluated for each alternative to consider potential visual effects on historic properties outside of the proposed I-26 right of way.

3.2.1 Historic Architectural Resources

As indicated in the *Historic Architectural Resources Survey Reports*, 67 properties located within the APE were identified during the field survey. Those properties considered worthy of further analysis were intensely surveyed and evaluated in the fall of 2014 and spring of 2016. Nine properties listed on or eligible for the NRHP were described in the *Draft EIS* and are listed below:

- McMurray House (Windy Hill) (determined eligible for NRHP);
- Camp Orr (Camp Pinewood) (determined eligible for NRHP);
- Sholtz-Cantrell Estate (previously determined eligible for NRHP);
- Hyder Dairy Farm (determined eligible for NRHP);
- Mountain Sanitarium (determined eligible for NRHP);
- Rugby Grange (NRHP listed);
- Cureton House (determined eligible for NRHP);
- BRP (previously determined eligible for NRHP); and
- Biltmore Estate (NRHP listed and designated NHL).

The remaining properties in the APE were determined not eligible for the NRHP and not worthy of further evaluation. HPO concurred with this assessment in its letters dated December 29, 2014 and April 8, 2016, included in **Appendix G**. The locations of the eligible and listed NRHP resources are shown on the **Figure 7 series**.

3.2.2 Archaeological Resources

An archaeological resource assessment was completed by NCDOT and discussed in three separate memoranda dated September, October, and November 2014. Two previously identified sites were described in the *Draft EIS*. No archaeological sites listed on or eligible for the NRHP are located within the APE.

A pedestrian survey of the BRP bridge replacement APE was completed by the NPS, resulting in the conclusion that no known archaeological sites would be impacted. If archaeological sites are found during construction, construction will stop and investigation will occur in accordance with the Section 106 Memorandum of Agreement.

3.2.3 Cultural Landscapes

The BRP motor road is the centerpiece of a 469-mile long designed historic, cultural landscape that stretches from Virginia to North Carolina and crosses STIP Project I-4400/I-4700 on a bridge. The BRP is a nationally significant cultural landscape eligible for listing on the NRHP. Significant cultural landscapes, historic structures, and archaeological sites along the BRP are also accounted for in NPS inventory databases, including the Cultural Landscape Inventory (CLI), the List of Classified Structures, and the Archaeological Sites Monitoring Information System. Further, the NPS is in the process of nominating the BRP for designation as a NHL.

3.2.4 Cultural Resources Impacts

3.2.4.1 Historic Architectural Resources

As identified in the *Historic Architectural Resources Survey Reports* (MdM Historical Consultants, 2014; 2016), nine resources within the APE are eligible or listed on the NRHP. These resources were discussed in the *Draft EIS* for each detailed study alternative. The Preferred Alternative would require right of way from some of the resources. At meetings on May 19, 2015, April 26, 2016, and July 25, 2017, representatives of the NCDOT, FHWA, and HPO reached concurrence on the effects of the proposed alternatives on these resources.

Since publication of the *Draft EIS*, the replacement of the Clear Creek Road bridge over I-26 on new alignment was added to the project's design. As a result, representatives of the NCDOT, FHWA, and HPO revisited the No Effect determination for the Sholtz-Cantrell Estate at a meeting December 11, 2018 and agreed that the minor impacts to the property constitute a No Adverse Effect.

The effects findings for the Preferred Alternative are listed in **Table 1**. The concurrence memoranda are in **Appendix G**.

What is Section 106 of the National Historic Preservation Act of 1966?

Section 106 of the National Historic Preservation Act *granted legal status to historic preservation in Federal planning, decision-making, and project implementation. Section 106 requires Federal agencies to take into account the effect of their undertakings on historic properties, and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment.*

Historic properties are properties that are included in or eligible for inclusion in the National Register of Historic Places. (Advisory Council on Historic Preservation 2013)

Table 1. Historic Architecture Assessment of Effects for the Preferred Alternative

Property and Status	Effect Finding	Reasons
McMurray House (Windy Hill) (HN1904) DE-Criterion C	No Adverse Effect	Access road along west side of property will be temporarily closed during construction, but does not impact access to the house.
Camp Orr (Camp Pinewood) (HN1905) DE-Criteria A & C	No Adverse Effect **4(f) *de minimis*	Some small sections of new right of way required on east side of interstate to accommodate cut and fill slopes and the control of access fencing will be relocated as needed in these areas. Requires some tree removal along length of property that borders interstate. Some fill impacts to wetlands adjacent to historic property, but within NCDOT existing ROW. Does not impact contributing resource.
Sholtz-Cantrell Estate (HN0059) DE-Criterion A	No Adverse Effect **4(f) *de minimis*	Some small sections of permanent drainage easement and temporary construction easement on the historic property will be required to upgrade the drainage system along Clear Creek Road. Viewshed from house will not be impacted.
Hyder Dairy Farm (HN1906) DE-Criteria A & C	No Adverse Effect **4(f) *de minimis*	Some small sections of new ROW required on both sides of interstate to accommodate cut and fill slopes and the Control of Access fencing will be relocated as needed in these areas. Requires minimal tree removal along length of property that borders interstate. Does not impact contributing resources. Viewshed from house will not be impacted.
Mountain Sanitarium (HN1907) DE-Criteria A & C	No Effect	No construction work within property boundary.
Rugby Grange (HN0042) NR-Criteria A & C	No Effect	No construction work within property boundary. Some fill impacts to wetlands adjacent to historic property, but within NCDOT existing ROW. Viewshed from house will not be impacted.
Cureton House (HN1912) DE-Criterion C	No Effect	No construction work within property boundary. Viewshed from house will not be impacted. An expected 2 decibel noise increase over existing levels, resulting in a 67 dBA noise level in all build alternatives, will not be noticeable to the average human ear, and is not considered an effect.

Table 1. Historic Architecture Assessment of Effects for the Preferred Alternative

Property and Status	Effect Finding	Reasons
Blue Ridge Parkway (NC0001) DE-Criteria A & C	**Adverse Effect** **4(f)**	Bridge carrying BRP over I-26 will be demolished and replaced with a new structure developed in collaboration with Eastern Federal Lands, BRP, NCDOT, NC-HPO, and FHWA.
Biltmore Estate (BN0004) NR-Criteria A, B, C, & D **National Historic Landmark**	No Adverse Effect **4(f) *de minimis*	Some small sections of new ROW required to accommodate cut and fill slopes and the Control of Access fencing will be relocated as needed in these areas. Requires minimal tree removal along length of property that borders interstate. Some fill impacts to wetlands adjacent to historic property, but within NCDOT existing ROW. Does not impact contributing resources.

**FHWA is using the HPO's and the NPS's concurrence, as applicable, as the basis for a *de minimis* finding for the following properties, pursuant to Section 4(f):

1. Camp Orr (Camp Pinewood) (HN1905)
2. Hyder Dairy Farm (HN1906)
3. Biltmore Estate (BN0004)

Refer to **Section 3.3** for more information about Section 4(f) properties.

3.2.4.2 Archaeological Resources

In its September 2014 memorandum, NCDOT recommended that no further archaeological work was necessary for the majority of the project study area. Impacts will remain within the disturbed I-26 right of way and will only extend outside the right of way to cut back steep slopes that are unlikely to yield significant archaeological sites. However, a reconnaissance of two known archaeological sites possibly within the project limits was determined necessary. The HPO provided their concurrence on these findings in a letter dated October 16, 2014. NCDOT's letter from October 22, 2014, details the results of the reconnaissance of two archaeological sites and recommends no additional work at either. HPO concurred with the results in a memorandum dated November 18, 2014 and concludes that no further work is needed for these sites in association with the project.

A memorandum from the NPS-BRP archaeologist, dated July 22, 2015, noted that the area included within the proposed APE was previously disturbed during initial construction and grading of the parkway. It is the determination of the BRP archaeologist that no archaeological sites would be affected by the proposed project.

3.2.4.3 Cultural Landscape

STIP Project I-4400/I-4700 would require the realignment of a short segment of the BRP motor road for the replacement of the bridge over I-26 to accommodate the addition of travel lanes underneath. Realignment of the BRP motor road would alter the topography, vegetation, and road alignment. While STIP Project I-4400/I-4700 would represent the first time the Parkway has been realigned since its completion, the portion of the BRP that would be realigned offers no significant historic views or vistas. Option 4, NPS's preferred bridge replacement option, would require cuts due to the topography north and south of the existing bridge and require approximately 11.1 acres of tree clearing.

The FHWA NC Division, NPS, NCDOT and HPO executed a Memorandum of Agreement (MOA) to take into account the effects of the project on the Parkway (**Appendix G**). The MOA stipulates the aesthetic design of the bridge

and the parking pull-off, archival documentation of the existing bridge, and a re-vegetation/landscaping plan.

3.3 Section 4(f) Resources

3.3.1 Resources Protected Under Section 4(f)

Resources that are potentially protected by the requirements of Section 4(f) of the Department of Transportation Act of 1966 are located in proximity to the proposed project. Section 4(f) resources within the study area include park lands and recreational trails: the BRP (also a historic resource), the MST, and the French Broad River Paddle Trail; and eight historic resources: McMurray House (Windy Hill), Camp Orr (Camp Pinewood), Sholtz-Cantrell Estate, Hyder Dairy Farm, Mountain Sanitarium, Rugby Grange, Cureton House, and Biltmore Estate.

The French Broad River Paddle Trail is a state-designated Paddle Trail and is part of the NC Parks system, which is managed by the NC Department of Parks and Recreation (NCDPR). The French Broad River Paddle Trail is a recreational watercraft trail covering approximately 116 miles of the French Broad River from the headwaters in Rosman, North Carolina to the North Carolina and Tennessee border. NCDPR works in partnership with MountainTrue and Riverlink, private non-profit organizations that maintain and operate campsites along the paddle trail in the vicinity of STIP Project I-4400/I-4700. These campsites are also included as part of the Section 4(f) resource.

What is Section 4(f)?

"Section 4(f)" refers to ***Section 4(f) of the Department of Transportation Act of 1966.*** *Section 4(f), as amended, stipulates that the FHWA will* ***not approve any program or project*** *which requires the use of* ***publicly owned park land, recreation area, wildlife or waterfowl refuge, or land of a significant historic site*** *unless there is no feasible and prudent alternative and all possible planning to minimize harm resulting from such use is included.*

3.3.2 Impacts to Section 4(f) Resources

The Preferred Alternative would result in the Section 4(f) use of Camp Orr, Sholtz-Cantrell Estate, Hyder Dairy Farm, French Broad River Paddle Trail, BRP, MST, and Biltmore Estate. Through consultation with the officials with jurisdiction it was determined that the minor use of Camp Orr, Sholtz-Cantrell Estate, Hyder Dairy Farm, French Broad River Paddle Trail, MST, and Biltmore Estate would result in a *de minimis* impact (**Appendix G**). Refer to the *Final Section 4(f) Evaluation* in **Chapter 6**.

The Preferred Alternative would also result in the Section 4(f) use of the BRP. The *Final Section 4(f) Evaluation* (**Chapter 6**) includes the determination of no prudent and feasible alternatives, least overall harm analysis and measures to minimize harm to the Section 4(f) property. The NCDOT and FHWA will continue to coordinate with the NPS in the proposed use of the BRP.

What is Section 4(f)* de minimis *impact?

Section 4(f) de minimis *impact is one that, after taking into account avoidance, minimization, mitigation and enhancement measures, results in no adverse effect to the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f).*

3.4 Visual Resources/Characteristics

3.4.1 Landscape Character

As previously noted in **Section 3.1.1**, land use is mixed, consisting of large sections of residential areas, commercial and industrial stretches, and agricultural tracts.

While aesthetic and landscape features, such as open agricultural fields, woodland areas, and the forest-lined French Broad River, are present

throughout the project study area, they are not limited to the project study area. Therefore, they are not considered to be unique aesthetic features.

3.4.2 Sensitive Visual Resources

The BRP crosses over I-26 north of NC 146 (Long Shoals Road), but does not have direct access to I-26. The MST uses the Parkway bridge to cross I-26. Outstanding scenery and recreational opportunities make the BRP one of the most traveled sections of the National Park System.

3.4.3 Visual Impacts

Extensive direct visual impacts would be unlikely to result from the addition of new lanes in the median and within existing right of way of I-26. In locations where widening within the existing median or right of way is not feasible, the clearing of trees and removal of vegetation through right of way acquisition and construction activities may occur.

The project corridor will take on a more urban appearance as grassed medians will be eliminated. However, this particular visual impact is not likely to affect surrounding communities.

As previously noted, the BRP bridge over I-26 will be replaced to accommodate the proposed widening of STIP Project I-4400/I-4700. Among the Section 106 MOA (**Appendix L**) stipulations to mitigate the adverse effect to the BRP, NPS will develop a re-vegetation/landscaping plan for the realignment area to re-establish native vegetation and provide for a continuous visual experience for the BRP user.

*The following I-4400/I-4700 technical studies provided information for **Chapter 3 Sections 3.2 to 3.4** and are appended by reference:*

***Historic Architectural Resources Survey Report Intensive Level Survey** (MdM Historical Consultants, November 12, 2014).*

***Memorandums to Ramona Bartos, Deputy State Historic Preservation Officer, to/ from Matt Wilkerson, NCDOT Archaeology Group Leader,** dated September, October, and November 2014, respectively.*

3.5 Natural Environment

Information for this section was obtained from the project's *Natural Resources Technical Report* (*NRTR*) (Carolina Ecosystems, 2014) and its *Addenda* (2015, 2015, 2016, and 2017), included in **Appendix A**. Other supporting memoranda provide more detailed information on natural features and resources in the study area.

*The **Blue Ridge Parkway Technical Report** (NPS and FHWA-EFL, 2016) and the **Final Value Analysis and Choosing By Advantages Study** (NPS and FHWA-EFL, 2016) provided information for **Section 3.4** and are found in **Appendices H and I**, respectively.*

3.5.1 Topography, Geology, and Soils

The study area lies in the Southern Blue Ridge Mountain physiographic region of North Carolina. Topography in the project vicinity ranges from very steep, rolling intermountain hills and narrow valleys to wide valleys and stream floodplains associated with the French Broad River. Elevations in the study area range from approximately 2,000 to 2,310 feet above mean sea level.

Buncombe and Henderson County soils surveys identify 35 soil types within the study area.

Coordination with the NCDOT Geotechnical Unit indicates that the preliminary soils information reported in the 2006 *Geotechnical Pre-Scoping Report* remains valid. NCDOT will obtain additional geotechnical information for the Preferred Alternative once right of way plans are complete.

3.5.2 Impacts to Topography, Geology and Soils

As noted in the *Geotechnical Pre-Scoping Report*, included in **Appendix A**, most existing cuts are in stable soil, but some hard rock is expected to be encountered if existing cuts are extended. Additionally, soft, organic, fine grained alluvial soils are present in the floodplain of the French Broad River between the interchange of NC 146 (Long Shoals Road) and the Glenn Bridge Road (SR 3495) overpass, which should be avoided if possible. Geotechnical investigations did not encounter acidic rock. Cut slopes at 2:1 (horizontal: vertical) or flatter are recommended; however, steeper slopes (1.5:1) may be used in some locations.

3.6 Water Resources

3.6.1 Surface Waters and Classifications

Water resources in the study area are part of the Broad and French Broad river basins as noted in the *Draft EIS*, *NRTR*, and *NRTR Addenda*. One hundred seventy-five (175) jurisdictional streams were identified in the study area and their physical characteristics are provided in Appendix F of the *NRTR* and within the text of the *NRTR Addenda*, which are in **Appendix A**. An additional jurisdictional stream is associated with the rest area east of I-26.

3.6.2 Water Quality

As stated in the *Draft EIS*, there are no designated anadromous fish waters, Primary Nursery Areas, High Quality Waters, Outstanding Resource Waters, or Water Supply Watersheds (WS-I or WS-II) within 1.0 mile downstream of the study area. The North Carolina 2016 Final 303(d) list of impaired waters (DWR, 2015) includes the French Broad River, Mud Creek, and Devils Fork; however, none of the streams in the project corridor are listed for either turbidity or sedimentation.

3.7 Biotic Resources

3.7.1 Terrestrial Communities

As noted in the *Draft EIS* eight terrestrial communities were identified in the study area including: maintained/disturbed, montane oak-hickory forest (acidic subtype), montane oak-hickory forest (white pine subtype), montane alluvial forest (small river subtype), acidic cove forest, montane floodplain slough forest, piedmont/mountain semi-permanent impoundment (shrub sub-type), and swamp forest-bog complex (typic subtype).

3.7.2 Terrestrial Wildlife

The diversity of terrestrial wildlife, including mammals, birds, reptiles, and amphibians, in both natural and disturbed habitats is noted in the *Draft EIS*.

3.7.3 Aquatic Communities

Aquatic communities in the study area consist of both perennial and intermittent mountain streams, as well as still water ponds. These waters are expected to include a variety of fish, macroinvertebrates, and amphibians, as described in the *Draft EIS*.

*"**Benthos**" refers to insects that live at the bottom of streams. The type and variety of species found are indicators regarding the health of a stream. When benthic samples are collected, they are given a bioclassification of* Excellent, Good, Good-Fair, Fair, and Poor. *Further information on how these bioclassifications are determined can be found in the NCDWR Standard Operating Procedure for the Collection and Analysis of Benthic Macroinvertebrates (2016).*

3.7.4 Invasive Species

Five species from the NCDOT Invasive Exotic Plant List for North Carolina (2012) were found to occur in the study area and are listed in the *Draft EIS*. NCDOT will manage invasive plant species on its right of way as appropriate.

3.7.5 Biotic Resource Impacts

The anticipated impacts to terrestrial communities are shown on **Table 2** for the Preferred Alternative, including the DDI design at the US 25 (Asheville Highway) interchange and the rest areas. Impacts were reduced from those shown in the *Draft EIS* for all terrestrial communities by approximately 10 percent. The amount of impacts and the reduction from the *Draft EIS* is shown in **Table 2**. Impacts are measured based on an area of functional design slope stake limits plus 25 feet. Impacts are expected to be reduced further during final design.

Table 2. Terrestrial Community Impacts

Community	Preferred Alternative (acres)	Reduction from DEIS (acres)
Maintained/Disturbed	469.2 (59.1%)	3.2
Montane Oak-Hickory Forest (acidic subtype)	166.5 (21.0%)	53.1
Montane Oak-Hickory Forest (white pine subtype)	90.8 (11.4%)	15.8
Montane Alluvial Forest (small river subtype)	29.0 (3.7%)	6.9
Acidic Cove Forest	34.8 (4.4%)	9.9
Montane Floodplain Slough Forest	2.6 (<1%)	1.1
Piedmont/Mountain Semi-permanent Impoundment (shrub subtype)	0.7 (<1%)	0.2
Swamp Forest-Bog Complex (typic subtype)	0.3 (<1%)	0.1
Total	**794.0 (100%)**	**90.1**

*Impacts are estimated based on functional design slope stake limits plus 25 feet and the total take of the rest areas.

Based on slope stake limits, the area of vegetation disturbance for Option 4 for the Blue Ridge Parkway is approximately 11.1 acres.

3.8 Streams, Wetlands, and Other Surface Waters

3.8.1 Streams

One hundred seventy-six (176) jurisdictional streams were identified in the study area. The locations of these streams are shown on figures in the *NRTR* and *NRTR Addenda*. Physical characteristics and water quality designations of each jurisdictional stream are also detailed in these reports. All but three jurisdictional streams in the study area were designated as coldwater streams for the purposes of stream mitigation. Cane Creek and its two tributaries were designated as cool water streams for the purposes of mitigation.

Stream S1, a UT to Higgins Branch, located within the rest area east of I-26 is shown on **Figure 7E.**

3.8.2 Stream Impacts

Using slope stake limits plus a 25-foot buffer, approximately 17,900 feet of stream impacts are anticipated from the construction of the Preferred Alternative, including the DDI design at the US 25 (Asheville Highway) interchange and the rest area east of I-26. This is a 5,969-foot reduction in impacts from those reported in the *Draft EIS* (about 25 percent). There are no impacts associated with the replacement of the BRP bridge. This amount includes the length of the temporarily piped streams associated with the access roads discussed in the BA **(Appendix A**).

What is a jurisdictional stream, and how is it classified?

Jurisdictional streams *include rivers, streams, and drainage ditches with a defined streambed and stream banks, an ordinary high water mark (a clear line along the stream banks below which vegetation does not grow due to the flow of water), and deposited sediment, such as sand or rocks. Jurisdictional streams are classified as perennial or intermittent. A perennial stream flows continuously in parts of its stream bed all year round during years of normal rainfall. Intermittent streams normally stop flowing for weeks or months each year.*

3.8.3 Wetlands

One hundred fifty-eight (158) jurisdictional wetlands were identified within the study area. Wetland classification and quality rating data are included in the *NRTR* and *NRTR Addenda*. All wetlands in the study area are within the Broad and French Broad river basin (Hydrologic Unit Codes (HUC) 03050105 and 06010105). Descriptions of the terrestrial communities at each wetland are presented in the *NRTR*.

3.8.4 Wetland Impacts

Using slope stake limits plus a 25-foot buffer, approximately 4.2 acres of wetland impacts are associated with the Preferred Alternative, including the DDI design at the US 25 (Asheville Highway) interchange. The amount of impacts was reduced by approximately 3.3 acres from that reported in the *Draft EIS* (approximately 44 percent). BRP bridge replacement Option 4 has no wetland impacts.

3.8.4.1 Wetland Finding

Presidential Executive Order 11990 (issued in May 1977) addresses protection and preservation of the Nation's wetlands. Federal agencies are directed to avoid construction in wetlands unless there is no practicable alternative, and to include in each project all practicable measures to minimize harm to wetlands.

The rationale for the selection of the Preferred Alternative was based on many factors, including its impact on wetlands, streams, and ponds. Measures to minimize harm to wetlands have been incorporated into the project through the use of horizontal and vertical alignment refinements. The minimization techniques applied to the Preferred Alternative's design have lowered total wetland and stream impacts from those estimated in the *Draft EIS*.

Based on the analysis for the project, there is no practicable alternative to completely avoid impacts to wetlands. The Preferred Alternative includes all practicable measures to minimize harm to wetlands. These findings have been coordinated with environmental resource and regulatory agencies.

3.8.5 Ponds

Fourteen ponds were identified in the study area totaling approximately 1.66 acres. Thirteen ponds have connections to perennial and/or intermittent streams allowing the US Army Corps of Engineers (USACE) to take jurisdiction, which is further explained in the next section. The fourteenth pond is a maintained stormwater pond and is non-jurisdictional.

3.8.6 Pond Impacts

There is less than 0.01 acre of impacts to ponds associated with the Preferred Alternative, including the DDI design at the US 25 (Asheville Highway) interchange. These impacts are the same as those reported in the *Draft EIS*.

3.8.7 Jurisdictional Issues

3.8.7.1 Waters of the United States

Section 404 of the Clean Water Act requires regulation of discharges into "Waters of the United States." The US Environmental Protection Agency (USEPA) is the principal administrative agency of the Clean Water Act. However, the USEPA has delegated authority to the USACE for the responsibility of implementation, permitting, and enforcement of the provisions of the Act. The USACE regulatory program is defined in 33 CFR 320-330.

Surface waters (lakes, rivers, and streams) and wetlands are subject to jurisdictional consideration under the Section 404 program. Any action that proposes to place fill into these areas falls under the jurisdiction of USACE under Section 404 of the Clean Water Act (33 USC 1344).

Section 401 of the Clean Water Act grants authority to individual states for the regulation of discharges into jurisdictional waters. Under North Carolina General Statutes, 113A "Pollution Control and Environment" and codified in NCAC 15A, NC Division of Water Resources (NCDWR) has the responsibility for implementation, permitting, and enforcement of the provisions of the Act.

It is anticipated that the Preferred Alternative would require a Section 404 Individual Permit, as well as a corresponding Section 401 Water Quality Certification. Final determination of permit applicability lies with the USACE. NCDOT will coordinate with the USACE after completion of final design to obtain the necessary permits.

3.8.7.2 Anticipated Permit Requirements

3.8.7.2.1 Construction Moratoria

In its comments on the *Draft EIS* (**Appendix K**) dated October 2, 2017, the NCWRC stated that there are no trout waters in the project study area and therefore, it does not anticipate requesting a work moratorium for trout.

NCDOT has also committed to tree clearing and construction lighting restrictions, which are detailed in the Special Project Commitments and the BA (**Appendix A**).

***Avoidance** is the first strategy employed, selecting an alternative that avoids a resource.*

***Minimization** modifies the design alternatives to reduce the level of impact to a resource.*

***Mitigation** is employed if no reasonable or prudent alternative exists to offset the impact to a resource.*

3.8.7.2.2 NC River Basin Buffer Rules

No state riparian buffer rules apply to the study area.

3.8.7.2.3 Rivers and Harbors Act Section 10 Navigable Waters

The French Broad River has been designated by the USACE as a navigable water under Section 10 of the Rivers and Harbors Act. A Section 10 permit or exemption from the US Coast Guard will be required for the construction of any structure, excavation or dredging of material, or any obstruction or alteration in or over the river.

3.8.8 Wetland and Stream Mitigation

3.8.8.1 Avoidance and Minimization of Impacts

No water supply watersheds are present within or 1.0 mile downstream of the project study area. As noted in the *Draft EIS*, three streams within the study area are listed as 303(d) impaired waters. However, none are listed on the 2016 Final 303(d) list for turbidity and/or sedimentation impairments and therefore do not require special consideration.

The NCDOT will attempt to avoid and minimize impacts to streams and wetlands to the greatest extent practicable for the Preferred Alternative and during final design.

3.8.8.2 Compensatory Mitigation of Impacts

The NCDOT will investigate potential on-site stream and wetland mitigation opportunities for the Preferred Alternative. If on-site mitigation is not feasible, mitigation will be provided by the North Carolina Division of Mitigation Services (NCDMS).

3.8.9 Endangered Species Act Protected Species

As of June 27, 2018, the USFWS lists 19 federally protected species in Henderson and Buncombe counties. These species are listed in **Table 3**, along with the Biological Conclusion rendered based on survey results in the study area. Habitat requirements for each species are based on the current best available information as per referenced literature and USFWS correspondence. A description of each species' habitat requirements is included in the *NRTR* and *NRTR Addenda*.

Table 3. Federally Protected Species Listed for Buncombe & Henderson Counties

Scientific Name	Common Name	Federal Status	Habitat Present	County	Biological Conclusion
Alasmidonta raveneliana	Appalachian elktoe	E	Yes	Buncombe and Henderson	May Affect Likely to Adversely Affect
Bombus affinis	Rusty-patched bumble bee[1, 2]	E	No	Buncombe[1,2] and Henderson[1,2]	Not Required[1, 2]
Epioblasma florentina walkeri *(= E. walker)*	Tan riffleshell	E	Yes	Buncombe[1,2]	Not Required[1, 2]
Erimonax monachus	Spotfin chub (=turquoise shiner)	T	No	Buncombe[1,2]	Not Required[1, 2]
Geum radiatum	Spreading avens	E	No	Buncombe	No Effect
Glaucomys sabrinus coloratus	Carolina northern flying squirrel	E	No	Buncombe and Henderson	No Effect
Glyptemys muhlenbergii	Bog Turtle	T(S/A)	Yes	Buncombe and Henderson	Not Required[3]
Gymnoderma lineare	Rock gnome lichen	E	No	Buncombe	No Effect
Helonias bullata	Swamp pink	T	Yes	Henderson	No Effect
Isotria medeoloides	Small whorled pogonia	T	Yes	Henderson	No Effect
Microhexura montivaga	Spruce fir moss spider	E	No	Buncombe	No Effect
Myotis grisescens	Gray bat	E	Yes	Buncombe and Henderson[4]	May Affect Likely to Adversely Affect
Myotis septentrionalis	Northern long-eared bat	T	Yes	Buncombe and Henderson	May Affect Not Likely to Adversely Affect[5]
Myotis sodalis	Indiana bat	E	Yes[6]	Blue Ridge Parkway[6]	May Affect Not Likely to Adversely Affect

Table 3. Federally Protected Species Listed for Buncombe & Henderson Counties

Scientific Name	Common Name	Federal Status	Habitat Present	County	Biological Conclusion
Platanthera integrilabia	White fringeless orchid	T	No	Henderson[1]	Not Required[1,2]
Sagittaria fasciculata	Bunched arrowhead	E	Yes	Henderson[1,2] and Buncombe	No Effect
Sarracenia rubra ssp. jonesii	Mountain sweet pitcher plant	E	Yes	Henderson and Buncombe	No Effect
Sisyrinchium dichotomum	White irisette	E	Yes	Henderson	No Effect
Solidago spithamaea	Blue Ridge goldenrod	T	No	Buncombe	No Effect
Spirea virginiana	Virginia spiraea	T	Yes	Buncombe[1,2]	Not Required[1,2]

E – Endangered
T – Threatened
T(S/A) – Threatened due to similarity of appearance
[1]Historic record (the species was last observed in the county more than 50 years ago)
[2]No Section 7 survey, conclusion, or consultation is required at this time.
[3]Species listed as T(S/A) are not biologically endangered or threatened and are not subject to Section 7 consultation and therefore no Biological Conclusion is required.
[4]Probably/Potential (the species is considered likely to occur in this county based on the proximity of known records (in adjacent counties), the presence of potentially suitable habitat, or both.
[5]Although there is no known presence of Northern long-eared bat within the study area, because some tree clearing will be necessary on Parkway property, NPS prefers to exercise caution and assume presence. Therefore, under Section 7 consultation the May Affect Not Likely to Adversely Affect conclusion was given.
[6]Indiana bat is not listed in either Henderson or Buncombe County. Due to the fact that some tree clearing will be necessary on Parkway property, and NPS believes Indiana bat to be present on Parkway property based on their acoustic surveys, the NPS prefers to exercise caution and assume presence of Indiana bat on Parkway property. Therefore, under Section 7 consultation the May Affect Not Likely to Adversely Affect conclusion was given.

3.8.9.1 Rusty-patched bumble bee

The rusty-patched bumble bee (*Bombus affinis)* was listed as an endangered species for Buncombe and Henderson counties, on April 11, 2017 and April 28, 2017, respectively, with a historic status. The species has been added to **Table 3**, since the *Draft EIS*; however, due to its historic status no Section 7 survey, biological conclusion, or consultation is required at this time.

Section 7 of the Endangered Species Act *requires each agency in consultation with the USFWS, ensure that any action authorized, funded, or carried out by such agency, is not likely to jeopardize the continued existence of an endangered or threatened species, or result in the destruction or adverse modification of critical habitat.*

3.8.9.2 Mountain sweet pitcher plant

The mountain sweet pitcher plant *(Sarracenia rubra ssp. jonesii*) was listed as an endangered species for Buncombe County on June 27, 2018. This listing has been updated in **Table 3**, since the *Draft EIS*. Pedestrian surveys for the plant were conducted in areas of suitable habitat on August 13 and 14, 2018. No individuals were found during field activities within the survey window.

3.8.9.3 Gray bat

As noted in previous sections, the gray bat was recorded in the study area after the *Draft EIS* was published. USFWS commented on the *Draft EIS* (**Appendix L**) that gray bats were discovered within the project study area and that the agency no longer agreed with the "no effect" finding in the *Draft EIS*. NCDOT subsequently entered into consultation with USFWS under Section 7 of the Endangered Species Act and began additional surveys for the gray bat.

Based on acoustic survey data collected by NCDOT and NCWRC, gray bats are known to be present in the vicinity of the proposed project between spring and fall. Maternity, bachelor, and transient roosts have been identified within and/or adjacent to the project study area. However, no hibernacula are known from North Carolina. Details of the acoustic and structure surveys, as well as a discussion of the potential effects of the proposed project on the gray bat are found in the BA prepared for this project (**Appendix A**).

The following biological conclusion for the gray bat is provided in the BA.

> No bats or evidence of bats were observed on any bridges or in any culverts that will be included in project construction activities. Direct impacts to gray bat due to modification or elimination of their summer roosts are not expected.
>
> There are not any known gray bat hibernacula in Buncombe or Henderson Counties, and there are not underground mines located within the Action Area or within 3 mi. of the Action Area. Therefore, no impacts to gray bat winter roosting habitat are anticipated.
>
> However, construction of the I-26 widening project, I-4400/I-4700, is expected to result in unavoidable adverse effects to gray bat foraging and commuting habitat, particularly at the French Broad River crossing. Therefore, it is concluded that the proposed action "May Affect, Likely to Adversely Affect" gray bat. Incorporation of conservation measures into the project will offset some of those effects. These measures are consistent with the recovery objectives outlined in the recovery plan for the gray bat aiding particularly in the control of habitat destruction and research needs.

The Biological Opinion (BO) issued by USFWS (February 2019) (**Appendix M**) concluded that "…implementing this project is not likely to jeopardize the continued existence of the gray bat nor will it have adverse impacts to critical habitat." This conclusion is based on "the current status of the gray bat; the environmental baseline for the action area; the effects of bridge construction, demolition, and highway widening; measures identified in the NCDOT's BA to help minimize the potential impacts of the proposed project and assist in the protection, management, and recovery of the species; any potential interrelated and interdependent actions associated with the proposed action; and any potential cumulative effects [of the project]."

In its BO (**Appendix M**), the "USFWS determined that this level of take [project duration of more than five years] is not likely to result in jeopardy to the gray bat. In addition to the subsequent measures listed in the Reasonable and Prudent Measures and Terms and Conditions sections of [the BO], the measures listed in the Conservation Measures section of [the BO] must be implemented for this determination to remain valid."

3.8.9.4 Appalachian elktoe

NCDOT conducted additional surveys for other protected species in the project study area and found a previously undocumented occurrence of Appalachian elktoe in September 2017. NCDOT entered into formal consultation for the Appalachian elktoe.

The Appalachian elktoe is known to occur within a portion of the project study area, specifically the main stem of the French Broad River. Freshwater mussel surveys were completed June 13 through October 6, 2017 and the results of these surveys are included in the Freshwater Mussel Survey Report (NCDOT, 2018).

The BA (**Appendix A**) prepared for this project also details the effects the project may have on the Appalachian elktoe.

While the Appalachian elktoe is currently rare in the French Broad River, the population appears to be expanding. The I-26 Widening is expected to result in unavoidable adverse effects to Appalachian elktoe. Therefore, it is concluded that the proposed action "May Affect, Likely to Adversely Affect" Appalachian elktoe. The direct and indirect adverse effects from this project as well as the changes to the environmental baseline should not preclude the expansion of the Appalachian elktoe through the Action Area. Incorporation of conservation measures into the project will offset some of the effects. These measures are consistent with the recovery objectives outlined in the USFWS recovery plan for the Appalachian elktoe and will help further facilitate the expansion of the French Broad River population. The BO (**Appendix M**) concluded that "…implementing this project is not likely to jeopardize the continued existence of the Appalachian elktoe nor will it have adverse impacts to critical habitat." This conclusion is based on "the current status of the Appalachian elktoe; the environmental baseline for the action area; the effects of bridge construction, demolition, and highway widening; measures identified in the NCDOT's BA to help minimize the potential impacts of the proposed project and assist in the protection, management, and recovery of the species; any potential interrelated and interdependent actions associated with the proposed action; and any potential cumulative effects [of the project]."

In its BO (**Appendix M**), "the USFWS has determined that this level of take [effects to approximately 1.04 acres of appropriate habitat] is not likely to result in jeopardy to the Appalachian elktoe. In addition to the subsequent measures listed in the Reasonable and Prudent Measures and Terms and Conditions sections of [the BO], the measures listed in the Conservation Measures section of [the BO] must be implemented for this determination to remain valid."

For more information on natural resources in the study area, refer to:

Gray Bat Habitat Survey Report, *May 2013*

Freshwater Mussel Survey Report, *October 2013*

Natural Resources Technical Report, *August 2014*

Natural Resources Technical Report Addendum – BRP Addendum, *July 2015*

Natural Resources Technical Report Addendum – US 25/I-26 Interchange Addendum, *December 2015*

Biological Conclusion Update for the Appalachian Elktoe Memorandum, *March 2016*

Natural Resources Technical Report Addendum – US 25/I-26 Interchange Addendum, *April 2016*

Natural Resources Technical Report Addendum #4, *June 2017*

Mountain Sweet Pitcher Plant Field Summary and Notes*, August 2018*

Biological Assessment*, August 2018*

3.8.9.5 Indiana bat

The majority of the proposed road widening will occur within existing NCDOT right of way and will mainly occur in the existing median. With the exception of a bifurcated section of the interstate between the Blue Ridge Parkway and the French Broad River, the median contains no woody vegetation. Clearing in this area will be limited due to the presence of a jurisdictional stream (labeled SDX in the 2014 NCDOT NRTR). Areas outside the existing right of way that may require clearing are limited to existing interchanges, which are already cleared of most woody vegetation and tend to be urbanized.

Although no Indiana bat roost tree surveys were conducted for this project, it is highly unlikely that Indiana bat would choose to roost in trees within this wooded area, or in any wooded areas immediately adjacent to the interstate due to elevated levels of disturbance caused by light and noise from passing vehicles.

Due to the fact that some tree clearing will be necessary on Parkway property, and NPS believes Indiana bat to be present on Parkway property based on their acoustic surveys, the NPS prefers to exercise caution and assume presence of Indiana bat on Parkway property. Therefore, NCDOT has agreed that emergence and/or acoustic surveys shall be conducted prior to removal of trees if the work is conducted between April 15 and August 15. Furthermore, no significant tree removal within 5 mi. of known hibernacula, should any be discovered within that radius, will occur between April 1 and November 15.

The project is not anticipated to have direct or indirect effects to Indiana bat. Therefore, it has been determined that the project "May Affect, Not Likely to Adversely Affect" this species based on discountable effects. However, USFWS is not requiring consultation for this species for this project.

3.8.9.6 Northern long-eared bat

The majority of the proposed road widening will occur within existing NCDOT right of way and will mainly occur in the existing median. With the exception of a bifurcated section of the interstate between the Blue Ridge Parkway and the French Broad River, the median contains no woody vegetation. Clearing in this area will be limited due to the presence of a jurisdictional stream (labeled stream SDX in the 2014 NCDOT NRTR). Areas outside the existing right of way that may require clearing are limited to existing interchanges, which are already cleared of most woody vegetation, and tend to be urbanized.

Although no northern long-eared bat (NLEB) roost tree surveys were conducted for this project, it is highly unlikely that NLEB would choose to roost in trees within this wooded area, or in any wooded areas immediately adjacent to the interstate due to elevated levels of disturbance caused by light and noise from passing vehicles.

Due to the fact that some tree clearing will be necessary on Parkway property, NPS prefers to exercise caution and assume presence of NLEB. NCDOT has agreed that no tree clearing shall be conducted between August 15 and May 15. In the event that any NLEB roost trees are documented within 0.25 mi. of the project

area, regardless of the time of year, the NPS will seek consultation with the USFWS before work proceeds.

The project is not anticipated to have direct or indirect effects to NLEB. Therefore, it has been determined that the project "May Affect, Not Likely to Adversely Affect" this species based on discountable effects.

3.8.9.7 Bald Eagle and Golden Eagle Protection Act

Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large, dominant trees are utilized for nesting sites, typically within 1.0 mile of open water. Suitable habitat for the bald eagle exists in the study area, especially along the French Broad River. Surveys for nest trees were conducted in the summer of 2013 within the study area and within a radial distance of 660 feet, where suitable forage habitat was located within a distance of one mile. No nest trees were identified. A review of NCNHP records, updated February 2017, indicates no known bald eagle or golden eagle occurrences within 1.0 mile of the study area.

3.8.9.8 Endangered Species Act Candidate Species

As of June 27, 2018, there are no Candidate species listed for Buncombe or Henderson Counties.

3.9 Floodplains

Protection of floodplains and floodways is required by Executive Order 11988, *Floodplain Management*. The US Department of Transportation Order 5650.2, titled "Floodplain Management and Protection," prescribes policies and procedures for ensuring that proper consideration is given to the avoidance and mitigation of adverse floodplain effects.

Of the 28 stream crossings evaluated in the *Hydraulic Technical Memorandum* (HNTB, 2014), nine crossings are located on FEMA studied streams. **Table 4** summarizes the FEMA stream crossings within the proposed project study area.

Table 4. FEMA Stream Crossing Summary

Site	Stream	FEMA Classification
4	Dunn Creek	Limited Detail Study
7	Devils Fork	Detailed Study
11	Clear Creek	Detailed Study
13	Featherstone Creek	Limited Detail Study
16	Cane Creek	Detailed Study
17	Kimsey Creek	Limited Detail Study
20	French Broad Tributary 149	Limited Detail Study

*Congress created the **National Flood Insurance Program** in 1968 to minimize the taxpayer burden caused by escalating flood costs and to reduce such costs in the future by implementing floodplain protection ordinances and flood insurance that place a premium on actual flood related risk.*

Table 4. FEMA Stream Crossing Summary

Site	Stream	FEMA Classification
25	French Broad River	Detailed Study
28	Hominy Creek	Detailed Study

Detailed hydraulic computations will be calculated for these crossings as part of final design. The floodplain impacts presented below are an estimation based on slope stake limits plus 25 feet. Potential permitting issues may occur in areas where supplemental structures are needed because existing structures are undersized. Accessing floodplains for installation of supplemental pipes could potentially impact jurisdictional wetlands. Any channel improvements that are made may result in impacts to existing surface waters.

Table 5 shows the estimated impacts to floodplains by the Preferred Alternative. In Henderson County, the amount of impacts was reduced by 3.6 acres for the 100-year floodplain and the 500-year floodplain remained the same when compared to the *Draft EIS*. In Buncombe County, the amount of impacts was reduced by 6.8 acres and 0.6 acre for the 100-year and 500-year floodplains, respectively, compared to the *Draft EIS*. Impacts were measured using slope stake limits plus a 25-foot buffer.

Table 5. Floodplain Impacts*

	Preferred Alternative		
	Henderson County	Buncombe County	Total
100-year Floodplain	14.6	16.7	31.3
500-year Floodplain	6.0	10.7	16.7

*Impacts are based on functional design slope stake limits plus 25 feet

The NCDOT Hydraulics Unit will coordinate with the NC Floodplain Mapping Program to determine the status of the project with regard to the applicability of NCDOT's Memorandum of Agreement or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR). Additionally, since the project will involve construction activities on or adjacent to FEMA-regulated streams, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structures and roadway embankments that are located within 100-year floodplains were built as shown in the construction plans, both horizontally and vertically.

3.9.1 Floodplain Finding

Presidential Executive Order 11988 (issued in May 1977) directs federal agencies to refrain from conducting, supporting, or allowing project activities in floodplains unless there is no practicable alternative. FHWA has determined that a federally

funded transportation project with significant floodplain encroachments will not be approved unless FHWA finds that the proposed significant encroachment is the only practicable alternative.

The project is predominantly within the floodplains of the French Broad River and creeks and streams draining to the French Broad River. Although efforts have been made to minimize effects on these floodplains, the Preferred Alternative will unavoidably impact 100-year and 500-year floodplains where it crosses these streams or their tributaries. Efforts have been made to minimize the effects on floodplains through bridging at the more substantial floodplain crossings. Additionally, stream crossings would be perpendicular or nearly perpendicular to each stream, which would minimize impacts to the associated floodplains. Bridges and culverts along the project will be sized to ensure compliance with FEMA requirements or NC floodplain requirements.

The selection of the Preferred Alternative was based on a consideration of the effects it would have on natural, human, and physical environments, compared to the other alternatives, and on comments received on the *Draft EIS*. NCDOT and FHWA have determined that there is no other practicable alternative that would further reduce impacts to floodplains.

3.10 Traffic Noise

The following sections briefly describe the findings of the noise impact assessment, which is detailed in *Traffic Noise Analysis STIP Project I-4400/I-4700* (HNTB, 2015) and in the *Traffic Noise Analysis Addendum* (HNTB, 2016) and *Traffic Noise Report* (HNTB, 2017). The *Traffic Noise Report* (HNTB, 2017) was completed so that the Preferred Alternative would comply with the 2016 *NCDOT Traffic Noise Policy* and accompanying 2016 *NCDOT Traffic Noise Manual*. Copies of the noise reports are in **Appendix A**, at public review locations listed in **Appendix C**, on the NCDOT website at www.ncdot.gov/projects/i26widening/, and at the Project Development & Environmental Analysis Unit, Century Center Building A, 1000 Birch Ridge Drive, Raleigh.

Traffic noise impacts are determined by implementing the current Traffic Noise Model (TNM 2.5) approved by FHWA and following procedures detailed in 23 CFR 772, the NCDOT *Traffic Noise Policy*, and the NCDOT *Traffic Noise Manual*. The noise analysis studied the full I-26 study area, from US 25 to just south of the I-40/I-240 interchange. When traffic noise impacts are predicted, examination and evaluation of alternative noise abatement measures must be considered for reducing or eliminating these impacts. Temporary and localized noise impacts will likely occur because of project construction activities. Construction noise control measures will be incorporated into the project plans and specifications, as appropriate.

Table 6 is the FHWA Noise Abatement Criteria (NAC) table, which defines noise levels for various land use activity categories that, when approached, equaled or exceeded, require the consideration of noise abatement.

Under 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise and the NCDOT Traffic Noise Abatement Policy, each Type I highway project must be analyzed for predicted traffic noise impacts.

Type I projects are State or Federal highway projects that include but are not limited to:

- *Construct a highway or interchange on new location;*
- *Improve an existing highway, substantially changing the horizontal or vertical alignment;*
- *Increase the addition of through-travel lanes; and/or*
- *Involve new construction or substantial alteration of transportation facilities such as weigh stations, rest stops, ride-share lots or toll plazas.*

Traffic noise impacts occur when predicted design year build condition worst hour noise levels either approach, equal, or exceed the FHWA NAC, and/or when the predicted design year build condition worst hour noise levels substantially exceed the existing worst hour noise levels. Noise abatement must be considered for all traffic noise impacts due to the Preferred Alternative.

Table 6. Noise Abatement Criteria - Hourly Equivalent A-Weighted Sound Level (decibels (dBA))

Activity Category	Activity Criteria[1] $L_{eq(h)}$[2]	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[3]	67	Exterior	Residential
C[3]	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[3]	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A- D or F.
F	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	--	Undeveloped lands that are not permitted.

[1]The $L_{eq(h)}$ Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.
[2]The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period, with $L_{eq(h)}$ being the hourly value of L_{eq}.
[3]Includes undeveloped lands permitted for this activity category.

3.10.1 Traffic Noise Impacts and Contours

The maximum number of receptors for the Preferred Alternative that would be impacted by future traffic noise is shown in **Table 7**. These receptors are expected to experience traffic noise impacts by either approaching, equaling, or exceeding the FHWA NAC or by a substantial increase in exterior noise levels.

Table 7. Traffic Noise Impact Summary

	Approximate # of Impacted Receptors Approaching or Exceeding FHWA NAC[2]							Substantial Noise Level Increase[3]	Impacts Due to Both Criteria[4]	Total Impacts per 23 CFR 772
	A	B	C	D	E	F	G			
Preferred Alternative	0	393	6	0	0	0	0	0	0	399[5]

[1]This table presents the number of build-condition traffic noise impacts as predicted for the Hybrid 6/8-Lane Widening Alternative. Refer to Appendix B of the *Traffic Noise Report* (HNTB 2017) for a detailed analysis of traffic noise impacts at each noise sensitive receptor location.
[2]Predicted traffic noise level impact due to approaching or exceeding NAC (refer to Table 8).
[3]Predicted "substantial increase" traffic noise level impact.
[4]Predicted traffic noise level impact due to exceeding NAC *and* "substantial increase" in build-condition noise levels.
[5]The total number of predicted impacts is not duplicated if receptors are predicted to be impacted by more than one (1) criterion.

Traffic noise impacts were determined using the current NCDOT Traffic Noise Policy and NCDOT Traffic Noise Manual and account for the change in the number of receptors as presented in the *Draft EIS*. Further information is provided in the *Traffic Noise Report* (HNTB, 2017).

3.10.2 Potential Traffic Noise Abatement

Measures for reducing or eliminating the traffic noise impacts were considered for all receptors that would be impacted by the Preferred Alternative. For each of these measures, benefits versus costs (reasonableness), engineering feasibility, effectiveness and practicability and other factors were included in the noise abatement considerations.

3.10.2.1 Noise Barriers

Noise barriers include two basic types: earthen berms and noise walls. These structures act to diffract, absorb and reflect highway traffic noise, and are described in the *Draft EIS* and *Traffic Noise Analysis* and *Traffic Noise Analysis Addendum*.

A noise barrier evaluation was conducted for this project utilizing the TNM 2.5 software developed by the FHWA. Potential barriers, which preliminarily meet feasibility and reasonableness criteria found in the NCDOT Traffic Noise Abatement Policy and therefore are recommended "likely" to be provided, are described below.

For analysis, the project area was divided into 14 Noise Study Areas (NSAs) based on the interchanges located along the I-26 corridor and are described in the *Traffic Noise Report* (HNTB, 2017). Noise barriers were recommended in six of the subdivided, A through AAA, NSAs. The location of the noise barriers is described in the *Traffic Noise Report* (HNTB, 2017).

Table 8 summarizes the results of the noise barrier evaluation for the Preferred Alternative for potential barriers that preliminarily meet feasibility and reasonableness criteria. Based upon feasibility and reasonableness criteria defined in the NCDOT Traffic Noise Policy, these barriers are preliminarily justified and likely to be constructed, contingent upon completion of the project design and the public involvement process. The *Traffic Noise Report* (HNTB, 2017) provides detailed information on the analysis of all preliminary sound barriers.

***Feasibility** and **reasonableness** are distinct and separate considerations.*

***Feasibility** is the consideration as to whether noise abatement measures can be implemented.*

***Reasonableness** is the consideration as to whether noise abatement measures should be implemented.*

Table 8. Preliminarily Feasible and Reasonable Noise Walls

Noise Wall Name	Benefited Area	Approximate Length (ft)	Approximate Area (sq ft)	Number of Impacted Receptors	Total Number of Benefits		Quantity of Wall per Benefit (sq ft)/ Allowable Quantity
					<7 dB(A)	≥7 dB(A)	
NW2.3	Residences along Springside Drive, Willowbrook Road and Katie Drive	3,120	57,391	32	7	36	1,335 / 1,500
NW4.1	Residences on Carolina Circle	1,680	34,333	42	10	13	1,493 / 1,500
NW4.6	Residences on Community Road, Old Hendersonville Road, Pleasant Row Drive, Fender Drive, November Lane and Hickory Flats Drive	1,556	23,470	15	11	19	782 / 1,500

Table 8. Preliminarily Feasible and Reasonable Noise Walls

Noise Wall Name	Benefited Area	Approximate Length (ft)	Approximate Area (sq ft)	Number of Impacted Receptors	Total Number of Benefits		Quantity of Wall per Benefit (sq ft)/ Allowable Quantity
					<7 dB(A)	≥7 dB(A)	
NW5.3	Residences on Hope Opal Lane	420	4,749	14	3	1	1,187 / 1,500
NW9.3	Residences on Hidden Creek Drive, Nathan Drive, Wells Drive and Hidden Creek Road	1,740	31,376	23	10	11	1,494 / 1,500
NW13.2	Residences on Meadowlark Lane and Papa Joes Way	2,040	34,418	18	14	9	1,496 / 1,500
	Total	10,556	185,737	144	55	89	N/A

N/A = Not Applicable.

3.10.2.2 Summary

The preliminary noise evaluation identified six noise barriers for the Preferred Alternative that preliminarily meet feasibility and reasonableness criteria found in the NCDOT Traffic Noise Policy. A more detailed analysis will be completed during project final design. Noise barriers found to be feasible and reasonable during the preliminary noise analysis may not be found to be feasible and reasonable during the final design noise analysis due to changes in proposed project alignment and other design considerations, surrounding land use development, or utility conflicts, and/or other factors. Conversely, noise barriers that were not considered feasible and reasonable may meet the established criteria and be recommended for construction. This evaluation completes the highway traffic noise requirements of Title 23 CFR Part 772.

In accordance with NCDOT Traffic Noise Policy, Federal/State governments are not responsible for providing noise abatement measures for new development for which building permits are issued after the Date of Public Knowledge. The Date of Public Knowledge of the proposed highway project will be the approval date of this *Final EIS/ROD*. For development occurring after this date, local governing bodies are responsible for ensuring that noise compatible designs are used along the I-26 corridor.

For more information on traffic noise in the study area, refer to

Traffic Noise Analysis STIP Project I-4400/I-4700 *(HNTB, 2015) and* ***Traffic Noise Analysis Addendum*** *(HNTB, 2016),*

Traffic Noise Analysis Comparison Tables *(HNTB, 2016).*

Draft Traffic Noise Report *(HNTB, 2017)*

3.11 Air Quality

Air pollution is a general term that refers to one or more chemical substances that degrade the quality of the atmosphere. Individual air pollutants degrade

the atmosphere by reducing visibility, damaging property, reducing the productivity or vigor of crops or natural vegetation, or harming human or animal health. When assessing the impact of a proposed transportation project on air quality, compliance with National Ambient Air Quality Standards (NAAQS) for six criteria pollutants and the potential for the project to increase Mobile Source Air Toxics (MSAT) are considered. The six criteria pollutants are: carbon monoxide, nitrogen dioxide, ozone, particulate matter, sulfur dioxide, and lead.

*A **qualitative MSAT analysis** provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various proposed alternatives.*

*Additional information on air quality impacts is included in the **Air Quality Technical Report**, NCDOT, December 2014.*

3.11.1 Conformance with National Ambient Air Quality Standards

The project is in Buncombe and Henderson counties, which have been determined to comply with the NAAQS. The proposed project is in an attainment area; therefore, 40 CFR Parts 51 and 93 are not applicable. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

3.11.2 Qualitative MSAT Analysis

The Preferred Alternative 2040 Design Year traffic volumes are not projected to meet or exceed the 140,000 to 150,000 AADT; as such, this project is expected to have "low potential MSAT effects." Therefore, in accordance with FHWA's *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents* issued October 2016, this project meets the criteria for a Qualitative MSAT Analysis.

The EPA publishes a list of all geographic areas that are in compliance with the NAAQS (criteria pollutant levels below their respective standards), as well as those areas not in compliance with the NAAQS. The designation of an area is made on a pollutant-by-pollutant basis.

*Regulations governing transportation conformity are found in **40 CFR 51 and 93)**. The transportation conformity rule sets forth policy, criteria, and procedures for demonstrating and assuring conformity of transportation activities.*

The estimated vehicle miles traveled (VMT) under the Preferred Alternative are projected to be higher than that of the No-Build Alternative. This is because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. The amount of MSAT emitted would be proportional to the VMT. Therefore, this increase in VMT would lead to higher MSAT emissions for the Preferred Alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes.

The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to the USEPA's MOVES2014 model, emissions of the priority MSAT decrease as speed increases. Emissions will likely be lower than present levels in the 2040 design year as a result of the USEPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

In FHWA's view, information is incomplete or unavailable to credibly project the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than

any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

FHWA is continuing to study MSATS. As the science progresses FHWA will continue to revise and update their guidance. FHWA is working with stakeholders, USEPA, and others to better understand the strengths and weaknesses of developing analysis tools and the applicability on the project level decision documentation process.

3.12 Utilities

Based on NCDOT's Utility Estimate Worksheet (2015) for this project, evidence of gas, electric, telephone, cable television, water, sewer, and drainage utilities were observed in the study area during a field inspection. The utility estimate indicates that relocation or construction of all listed utility types would be required for the Preferred Alternative. The total estimated cost for utility relocation and construction for the Preferred Alternative is approximately $5,229, 597. The detailed Utility Estimate Worksheet is located in **Appendix D**.

As noted in **Section 3.1.2**, the Duke Energy Asheville Plant is located just east of the I-26 corridor and adjacent to the western side of Lake Julian in Buncombe County. The site incorporates the use of coal ash ponds and other storage facilities located within 500 feet of the I-26 corridor. NCDOT is coordinating with Duke Energy and the NC Department of Environmental Quality (NCDEQ) to avoid encroachment on the dam located on the property. The Asheville 1964 Ash Pond Dam (BUNCO-097) is located near the I-26 study area. However, it is nearly 200 feet from the slope stakes plus 40 feet limits used to measure impacts and will not be affected by the project. No additional Dam Safety Permit is required for the project.

As shown on **Figure 11**, several groundwater monitoring wells, piezometers, soils borings, and seep locations are located adjacent to I-26 near the Asheville Plant. Based on the AutoCAD data provided by Duke Energy's consultant (SynTerra Corp.) on July 8, 2015, two monitoring wells (MW-21D/21BR and MW-22S/22D/22BR) are located within the existing I-26 right of way. In addition to the sites located within the existing right of way, five compliance wells (CB-4, CB-4B, GW-3, CB-08/08D/08BR, and MW-11) may be impacted by the Preferred Alternative. These impact calculations are based on the slope stake limits plus 40 feet.

Based on a coordination meeting with NCDOT held in February 2015, Duke Energy's stated that based on their tentative schedule, coal ash removal at the Asheville Plant would be complete by 2019.

In response to public feedback, Duke Energy officials announced on November 4, 2015 that the Asheville Power Plant will be reconfigured and the proposed Foothills Transmission Line project will be terminated. The current on-site coal-fired plant will close by 2020. The coal-fired plant will be replaced with two natural gas combined-cycle 280-megawatt units, with the option for a simple-cycle 190-megawatt unit in 2023 or later. In addition,

existing transmission lines will be rebuilt and substations will be upgraded within existing rights-of-way. On February 29, 2016, Duke Energy confirmed the retirement of the coal plant and replacement with two 280-megawatt units, as approved by the North Carolina Utilities Commission.

NCDOT will coordinate with all utility providers during final design and construction to prevent damage to utility systems and to minimize disruption and degradation of utility service to local customers. Where impacts cannot be avoided, NCDOT will coordinate with utility owners and operators to identify construction requirements and financial responsibility for relocations based on easements, license agreements, ownership, or other existing agreements covering the use of affected utilities.

3.13 Hazardous Materials

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage, and disposal of hazardous materials, substances, and waste, as well as the investigation and mitigation of waste releases, air and water quality, human health and land use.

The NCDOT GeoEnvironmental Section investigated the project to identify hazardous material sites of concern in the project study area. The *Hazardous Materials Technical Memorandum* (NCDOT, 2014) is located in **Appendix A**. Based on this study, 22 possible GeoEnvironmental sites of concern were identified within the proposed project limits. These environmental sites are shown on **Figure 7 series** and include 18 active or former underground storage tank (UST) facilities, two landfills, a concrete plant, and a metal recycling business. Low monetary and scheduling impacts resulting from these sites are anticipated.

The NCDOT GeoEnvironmental Section will provide soil and groundwater assessments on each of the properties prior to right-of-way acquisition. If any USTs or other potential source of contamination is discovered during construction activities, NCDOT should be notified of their presence immediately upon discovery. An assessment will then be conducted to determine the extent of contamination and identify the potential impacts.

***Hazardous material** impacts may include, but are not limited to, active and abandoned underground storage tank (UST) sites, hazardous waste sites, regulated landfills and unregulated dumpsites.*

3.14 Blue Ridge Parkway and Mountains-to-Sea Trail

3.14.1 Visitor Use and Experience

As noted in the *Blue Ridge Parkway Bridge over Interstate 26 Technical Report* (NPS-BLRI & FHWA-EFL, 2016), included in **Appendix H**, the fundamental purpose of all national parks is the enjoyment of park resources and values by the people of the United States. The BRP is comprised of over 80,000 acres of land and features 24 visitor use and recreation areas. Approximately 18.2 million people visit the Parkway each year.

The MST stretches from Clingman's Dome in Great Smoky Mountains National Park to Jockey's Ridge State Park in Nags Head, North Carolina. Segments of the MST along the BRP were designated as a National Recreation Trail in 2005. The MST crosses I-26 using the BRP bridge.

3.14.2 Impacts to Visitor Use and Experience

Visitor use of the BRP and the MST would be temporarily impacted during construction of the BRP realignment and bridge replacement. The following impacts were analyzed in detail in the *Final Value Analysis* located in **Appendix I** and are summarized in this section and in **Section 3.15.4**.

As described in the *Draft EIS* and the *Final Value Analysis*, Option 4 will realign and replace the bridge on new location. NCDOT will coordinate with NPS to limit closure of the Parkway during construction. Nighttime work will be limited and NPS biologists will be coordinated with if any additional mitigation measures are required.

Construction of the new bridge will be noticeable and will detract from the natural setting of the Parkway. Although the area would be graded for construction of the new roadway alignments and would be re-vegetated with native species, it would be noticeably different in appearance until the vegetation matures. The new bridge will be longer than the existing bridge and the bridge railing will be different in appearance. The railing will be higher to provide a safer railing for pedestrians crossing the bridge, but will be at the eye height of drivers obscuring a portion of their view; however, the portion of the BRP that would be realigned – including the I-26 overpass – offers no significant historic views or vistas.

Since the *Draft EIS*, the NPS has introduced the construction of an asphalt-paved pull-off parking area to accommodate up to eight vehicles northeast of the replacement bridge near BRP milepost 392 as part of the BRP bridge replacement. Initially the pull-off parking area was proposed as a separate project; however, it has since been added to the I-4400/I-4700 project. The BRP comprehensive study of the Asheville commuter zone and MST access includes the potential for the construction of new gravel pull-off parking areas within the vicinity of the I-26 bridge. This location will provide safe sight distances for motorists to and from the parking area and benefit MST users access and safety.

The MST will be indirectly impacted by the proposed project. Although there are typically fewer hikers in the winter months, the NPS will provide detour signage to guide trail users away from the active construction area and into safe locations. Construction will have a direct, short-term, minor adverse impact on the use of this section of the trail through the project corridor. Adverse impacts are considered minor because initial clearing that could impact use of the trail would be of short duration and during a time of low probable usage.

3.14.3 Blue Ridge Parkway Operations

Parkway operations include the maintenance cost, including time, permanent and seasonal staff and equipment, for the upkeep of the road, bridges, and shoulder maintenance. Bridges are routinely inspected, and bridges of different types and longer lengths may require more time and specialized equipment. Actions that change the Park's budget and/or personnel levels would impact parkway operations.

3.14.4 Impacts to Blue Ridge Parkway Operations

The existing bridge is a seven-span concrete girder bridge. The bridge is 512 feet long and 35.2 feet wide (including railings). NPS's preferred Option 4 bridge is approximately 606 feet and would be a concrete box girder type. A concrete box girder could be accessed from the abutments.

Other impacts associated with closure of the Parkway, particularly during the visitor season include delays to emergency response by Parkway rangers and detouring bicycle traffic onto US and State highways.

3.15 Indirect and Cumulative Effects

3.15.1 Indirect Effects

An *Indirect Effects Screening Report* (HNTB, 2013), found in **Appendix A**, was prepared to assess the likelihood of possible indirect effects on land use decisions because of the project. These indirect effects were considered in combination with other projects and development actions occurring in the area during the same time period and are summarized in the *Draft EIS*. 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 and will generate modest travel time savings.

Based on this assessment of the Preferred Alternative, STIP Project I-4400/I-4700 is not expected to have a notable indirect effect on land use. Furthermore, any direct natural environment impacts by the project would be addressed through Programmatic Agreements with resource agencies during the Merger and permitting processes. Developments will also be required to follow local, state, and federal guidelines and permitting regulations.

3.15.2 Cumulative Effects

The *Asheville Regional Cumulative Effects Study* (*CES*) (URS, 2014), included in **Appendix A**, examined potential cumulative effects of projects from the cities, counties, French Broad River MPO, and major projects planned by private sector businesses and institutional entities within the region to determine their potential cumulative effects.

To determine these effects, a spatial boundary was created that was finalized to include Buncombe and Henderson counties. Establishing this study area provided a large geographical area from which data could be gathered for a variety of impacts that are both regional and local. Potential cumulative impacts from the various projects could then be assessed.

To establish a temporal boundary, the horizon year selected for the cumulative effects assessment is 2035, which corresponded with the fiscally-constrained LRTP in effect at the time of the assessment's completion.

The Cumulative Effects Tool, shown in **Table 9**, rated cumulative effects at a medium level of concern because of the reasonably-foreseeable transportation projects in the region. However, it is anticipated that growth and development (and any associated impacts) on the four resource categories would occur whether or not the projects are built. However, several external influences and recommendations have the potential to influence both trends in the area and the results of this study.

Some amount of 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. It appears that notable cultural features are prevalent in planning regulations, whereas water quality and natural habitat features are unique resources that are both under-protected and under-recognized. For community, water quality, and natural habitat features, present and future policies do indicate shifts in including these attributes, but they have historically not been prioritized for protection.

What are Cumulative Effects?

Cumulative effects are the result of when an action, such as a proposed transportation project, or a group of similar actions, such as transportation improvements proposed within a regional area, are added to or interact with other actions in a defined area over a defined span of time (past and future).

The disclosure of these effects, whether beneficial or adverse, was the focus of the ***Asheville Regional Cumulative Effects Study (URS, 2014)****.*

A cumulative effects assessment takes into account known actions having the potential to affect a resource over a specified timeframe. In addition, the term "effect" is primarily qualitative in nature, while "impact" is primarily quantitative in nature.

Table 9. Alternatives Screening Matrix for Regional Cumulative Effects

Rating	Cultural Features			Community Features			Water Quality Features			Natural Habitat Features			Result
More Concern	Unique Resources Not Protected/Recognized			Unique Resources Not Protected/Recognized			Unique Resources Not Protected / Recognized			Unique Resources Not Protected / Recognized			
	Past Actions	Current Activities	Future Development	Past Actions	Current Activities	Future Development	Past Actions	Current Activities	Future Development	Past Actions	Current Activities	Future Development	
High													
Medium - High				X									
Medium							X	X		X			Possible Cumulative Effects
Medium - Low	X	X			X	X			X		X		
Low			X									X	
Less Concern	Features Incorporated in Local Planning and Protection			Features Incorporated in Local Planning and Protection			Features Incorporated in Local Planning and Protection			Features Incorporated in Local Planning and Protection			

Note: This tool rates the magnitude of concern associated with potential cumulative effects.
Source: Asheville Regional Cumulative Effects Study (URS, 2014), Table 5

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3.15.2.1 Community Resources

The original construction of both I-26 and I-40 severed a number of communities within the greater Asheville area. Some of the most economically-depressed and highest percentage minority populations live along these corridors. Relocations and other direct impacts may result in additional stress to these low income and minority communities and constitute a recurring impact. These areas are located along the corridors through Weaverville and Woodfin, near Swannanoa, within Asheville, and in Henderson County. Although individually the projects may not have notable effects on these communities, cumulatively, the projects could result in additional stress to regional low-income and minority populations.

As explained in **Section 3.1.3.4**, the communities of Brickton and Hidden Creek Village are the low-income and minority communities of note along the I-26 corridor and specifically affected by STIP Project I-4400/I-4700. As discussed in **Section 3.1.3.4** upon further consultation with Henderson County planners the Preferred Alternative is not anticipated to displace residents of the Brickton community as a result of widening I-26 under the Butler Bridge Road bridge. The Preferred Alternative is anticipated to widen within the existing right of way, and therefore would have limited effect on the Hidden Creek Village community.

3.15.2.2 Water Resources

The French Broad River is a major feature in the region, bisecting Buncombe County, while providing a water source for a large portion of the study area. Due to the topography of the region, most other rivers, streams, and creeks flow into the French Broad River. In addition, the Forks of Ivy watershed is located along the border of Buncombe and Madison counties. This watershed is the primary surface water source for a large portion of northern Buncombe County and southern Madison County. The Hominy Creek watershed is located in southern Asheville and contains Hominy Creek and South Hominy Creek. South Hominy Creek, the French Broad River, Clear Creek, Devils Fork, Bat Fork, Ivy Creek, Mills River, Mud Creek, and Cane Creek are listed on the NCDWR 2016 Final 303(d) list of impaired waters. Buncombe County does not afford streams any additional protection outside of state standards, while Henderson County requires a 30-foot riparian buffer around all perennial streams. Buncombe County is considering expanding its ordinances to afford these resources extra protection.

All the projects will address increases in impervious surfaces and associated stormwater runoff in the individual project design using NCDOT's Best Management Practices (BMPs). It is possible that these projects could have cumulative impacts when combined with the on-going urbanization and suburbanization of the region due to private development actions. The increases in impervious surfaces associated with the construction of buildings, homes, and parking areas could lead to a deterioration of water quality in the absence of BMPs.

3.15.2.3 Natural Resources

Many of the natural resources are located within areas already designated for protection such as National and State Parks, areas of steep slope, or areas designated for conservation. Through the creation of a Land Conservation Advisory Board as well as cooperation with the Southern Appalachian Highlands Conservancy Land Trust, Buncombe County is promoting the use of voluntary land conservation easements, identifying high priority focus areas, and generating financial resources to slowly increase their holdings of lands for conservation. However, Buncombe County has indicated that future additions to these holdings will be difficult due to increasing prices, loss of funding, and lack of large, contiguous parcels.

Local planners indicated that there are still active agricultural areas in proximity to the transportation corridors. As such, VADs and Enhanced VADs are included, as they demonstrate local commitment to preserving agricultural lands, while prime farmland soils and other agricultural lands are protected under the FPPA and impacts to these should be considered.

3.15.2.4 Travel Demand

As explained in the *CES* the widening along the length of I-26, when considered as individual STIP projects (A-0010A, I-2513, I-4400/I-4700, I-4759, and I-5504), are not likely to change travel times by more than five minutes outside of peak hours; however, when viewed cumulatively, substantial travel time savings could result along the length of the corridor. This could potentially lead to increased traffic volumes as travelers, currently traveling along parallel arterial routes, may be inclined to use the less congested interstate routes. The French Broad River MPO's regional traffic model, which was used for the development of the STIP Project I-4400/I-4700 traffic forecast, was used to help determine the relative impact that a potential project and multiple projects, could have on the overall transportation network. The French Broad River MPO adopted an updated travel demand model in 2015. This current adopted model indicates that the project corridor will have a similar traffic volume and vehicle miles traveled when compared to the previous adopted model.

3.16 Other Impact Considerations

3.16.1 Construction Impacts

3.16.1.1 Maintenance of Traffic during Construction

In 2004, the FHWA published updates to work zone regulations (23 CFR 630 Subpart J). The updated regulations are referred to as the Work Zone Safety and Mobility Rule (Rule) and apply to all State and local governments that receive Federal-aid highway funding. In accordance with the Rule, a Transportation Management Plan (TMP) appropriate to the proposed project will be developed. The TMP will identify a set of coordinated transportation management strategies for use in managing the work zone impacts caused by the proposed project. Transportation management strategies for a work zone could include temporary traffic control measures, operational strategies such

as signal retiming and traffic incident management and public information and outreach.

As part of the TMP, a general concept will be developed for the maintenance of traffic and sequencing of construction. This is intended to minimize traffic delays within the project corridor. Plans for the maintenance and protection of traffic in conjunction with construction activities associated with STIP Project I-4400/I-4700 will be prepared in accordance with the latest edition of the *Manual of Uniform Traffic Control Devices* and NCDOT's roadway standards.

3.16.1.2 Noise Impacts

While discrete construction noise level prediction is difficult for a particular receptor or group of receptors, it can be assessed in a general capacity with respect to distance from known or likely project activities. For this project, earth removal, grading, hauling, and paving is anticipated to occur near noise-sensitive receptors. Temporary and localized construction noise impacts may occur because of these activities.

Additional recommendations for construction noise impact mitigation were described in the *Draft EIS* and can be found in the FHWA Construction Noise Handbook (FHWA-HEP-06-015) and the Roadway Construction Noise Model (RCNM), available online at: http://www.fhwa.dot.gov/environment/noise/cnstr_ns.htm.

3.16.1.3 Air Quality Impacts

Air quality impacts resulting from roadway construction activities are typically not a concern when contractors utilize appropriate control measures. During construction of the proposed project, all materials resulting from clearing and grubbing, demolition or other operations will be removed from the project, burned or otherwise disposed of by the contractor. The demolition or relocation of any buildings or structures containing asbestos found in Buncombe County will require inspection and permitting. Measures will also be taken to reduce the dust generated by construction when the control of dust is necessary for the protection and comfort of motorists or area residents.

Any burning done during construction will be done in accordance with applicable local laws and ordinances and regulations of the North Carolina State Implementation Plan for air quality in compliance with 15A NCAC 02D.1903 for Henderson County. Buncombe County is under a different jurisdiction, WNCRAQA, open burning regulations are found in Chapter 4.1903 of its Code.

3.16.1.4 Water Quality and Drainage

Impacts to water resources may result from activities associated with project construction. Water quality concerns should be avoided and/or mitigated through compliance with regulations covering watershed protection, floodplain protections, stream and river buffers, and stormwater management. Compliance with these regulations, as well as the implementation of NCDOT's BMPs should help to minimize impacts to water resources during the pre-construction, construction, maintenance, and repair situations. NCDOT's *Best Management Practices for the Protection of Surface Waters* and, where applicable, *Design Standards in Sensitive Watersheds* will be followed during the pre-construction phase of the project. NCDOT's *Best Management Practices for Construction and Maintenance Activities* will be

followed to minimize impacts to water resources during construction, maintenance, and repair situations.

3.16.2 Irretrievable or Irreversible Commitment of Resources

Construction of the Preferred Alternative would involve a commitment of a range of natural, physical, human, and fiscal resources. Land use for the construction of the proposed project is considered an irreversible commitment during the time that the land is used for a highway facility. However, if a greater need arises for the use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion would be necessary or desirable.

Considerable amounts of fossil fuels, labor, and highway construction materials such as concrete, aggregate, and bituminous material would be expended to build the proposed project. Additionally, large amounts of labor and natural resources would be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use would not have an adverse effect upon continued availability of these resources. Any construction also would require a substantial one-time expenditure of state and federal funds, which are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, region, and state would benefit from the improved quality and efficiency of the transportation system.

3.16.3 Local Short-Term Uses of Environment and Long-Term Productivity

The most disruptive short-term impacts associated with the proposed project would occur during land acquisition and project construction. However, these short-term uses of human, physical, economic, cultural, and natural resources would contribute to the long-term productivity of the study area by creating a better, more efficient transportation system.

Existing homes and businesses within the Preferred Alternative's right of way would be displaced. However, adequate replacement housing, land, and space are available for homeowners and business owners to relocate within the study area.

The project is consistent with the objectives of state and local transportation plans. It is anticipated the proposed project will improve existing and projected roadway capacity deficiencies, and will support local, regional, and statewide commitments to transportation improvement and economic viability.

3.17 Summary of Impacts

The Preferred Alternative will result in impacts to resources in the study area. **Table 10** indicates anticipated impacts to the human environment and natural resources because of the Preferred Alternative.

Table 10. Summary of Impacts

IMPACT CATEGORY	Preferred Alternative
Human Environment Impacts:	
Residential Relocations (Minorities)	8 (2)
Business Relocations	0
Grave Site Relocations	0
Neighborhood & Community Cohesion	No
Recurring Community / Neighborhood Impacts	No
Low Income / Minority Populations	Yes; not disproportionately high and adverse.
Cultural Resources (Adverse Effect determined)	Yes; Blue Ridge Parkway
Section 4(f) Impacts	Yes; Blue Ridge Parkway.
Section 4(f) *de minimis*	Yes; Biltmore Estate, Hyder Dairy Farm, Camp Orr (Camp Pinewood), French Broad River Paddle Trail, and Mountains to Sea Trail
Visual Resources/Characteristics	No
Traffic Noise Impacts (# of receptors)	399
Air Quality	No
Farmland[1] (acres)	7.6
Hazardous Materials	Minimal monetary and scheduling impacts.
Natural Resources Impacts:	
Federal Listed Species Habitat	May Affect, Likely to Adversely Affect the gray bat and Appalachian elktoe. May Affect Not Likely to Adversely Affect NLEB[2,3] and Indiana bat[2,4]. No effect for other listed species in Henderson and Buncombe Counties.
Jurisdictional Streams[1] (linear feet)	17,900
Jurisdictional Wetlands[1] (acres)	4.2
Ponds[1] (acres)	0.00008
Floodplains:	
100-year Floodplain[1] (acres)	31.3
500-year Floodplain[1] (acres)	16.7

Table 10. Summary of Impacts

IMPACT CATEGORY	Preferred Alternative
Indirect and Cumulative Effects	STIP Project I-4400/I-4700 is not expected to have a notable indirect effect on land use. 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. 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 because of the reasonably-foreseeable transportation projects in the region.

[1] Impacts based on proposed slope stake limits plus 25 feet.
[2] NCDOT will follow NPS mitigation protocol for the Indiana bat and NLEB as detailed in the Special Commitments (Green Sheets) and **Section 3.8.7.2.1.**
[3]Although there is no known presence of Northern long-eared bat within the study area, because some tree clearing will be necessary on Parkway property, NPS prefers to exercise caution and assume presence. Therefore, under Section 7 consultation the May Affect Not Likely to Adversely Affect conclusion was given.
[4]Indiana bat is not listed in either Henderson or Buncombe County. Due to the fact that some tree clearing will be necessary on Parkway property, and NPS believes Indiana bat to be present on Parkway property based on their acoustic surveys, the NPS prefers to exercise caution and assume presence of Indiana bat on Parkway property. Therefore, under Section 7 consultation the May Affect Not Likely to Adversely Affect conclusion was given.

Chapter 4 COMMENTS AND COORDINATION

4.1 History

As explained in **Section 1.2**, STIP Project I-4400 proposed improvements to I-26, primarily in Henderson County, from US 25 to NC 280 (Airport Road) was previously studied as a stand-alone project. An EA for STIP Project I-4400 was completed in May 2001 and a FONSI was issued in January 2002. After the completion of the NEPA process, a Design-Build contract was awarded for the final design and construction of the project. However, a lawsuit and resulting judgment in 2003 found that NCDOT should conduct a broader analysis of the cumulative impacts and logical termini, or project limits, of the overall expansion of the I-26 corridor. The project was subsequently placed on hold due to financial constraints. However, the growing need for improvements to the I-26 corridor was recognized and the project was reinitiated and included in the Draft NCDOT 2013-2023 STIP. To address the 2003 judgment, the NCDOT combined the analysis of STIP Project I-4400 with STIP Project I-4700, the proposed widening of I-26 from NC 280 (Airport Road) to I-40/I-240, into one comprehensive EIS. This EIS addresses logical termini and cumulative effects in accordance with NEPA. The *CES* (discussed in **Section 3.15.2**) was prepared to assess the indirect and cumulative effects along the I-26 corridor in Madison, Buncombe, and Henderson Counties. The *CES* was completed in June 2014 and has been incorporated into this *Final EIS*.

4.2 Citizen and Agency Involvement

The project process included early participation from the public, elected officials, government agencies, and other stakeholders. The scoping process is intended to be a collaborative and cooperative process that considers the views of those who will be affected by or have an interest in the project.

The timeline (**Table 12**) lists those events that have included involvement of the public, local officials, agencies, and other stakeholders.

Following FHWA approval of the *Draft EIS* in August 2016, NCDOT distributed copies to resource agencies and to public locations for viewing. The agencies and public locations where the document was made available are listed in **Appendix C**. A newsletter announcing the publication of the *Draft EIS* and encouraging attendance at the Open House and Public Hearing was sent to 766 residents within the study area. NCDOT also announced the Open House and Public Hearing through local media outlets. Additional efforts to reach Environmental Justice populations, including the Brickton community, are described in *I-4400/I-4700 Environmental Outreach and Language Assistance Services* memorandum (Planning Communities, 2017), included in **Appendix J**.

The USACE also issued a notice in the Federal Register and notified members of the public with property adjacent to jurisdictional wetlands and those in low-income/minority communities. The NPS also issued a notice of the availability of the *Draft EIS* on its website.

4.2.1 Local Officials' Informational Meetings, Open House, and Public Hearing

Local Officials' Informational Meetings were held in Henderson and Buncombe Counties prior to the Open House and Public Hearing on October 13, 2016. The Henderson County Local Officials' Informational Meeting held at the Historic Court House had 22 attendees.

The Buncombe County Local Officials' Informational Meeting and the Open House and Public Hearing were held at the Biltmore Baptist Church. The Buncombe County Local Officials' Informational Meeting had 25 attendees. The Open House and Public Hearing had 128 attendees. One person spoke during the Public Hearing and provided a comment unrelated to the project.

Prior to the public meeting, areas identified as needing language assistance or LEP were canvassed with door hangers to encourage attendance. No one used the provided Spanish-language services. A summary of these efforts is included in **Appendix J**.

Because the USACE, NPS, and NCDOT had different comment period ending dates, the NCDOT designated the end of the comment period as one month following the Open House and Public Hearing, November 14, 2016. However, comments are still added to the project file following the comment period.

As of November 29, 2016, 124 comments were received. USACE received eight comments, four from agencies and four public comments. The NPS received three public comments. NCDOT received 113 public comments on the project. The public comments (not specific to the *Draft EIS*) received by all agencies were developed into a matrix and are included in **Appendix J**.

Many public comments fit into one or more categories or themes. As there are some multi-part comments that fit multiple themes, they may be included more than once.

Table 11. Comment Themes/Categories from Public Comments

Comment Theme	Frequency
Supports widening	21
Supports 6-Lane Widening Alternative	6
Supports 8-Lane Widening Alternative	26
Supports Hybrid 6/8-Lane Widening Alternative	22
I-26 should not be widened	8
Construct the project as soon as possible	26
This project (I-26 widening) is long overdue	11
Leave room under the bridges to accommodate future widening	3
Restrict truck traffic to the right two lanes	8
Commenting on I-26 Connector	6

As shown in **Table 11** most of the comments expressed support for expediting construction of STIP Project I-4400/I-4700 and preferred the 8-Lane Widening Alternative.

NCDOT received an additional 22 comments from agencies, organizations, and a citizen specific to the *Draft EIS*. Comments and responses specific to the *Draft EIS* are included in **Appendix K**.

4.2.2 Local Officials' Informational Meeting and Design Public Meeting

A Local Officials' Informational Meeting and Design Public Meeting were held on April 16, 2018. Both meetings were held at the Biltmore Baptist Church in Arden, NC. The Local Officials' Informational Meeting was held first in the afternoon and was attended by 17 representatives from FHWA, French Broad River Metropolitan

Planning Organization (FBRMPO), Henderson County, Buncombe County, City of Hendersonville, Town of Fletcher, City of Asheville, Asheville Chamber of Commerce, and the Greater Asheville Regional Airport Authority (GARAA).

The Design Public Meeting followed the Local Officials' Informational Meeting in the evening and had 176 attendees. Prior to the public meeting areas identified as needing language assistance or LEP were canvassed with door hangers to encourage attendance. One individual used the Spanish-language services provided at the meeting. A summary of these efforts is included in **Appendix J**.

Public comments were received and considered through May 10, 2018; however, comments are still added to the project file following the comment period. Of the 142 comments received, 17 were submitted at the meeting. Although some people submitted multiple comments, they were only counted once. Common themes included concern for traffic noise, greenway needs, and the explicit approval of the project. The meeting summary and comment matrix are included in **Appendix J**.

4.2.3 Additional Public and Agency Involvement

The timeline (**Table 12**) is continued from the signing of the *Draft EIS* and includes agency and public involvement efforts through the issuing of this *Final EIS*. Some important, but non-public involvement and specific project events have also been included in the timeline for reference.

Table 12. Public, Local Government, and Agency Participation Timeline

Date	Event
2001/2002	EA/FONSI approved for I-4400
July 2003	Court ruled on legal challenge that insufficient attention was given to indirect and cumulative effects and mandated that NCDOT conduct additional studies for the I-26 widening.
August 2004	*Asheville Regional Cumulative Effects Study (CES)* of I-26 corridor in Madison, Buncombe, and Henderson Counties began.
2005	Meetings were held with local planners and stakeholders for CES data collection.
December 2005	NEPA/Section 404 Merger Team (Merger) Screening Meeting to determine if the project should go through the Merger process. It was agreed that the project should at least start in Merger.[1]
April 7, 2006	Start of study letters sent to agencies to request input on the proposed project.[2]
June 7, 2006	Notice of Intent published in the Federal Register notifying the public of the proposed project.[2]
June 13, 2006	Resource agency scoping meeting held.[1]
January 2009	Project studies placed on hold.

Table 12. Public, Local Government, and Agency Participation Timeline

Date	Event
November 18, 2010	Meeting held for the resumption of project studies.[1]
September 28, 2012	Merger Screening Meeting concluded that the project should continue to follow the Merger process.[1]
January 31, 2013	Citizens Informational Workshop held to update the public on the status of the project and to provide citizens and stakeholders an opportunity to ask questions and provide feedback.[1]
March 13, 2013	Stakeholder's project update meeting.[1]
March 26, 2013	Project update presented and discussed at Asheville City Council meeting.
April 16, 2013	Meeting of NCDOT, NPS, and FHWA to discuss the BRP bridge over I-26.
June 20, 2013	Merger meeting. Discussion and concurrence achieved on the Purpose and Need Statement (Concurrence Point 1) and Detailed Study Alternatives (Concurrence Point 2).[2]
July 30, 2013 October 29, 2013 February 20, 2014 March 13, 2014	Meeting of NCDOT, NPS, and FHWA to discuss the BRP bridge over I-26.
April 30, 2014	NCDOT meeting to discuss the proposed greenway along the I-26 corridor.
June 3, 2014	*CES* completed.
July 21, 2014	Meeting of NCDOT and FHWA to discuss the proposed greenway along I-26. A feasibility study for a greenway was prepared (July 2015) and the findings of the study are included in this EIS.
January 30, 2015	Meeting of NCDOT, NPS, and FHWA to discuss the BRP bridge over I-26.
February 4, 2015	Meeting with Duke Energy to discuss project coordination for the Duke Energy Plant coal ash removal, potential impacts, and coordination with the I-26 widening.[1]

Table 12. Public, Local Government, and Agency Participation Timeline

Date	Event
February 11, 2015	Merger meeting. Discussion and concurrence on the bridging decisions and alignment review (Concurrence Point 2A). Drainage structure crossings and drainage structures were reviewed and discussed.[2]
March 9, 2015	Meeting of NCDOT, NPS, and FHWA to discuss a Memorandum of Agreement for the replacement of the BRP bridge over I-26.
April 23, 2015 May 12, 2015 May 18, 2015	Meeting of NCDOT, NPS, and FHWA to discuss the BRP bridge over I-26.
May 15, 2015	Meeting of NCDOT and HPO to discuss effects to historic resources.[2]
June 4, 2015 June 18, 2015 July 14, 2015 August 20, 2015 September 15, 2015	Meeting of NCDOT, NPS, and FHWA to discuss the BRP bridge over I-26.
July 2015	*Bent Creek-Lake Julian Greenway Feasibility Study* completed.
August 25, 2015	Meeting of NCDOT and FHWA to discuss the proposed Bent Creek-Lake Julian Greenway.
November 4, 2015	Meeting of NCDOT, FHWA, NPS-BRP and FHWA-EFL to discuss the BRP bridge over I-26.
December 15-17, 2015	NPS-BRP & FHWA-EFL Value Assessment Meeting for the BRP bridge replacement over I-26.
January 21, 2016	Meeting of NCDOT, FHWA, NPS-BRP and FHWA-EFL to discuss the BRP bridge over I-26.
January 2016	*Draft Value Analysis Report* (NPS) provided.[3]
February 2, 2016	Meeting of NCDOT and HPO to discuss effects to historic resources.
February 25, 2016	Meeting of NCDOT, FHWA, NPS-BRP and FHWA-EFL to discuss the BRP bridge over I-26.
March 3, 2016	*BRP over Interstate 26* Technical Report (NPS-BLRI & FHWA-EFL) completed.[4]

Table 12. Public, Local Government, and Agency Participation Timeline

Date	Event
March 22, 2016	Meeting of NCDOT to discuss design of I-26 interchange at US 25 and US 64.
March 22, 2016	Meeting of NCDOT, FHWA, NPS-BRP and FHWA-EFL to discuss the BRP bridge over I-26.
April 25, 2016	Meeting of NCDOT, FHWA, and NPS-BRP and FHWA-EFL to discuss the public hearing maps.
April 26, 2016	Meeting with NCDOT, FHWA, and HPO to discuss effects at the Cureton House property.[2]
May 3, 2016 June 6, 2016	Meeting of NCDOT, FHWA, NPS-BRP and FHWA-EFL to discuss the BRP bridge over I-26.
June 30, 2016	Meeting of NPS, SHPO, FHWA-EFL, FHWA, and NCDOT for Section 106 Consultation of the BRP bridge over I-26 design.
July 19, 2016	Meeting of NCDOT, FHWA, NPS-BRP and FHWA-EFL to discuss the BRP bridge over I-26.
July 20, 2016	*BRP over Interstate 26* Technical Report (NPS-BLRI & FHWA-EFL) updated to include decisions from Section 106 Consultation (June 30, 2016).[4]
August 9, 2016	*Draft EIS* is signed.
August 23, 2016	NCDOT presents STIP Project I-4400/I-4700 for Value Engineering Study. Dr. Joe Hummer (NCDOT) proposes a new Synchronized Interchange (SI) to limit impacts at US 25 (Asheville Highway) interchange.
September 1, 2016 October 6, 2016	Meeting of NCDOT, FHWA, NPS-BRP and FHWA-EFL to discuss the BRP bridge over I-26.
September 20, 2016	NCDOT sends out a newsletter announcing the publication of the *Draft EIS* and the date of the Open House and Public Meeting.
September 21, 2016	NPS notifies NCDOT that an Indiana bat was found on September 19, 2016 within 1.0 mile of the BRP. Mitigation commitment added to Project Commitments in the *Final EIS*.
September 22, 2016	USACE issues public notice of the availability of the *Draft EIS*.

Table 12. Public, Local Government, and Agency Participation Timeline

Date	Event
September 23, 2016	NPS issues a public notice soliciting comments pertaining solely to the replacement of the BRP Bridge as part of STIP Project I-4400/I-4700.
September 26, 2016	USFWS notifies NCDOT that the gray bat has been found roosting in bridges in Buncombe County. The gray bat has been found within the vicinity of the STIP Project I-4400/I-4700 project area.
October 13, 2016	Local Officials' Informational Meetings for Henderson and Buncombe Counties held.[5]
October 13, 2016	Open House Public Meeting and Public Hearing held.[5]
October 21, 2016	USACE comment period for *Draft EIS* ends.
October 26, 2016	NPS comment period ends.
November 14, 2016	NCDOT comment period for *Draft EIS*, and Open House and Public Hearing comments ends (comments still accepted following this date).
December 13, 2016	NCDOT post-public hearing and comment review meeting.
December 20, 2016	Meeting with USFWS, NPS, NCWRC, FHWA, and NCDOT to discuss Section 7 consultation for the gray bat.
January 18, 2017	Merger meeting. Discussion and concurrence achieved on the Least Environmentally Damaging Practicable Alternative (Concurrence Point 3).[2]
February 7, 2017	FHWA and NCDOT discussion of Climate Change and Greenhouse Gas impacts from STIP I-4400/I-4700.
March 20, 2017	NCDOT to review discussions between NPS/EFL and Mike Holder regarding the Blue Ridge Parkway bridge replacement.
March 23, 2017	FHWA and NCDOT discussion of Greenhouse Gas impacts and reduction strategies from STIP I-4400/I-4700.
March 24, 2017	FHWA and NCDOT discussion of protected species surveys and Section 7 consultation.
March 27, 2017	FHWA and NCDOT discussion with EFL to pursue a final bridge design.

Table 12. Public, Local Government, and Agency Participation Timeline

Date	Event
April 18, 2017	FHWA and NCDOT discussion of Climate Change and Greenhouse Gas impacts in regard to Hydraulics from STIP I-4400/I-4700.
May 11, 2017	FHWA and NCDOT discussion with EFL to pursue a final bridge design.
July 5, 2017	FHWA and NCDOT discussion on the traffic analysis and impacts of the DDI and SI types at the I-26 and US 25 (Asheville Highway) interchange. Agreed to move forward with the DDI type.[1]
July 25, 2017	Meeting with NCDOT, FHWA, and HPO to reach concurrence on the no effect determination to the Cureton House property.[2]
September 20, 2017	Meeting with NCDOT and FHWA to discuss the US 64 (Four Seasons Boulevard/Chimney Rock Road) interchange improvement options (Partial Cloverleaf B, Partial Cloverleaf B Compact, and Diverging Diamond Interchange) and associated traffic operation and impacts.
September 25, 2017	Meeting with NCDOT and USFWS to discuss the Biological Assessment for the gray bat.
September 26, 2017	Meeting with NCDOT and FHWA to discuss Blue Ridge Parkway over I-26 bridge replacement.
October 2, 2017	NCDOT meeting to discuss coordination for the Biological Assessment/Biological Opinion and inclusion of the Appalachian elktoe (found September 29, 2017).
October 5, 2017	Meeting with NCDOT and FHWA to discuss coordination for the Biological Assessment/Biological Opinion.
October 11, 2017	Concurrence Point 4A – Avoidance and Minimization[2]
October 16, 2017	NCDOT meeting to discuss coordination for the Biological Assessment/Biological Opinion.
October 19, 2017	Project status meeting with NCDOT and FHWA.
October 20, 2017	Meeting with NCDOT and FHWA to discuss coordination for the Biological Assessment/Biological Opinion.

Table 12. Public, Local Government, and Agency Participation Timeline

Date	Event
November 14, 2017	Meeting with NCDOT and FHWA to discuss the US 64 (Four Seasons Boulevard/Chimney Rock Road) interchange traffic analyses conclusions from traffic revisions.
February 6, 2018	Meeting with NCDOT and FHWA to review draft Hearing Maps for April 2018 Design Public Meeting.
February 7, 2018	Meeting with NCDOT, USACE, USFWS, NCDWR, and FHWA to discuss I-26 bridge over the French Broad River construction.
March 21, 2018	Presentation to Henderson County Commissioners regarding the I-26 bridge over the French Broad River and proposed plans for construction/ demolition and its effects on river users.
March 23, 2018	Meeting with NCDOT, USACE, USFWS, NCDWR, and FHWA to discuss I-26 bridge over the French Broad River construction, demolition document, and Biological Assessment.
April 3, 2018	Meeting with Biltmore Estate, SHPO, FHWA, and NCDOT to discuss possible impacts to Biltmore Estate property as assessed in the BA and determine if Section 4(f) *de minimis* standing changed. FHWA and SHPO agreed that it did not.
April 10, 2018	Presentation to Buncombe County Commissioners Asheville City Council regarding the I-26 bridge over the French Broad River and proposed plans for construction/demolition and its effects on river users.
April 11, 2018	Presentations to River businesses and civic groups regarding the I-26 bridge over the French Broad River and proposed plans for construction/ demolition and its effects on river users.
April 16, 2018	Local Officials Informational Meeting and Design Public Meeting.[1]
April 30, 2018	Biltmore Estate writes a letter of concerns regarding the potential use of its property and additional project impacts.[2]
June 5-7, 2018	NCDOT and FHWA meet for Cost Estimate Review of the project.[5]

Table 12. Public, Local Government, and Agency Participation Timeline

Date	Event
June 27, 2018	NCDOT responds to Biltmore Estate letter of April 30, 2018 addressing their concerns.[2]
July 18, 2018	Concurrence Point 4A revised to include Avoidance and Minimization Measures provided in the Biological Assessment as well as the inclusion of the rest areas.[1]
August 2, 2018	Concurrence reached on Concurrence Point 4A.[1] In an email NCHPO noted that it does not sign CP4A.[2]
August 14 and September 19, 2018	Concurrence Point 4B meeting held to discuss 30 percent Hydraulic Design of I-4700.
September 27, 2018	Meeting between NPS, FHWA-EFL, NCDOT, and HNTB to discuss the use of access roads from I-26 for the construction of the Blue Ridge Parkway bridge.
October 2, 2018	Meeting between Biltmore Estate, NCDOT, and HNTB to discuss Biltmore's concerns from their letter (April 30, 2018) and NCDOT's response letter (June 27, 2018).

[1]Meeting minutes and public meeting materials are included in **Appendix J**.

[2]Correspondence is included in **Appendix G**.

[3]**Appendix I** – Final Value Analysis Study

[4]**Appendix H** – Blue Ridge Technical Report

[5]**Appendix D** – FHWA Cost Estimate Review

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Chapter 6 FINAL SECTION 4(f) EVALUATION

6.1 Introduction

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (USC) 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that the US Secretary [of Transportation] may approve a transportation program or project...requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- there is no prudent and feasible alternative to using that land; and
- the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

A Section 4(f) use occurs when property from a Section 4(f) resource is permanently acquired and incorporated into a transportation project or when there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose of maintaining the integrity of the Section 4(f) resource(s). When the use of a Section 4(f) property is minor in nature, the use may be classified as a *de minimis* impact. A *de minimis* impact is one that, after taking into account avoidance, minimization, mitigation and enhancement measures, results in no adverse effect to the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f).

In addition, Section 106 of the National Historic Preservation Act of 1966 (Section 106) protects those properties that are listed on or eligible for listing on the National Register of Historic Places (NRHP). **Section 3.2.4** of this *Final EIS* identifies and describes the historic architectural resources that would be affected by the Preferred Alternative for STIP Project I-4400/I-4700.

Through consultation with the North Carolina State Historic Preservation Office (HPO), it was determined that there are nine historic sites (including the Blue Ridge Parkway [BRP]) listed on or eligible for listing on the NRHP in the vicinity of the Preferred Alternative that are subject to Section 4(f) requirements. Of these nine sites, five have the potential to be affected by the STIP Project I-4400/I-4700 Preferred Alternative (**Figure 11**). Through this consultation, it was determined that one of these sites, the BRP (also considered a recreational site), would be adversely affected under Section 106 and have a Section 4(f) use by the Preferred Alternative. It was also determined that impacts to four historic properties result in no adverse effect under Section 106. In accordance with 23 CFR Part 774 (Sections 774.3(b) and

774.17) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Pub. L. 109-59, the Federal Highway Administration (FHWA) has determined that a *de minimis* use will occur to the Biltmore Estate, Hyder Dairy Farm, Sholtz-Cantrell Estate, and Camp Orr (Camp Pinewood) properties based on HPO's concurrence with the Section 106 determination of "No Adverse Effect".

There are three existing public parks and recreational sites that are subject to Section 4(f): BRP (historic site introduced above), Mountains-to-Sea Trail (MST), and French Broad River Paddle Trail (**Figure 11**). In accordance with 23 CFR Part 774 (Sections 774.3(b) and 774.17) of the SAFETEA-LU, Pub. L. 109-59, the FHWA has determined that a *de minimis* use will occur to the MST based on the National Park Service's (NPS) and North Carolina Division of Parks and Recreation's (NCDPR) concurrence that the project will result in no adverse effect to the MST; the FHWA determined that a *de minimis* will occur to the French Broad River Paddle Trail based on the NCDPR's concurrence that the project will result in no adverse effect to the French Broad River Paddle Trail.

This chapter documents the location and characteristics of each of these historic sites and public parks, describes the potential impacts of the Preferred Alternative to each of them, and discusses avoidance measures taken to minimize harm. There are no wildlife and waterfowl refuges affected by the Preferred Alternative. Each of the historic sites and the parks and recreational sites are discussed in this evaluation and are shown in figures at the end of this Final Environmental Impact Statement (*Final EIS)*.

6.2 Proposed Action

6.2.1 Project Need and Purpose

The North Carolina Department of Transportation (NCDOT), in cooperation with the FHWA, proposes to improve an approximately 22.2-mile segment of I-26. The project is in northern Henderson County, just south of Hendersonville, and southern Buncombe County, just south of Asheville. The Need and Purpose of the project are summarized below. Additional detail regarding the need and purpose is found in **Sections 1.2** and **1.3** of this *Final EIS*.

The needs to be addressed by the project are:

Improve existing and projected roadway capacity deficiencies. Sections of I-26 currently operate at levels of congestion characterized by unstable travel speeds with a high level of discomfort to the driver. As projected traffic volumes increase, more sections of I-26 are projected to operate at similar levels of congestion. I-26 is anticipated to operate over capacity by 2040 (design year), hindering its ability to serve high-speed regional travel.

Improve insufficient pavement structure and deteriorating existing road surface conditions. The existing I-26 roadway surface has undergone major rehabilitation twice, most recently in 2011. During past

rehabilitation efforts, NCDOT Divisions 13 and 14 also replaced slabs and repaired joints. With the current load and volume of traffic, the roadway is again showing signs of deterioration. Additional rehabilitation will not be sufficient to provide a quality roadway because of the lack of depth of remaining concrete. Reconstruction of I-26 in the project study area is needed for high-speed, safe, and efficient travel.

These needs are specific to STIP Project I-4400/I-4700 and will be a reasonable expenditure even if no additional transportation improvements are made in the area.

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. LOS D is the standard performance goal target used by NCDOT for environmental studies where congestion is one of the needs being addressed.

6.2.2 Alternatives

The following Build Alternatives were included in the *Draft EIS* for further analysis. The additional traffic lanes would reduce congestion in general and all alternatives include pavement reconstruction.

Build Alternative 1: 6-Lane Widening. The 6-Lane Alternative would widen I-26 to three lanes in each direction from US 25 to I-40/I-240.

Build Alternative 2: 8-Lane Widening. The 8-Lane Alternative would widen I-26 to four lanes in each direction from US 25 to I-40/I-240.

Build Alternative 3: Hybrid 6/8-Lane Widening. The Hybrid 6/8-Lane Alternative would 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 the US 25 (Asheville Highway) to the I-40/I-240 interchange.

All alternatives would be designed to best fit within the existing right of way limits for I-26.

All three Build Alternatives would require a longer bridge to carry the BRP bridge over I-26. The replacement of the bridge provides an opportunity to improve the curvature of the BRP in its approaches to the bridge. A realignment of the BRP is proposed. The replacement BRP bridge would also carry the MST, as it does currently. The railing height on the bridge would be 42 inches, which meets the minimum American Association of State and Highway Transportation Officials (AASHTO) requirements for use by vehicles, bicyclists and pedestrians. Seven options for the bridge replacement were analyzed (**Section 2.4** of *Draft EIS*) and are discussed in the Least Overall Harm Analysis (**Section 6.7**).

6.2.3 Preferred Alternative

The *Draft EIS* identified the Hybrid 6/8-Lane Widening Alternative as the Preferred Alternative. After reviewing agency and public comments,

NCDOT and FHWA confirmed that the Hybrid 6/8-Lane Widening Alternative is the Preferred Alternative for the I-26 widening project.

As discussed in **Section 2.5.1.1** of the *Draft EIS*, the 6-Lane Widening Alternative does not meet the Need and Purpose of an overall performance goal of LOS D in 2040 in the I-4700 portion of the project. Thus, the 6-Lane Widening Alternative was eliminated from further study within the *Draft EIS* because it does not fully meet the project purpose and need. The 8-Lane Widening Alternative and the Hybrid 6/8-Lane Widening Alternative meet the performance goal of LOS D in 2040. The LOS for the three widening alternatives in the design year 2040 is depicted in **Figure 3C, 3D and 3E**. However, the Hybrid 6/8-Lane Widening Alternative had fewer overall impacts and cost than the 8-Lane Widening Alternative.

Based on the analyses presented in the *Draft EIS* and public and agency comment, the Merger Team concurred on January 18, 2017 that the Hybrid 6/8-Lane Widening Alternative is the Least Environmentally Damaging Practicable Alternative (LEDPA). The information provided for this decision and the Merger Team concurrence signature page is found in **Appendix J**.

As part of the Preferred Alternative, the US 25 (Asheville Highway) interchange will be a Diverging Diamond Interchange. The US 64 interchange will be studied for modification to a Partial Cloverleaf "B" (ParClo B). The Preferred Alternative is designed to best fit within the existing right of way limits for I-26. The best fit alignment is shown on **Figure 4A though 4I**. The Preferred Alternative is further described in **Section 2.4** of this *Final EIS*. The impacts of the Preferred Alternative, including avoidance and minimization measures are discussed in **Chapter 3**.

6.2.4 Blue Ridge Parkway Bridge Replacement Options

Several options were analyzed in the *Blue Ridge Parkway Bridge over Interstate 26 Technical Report* (NPS-Blue Ridge Parkway and FHWA-EFL, 2016) (**Appendix H**) for the realignment and replacement or reconstruction of the BRP bridge over I-26 and were presented in the *Draft EIS*. **Figure 5** shows the alignment options. The new bridge type would be a segmental concrete box girder. Construction of the new bridge would most likely be from the top down, using segmental construction. The bridge would have two ten-foot travel lanes, three-foot shoulders, and a five-foot sidewalk on one side to accommodate the MST.

One reconstruction and six replacement options were developed for consideration. Of these, Options 2, 3, and 6 were eliminated from further consideration as explained in the *Blue Ridge Parkway Bridge Over Interstate 26 Technical Report* (2016), included as **Appendix H**, and in the *Draft EIS*. The remaining options are presented in **Table 13**. During preliminary bridge design, span lengths will be adjusted as needed to accommodate the I-26 widening and to balance the span lengths based on the proposed bridge type and construction method. Additional detail regarding these options can be found in the technical report.

Table 13. Blue Ridge Parkway Bridge Replacement Alignment Options

Option	Location	Bridge Length	BRP Realignment Length	Superelevation
Option 1	North of Existing Bridge	715 feet	2,300 feet	6.8%
Option 4	South of Existing Bridge	606 feet	3,050 feet	6.0%
Option 5	South of Existing Bridge	575 feet	3,255 feet	10.0%
Option 7	Existing Location (Reconstruction)	605 feet	0 feet	0%

[1]Lengths are approximate

Through coordination with NPS, EFL, NCDOT, FHWA and HPO it was determined that the preferred bridge replacement would be a concrete segmental bridge type with Caltrans Type 80 railing type.

Following the *Draft Section 4(f) Evaluation* and comment period, the NPS confirmed Option 4, using a segmental concrete box girder bridge type with Caltrans Type 80 bridge rail as its Preferred Option. Also, an asphalt-paved parking pull-off area will be constructed northeast of the BRP bridge as part of the project.

6.3 Description of Section 4(f) Properties

6.3.1 Blue Ridge Parkway

Description. The BRP bridge that crosses I-26 is a contributing resource within the Parkway, which is a resource previously determined to be eligible for listing on the NRHP. The legislated purpose of the Blue Ridge Parkway, under the Act of June 30, 1936, is "*to link Shenandoah National Park in Virginia and Great Smoky Mountains National Park in North Carolina and Tennessee by way of a recreation-oriented motor road intended for public use and enjoyment free from commercial traffic*". The Parkway begins in Virginia at Rockfish Gap, at the southern end of Skyline Drive in Shenandoah National Park, and extends 469 miles through the Southern Appalachian Mountains before ending at US 441 beside the Oconaluftee River, at the entrance to Great Smoky Mountains National Park in North Carolina. It winds along the Blue Ridge Mountains for 355 miles, across forested mountain slopes and settled agricultural valleys and plateaus, and then rises into some of the most rugged mountains east of the Mississippi, including the Black Mountains, Great Craggies, Pisgah Ledge, Great Balsam and Plott Balsam Ranges.

The BRP is primarily a mountain road; however, its location changes every few miles to provide a range of scenic views. The road's curvilinear alignment follows the natural contours of the mountain slopes and is designed for the safe enjoyment of surrounding landscape. In the project area, the BRP consists of a two-lane motor road with 10-foot travel lanes and grassed shoulders. The BRP spans I-26 with a 512-foot long bridge. The BRP

boundaries are approximately 650 feet wide through this section, and the area is forested.

All road structures (with some noted exceptions) constructed between 1935 and 1987 associated with the BRP are listed on the draft National Historic Landmark (NHL) NRHP nomination (October 2015) as contributing resources. These resources reflect the design development of the Parkway through its completion in 1987.

Ownership. The BRP is a National Park Service unit and is owned by the US Government.

Features and functions. Land uses within the BRP are primarily forested natural and recreation areas. The BRP motor road runs through the property. The BRP is eligible for listing on the NRHP.

6.3.2 Mountains-to-Sea Trail

Description. The MST stretches from Clingman's Dome in Great Smoky Mountains National Park to Jockey's Ridge State Park (North Carolina) by the Atlantic Ocean. The mainline distance is 935 miles. The segments of MST along the BRP were designated as a National Recreation Trail in 2005.

Ownership. The MST is officially a part of the NC State Parks System, and overall is managed by NCDPR. The NCDPR works in partnership with the owners of each trail section. For the section of trail located within the BRP, the NPS owns the property the trail utilizes. NCDPR also has jurisdiction as the trail administrator.

Features and functions. Within the project area, the trail intersects the BRP at three locations, from west to east: at milepost 392.1 the MST crosses the BRP; at milepost 391.9 the MST converges with the BRP; and at milepost 391.7 the MST diverges from the BRP (**Figure 13**). There are posts with directional arrows and the MST logo at these locations. The trail follows along the motor road for approximately 0.2 mile, crossing I-26 on the BRP Bridge. There is no designated shoulder or sidewalk for trail users along the motor road and bridge, so users travel along the roadway shoulder and share the travel lane on the bridge. The MST's approved plan (the NPS's *Asheville Corridor MST Trailhead Parking Improvement Plan*) proposes improved trail parking at milepost 391.5 and milepost 392.1. The NPS will reassess the location of the proposed parking improvements in light of the current project.

6.3.3 Biltmore Estate

Description. Biltmore Estate is the residual holding that contains the home estate created by George Washington Vanderbilt between 1888 and 1902 and remains in the hands of his descendants. In total, the estate includes 6,949.48 acres and contains significant structures, archaeological resources, forests, and landscape features associated with its period of significance, 1888 to 1950. In total, 138 contributing resources and 112 noncontributing resources comprise the NHL (designated in 1963).

In 2005, the original 1963 NHL nomination (identified then as the Biltmore Estate and Biltmore Forestry School Site NHL) was amended to remove the parts of the former estate lands that lie south and southwest of I-26 and south and southeast of the BRP. Other land removed included smaller parcels on the east and west sides of the estate that have been cut off from the larger holding through modern development, sale to outside parties, and multiple non-historic uses. The west boundary for Biltmore Estate extends to the right-of-way of I-26. Resources within the NHL boundary closest to the interstate include River Cliff Cottage Site, a noncontributing site of a historic dwelling, and Bent Creek Plantations, which is part of the estate's historic forest plantations located east of the property's west boundary. Dating from the early 1900s, Bent Creek Plantations consist of white pines that have been thinned and harvested in recent years. (*Historic Architectural Resources Report*, 2014)

Ownership. The Biltmore Estate is privately owned. As a NHL, the NPS is the official with jurisdiction.

Features and functions. The S-shaped French Broad River bisects the gently rolling acreage of the estate. Approximately 3,758 acres lie on the east side of the river and about half of that land contains the grounds, gardens, roadways, and forests open to the paying public. The 3,067 acres on the west side of the French Road River remains private.

About two-thirds (4,449 acres) of the entire estate is covered by managed forest. Approximately 700 acres of pasture is devoted to beef cattle and sheep grazing. A local farmer leases approximately 250 acres of bottomland fields along the French Broad and Swannanoa Rivers where corn and other field crops are grown. An undetermined amount of land is taken up by the 14 miles of paved roads and approximately 30 miles of gravel roads that meander through the property. The remaining acreage includes the site, settings, gardens, and grounds of Biltmore House and the buildings and structures housing the commercial, agricultural and domestic functions of the estate.

6.3.4 Hyder Dairy Farm

Description. Located on 60.7 acres on the east and west sides of I-26, the Hyder Dairy Farm likely dates to the late nineteenth century when the one-story, single-pen log house was built. The parcel is mostly on the west side of I-26, although a portion containing no historic resources is on the east side of the interstate. The acreage on the east side of I-26 was historically part of the dairy operation and was isolated from the rest of the farm by the construction of the interstate. Outbuildings on the farm include a metal silo, a large dairy barn and a shed. A large pond with a dam is positioned at the center of the parcel south of the interstate. In the 1950s, a milking parlor and a springhouse were added to the complex. A circa 1920 crib was recently moved to the farm. A circa 2000 manufactured home is southwest of the house.

The Hyder Dairy Farm was determined eligible for the National Register under Criterion A in the area of agriculture as an example of a small dairy farm in Henderson County. The barn, milking parlor, silo, and farm landscape contribute to the property's agricultural significance. The Hyder Dairy Farm is also eligible under Criterion C for architecture. The collection of outbuildings coupled with the survival of the single-pen log house represents the types and forms of architecture found on small farms of the period. (*Historic Architectural Resources Report* 2014)

Ownership. The Hyder Dairy Farm is privately owned. The HPO is the official with jurisdiction.

Features and functions. The 22-acre parcel on the east side of the interstate is wooded and contains no buildings or structures. On the west side, the parcel is largely cleared of trees except at its southeast corner. Much of the land remains pasture for grazing cattle.

6.3.5 Sholtz-Cantrell Estate

Description. The Sholtz-Cantrell Estate contains eleven contributing resources, five noncontributing resources, and one contributing site (the estate grounds) within approximately 47 acres northeast of the town of Hendersonville.

The Sholtz-Cantrell Estate was determined eligible for the National Register in 1995 and reconfirmed for the current project. The property remains eligible under Criterion A as evidence of the tourism and real estate boom that occurred in and around Hendersonville in the 1920s and under Criterion C for its intact circa 1930 Colonial Revival-style dwelling and as an example of rural retreats established during this period. (*Historic Architectural Resources Report*, 2014)

Ownership. The Sholtz-Cantrell Estate is privately owned. The HPO is the official with jurisdiction.

Features and functions. The boundary for the Sholtz-Cantrell Estate includes two legal parcels and consists of approximately 47 acres north of Clear Creek Road and west Hyder Farm Road; the boundary does not extend to I-26. The acreage contains the estate grounds and all contributing resources.

6.3.6 Camp Orr (Camp Pinewood)

Description. Camp Orr, now known as Camp Pinewood, occupies 49-acres northeast of the town of Hendersonville. The parcel is heavily wooded except around the lakes and swimming pool. Typical of summer camps in western North Carolina, the property contains buildings including camper cabins and support buildings and structures dating from the camp's founding in 1929. The camp, like others in the region from this era, contains buildings and structures constructed in the rustic style, an idiom greatly influenced by the Adirondack style.

Of the camp's 50 resources, 12 are noncontributing due to age. Camper cabins built within the last 50 years were constructed in a style similar to

historic cabins so that they do not detract from the camp's overall historic integrity. One of the earliest structures is the concrete water tower dating to 1929-1930. Camp Orr was determined eligible under Criterion A in the areas of entertainment and recreation as a summer recreational residential camp established in the early twentieth century as part of a regional movement. Western North Carolina became the center of recreational camping for children starting in the 1910s, a period when camp directors and owners saw the outdoors as a positive contrast to a rapidly industrializing world. These camps offered respite from urban living and an opportunity to expose children to nature and camp life. Camp Orr is also eligible under Criterion C for architecture for its collection of rustic style buildings and structures executed in log, vertical wood siding, and board-and-batten. (*Historic Architectural Resources Report*, 2014)

Ownership. Camp Orr is privately owned. The HPO is the official with jurisdiction.

Features and functions. The boundary for Camp Orr includes all forty-nine acres currently associated with the property. The parcel is mostly on the west side of I-26, although a small portion containing no historic resources is on the east side of the interstate. The acreage contains all the camp buildings, structures, and sites that make up Camp Orr.

6.3.7 French Broad River Paddle Trail

Description. The French Broad River Paddle Trail is a recreational watercraft trail ("paddle trail") covering approximately 116 miles of the French Broad River from the headwaters in Rosman, North Carolina to the North Carolina/Tennessee border. The paddle trail facilitates public access to and camping along the length of the French Broad River.

Ownership. The French Broad River Paddle Trail is designated a State Paddle Trail and overall is managed by the NCDPR. NCDPR works in partnership with MountainTrue and Riverlink, private non-profit organizations that maintain and operate campsites along the paddle trail. The NCDPR has jurisdiction as the French Broad River Paddle Trail administrator.

Features and functions. Within the project area, the French Broad River Paddle Trail intersects I-26 just north of the BRP bridge over I-26 at mile marker 34.5. The French Broad River flows in a northerly direction, roughly paralleling I-26, but crosses under I-26 in a west-east direction in the project area. I-26 crosses the French Broad River on two parallel bridges; one bridge carries two northbound lanes and one bridge carries two southbound lanes. Near the Preferred Alternative, river access is available at Bent River Creek Park, a Buncombe County Recreation Services facility located approximately 1 mile west of I-26 (upstream), and from the Biltmore Estate property (private access), approximately 1.8 miles east (downstream) of I-26.

6.4 Impacts to the Section 4(f) Properties

The Preferred Alternative will result in the Section 4(f) use of the BRP, MST, Biltmore Estate, Hyder Dairy Farm, Sholtz-Cantrell Estate, Camp Orr, and French Broad River Paddle Trail.

Through consultation with the HPO and NPS, it was determined that, despite the use of land from within historic boundaries, no adverse effects would occur under Section 106 to the Biltmore Estate, Hyder Dairy Farm, Sholtz-Cantrell Estate, and Camp Orr in the Preferred Alternative. Through consultation with the HPO and NPS, it was determined that the use of the Biltmore Estate, Hyder Dairy Farm, and Camp Orr results in a *de minimis* finding.

Through consultation with NPS and NCDPR, it was determined that the proposed use of the MST and French Broad River Paddle Trail results in a *de minimis* finding.

6.4.1 Blue Ridge Parkway

Because of the proximity of the existing BRP bridge's high piers to the current travel lanes of I-26, the I-26 Widening project would require their relocation. Though the Preferred Alternative does not require additional right of way from the BRP, implementation of Option 4 (i.e., demolition and replacement of the existing bridge) would require the bridge piers be moved. The right of way granted by the NPS to the NCDOT for the original construction of I-26 is sufficient to accommodate the Preferred Alternative. The BRP will be realigned in its approaches to the proposed replacement bridge to flatten the bridge and roadway curvature to improve safety and user experience. The realignment of the BRP and the replacement bridge is approximately 3,050 feet (or 0.63 mile) in length (refer to Section 2.4 of *Draft EIS* and **Section 6.7**, Least Overall Harm Analysis for more information).

Since the *Draft Section 4(f) Evaluation*, the NPS has introduced the construction of an asphalt-paved pull-off parking area to accommodate up to eight vehicles northeast of the replacement bridge near BRP milepost 392 as part of the BRP bridge replacement. Initially the pull-off parking area was proposed as a separate project; however, it has since been added to the I-4400/I-4700 project. The BRP comprehensive study of the Asheville commuter zone and MST access includes the potential for the construction of new pull-off parking areas within the vicinity of the I-26 bridge. This location will provide safe sight distances for motorists to and from the parking area and benefit MST users access and safety.

6.4.2 Mountains-to-Sea Trail

Within the project area, the MST intersects the BRP at three locations (**Figure 13**). Posts with directional arrows and the MST logo mark these locations. The realigned BRP will shift approximately 70 feet to the south in the location of the trail crossing at milepost 392.1. This shift will require minor improvements to the trail at the relocated crossing, including the resetting of wayfinding markers; however, the trail will remain on the existing alignment.

At milepost 391.9, the BRP realignment will be located roughly at the same location as the motor road is currently; however, minor improvements to adjust the grade may be required at the trail head to tie into the improved motor road. The MST will be relocated to the proposed sidewalk on the north side of the new BRP bridge to cross I-26. The realigned BRP will shift approximately 110 feet to the south in the location of the trail intersection at milepost 391.7 on the east side of the bridge through a steep cut section. This shift will require minor improvements to the trail at the relocated crossing, including the resetting of wayfinding markers; however, the trail will remain on the existing alignment.

Though some minor work is anticipated at the relocated motor road intersections, including but not limited to grading and the resetting of wayfinding signs, the trail will remain on existing alignment – except as it crosses I-26 on the replacement BRP bridge. This work would be minor in nature and would not alter any features that contribute to the MST's recreational use and/or aesthetic qualities. The initial clearing activity associated with project construction would be of short duration and during a time of low probable usage (i.e. winter). As noted in **Section 3.3.2** of this *Final EIS*, NPS and NCDPR have acknowledged that the use of the MST will not adversely affect the activities, features, or attributes qualifying the MST for protection under Section 4(f).

FHWA Impact Determination under Section 4(f): *De minimis*.

6.4.3 Biltmore Estate

Small sections of right of way would be required within the Biltmore Estate's NHL boundary for the relocation of the control of access fencing and cut and fill activities. The Preferred Alternative would require 8.32 acres within the NHL boundary. Tree removal would be required along the length of the proposed new right of way. However, no features that contribute to the Biltmore Estate's historic significance would be impacted by the Preferred Alternative. NPS and HPO have acknowledged that the use of the Biltmore Estate will not adversely affect the activities, features, or attributes qualifying the Biltmore Estate for protection under Section 4(f).

FHWA Impact Determination under Section 4(f): *De minimis*.

6.4.4 Hyder Dairy Farm

Sections of right of way would be required within the NRHP eligible boundary of the Hyder Dairy Farm for the relocation of the control of access fencing and cut and fill activities. The Preferred Alternative would require approximately 1.65 acres from within the NRHP eligible boundary. Tree removal would be required along the length of the proposed new right of way. No features that contribute to the Hyder Dairy Farm's historic significance would be impacted by the Preferred Alternative and the viewshed from the house would not be impacted. HPO acknowledged that the use of Hyder Dairy Farm would not adversely affect the activities, features, or attributes qualifying the Hyder Dairy Farm for protection under Section 4(f).

FHWA Impact Determination under Section 4(f): ***De minimis***

6.4.5 Sholtz-Cantrell Estate

Sections of permanent drainage easement and temporary construction easement would be required within the NRHP eligible boundary of the Sholtz-Cantrell Estate for the reconstruction of the Clear Creek Road bridge over I-26. The Preferred Alternative would require less than approximately 0.01 acre of permanent drainage easement and approximately 0.07 acre of temporary construction easement from within the NRHP eligible boundary. No features that contribute to the Sholtz-Cantrell Estate's historic significance would be impacted by the Preferred Alternative and the viewshed from the house would not be impacted. HPO acknowledged that the use of Sholtz-Cantrell Estate would not adversely affect the activities, features, or attributes qualifying the property for protection under Section 4(f).

FHWA Impact Determination under Section 4(f): ***De minimis***

6.4.6 Camp Orr (Camp Pinewood)

Small sections of right of way would be required within the NRHP eligible boundary of Camp Orr for the relocation of the control of access fencing and cut and fill activities. The Preferred Alternative would require approximately 0.57 acre from within the NRHP eligible boundary. Tree removal will be required along the length of the proposed new right of way. No features that contribute to Camp Orr's historic significance would be impacted by the Preferred Alternative. HPO acknowledged that the use of Camp Orr would not adversely affect the activities, features, or attributes qualifying the Camp Orr for protection under Section 4(f).

FHWA Impact Determination under Section 4(f): ***De minimis***

6.4.7 French Broad River Paddle Trail

The Preferred Alternative would result in the use of the French Broad River Paddle Trail during construction of the I-26 Widening project. The existing I-26 bridges over the French Broad River are functionally obsolete and will be replaced as part of the Preferred Alternative. To maintain interstate traffic during construction, new lanes would be added to the outside of the existing bridges.

The Preferred Alternative includes public benefits in its design. The eastbound and westbound bridges currently consist of six spans each, each with five sets of piers. Three sets of piers are in the river channel and two at or near each bank. The current design proposes four spans for each bridge deck, resulting in fewer piers in the river channel water and wider channels through which to guide recreational watercraft. The reduction of obstructions in the river channel is considered an improvement to river users.

Impacts to the French Broad River Paddle Trail would consist of use restrictions during the widening and reconstruction of the bridges. Construction activity would include the removal of existing piers and construction of new piers in the water, as well as the removal and

reconstruction of wider bridge decks above the water. NCDOT will place signage at the Bent Creek River Park and along the French Broad River notifying users of construction. NCDOT will work with NCDPR partner organizations to alert boaters of construction. In addition, a safe passage lane under the French Broad River and I-26 bridge will be provided for the duration of construction. An exception would be made during demolition of the bridges when safety hazards to river users are expected to be greatest. Bridge demolition is expected to occur over the winter months, during periods of low probable use.

As noted in **Section 3.2.2** of this *Final EIS*, the NCDPR acknowledged that the use of the French Broad River Paddle Trail will not adversely affect the activities, features, or attributes qualifying the paddle trail for protection under Section 4(f).

FHWA Impact Determination under Section 4(f): *De minimis*

6.5 Avoidance Alternatives

The proposed project would widen the I-26 alignment within the project limits. Alternatives to avoid the potential impacts to the Section 4(f) properties included the No-Build Alternative, the Mass Transit Alternative, the Transportation System and Demand Management Alternatives.

6.5.1 No Build

The No-Build Alternative would not provide any improvements to the I-26 corridor in the study area. Only typical maintenance activities would be provided along this section of I-26. As such, the No-Build Alternative would incur neither right of way nor construction costs. There would be no short-term disruptions along existing roadways during construction. There would be no impacts to streams, wetlands, or other natural and cultural resources, nor any residential or business relocations. The No-Build Alternative would not improve existing and projected roadway capacity deficiencies or improve insufficient pavement structure and deteriorating road surface conditions. For these reasons, the No-Build Alternative would not meet the purpose and need for the project and is, therefore, not a feasible and prudent alternative.

6.5.2 Mass Transit Alternative

The Mass Transit Alternative considered forms of transportation other than the single-occupancy passenger vehicle. The City of Asheville provides bus service throughout Asheville and connects their service with Mountain Mobility to reach Black Mountain. Apple Country Transit provides limited fixed-route and deviated fixed-route service. Buncombe and Henderson Counties provide van transportation service for residents in need of transportation. Passenger rail service is not available in the project area.

I-26 accommodates both regional and local traffic. Expanded bus service would not capture the requisite number of trips to reduce congestion along I-26. New rail alignments would not be financially feasible within the time horizon under consideration. Furthermore, the Mass Transit Alternative would not improve insufficient pavement structure and deteriorating road

surface conditions. For these reasons, the Mass Transit Alternative would not meet the project's purpose and need and is, therefore, not a feasible and prudent alternative.

6.5.3 Transportation System Management Alternative

Transportation System Management Alternative improvements typically involve low-cost, minor transportation improvements to increase the capacity of an existing facility, and do not include reconstructing or adding additional through lanes to the existing highway. Transportation System Management improvements on I-26 in the study area, such as ramp termini modifications, ramp metering, acceleration/deceleration lane lengths, and signing upgrades, would not noticeably reduce congestion. Furthermore, this alternative would not improve insufficient pavement structure and deteriorating road surface conditions. For these reasons, the Transportation System Management Alternative would not meet the project's purpose and need and is, therefore, not a feasible and prudent alternative.

6.5.4 Transportation Demand Management Alternative

Transportation Demand Management Alternatives typically include strategies that result in more efficient use of transportation resources by changing traveler behavior. Typically, Transportation Demand Management improvements do not involve major capital improvements. Such improvements can include staggered work hours, flex-time (employer focused), teleworking, and ride-sharing. While ride-sharing strategies, including carpools and vanpools, can provide a flexible option to transit for some travelers, the ability of these voluntary programs to substantially reduce traffic volumes on particular roadways is minimal. Although Transportation Demand Management measures would help optimize the efficiency of traffic flow on I-26 in the study area, the highway would remain congested due to the projected high volumes of traffic. Furthermore, this alternative would not improve insufficient pavement structure and deteriorating road surface conditions. For these reasons, the Transportation Demand Management Alternative would not meet the purpose and need of the project and is, therefore, not a feasible and prudent alternative.

6.6 Determination of No Feasible and Prudent Alternative

I-26 is perpendicular to the BRP, crossing under the motor road. An avoidance alternative to realign I-26 to a location that would accommodate the widening while avoiding the BRP is not feasible. The piers of the existing BRP bridge across I-26 are located immediately adjacent to the existing travel lanes, so any widening of I-26 would require their relocation and hence, a Section 4(f) use of the BRP. Because the avoidance analysis determined there is no feasible and prudent build alternative that would fully avoid Section 4(f) properties, a least harm analysis was conducted for the BRP bridge replacement.

6.7 Least Overall Harm Analysis

Pursuant to 23 CFR 774.3(c), if the avoidance analysis determines that there is no feasible and prudent avoidance alternative, then only the alternative that causes the least overall harm to the Section 4(f) property may be approved. All of the action alternatives considered were evaluated to determine which alternatives would cause the least overall harm to the Section 4(f) property. This section evaluates those alternatives, including alternatives that would reduce the use of individual Section 4(f) properties.

Seven conceptual alternatives (referred to as Options) were developed and analyzed by the NPS and the FHWA, Eastern Federal Lands Highway Division (EFL) for the BRP bridge replacement in the *Blue Ridge Parkway Bridge Over Interstate 26: Conceptual Alternatives, Impact Topics Considered, Environmental Consequences, VA/CBA Study Factors* (March 2016) (**Appendix H**). These included an option that would replace the existing bridge on new alignment to the north (Option 1), four options that would replace the existing bridge on new alignment to the south (Options 2–5), an option that would replace the bridge in its existing location but realign the BRP (Option 6), and an option that would reconstruct the existing bridge (Option 7). For reasons discussed below, NPS eliminated Option 2, Option 3 and Option 6 from further consideration in the *Draft Value Analysis Study* (January 2016). **Table 2** in **Section 2.4** of the *Draft EIS* includes details about Option 1, Option 4, Option 5 and Option 7.

As part of the March *2016 VA/CBA Study* the conceptual design developed by the Parkway for amenities associated with the MST at mile post (MP) 392.1 were evaluated. This location is northeast of the BRP bridge replacement. The BRP is analyzing existing gravel pull-off areas that are heavily used by hikers and bicyclists as parking facilities along the Parkway and evaluating the construction of new, and restoration of existing, gravel pull-off parking areas in the Asheville commuter zone and MST access within the vicinity of the existing I-26 bridge. Actions at MP 392.1 would include grading and constructing an asphalt-paved parking area on the west side of Parkway to accommodate up to eight vehicles. The location for parking area would provide safe sight distances for motorist to and from parking area. The adjoining social trails would be improved to provide official trail connections and be a benefit to MST. The pull-off parking area was considered for each bridge replacement option.

The least overall harm is determined by balancing seven factors as listed in 23 CFR 774.3(c)(1). These factors are enumerated below and are followed by an analysis of the BRP bridge options.

i. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)

Option 1, Option 4 and Option 5 provide the ability to mitigate adverse impacts to the BRP operations and visitor use and experience. These options would construct a replacement bridge on new alignment adjacent

to the existing bridge, providing for the continued operation of the BRP for visitors and Park rangers during construction of the replacement bridge and roadway approaches. The visitor's experience would be diminished by the presence of construction equipment and construction activity. Closure of the Parkway during tourist season, May 1 through October 31, would not be permitted thus minimizing visitor exposure to construction activities. However, these restrictions would lengthen the overall duration of construction.

Further, Option 1, Option 4 and Option 5 provide a reasonable ability to mitigate adverse impacts to the significant designed landscape associated with the BRP. The realignment associated with these options would alter the topography, vegetation, road alignment, and circulation patterns associated with the significant cultural landscape. No historic views or vistas are available to or from this section of the Parkway. The design of the realigned roadway and the new bridge would be consistent with the Parkway's landscape characteristics. Though grading and tree clearing associated with new alignment that would alter the visual character of the Parkway through this section, a re-vegetation plan would be implemented to mitigate construction disturbance and to reestablish native plants in the abandoned roadway sections. However, these areas would remain visually distinct from the surrounding mature forest for several years.

The realignment of the roadway and bridge in this section would have public health and safety benefits. Option 1, Option 4 and Option 5 would improve sight distance and vertical and horizontal curve alignment.

Option 2 and Option 3 would also provide a reasonable ability to mitigate adverse impacts to the BRP. These options have similar impacts to visitor use and experience as Option 1, Option 4 and Option 5. However, the realignment of the roadway and bridge in Option 2 and Option 3 would not accomplish the benefit to public health and safety.

Option 6 and Option 7 do not provide a reasonable ability to mitigate adverse impacts to the BRP operations. An off-site detour would be required for the duration of construction resulting in disruptions to the Parkway visitor experience and substantial adverse impacts to Park and concessioner operations, including emergency response times. Because these options would utilize the existing bridge alignment, construction disturbance would be minimized; Option 6 would include minor roadway improvements and Option 7 would include no improvements to the roadway. Less grading and tree clearing would minimize impacts to the surrounding mature forest and lessen the impacts to the visual character of the Parkway.

ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection

Option 1, Option 4 and Option 5 would maintain BRP operations throughout construction whereas Option 6 and Option 7 would require a 4.8-mile off-site detour that would add roughly 7 to 16 minutes of travel time for Parkway users, including but not limited to visitors and Park rangers. The disruption to Parkway visitors and Park and concessioner operations, including emergency response times, are considered relatively severe impacts.

For Option 1, Option 4 and Option 5 the remaining harm would be associated with the reclamation of the abandoned roadway section. Though these re-vegetated areas would be apparent to visitors for several years after construction, the visitor experience would be relatively brief in duration as they travel through this section. No historic views or vistas are available to or from this section of the Parkway. Therefore, the impacts to the mature forest surrounding the roadway are considered to be less severe than a disruption in the operation and use of the BRP.

iii. The relative significance of each Section 4(f) property

The MST shares the BRP bridge in the current and proposed conditions and is the only other Section 4(f) property impacted by the BRP bridge options. Impacts to the MST are proportionately equal to impacts to the BRP. Therefore, the relative significance of each Section 4(f) property was not a consideration in the Least Overall Harm Analysis.

iv. The views of the official(s) with jurisdiction over each Section 4(f) property

The NPS, in coordination with FHWA-EFL, FHWA and NCDOT, have evaluated the BRP bridge options in the *Blue Ridge Parkway Bridge Over Interstate 26: Conceptual Alternatives, Impact Topics Considered, Environmental Consequences, VA/CBA Study Factors* (2016) (**Appendix H**) and *Draft Value Analysis Study* (2016) report (**Appendix I**). As documented in the *Final Value Analysis Study* (2016), Option 4 best optimizes public health and safety; maintains or improves visitor experience; and optimizes operations and maintenance efficiency. As a result of these analyses, the NPS recommended Option 4 as the preferred option.

v. The degree to which each alternative meets the purpose and need for the project

All BRP bridge options fully meet the purpose and need of the proposed project.

vi. After reasonable mitigation, the magnitude of any adverse impacts to properties not protected by Section 4(f)

The BRP bridge options are contained within the BRP, thus all activities would impact a Section 4(f) property. Only one option, Option 2, includes impacts to a wetland resource.

vii. Substantial difference in costs among the alternatives

Option 7 is the least expensive (between $17 and $19.6 million) and Option 1 is the most expensive (between $21.4 and $23.6 million). Option 4 would cost approximately $19.8–$21.9 million; Option 5 would cost approximately $19.1–$21.3 million. Though cost estimates were not prepared for the other options, they can be placed on the continuum from least to most expensive and in relation to the intermediate costs. The cost for Option 6 would be slightly more than Option 7 due to minor roadway improvements, but less than Option 1. Option 2 would cost slightly more than Option 1 based on the length of roadway realignment and bridge length. Option 3 would cost slightly more than Option 4 (but less than Option 1) based on the length of roadway realignment and bridge length.

Based on comparative evaluation of each option's impacts, costs and benefits, the preferred BRP Option 4 would improve the conditions of the BRP (and the MST) from an operational perspective resulting in the least overall harm to the Section 4(f) property.

6.8 Measures to Minimize Harm

Since there is no feasible and prudent avoidance alternative, the preferred BRP Option 4 includes all possible planning to minimize harm as defined in 23 CFR 774.17.

6.8.1 Blue Ridge Parkway

In addition to replacing the bridge on a new alignment to avoid the construction detour impacts, additional measures to minimize harm would include:

- Construction dust and noise reduction through standard Best Management Practices (BMPs). Every practicable effort would be made to minimize the dust and noise during construction using standard BMPs (e.g., watering, covering of soil piles), and standard accepted noise reduction measures (e.g., maintaining tune of equipment, limited work hours).
- Temporary or nighttime closures would only be permitted from November 1 until April 31.
- Nighttime work (between dusk and dawn) would only be allowed during bridge removal activities and installation of new piers and segments. If other nighttime work is needed, park natural resources staff would be consulted to determine if further restrictions are necessary.
- To the extent feasible, bridge construction would occur within the existing I-26 right of way to minimize impacts within the BRP.

The Section 106 Memorandum of Agreement (MOA) (**Appendix G**) includes the following stipulations to minimize harm:

- Aesthetic Design of the Bridge

In order to reduce asymmetry on the replacement bridge, the sidewalk will extend to the end of the approach slab and have rounded edges and the guardwalls will flair out and transition in height to account for the visual difference of the single sidewalk. The guardwalls will be faced with stone masonry in a manner that will harmonize with the rest of BRP.

Eastern Federal Lands will provide 70 percent and 100 percent construction drawings for the Undertaking to BRP. BRP shall provide their comments to EFLHD staff within 30 calendar days of receipt. EFLHD shall revise drawings and plans to address the BRP comments and provide revised drawings to BRP within 30 calendar days after receiving comments. The revised drawings shall be submitted by BRP to the SHPO. The SHPO shall provide their comments to BRP within 15 calendar days of receipt. Comments provided by the SHPO will be sent to EFLHD by BRP within 5 calendar days to be incorporated into the bridge design. If SHPO does not respond within 15 days, concurrence is assumed.

- Cultural Landscape and Aesthetics

  EFLHD shall design a parking pull-off at milepost 392.1 with access to the Mountains to Sea Trail. The design shall incorporate features that match the visual character of the BRP and are consistent with other parking pull-offs along the motor-road (see Visual Character of the Blue Ridge Parkway, 1997).

  EFLHD shall develop a re-vegetation/landscaping plan for the realignment area of the BRP to re-establish native vegetation and provide for a continuous visual experience for the BRP user.

  EFLHD shall provide parking pull-off and re-vegetation/landscaping plans to BRP who will provide their comments to EFLHD staff within 30 calendar days of receipt. EFLHD shall revise the plan and design to address BRP comments and provide revised plans to BRP within 30 calendar days after receiving comments. These plans shall be submitted by BRP to the SHPO. The SHPO shall provide their comments to BRP within 15 calendar days of receipt. Comments provided by the SHPO will be sent to EFLHD by BRP within 5 calendar days to be incorporated into the plans. If SHPO does not respond within 15 days, concurrence is assumed.

- Archival Documentation

  Prior to demolition of the existing bridge and any construction activities, Historic American Engineering Record (HAER) Level II documentation of the bridge will be completed by NCDOT.

  All documentation activities will be performed or directly supervised by architects, historians, photographers, and/or other professionals meeting the qualification standards in the Secretary of Interior's Professional Qualification Standards (36 CFR 61, Appendix A).

HAER documentation will be submitted by NCDOT to BRP. BRP will within seven days forward to the NPS Southeast Regional Office will provide their comments to BRP and NCDOT within 30 calendar days of receipt. NCDOT shall revise the documentation to address NPS comments and provide revised documentation to BRP within 60 calendar days after receiving comments. BRP shall forward revised documentation to the NPS Southeast Regional Office who will review for acceptance to the Heritage Documentation Program Collection of the Library of Congress. Upon acceptance of the HAER documentation by the NPS, the BRP shall notify NCDOT so that copies of all documents resulting from the HAER documentation, including pertinent field records, notes, site sketches, superintendent reports, and construction reports shall be provided to the SHPO, the Library of Congress and the permanent collection of BRP. The NCDOT shall provide all said copies to all parties within 45 calendar days of notification of acceptance.

Documentation will include, but is not limited to:

- The written historical and descriptive data prepared in accordance with outline format guidelines containing:
  - A general history of BRP
  - A construction history of the bridge including the history of the bridge type
  - An architectural description of the resource including alterations
  - A description of the site and changes
  - Any historical photographs in the supplementary materials section (these may be subject to copyright release if not held by BRP)
  - A site plan
- Reproduction of as built drawings
- Large-format (4” x 5” or larger negative size) photographs processed for archival permanence in accordance with HABS photographic specifications (www.nps.gov/hdp/standards/photoguidelines.pdf). Views will include:
  - At least one view that shows the resource in context.
  - One photograph of both faces.
  - Photographs of the substructure.
  - Views of any detail unique to the resource including railings or date stamps/plaques.
- At least one color digital photograph of each resource and its setting. The digital format shall meet the NPS NRHP's 75-year permanence standard and higher resolution digital files (www.nps.gov/NR/PUBLICATIONS/bulletins/photopolicy/index.htm).
- Photo locations keyed to the site plan and included with the “Index to Photographs.”

Further, in consideration of protected species, the proposed demolition of the bridge would include appropriate measures to avoid destroying active nests or killing birds that are protected by the Migratory Bird Treaty Act. Also, as the project might be within habitat that is suitable for the endangered northern long-eared bat (*Myotis septentrionalis*), tree cutting/removal would only be allowed from August 15 to May 15. However, consistent with applicable regulations, no trees shall be removed within 0.25 mile of a known northern long-eared bat roost tree, regardless of the time of year the action is to be taken. Protected species survey would be conducted, and consultation with U.S. Fish and Wildlife Service (USFWS) will occur, as appropriate, prior to any tree removal activities.

The preferred BRP Option 4 includes several public benefits in its proposed design. As previously mentioned, the existing BRP bridge has a sharp curve at the southern bridge approach, which limits the sight distance of drivers. As a result of the sharp curve, there is a transition point in the middle of the bridge where the superelevation from the curve transitions to a normal crown. The new alignment and bridge would address these undesirable travel conditions by creating a sweeping curve along the roadway approach and bridge that would continue the superelevation along the bridge. This improved design creates a more uniform alignment, which maintains consistency. The proposed new alignment is also consistent with the historic design of the BRP. As a result, the preferred BRP Option 4 would provide benefits to the motor road user, including bicyclists and pedestrians, for improved safety and sight distance, resulting in an improved user experience.

6.9 Consultation and Coordination

The *Draft Section 4(f) Evaluation* was provided to the Department of Interior (DOI, includes the NPS), FHWA, Advisory Council on Historic Preservation (ACHP), NCDPR, NCDOT, and HPO for review and comment, concurrently with the release of the *Draft EIS* to the public, for a minimum of 45 days in accordance with 23 CFR 774.5. The *Draft EIS* was signed August 9, 2016 and subsequently distributed to regulatory agencies and the public (e.g., posted on-line, provided to public libraries and local governments for public availability). An Open House Public Meeting and Public Hearing was hosted October 13, 2016. The comment period ended November 14, 2016. FHWA, NPS, NCDOT and HPO executed a Section 106 MOA for the adverse effect to the BRP on May 30, 2018 (**Appendix L**).

North Carolina Historic Preservation Office: Coordination under Section 106 of the National Historic Preservation Act found that the proposed project would have an adverse effect on the BRP, determined eligible for inclusion on the NRHP under Criterion A and C. The HPO signed the Section 106 MOA, which stipulates HPO's continued involvement in the development of the project as it relates to the BRP (**Appendix L**). The HPO will also remain involved in the project as it relates to other historic resources.

The *de minimis* findings for the Biltmore Estate, Hyder Dairy Farm, Sholtz-Cantrell Estate and Camp Orr have been coordinated with HPO and NPS, as appropriate (**Appendix G**).

North Carolina Division of Parks and Recreation: The Draft Section 4(f) Evaluation and all relevant documentation was submitted to NCDPR for review and comment. For the purposes of the MST, NCDPR deferred to the NPS. However, NCDPR was still be given the opportunity to review and comment and acknowledged the *de minimis* finding for the MST (**Appendix G**).

The *de minimis* finding for the French Broad River Paddle Trail has been coordinated with NCDPR (**Appendix G**). NCDOT will continue to coordinate with NCDPR to notify users of the proposed construction activity associated with the Preferred Alternative. This notification will be coordinated with the official with jurisdiction, NCDPR, and be accomplished through a combination of posts along the paddle trail (e.g., at campsites and/or river access) and on-line. These posts will inform potential users of the expected construction duration and what paddlers may expect as they approach and travel under the bridges. See **Section 6.9.1** for a summary of NCDPR's comments on the French Broad River Paddle Trail.

US Department of Interior (DOI):

In a letter dated December 4, 2013, the BRP provided a summary of discussion items or talking points related to the necessary compliance and design criteria for the bridge (**Appendix G**). In this letter, the NPS indicated that a new bridge must be designed and constructed to the NPS standards, and that the retrofit of the existing bridge would not be acceptable because the steel girders of the existing bridge are approaching the end of their serviceable life cycle. The Park further indicated that because this section of the Parkway is within an established commuter zone, the detour of traffic would only be permitted on a short-term basis, not to exceed two months. Detours may only be implemented from November 1 to April 15 of any two consecutive years. The NCDOT provided a response dated July 22, 2014 acknowledging the points made by the NPS.

The NPS was invited to be a cooperating agency for the I-26 Widening Project Environmental Impact Statement (EIS) on May 26, 2015. The NPS accepted the role as a cooperating agency on July 21, 2015. These letters are included in **Appendix G**.

The BRP identified Option 4 as their preferred option for the reconstruction or replacement of the bridge across I-26 on September 15, 2015 via email (**Appendix G**). As mentioned previously, a Value Analysis/Choosing by Advantages workshop was completed during the week of December 14, 2015 to further evaluate the options. Representatives from NPS, EFL, FHWA and NCDOT attended the Value Analysis/Choosing by Advantages workshop. BRP Option 4 was identified as the alternative which best meets the function at the least cost. A new alignment was identified by the NPS as preferential to

the existing alignment due to the unacceptable impacts to visitors resulting from the traffic detour during construction.

The *Draft Section 4(f) Evaluation* was submitted to DOI's Office of Environmental Compliance and Policy for review and comment. See **Section 6.9.1** for a summary of DOI's comments on the *Draft Section 4(f) Evaluation*.

The NPS signed the Section 106 MOA and will continue to coordinate with FHWA, NCDOT, and HPO in the development of the BRP bridge replacement (**Appendix L**). The NPS has been consulted throughout the duration of project development as it applies to the BRP and the MST. The *de minimis* finding for the MST has been coordinated with NPS and NCDPR (**Appendix G**) and in consultation with public comments.

Advisory Council on Historic Preservation (ACHP): The ACHP has elected to participate in the Section 106 process under the National Historic Preservation Act with respect to historic properties potentially affected by the project. The *Draft Section 4(f) Evaluation* was submitted to ACHP for review and comment. No comments were received from ACHP.

6.9.1 Summary of Comments Received on Draft Section 4(f) Evaluation

The following summarizes questions and comments received on the *Draft Section 4(f) Evaluation* and NCDOT and FHWA responses:

Blue Ridge Parkway

The DOI has no objection to the approval of the Section 4(f) Evaluation for the BRP contingent on the development and full execution of a MOA, which fully describes all avoidance, minimization, and mitigation efforts. The MOA was executed May 30, 2018; FHWA NC Division, NPS, NCDOT, and HPO are signatories to the MOA.

Mountains-to-Sea Trail

The Friends of the Mountains-to-Sea Trail (FMST) and Carolina Mountain Club (CMC) commented on the project's *de minimis* use of the MST. The comments fell in two broad categories: request for coordination of construction activity, and hiker safety accommodations as part of the project.

All comments were noted and shared with the NPS, the official with jurisdiction over the MST. As the official with jurisdiction, NPS will be responsible for relaying future coordination with the FMST and CMC.

FMST and CMC noted that there should be a railing or other barrier separating pedestrians from vehicle traffic for safety purposes, and the CMC requested that the outer guardrail should be higher.

The railing height on the bridge would be 42 inches, which meets the minimum AASHTO requirements for use by vehicles, bicyclists and pedestrians.

FMST asked whether the proposed shoulders on the proposed realigned BRP would be wide enough for hikers.

NCDOT and FHWA responded that the current design does not include special provisions for hikers, but would construct shoulders in a manner consistent with the BRP design. The proposed shoulders would be consistent with the existing shoulders in their approach to the existing BRP bridge.

FMST and CMC requested that barriers be added to the plans to physically separate pedestrian and vehicle traffic on the BRP approaches and replacement bridge.

NCDOT and FHWA responded that the BRP is a nationally significant cultural landscape eligible for listing in the NRHP. Further the NPS is in the process of nominating the BRP for designation as a NHL. As such, the current design for the replacement bridge was developed in consultation with the NPS and the HPO to retain the landscape design characteristics of materials, use, aesthetics, workmanship, and alignment setting of the bridges along the BRP built after the World War II era. The addition of a barrier between the pedestrian and vehicle traffic would not be consistent with BRP aesthetics or the historic character that qualify the property for eligibility on the NRHP.

FMST and CMC requested additional information about the proposed new MST crossing of the BRP.

NCDOT and FHWA responded that the current plan proposes a new MST road crossing 0.12 mile south of where the MST currently exits the road. Shifting the MST crossing to the south will provide better sight lines for pedestrians as they cross the motor road. Hikers may cross the motor road directly at the proposed new crossing and continue northbound on the old abandoned BRP road bed. Hikers may utilize the short section of trail remaining between the old road bed and the proposed realigned BRP, approximately 75 feet east of the proposed replacement bridge.

Biltmore Estate

One comment was received from the private property owner of the Biltmore Estate opposed to any alternatives that would require right of way acquisition or impacts to lands outside the existing right of way.

FHWA and NCDOT responded that efforts to minimize impacts to the historic property have been implemented in the project design to date and would be further evaluated in the future. However, the officials with jurisdiction over the Section 4(f) use of the Biltmore Estate, HPO, FHWA and the NPS, have agreed that the proposed right of way acquisition from the Biltmore Estate results in a de minimis *finding.*

Hyder Dairy Farm

No comments were received regarding the *de minimis* use of the Hyder Dairy Farm.

Camp Orr (Camp Pinewood)

No comments were received regarding the *de minimis* use of Camp Orr.

McMurray House (Windy Hill)

No comments were received regarding the *de minimis* use of the McMurray House.

French Broad River Paddle Trail

Two comments were received regarding the French Broad River from the USACE and NCDPR.

NCDPR notified NCDOT that the French Broad River is designated as a State Paddle Trail. The USACE requested additional information regarding NCDOT's efforts to avoid, minimize and/or mitigate effects to the recreational use of the French Broad River; NCDPR noted the potential impact to the Long Shoals Campsite (managed by RiverLink, located at river mile 56.75).

FHWA and NCDOT responded that the Long Shoals Campsite will not be impacted by the project. No paddle accesses will be impacted by the project. In addition, signage would be placed along the river warning of construction activities. NCDOT would work with Buncombe County Recreation Services to alert boaters of the construction at the Bent Creek River Park boat launch location. In addition, safe passage lanes under the bridge will be provided for the duration of construction.

6.10 Summary

Three Build Alternatives that meet the purpose and need for STIP Project I-4400/I-4700 were considered in the *Draft EIS*. As described within the *Draft Section 4(f) Evaluation*, the BRP meets the criteria for protection under Section 4(f) and would be "used" by the Build Alternatives. Four additional NRHP eligible and listed historic resources meet the criteria for protection under Section 4(f). Three NRHP eligible and listed historic resources are also "used" in all Build Alternatives; however, the use of the properties was determined to result in no adverse effect under Section 106. One additional NRHP eligible historic property is "used" in the 8-Lane Widening Alternative (McMurray House). This use was determined to result in no adverse effect under Section 106 with commitments. Based on the HPO's determination that no adverse effect would occur to the Biltmore Estate, Hyder Dairy Farm, and Camp Orr, FHWA has determined a *de minimis* use under Section 4(f) for these resources. Based on NPS and NCDPR's determination that no adverse effect would occur to the MST, and in consultation with public comment, FHWA has determined a *de minimis* use under Section 4(f) for this resource.

This *Final Section 4(f) Evaluation* addresses only the Section 4(f) properties used by the Preferred Alternative. The Section 4(f) use of the French Broad River Paddle Trail was discovered after the *Draft Section 4(f) Evaluation* and is included in the *Final Section 4(f) Evaluation*. Based on the NCDPR's determination that no adverse effect would occur to the French Broad River Paddle Trail, and in consultation with public comments, FHWA has determined a *de minimis* use under Section 4(f) for this resource.

Following the *Draft Section 4(f) Evaluation* and comment period, the Preferred Alternative was revised to include the replacement of the Clear

Creek Road bridge over I-26 on new alignment. The design revision results in the Section 4(f) use of the Sholtz-Cantrell Estate, which is documented in the *Final Section 4(f) Evaluation*. This use was determined to result in no adverse effect under Section 106. Based on the HPO's determination that no adverse effect would occur to the Sholtz-Cantrell Estate, FHWA has determined a *de minimis* use under Section 4(f) for this resource.

6.11 Conclusion

Based upon the above considerations, there is no feasible and prudent alternative to the use of land from the BRP and the proposed action includes all possible planning to minimize harm to the BRP resulting from such use.

Chapter 7 Record of Decision

7.1 Decision

The Federal Highway Administration (FHWA) and the North Carolina Department of Transportation (NCDOT) have identified the Selected Alternative for the I-26 widening, in Henderson and Buncombe Counties, North Carolina. The Selected Alternative identified and discussed in this Record of Decision (ROD) is the Preferred Alternative identified in the *Final Environmental Impact Statement (EIS)* (**Chapters 1 through 5**) and the *Draft EIS* (August 2016). The proposed action includes widening I-26 from US 25 (Exit 54), just south of Hendersonville, to US 25 (Asheville Highway) (Exit 44) to a six-lane facility and widening US 25 (Asheville Highway) (Exit 44) to I-40/I-240, just south of Asheville, to an eight-lane facility, a distance of approximately 22.2 miles. As part of this project, the interchange of I-26 and US 64 (Four Seasons Boulevard/Chimney Rock Highway) (Exit 49) would be modified to a Partial Cloverleaf "B" (ParClo B) and the interchange of I-26 with US 25 (Asheville Highway) would be modified to a Diverging Diamond Interchange (DDI). In addition, to accommodate the widening of I-26, the Blue Ridge Parkway bridge over I-26 will also be replaced on new location. The project is included in the French Broad River Metropolitan Planning Organization's (FBRMPO) 2040 Long Range Transportation Plan (LRTP). The project is included in the 2016-2025 State Transportation Improvement Program (STIP) as Project Numbers I-4400/I-4700.

The proposed action will reduce congestion, with a goal of achieving an overall level of service (LOS) D in the design year (2040) and improve the pavement structure.

As reaffirmed in Section 2.3 of the *Final EIS* and identified in Section 2.5.1 of the *Draft EIS*, the FHWA and NCDOT identified the Hybrid 6/8-Lane Widening Alternative as the Preferred Alternative, based on the information in the *Draft EIS* and input received during the public comment period. The Hybrid 6/8-Lane Widening Alternative was selected because it fully met the purpose and need of the project and had lower overall impacts to the natural and human environments. The *Final EIS* includes details of the decision-making process and reasons for selecting the Hybrid 6/8-Lane Widening Alternative for the project.

In accordance with 42 USC 4312 et seq and the requirements set forth by the Council of Environmental Quality (CEQ) (40 CFR 1502.2), this ROD:

1. Identifies the Selected Alternative for the I-26 widening project, STIP Project Nos. I-4400/I-4700;
2. Summarizes all alternatives considered by the FHWA and the values that were important factors in the evaluation process;
3. Describes the measures adopted to avoid and/or minimize environmental harm; and
4. Identifies monitoring and enforcement programs for the implementation of mitigation measures.

7.2 Project History

An Environmental Assessment (EA) was completed for STIP I-4400 (the 13.6-mile segment from US 25 to NC 280) in May 2001. Following completion of the Finding of No Significant Impact (FONSI) decision document, in January 2002, the project was advertised as a Design-Build project by NCDOT. A lawsuit and resulting judgment in 2003 found that NCDOT should conduct a broader analysis of the cumulative impacts and logical termini, or project limits, of the overall expansion of the I-26 corridor. The project was subsequently placed on hold due to financial constraints. However, the growing need for improvements to the I-26 corridor was recognized and the project was reinitiated and included in the Draft NCDOT 2013 – 2023 STIP. To address the 2003 judgment, the NCDOT combined the analysis of STIP I-4400 and STIP I-4700 (the 8.6-mile segment from NC 280 to I-40/I-240) into one comprehensive Environmental Impact Statement (EIS).

7.3 Combined Final EIS and ROD

The FHWA is using the *Draft EIS*, together with public and agency input and comments received on that document, as the basis for a combined Final EIS/ROD, which will be the final document prepared under the National Environmental Policy Act (NEPA) process. The intention to prepare a combined Final EIS/ROD was stated on the signature page of the *Draft EIS*, as well as in Section 2.5 of that document. Section 1319(b) of MAP-21 directs the lead agency, to the maximum extent practicable, to expeditiously develop a single document that consists of a Final EIS and ROD unless the following conditions exist:

1. The Final EIS makes substantial changes to the proposed action that are relevant to environmental or safety concerns; or
2. There are significant new circumstances or information relevant to environmental concerns and that bear on the proposed action or the impacts of the proposed action.

The proposed project does not meet either of the conditions listed above. This Final EIS/ROD does not make any substantial changes to the proposed action as presented in the *Draft EIS* and there are no significant new circumstances or information that would change the proposed action or its impacts as presented in the *Draft EIS*.

According to FHWA's Final Guidance on MAP-21 Section 1319 *Accelerated Decisionmaking in Environmental Reviews* (January 2013), the following questions should be considered in deciding whether the use of a combined Final EIS/ROD is practicable for a particular project. Notes are included after each question to show how each was considered for the subject project.

1. **Are there any coordination activities that are more effectively completed after the Final EIS is available?** For example, if there is a need to develop a more detailed mitigation plan, or if a joint lead or cooperating agency requests separate Final EIS and ROD documents

to accommodate its decision-making requirements, then FHWA may determine that a separate FEIS and ROD provides a more effective and efficient decision-making process.

- Agency and public coordination has been ongoing throughout the project development process. There are no outstanding coordination concerns and no agencies have requested separate Final EIS and ROD documents to accommodate their decision-making requirements.

2. **Are there any unresolved interagency disagreements over issues that need identification in the Final EIS under 23 CFR 771.125(a)(2)?** In these situations, it may be necessary to keep the Final EIS and ROD as separate documents, so that FHWA can continue to work towards issue resolution prior to issuance of a ROD. For example, if the publication of a separate FEIS will sharpen the issues and rationale for a proposed resolution, then separate Final EIS and ROD documents will provide FHWA a better opportunity to resolve such disagreements.
    - There are no unresolved interagency disagreements with regard to the project. **Appendix K** of the *Final EIS* includes all comment letters received from environmental resource and regulatory agencies on the *Draft EIS*. In addition, **Appendix G** includes all environmental resource and regulatory correspondence received throughout the project.
3. **Is there a substantial degree of controversy?** FHWA may decide not to combine a Final EIS and ROD in these situations if the agencies believe that issuing the Final EIS as a separate document could help to resolve the controversy. For example, the opportunity to review additional comments submitted after the Final EIS may assist FHWA to develop additional mitigation commitments that could be included in the ROD to address the controversy.
    - All interested agencies have reviewed and provided comments on the *Draft EIS*. Based on these comments there are no interagency issues or disagreements. The U.S. Fish and Wildlife Service (USFWS) issued their Opinion (**Appendix M**) under Section 7 of the Endangered Species Act on February 22, 2019. There is a certain level of controversy as evidenced by comments received from the Southern Environmental Law Center (SELC) and others. However, per the terms of the final guidance on MAP-21, it does not appear that issuing a separate Final EIS and ROD would help resolve this controversy in the eyes of these commenters.
    - As explained in **Section 1.5** of the *Final EIS*, increasing capacity on I-26 will not overburden I-26 at the I-40/I-240 interchange, even with no improvements to this interchange as part of STIP Project I-4400/I-4700. The additional lanes proposed on I-26 will allow for the dispersal of traffic leaving I-26 to travel east or west

along I-40. In summary, the project limits represent rational beginning and end points for the following reasons:

- The project would address an identified need(s) and stands on its own.
- The project would not force immediate improvements on the remainder of I-26 (i.e. it would not substantially increase congestion or safety problems beyond the problems identified under the No-Build Alternative).
- Alternative selection would still allow flexibility for other reasonably foreseeable transportation improvements in the area.

4. **Does the DEIS identify the preferred alternative from among the comparatively evaluated reasonable alternatives?** If the *Draft EIS* does not identify the preferred alternative, then FHWA should provide agencies and the public with an opportunity after issuance of the Final EIS for an informed assessment related to impacted resources and environmental concerns of the preferred alternative. Whenever possible, FHWA should work with project applicants and appropriate participating agencies to identify the preferred alternative prior to issuing the DEIS.
    - The *Draft EIS* identifies the Preferred Alternative. Agencies and the public have had ample opportunity to make an informed assessment related to impacted resources and environmental concerns of the Preferred Alternative.
5. **Are there compliance issues with substantive requirements that must be resolved before issuance of the ROD, or that FHWA want to resolve before signing the ROD, but that do not merit deferring issuance of the Final EIS?** Section 1319 does not alter the compliance timing requirements under substantive environmental laws. If FHWA determines there are reasonable assurances of compliance so that FHWA can issue the Final EIS pursuant to 23 CFR 771.125(a)(1) and 771.133, and the agency believes there are important benefits to the overall decision-making process if the Final EIS is issued before such compliance matters are fully resolved, then FHWA may decide that it should not combine the FEIS and ROD. In such cases, FHWA can publish the Final EIS using the reasonable assurances provisions in Sections 771.125(a) and 771.133, and can update compliance status in the ROD. For example, if FHWA cannot sign the ROD until conforming amendments are made to planning documents due to the need for a new Clean Air Act conformity determination, it may be beneficial for purposes of both transparency and the overall project timeline to issue the Final EIS separately. This provides the agencies and the public access to the Final EIS information while the amendments are being made to the planning documents.

- Agency comments have not identified, nor are NCDOT and FHWA aware of, any compliance issues with substantive requirements that must be resolved prior to issuance of the ROD.

Based on the information presented in the discussion above, FHWA has determined that the use of a combined Final EIS and ROD process for this project is practicable. In reaching this conclusion, the FHWA North Carolina Division has consulted with FHWA South Field Legal Services Division, Atlanta, GA.

This ROD identifies the Selected Alternative and presents the basis for the decision. The functional design for the Selected Alternative presented in this document may change during final design activities occurring after approval of this ROD.

The FHWA NEPA process allows transportation officials to make project decisions that balance engineering and transportation needs with social, economic, and natural environmental factors. During the process, a wide range of partners including the public, businesses, interest groups, and agencies at all levels of government, provide input into project and environmental decisions (FHWA, 2017). FHWA plans to file a Notice of Limitation on Claims for Judicial Review for this *Final EIS/ROD* in the Federal Register. The date that the notice appears in the Federal Register will begin the 150-day statute of limitations.

7.4 Alternatives Considered

This section describes the consideration of preliminary alternatives, detailed study alternatives, and the basis for choosing the Selected Alternative. This section also describes the Selected Alternative and documents the anticipated impacts associated with it.

7.4.1 Range of Alternatives

A range of alternatives were considered for this project, including:

- No-Build Alternative
- Mass Transit Alternative
- Transportation Systems Management Alternative
- Transportation Demand Management Alternative
- 6-Lane Widening Alternative
- 8-Lane Widening Alternative
- Hybrid 6/8-Lane Widening Alternative

The development and evaluation of alternatives for determination of the Detailed Study Alternatives included in the *Draft EIS* is documented in the *Purpose and Need and Alternatives Considered for I-26 Improvements,* Merger Concurrence Points 1 and 2, the *Purpose and Need Traffic Analysis Technical Memorandum* (HNTB, 2013), and *Purpose and Need Traffic Analysis Technical Memorandum* (HNTB, 2014).

The 6-Lane Widening Alternative, 8-Lane Widening Alternative, and Hybrid 6/8-Lane Alternative were carried forward for additional study.

To accommodate the widening of I-26, the Blue Ridge Parkway Bridge over I-26 will also be replaced. As documented in its *Blue Ridge Parkway Bridge Over Interstate 26 Technical Report* (NPS and FHWA-EFL, 2016) and *Value Analysis and Choosing by Advantages Study* (NPS, 2016) the National Park Service (NPS) and its engineer, FHWA-Eastern Federal Lands (EFL) developed seven alternatives. One reconstruction and six replacement alternatives were developed for consideration.

The NCDOT complied with its obligation to rigorously explore and objectively evaluate all reasonable alternatives through its analysis and comparison of the preliminary and detailed study alternatives. The NCDOT followed a widely accepted screening process in alternatives evaluation for the I-26 widening, STIP Project I-4400/I-4700. In addition, NCDOT has conformed to legal principles and practitioner guidelines prescribed by the CEQ, FHWA, and the American Association of State Highway and Transportation Officials (AASHTO) throughout the process.

7.4.2 Basis for Choosing the Selected Alternative

As presented in **Chapter 2** of the *Final EIS*, the FHWA and NCDOT confirmed the Hybrid 6/8-Lane Widening Alternative as the Preferred Alternative, based on the information in the *Draft EIS* and input received during the public comment period. The Hybrid 6/8-Lane Widening Alternative was identified as the Preferred Alternative in the *Draft EIS*. The following summarizes the basis for selecting the Preferred Alternative as the Selected Alternative

Purpose and Need Considerations

The 6-Lane Widening Alternative does not meet the Purpose and Need of an overall performance goal of LOS D in 2040 in the I-4700 portion of the project. Thus, the 6-Lane Widening Alternative was eliminated from further study within the *Draft EIS* because it does not fully meet the project purpose and need. The 8-Lane Widening Alternative and the Hybrid 6/8-Lane Widening Alternative meet the performance goal of LOS D in 2040.

Cost Considerations

A cost estimate was prepared for this project in preparation for an FHWA cost estimate review. The cost estimate review follows a process required for all major FHWA projects (i.e. those costing more than $500 million). The full report can be found in **Appendix D**. The total project cost estimate included construction of the project including the Blue Ridge Parkway bridge ($553.9 million), right of way acquisition and relocation ($6.3 million), utility relocation ($3.7 million), agency expenses and reserve funds ($162.5 million), environmental mitigation ($11.9 million), and prior expenditures ($12.3 million).

The FHWA review estimated the cost of the Selected Alternative to be between $716.1 million and $764.5 million, with a planning level estimate of $750.8 million in anticipated year-of-expenditure dollars. The planning level cost represents the 70 percent probability that the project will cost less than this amount; accordingly, there is a 30 percent chance that the project will cost more.

Human Environment Impact Considerations

The Selected Alternative has fewer human environment impacts than the 8-Lane Widening Alternative. This is most notable in the number of relocations and impacts to cultural resources.

Table 14. Summary of Impacts

IMPACT CATEGORY	6-Lane Widening Alternative	8-Lane Widening Alternative	Hybrid 6/8-Lane Widening Alternative
Human Environment Impacts:			
Residential Relocations (Minorities)	12 (4)	23 (6)	8 (2)[1]
Business Relocations	1	2	0[2]
Grave Site Relocations	0	0	0
Disrupts Neighborhood & Community Cohesion	No	No	No
Recurring Community / Neighborhood Impacts	No	Yes; minor relocation impacts to Brickton community.	No
Low Income / Minority Populations	No	Yes; not disproportionately high and adverse.	Yes; not disproportionately high and adverse.
Cultural Resources (Adverse Effect determined)	Yes; Blue Ridge Parkway	Yes; Blue Ridge Parkway	Yes; Blue Ridge Parkway
Section 4(f) Impacts	Yes; Blue Ridge Parkway	Yes; Blue Ridge Parkway	Yes; Blue Ridge Parkway
Section 4(f) *de minimis*	Yes; Biltmore Estate, Hyder Dairy Farm, Camp Orr (Camp Pinewood), French Broad River Paddle Trail, and Mountains to Sea Trail	Yes; Biltmore Estate, Hyder Dairy Farm Camp Orr (Camp Pinewood), McMurray House (Windy Hill), French Broad River Paddle Trail, and Mountains to Sea Trail	Yes; Biltmore Estate, Hyder Dairy Farm, Camp Orr (Camp Pinewood), French Broad River Paddle Trail, and Mountains to Sea Trail

Table 14. Summary of Impacts

IMPACT CATEGORY	6-Lane Widening Alternative	8-Lane Widening Alternative	Hybrid 6/8-Lane Widening Alternative
Human Environment Impacts:			
Visual Resources / Characteristics	No	No	No
Traffic Noise Impacts (# of receptors)	292	339	399[3]
Air Quality	No	No	No
Farmland (acres)	5.5	24.5	7.6
Hazardous Materials	Minimal monetary and scheduling impacts.		

[1] The number of relocations presented in the *Draft EIS* was 18 (6). The number presented here is a result of changing the US 25 (Asheville Highway) interchange design from a Partial Cloverleaf to a Diverging Diamond Interchange.

[2] The number of impacted businesses presented in the *Draft EIS* was 1. The number presented here is a result of changing the US 25 (Asheville Highway) interchange design from a Partial Cloverleaf to a Diverging Diamond Interchange.

[3] The number of receptors presented in the *Draft EIS* was 314. The number of noise receptors for the Hybrid 6/8-Lane Widening Alternative increased to 399 as presented in the updated Traffic Noise Report (2017), which used updated models based on the most recent available project designs in compliance with the 2016 NCDOT Noise Policy and Guidance. The 6- and 8-Lane Widening Alternative number of receptors were reported in the Traffic Noise Analysis Addendum (2016)

Natural Environment Impact Considerations

The Selected Alternative has fewer human environment impacts than the 8-Lane Widening Alternative.

Table 14. Summary of Impacts

IMPACT CATEGORY	6-Lane Widening Alternative	8-Lane Widening Alternative	Hybrid 6/8-Lane Widening Alternative
Natural Resources Impacts:			
Federal Listed Species Habitat	May Affect, Likely to Adversely Affect the gray bat and Appalachian elktoe. May Affect, Not Likely to Adversely Affect the NLEB[2] and Indiana bat[3]. No effect for other listed species in Henderson and Buncombe Counties.		
Jurisdictional Streams[4] (linear feet)	21,597	27,241	17,900
Jurisdictional Wetlands[4] (acres)	4.8	8.0	4.2
Ponds[4] (acres)	0.03	0.06	0.00008
Floodplains:			
100-year Floodplain[4] (acres)	30.1	48.2	31.3
500-year Floodplain[4] (acres)	15.5	18.6	16.7

Table 14. Summary of Impacts			
IMPACT CATEGORY	**6-Lane Widening Alternative**	**8-Lane Widening Alternative**	**Hybrid 6/8-Lane Widening Alternative**
Indirect and Cumulative Effects	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 Future Land Use Study Area (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. 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.		

[1]NCDOT will follow NPS mitigation protocol as detailed in the Special Commitments (Green Sheets) and Section 3.8.7.2.1.
[2]Although there is no known presence of Northern long-eared bat within the study area, due to the fact that some tree clearing will be necessary on Parkway property, NPS prefers to exercise caution and assume presence. Therefore, under Section 7 consultation the May Affect Not Likely to Adversely Affect conclusion was given.
[3]Indiana bat is not listed in either Henderson or Buncombe County. Due to the fact that some tree clearing will be necessary on Parkway property, and NPS believes Indiana bat to be present on Parkway property based on their acoustic surveys, the NPS prefers to exercise caution and assume presence of Indiana bat on Parkway property.
[4]Impacts based on proposed functional slope stake limits plus 25 feet.

7.4.3 Description of Selected Alternative

The Selected Alternative is a hybrid widening. The Selected Alternative will widen I-26 to six lanes from US 25, south of Hendersonville, to US 25 (Asheville Highway) in Fletcher. From US 25 (Asheville Highway) to I-40/I-240 in Asheville I-26 will be widened to eight lanes. The total length of the widening is approximately 22.2 miles.

The widening will use an asymmetrical alignment, designed to "best fit" within the existing right of way. As part of the widening, the US 25 (Asheville Highway) interchange will be reconfigured to a DDI type. The US 64 interchange will be studied for reconfiguration to a Partial Cloverleaf "B" design.

Right of way requirements for I-26 within the project study area vary between approximately 240 feet and 430 feet for the majority of the project. The right of way width may extend up to 900 feet in the bifurcated areas. The amount of right of way required for the project is approximately 26 acres, including approximately 4.9 acres at the US 25 (Asheville Highway) interchange. The US 64 interchange reconfiguration

fits within current right of way. Additional easements may also be required for drainage, utilities, and construction.

The proposed typical section for the six-lane section, from US 25 to US 25 (Asheville Highway), of the Selected Alternative consists of three 12-foot travel lanes in each direction, with a 26-foot median that includes a median barrier wall. The typical width for the inside paved shoulder is 12 feet. The outside paved shoulder width is 12 feet, with an additional two feet of graded shoulder. The eight-lane section of the Selected 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. The typical width for inside and outside paved shoulders is 12 feet throughout this segment. The outside paved shoulder has an additional two feet of width beyond the pavement.

The typical width of the I-26 median is 26 feet, including a median barrier wall. However, there are two areas where the northbound and southbound lanes separate and the median width varies. The typical shoulder type along I-26 is a 12-foot inside paved shoulder in the median and a 12-foot paved with 14-foot graded outside shoulder.

The proposed design speed limit in the beginning of the project at the US 25 interchange to the US 25 (Asheville Highway) is 70 mph. The speed limit would be reduced to 65 mph from US 25 (Asheville Highway) to the northern project terminus at the I-40/I-240 interchange.

The majority of the interchange designs will stay the same or have minor design adjustments that will not affect the speed on the ramp.

7.4.4 Impacts of the Selected Alternative

Impacts of the Selected Alternative are discussed in detail in **Chapter 3** of the *Final EIS* and summarized below.

Human Environment

Impacts to the human environment are documented in the *Community Characteristics Report and Community Impact Assessment* (HNTB, 2014) *Community Impact Assessment* (HNTB, 2015) and *Asheville Regional Cumulative Effects Study* (URS, 2014), as well as **Sections 3.1** through **3.4** and **3.10** through **3.17** and **Chapter 6** of the *Final EIS*.

Human Environment

- The Selected Alternative requires the relocation of 8 residences.
- The construction of the Selected Alternative does not have a disproportionately high and adverse impact on minority and low income populations.

Cultural Resources

- The Selected Alternative will have No Effect on any archaeological resource on or eligible for listing on the National Register of Historic Places (NRHP).

- The Selected Alternative has one Adverse Effect under Section 106 of the National Historic Preservation Act of 1966, the Blue Ridge Parkway.
- The Selected Alternative results in a Section 4(f) use of the Blue Ridge Parkway.
- NCDOT, FHWA and the official(s) with jurisdiction have agreed to a *de minimis* finding on the following resources:
  - Hyder Dairy Farm (NC Historic Preservation Office (HPO))
  - Camp Orr (Camp Pinewood) (HPO)
  - French Broad River Paddle Trail (NC Division of Parks and Recreation (NCDPR))
  - Mountains to Sea Trail (NCDPR and National Parks Service)
  - Biltmore Estate (NPS)

Physical Environment

- Noise impacts are documented in the *Final Traffic Noise Report* (HNTB, 2017). The Selected Alternative impacts 399 receptors. Based upon feasibility and reasonableness criteria defined in the NCDOT Traffic Noise Policy, six noise barriers are preliminarily justified and likely to be constructed, contingent upon completion of the project design and the public involvement process. The *Design Noise Report* will make final recommendations for noise barriers based on the final design.
- The project is in Buncombe and Henderson counties, which have been determined to comply with the National Ambient Air Quality Standards (NAAQS). The proposed project is in an attainment area; therefore, 40 CFR Parts 51 and 93 are not applicable. This project is not anticipated to create any adverse effects on the air quality of this attainment area.
- The Selected Alternative impacts approximately 1.0 acre of prime and unique farmland soils and 0.2 acre of statewide important farmland soils and 6.4 acres of farmland soils of local importance.
- Utility coordination will be conducted during final design. All utility providers will be contacted and coordinated with to ensure that the proposed design and construction of the project does not substantially disrupt service.
- Within the proposed right of way for the Selected Alternative there are 22 possible geoenvironmental sites of concern (potential hazardous waste sites). The NCDOT GeoEnvironmental Section will provide soil and groundwater assessments on each of the properties prior to right-of-way acquisition. If any USTs or other potential source of contamination is discovered during construction activities, NCDOT should be notified of their presence immediately upon discovery. An assessment will then be conducted to determine the extent of contamination and identify the potential impacts.
- The Selected Alternative includes 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. Nine of the 28 crossings are located on FEMA studied streams. During final design, a detailed hydrologic and hydraulic analysis will be performed for each crossing location to determine the actual size and configuration of each structure. The NCDOT Hydraulics Unit will coordinate with the NC Floodplain Mapping Program to determine the status of the project with regard to the applicability of NCDOT's Memorandum of Agreement or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR). Additionally, since the project will involve construction activities on or adjacent to FEMA-regulated streams, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structures and roadway embankments that are located within 100-year floodplains were built as shown in the construction plans, both horizontally and vertically.

Natural Environment

Impacts of the Selected Alternative to the Natural Environment are documented in the *Natural Resource Technical Report* and *Memoranda* (Carolina Ecosystems, 2014, 2015, and 2016; NCDOT, 2015), the Biological Assessment (BA) (Calyx and Three Oaks Engineers, 2018), the Biological Opinion (USFWS, 2018) and **Sections 3.5 through 3.8** of the *Final EIS*.

- The Selected Alternative will permanently impact terrestrial communities:

Table 15. Terrestrial Community Impacts*

Community	Selected Alternative (acres)
Maintained/Disturbed	469.2 (59.1%)
Montane Oak-Hickory Forest (acidic subtype)	166.5 (21.0%)
Montane Oak-Hickory Forest (white pine subtype)	90.8 (11.4%)
Montane Alluvial Forest (small river subtype)	29.0 (3.7%)
Acidic Cove Forest	34.8 (4.4%)
Montane Floodplain Slough Forest	2.6 (<1%)
Piedmont/Mountain Semipermanent Impoundment (shrub subtype)	0.7 (<1%)
Swamp Forest-Bog Complex (typic subtype)	0.3 (<1%)
Total	**794.0 (100%)**

*Impacts are estimated based on functional design slope stake limits plus 40 feet

- The Selected Alternative will impact approximately 4.2 acres of wetlands and 17,900 feet of streams. Impacts are calculated based on slope stake limits plus 25 feet. It is expected that the stream and wetland impact estimates will be reduced as the level of design detail increases.
- Protected species information was presented in **Section 3.8.9** of the *Final EIS*. Following the *Draft EIS*, two protected species were identified within the project area. A BA was prepared to evaluate protected species that may be impacted by the Selected Alternative. The BA (Calyx and Three Oaks Engineering, 2018), examined impacts of the project action to the gray bat (*Myotis grisescens*) and Appalachian elktoe (*Alasmidonta raveneliana*).
- The BA was submitted to USFWS on August 20, 2018 for their review and concurrence. USFWS concurred with their Biological Opinion (**Appendix M**) on February 22, 2019:

Land Use and Transportation Planning

The project is generally consistent with local land use plans and the FBRMPO *2040 Metropolitan Transportation Plan*.

Indirect and Cumulative Effects

Potential indirect and cumulative effects of the project are documented in the *Asheville Regional Cumulative Effects Study* (URS, 2014) and the *Indirect Effects Screening Report* (HNTB, 2013), as well as **Section 3.16** of the *Final EIS*.

- The Selected Alternative is not expected to have a notable indirect effect on land use. Furthermore, any direct natural environment impacts by the project would be addressed through Programmatic Agreements with resource agencies during the NCDOT's Section 404 Merger and permitting processes. Developments will also be required to follow local, state, and federal guidelines and permitting regulations.
- Cumulative effects of the Selected Alternative are of a medium level of concern because of the reasonably-foreseeable transportation projects in the region. However, it is anticipated that growth and development (and any associated impacts) on the four resource categories would occur whether or not the projects are built.
  - The communities of Brickton and Hidden Creek Village are the low-income and minority communities of note along the I-26 corridor and specifically affected by STIP Project I-4400/I-4700. The Selected Alternative is not anticipated to displace residents of the Brickton community as a result of widening I-26 under the Butler Bridge Road bridge. The Selected Alternative is anticipated to widen within the existing right of way. It is not expected that the widening would direct increased stormwater to the Hidden Creek Village community.

The four resource categories, known as Transportation Impact Causing Activities (TICAs) are:

- *Travel Times*
- *New Network Connections*
- *Property Access*
- *Creation of Activity Centers*

- As one of the projects in the Asheville region, the Selected Alternative will address increases in impervious surfaces and associated stormwater runoff in the individual project design using NCDOT's Best Management Practices (BMPs). It is possible that the combination of all projects could have cumulative impacts when also combined with the on-going urbanization and suburbanization of the region due to private development actions. The increases in impervious surfaces associated with the construction of buildings, homes, and parking areas could lead to a deterioration of water quality in the absence of BMPs.
- Many of the natural resources are located within areas already designated for protection such as National and State Parks, areas of steep slope, or areas designated for conservation. There are several agricultural holdings that are either Voluntary Agricultural Districts (VADs) or Enhanced Voluntary Agricultural Districts. The Selected Alternative will impact three VADs as discussed in **Section 3.1.7** of the *Final EIS*.
- When considered as an individual project, the Selected Alternative is not likely to change travel times by more than five minutes outside of peak hours. However, when viewed with other regional projects, substantial travel time savings could result along the length of the corridor. This could potentially lead to increased traffic volumes as travelers, currently traveling along parallel arterial routes, may be inclined to use the less congested interstate routes.

7.5 Section 4(f) Statement

The *Final Section 4(f) Evaluation* considers the Section 4(f) properties used by the Preferred Alternative. Additionally, the Section 4(f) use of the French Broad River Paddle Trail which was discovered after the *Draft Section 4(f) Evaluation* is included in the *Final Section 4(f) Evaluation*.

Based upon the final evaluation, there is no feasible and prudent alternative to the use of land from the BRP and the proposed action includes all possible planning to minimize harm to the BRP resulting from such use.

7.6 Measures to Minimize Harm

7.6.1 Avoidance, Minimization and Mitigation for Water Resources

Through the use of minimization techniques, NCDOT has eliminated or reduced impacts to streams and wetlands to the greatest extent practicable at the current stage of design.

Mitigation policy for jurisdictional Waters of the United States has been established by USEPA and USACE regulations. Unavoidable impacts of the Selected Alternative to wetlands and streams will be offset through

mitigation. All wetland, stream, and buffer mitigation will be approved by state and federal permit agencies, prior to permit authorization.

7.6.2 Avoidance, Minimization, and Mitigation for Endangered Species

Through the use of minimization and mitigation (conservation) techniques, NCDOT has reduced impacts to endangered species to the greatest extent practicable at the current stage of design.

NCDOT will carry out all activities for which it has been assigned responsibility in the Biological Assessment: An Assessment of Potential Effects to Federally Listed Species (August 2018). These measures largely address potential impacts caused by the construction and demolition of the I-26 bridge over the French Broad River. Additional measures include the use of Design Standards in Sensitive Watersheds, monitoring the effectiveness of sediment and erosion control devices; agency coordination; stormwater control measures, additional acoustic monitoring for the gray bat, reforestation and monitoring plan, et al. NCDOT is also sponsoring a gray bat research project and providing conservation funding to benefit the North Carolina Nongame Aquatic Projects Fund for the French Broad River Conservation Plan to aid in the recovery and conservation of the Appalachian elktoe.

7.7 Monitoring and Enforcement Program

Coordination will be maintained with all regulatory and resource agencies during final design, permitting, right of way acquisition, and construction to ensure that avoidance, minimization and compensatory mitigation measures are implemented. The NCDOT and FHWA will enforce all pertinent specifications and contract provisions in accordance with the intent of the *Final EIS* and the welfare of the public. Many of the avoidance, minimization, and compensatory mitigation measures included in this document are likely to be conditions of federal or state permits that are enforceable by regulatory agencies.

7.8 Conclusion

The environmental record for STIP Project Nos. I-4400/I-4700, I-26 Widening, includes the previously referenced *Draft EIS and Section 4(f) Determination* (August 2016), *Combined Final EIS/Section 4(f) Determination/ROD*, and all technical reports and supporting documentation incorporated by reference into the *Draft EIS* and *Final EIS*.

These documents, incorporated herein by reference, constitute the statements required by the National Environmental Policy Act (NEPA) and Title 23 of the United States Code (USC) on:

- The environmental impacts of the project;
- The adverse environmental effects that cannot be avoided should the project be implemented;
- Alternatives to the proposed project; and

- Irreversible and irretrievable impacts on the environment that may be involved with the project should it be implemented.

Having carefully considered the environmental record noted above, the mitigation measures as required herein, the written and oral comments offered by other agencies and the public on this record and the written responses to comments, it is FHWA's decision to adopt the Preferred Alternative (identified as the Hybrid 6/8-Lane Alternative in the *Final EIS*), as the proposed action for the project. Specifically, FHWA has determined that implementation of this Selected Alternative as described in this ROD is in the best overall public interest. FHWA finds that all practicable measures to minimize environmental harm were incorporated into the design of the project and FHWA will ensure that the commitments outlined herein will be implemented as part of final design, construction, and post-construction monitoring.

March 5, 2019

Date

Edward T. Parker

for John F. Sullivan, III, P.E.

Division Administrator

Federal Highway Administration