



I-26 WIDENING

HENDERSON COUNTY

BUNCOMBE COUNTY

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

WBS No. 34232.1.1/36030.1.1

STIP Project No. I-4400/I-4700

ADMINISTRATIVE ACTION DRAFT ENVIRONMENTAL IMPACT STATEMENT

DRAFT SECTION 4(f) EVALUATION

August 2016

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 771.119 and 42 USC 4332(2) (c)

APPROVED:

8/8/16 Glenn Mumford (ACTING PROJECT MANAGER)

Date for Glenn Mumford, P.E., State Roadway Design Engineer
Roadway Design Unit
North Carolina Department of Transportation

8/9/16 John F. Sullivan III

Date for 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.

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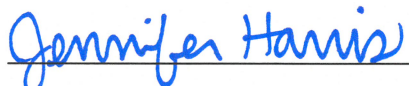
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Cooperating Agency
National Park Service - Blue Ridge Parkway

Submitted Pursuant to the National Environmental Policy Act
23 CFR 771.119 and 42 USC 4332(2) (c)

8-09-16 

Date **John Williams, P.E.**
Project Development Engineer
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation

8-8-2016 

Date **Jennifer Harris, P.E.**
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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. 34232.1.1/36030.1.1
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 Project Development & Environmental Analysis (PDEA) – Human Environment Section (HES) | The <i>Traffic Noise Analysis</i> and <i>Traffic Noise Analysis Addendum</i> (HNTB, 2015 and 2016, respectively) for State Transportation Improvement Project (STIP) Project I-4400/I-4700 preliminarily identifies ten noise walls for abatement of noise impacts for each of the three proposed Build Alternatives. The Design Noise Report will verify the final number and location of noise walls for the preferred alternative based on the NCDOT Traffic Noise Abatement Policy. | Final Design |

| Item | Resource | Agency | Project Commitment | Project Stage |
|------|-----------------------------------|--|---|------------------------------------|
| 2 | Limited English Proficiency (LEP) | NCDOT PDEA – 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 PDEA – 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 | Trout Water | NCDOT PDEA – Natural Environment Section (NES) | Beck Creek and its associated Unnamed Tributaries (UTs) are a NC Wildlife Resource Commission (NCWRC) Trout Water requiring the implementation of <i>Design Standards in Sensitive Watersheds</i> . | Final Design |
| 5 | Threatened & Endangered Species | NCDOT PDEA – NES and 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 |
| 6 | Hydraulics | NCDOT Hydraulics | Provide as-built plans to the Floodplain Mapping Program for determination of LOMR/CLOMR. | Post-Construction |
| 7 | 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 |

| Item | Resource | Agency | Project Commitment | Project Stage |
|------|---|---|---|---------------|
| 8 | 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 |
| 9 | 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 |
| 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 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 |

| Item | Resource | Agency | Project Commitment | Project Stage |
|------|---|---------------------------------------|---|---------------|
| 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 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 |

PREFACE

Why did we prepare this Draft Environmental Impact Statement?

This Draft Environmental Impact Statement (EIS) 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. This Draft EIS was prepared by the North Carolina Department of Transportation (NCDOT) in coordination with the Federal Highway Administration (FHWA).

Under NEPA, the required level of documentation and analysis largely corresponds to the potential for impacts. An EIS requires the most detailed level of environmental analysis. Based on the history of the project, it was determined that this detailed level of analysis and documentation would be appropriate for the project. Information about the project history is included in **Section 1.4**.

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 Draft EIS was also prepared in cooperation with the NPS, which has been designated as a “cooperating agency”. The completed document will include information necessary for the NPS to adopt the 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 Record of Decision (ROD) requiring approval from the NPS Southeast Regional Director.

What information is included in this Draft EIS?

This Draft EIS provides the public and decision-makers relevant information to make an informed decision regarding which transportation improvement alternative to select for implementation. 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 Draft EIS.

Throughout the Draft EIS, 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 Draft EIS 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 each of the alternatives.

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

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/>*

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

Chapter 2: Alternatives. A range of reasonable alternatives, including those that were eliminated, are described in this chapter. Additional information about the alternatives selected for further detailed study and the identification of the preferred FHWA/NCDOT alternative are also provided in this chapter.

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 each alternative. The discussion is organized by resource (e.g., land use, air quality, water resources, 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 EIS.

Chapter 5: References. Full citation information for all references cited within the Draft EIS is included in Chapter 5.

Figures and Appendices. Figures and Appendices follow Chapter 6. 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.

What are the next steps?

Following a formal comment period and receipt of comments from the public and agencies, a Final EIS and Record of Decision (ROD) will be prepared.

In the past, in accordance with the CEQ Regulations (40 CFR 1506.10(b)(2)), Final EIS and ROD documents were issued as separate documents with a minimum 30-day period between the Final EIS and ROD. However, Section 1319(b) of 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.

Based on current circumstances and available information, this project will combine the Final EIS and ROD as mandated by Section 1319(b) of MAP-21. The Preferred Alternative identified in this Draft EIS, pursuant to guidance in Section 1319, includes the widening of I-26, the BRP bridge, and the US 25/I-26 interchange as described on page viii of this Summary. If circumstances change and this is no longer practicable, a separate Final EIS and ROD will be prepared.

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/>

The NPS will issue a separate ROD following the issuance of the NCDOT Final EIS.



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 located in western North Carolina in southeastern Henderson County, just south of Hendersonville, and continues west to southern Buncombe County, just south of Asheville. Buncombe and Henderson Counties are located 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 2016 – 2025 State Transportation Improvement Program (STIP) as two projects, I-4400 and I-4700. STIP Project I-4400 begins at US 25 (Exit 54) near Hendersonville and extends along I-26 west to NC 280 (Exit 40). STIP Project I-4700 extends along I-26 from NC 280 west to the I-40/I-240 interchange. **Figure 1** shows the general project vicinity.

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 Blue Ridge Parkway 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?

The STIP includes NCDOT's priority projects and is the document NCDOT uses to schedule construction funding. According to the NCDOT 2016 – 2025 STIP, funding for right of way acquisition for I-4700 and a portion of I-4400, from US 25 (Asheville Highway) to NC 280, is scheduled to begin in fiscal year 2018 and construction is scheduled to begin in fiscal year 2020. The remaining portion of I-4400, from US 25 to US 25 (Asheville Highway), is not currently funded.

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

*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 replacement of the Blue Ridge Parkway 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) 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. In order 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 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 was completed in June 2014. The Cumulative Effects Study 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 alternatives are being studied?

Three Build Alternatives are considered 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.

All of the alternatives would be designed to best fit within the existing right of way limits for I-26. Best fit alignments, or asymmetrical widening, have been evaluated and selected to improve the existing highway alignment, minimize impacts, and accommodate maintenance of traffic during construction. These alternatives are discussed in more detail in **Chapter 2** and analyzed in **Chapter 3**.

The columns supporting the bridge deck of the Blue Ridge Parkway bridge over I-26 are spaced in such a way that they do not accommodate widening of the I-26 facility (all Build Alternatives). 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. Four options for realigning the Blue Ridge Parkway in conjunction with replacing the existing bridge were investigated in detail. These options include an option that would replace the existing bridge on new alignment to the north, two options that would replace the existing bridge on new alignment to the south, and an option that

would reconstruct the existing bridge. Two bridge types were considered, segmental concrete box girder and steel-plate girder. The NPS conducted a Value Analysis evaluation of the seven original options for realigning the Blue Ridge Parkway and replacing the bridge over I-26, and studied four in detail. Option 4 was identified as NPS's Preferred Option and has been determined to have the greatest cost/benefit ratio. Options 1, 5, and 7 were considered and investigated and found to have fewer benefits to initial cost and life cycle cost ratio than Option 4.

The US 25 (Asheville Highway) interchange with I-26 was determined to have operational issues in the design year (2040) under the No-Build Alternative. In addition, the 8-Lane Widening Alternative in the base year (2011) and the 6-Lane Widening Alternative in the design year (2040) had operational deficiencies at the southern ramp termini where lanes would be added to or dropped from the existing system at the US 25 (Asheville Highway) interchange. Therefore, additional study was recommended to examine the cause of the operational deficiencies and to explore additional design possibilities at this location. Based on this recommendation, four alternative interchange designs were developed and evaluated. These included two partial cloverleaf interchanges (one with standard ramps and one with minimized ramps), a diverging diamond interchange (DDI), and a displaced left turn (DLT) interchange.

The partial cloverleaf design with a 231-foot loop radius was recommended for further study in combination with the three I-26 widening Build Alternatives.

Were other alternatives considered?

Yes, however, alternatives that did not meet the project's purpose and need were eliminated from further consideration. The eliminated alternatives include the No-Build Alternative, Mass Transit Alternative, Transportation Systems Management Alternative, and Transportation Demand Management Alternative. Although the No-Build Alternative was eliminated, it provides a baseline for comparing the adverse impacts and benefits of the Build Alternatives.

How much will the project cost?

To further refine the project costs in the STIP, detailed construction costs (March 2015) were estimated for each Build Alternative and are shown in **Table S-1** below. Costs for relocating and constructing utilities were also estimated by NCDOT. 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 will be required for all of the Build Alternatives.

Table S-1. Estimated Cost of Build Alternatives

| | 6-Lane Widening Alternative | 8-Lane Widening Alternative | Hybrid 6/8-Lane Widening Alternative |
|--------------------------|--|--|---|
| Construction Cost | \$364,800,000 | \$484,500,000 | \$440,200,000 |
| Right of Way Cost | \$9,828,500 | \$13,381,500 | \$9,311,500 |
| Utility Cost | \$5,008,760 | \$6,281,800 | \$5,229,597 |
| TOTAL COST | \$379,637,260 | \$504,163,300 | \$454,741,097 |

The detailed construction, utility, and right of way cost estimates are located in **Appendix D**.

Upgrading the US 25 (Asheville Highway) interchange with I-26 is proposed because the No-Build Alternative is projected to have major operational deficiencies at this location in the design year (2040). The costs in **Table S-1** include the cost for the partial cloverleaf design with a 231-foot loop radius in combination with the three I-26 widening Build Alternatives.

The costs in **Table S-1** include the BRP bridge and realignment. In its Draft Value Analysis Study, NPS noted that the construction cost for its preferred alternative, Option 4 (realignment and concrete segmental bridge), is \$19.8 million.

What impacts are expected?

The three Build Alternatives would result in impacts to resources in the study area. **Table S-2** below indicates anticipated impacts to the human environment and natural resources as a result of the three studied Build Alternatives (including the US 25 (Asheville Highway) interchange modifications).

Table S-2. 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) | 18 (6) |
| Business Relocations | 1 | 2 | 1 |
| 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. | Yes; minor relocation impacts to Brickton community. |
| 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 and Cureton House | Yes; Blue Ridge Parkway and Cureton House | Yes; Blue Ridge Parkway and Cureton House |
| Section 4(f) Impacts | Yes; Blue Ridge Parkway | | |
| Section 4(f) <i>de minimis</i> | Yes; Biltmore Estate, Hyder Dairy Farm and Camp Orr (Camp Pinewood), and Mountains to Sea Trail | Yes; Biltmore Estate, Hyder Dairy Farm Camp Orr (Camp Pinewood), McMurray House (Windy Hill), and Mountains to Sea Trail | Yes; Biltmore Estate, Hyder Dairy Farm, Camp Orr (Camp Pinewood), and Mountains to Sea Trail |
| Visual Resources / Characteristics | No | No | No |
| Traffic Noise Impacts (# of receptors) | 292 | 339 | 315 |
| Air Quality | No | No | No |
| Farmland* (acres) | 5.5 | 24.5 | 11 |
| Hazardous Materials | Minimal monetary and scheduling impacts. | | |

Table S-2. 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 but not likely to adversely affect the Northern long-eared bat (NLEB). No effect ¹ on other species in Henderson and Buncombe Counties. | | |
| Jurisdictional Streams ² (linear feet) | 21,597 | 27,241 | 24,650 |
| Jurisdictional Wetlands ² (acres) | 4.8 | 8.0 | 7.7 |
| Floodplains: | | | |
| 100-year Floodplain ² (acres) | 30.1 | 48.2 | 41.8 |
| 500-year Floodplain ² (acres) | 15.5 | 18.6 | 17.3 |
| Ponds ² (acres) | 0.03 | 0.06 | 0.05 |
| Indirect and Cumulative Effects | <p>Based on this assessment of the currently identified project alternatives, STIP Project I-4400/I-4700 is not expected to have a notable indirect effect on land use in the FLUSA. Potential land use effects as a result of STIP Project I-4400/I-4700 are somewhat tempered by the fact that the project is not expected to provide any new access or opportunities for traffic exposure to properties in the FLUSA, and will generate marginal travel time savings.</p> <p>Some amount of regional cumulative impacts can be expected for notable cultural, community, water quality, and natural habitat features. This is due to features having minimal incorporation in local planning protections and/or policies. The Cumulative Effects Tool indicated that cumulative effects were rated as a medium level of concern as a result of the reasonably-foreseeable transportation projects in the region.</p> | | |

¹ NCDOT will follow NPS mitigation protocol as detailed in the Special Commitments (Green Sheets) and Section 3.8.6.2.2.

² Impacts based on proposed functional slope stake limits plus 40 feet.

What is the Preferred Alternative?

Based on the information available to date, including this Draft EIS, the FHWA and NCDOT have identified the Hybrid 6/8-Lane Widening Alternative as the Preferred Alternative. This 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. The US 25 (Asheville Highway) partial cloverleaf interchange is a

component of the Preferred Alternative as is the Blue Ridge Parkway Bridge replacement and realignment. (**Section 2.4** includes more information about the options considered for the Blue Ridge Parkway and the preferred option included in the Preferred Alternative.)

After the Draft EIS comment period ends, the FHWA and NCDOT will review agency and public comments received on this Draft EIS and at the public hearing to reassess and/or reconfirm the Preferred Alternative. Based on current circumstances and available information, this project will combine the Final EIS and ROD as mandated by Section 1319 and the preferred alternatives for I-26, the BRP bridge, and the US 25/I-26 interchange as identified on page viii of this Summary. If circumstances change and this is no longer practicable, a separate Final EIS and ROD will be prepared.

The Hybrid 6/8-Lane Widening Alternative has been identified as the Preferred Alternative based on consideration of purpose and need, cost and design, and human and natural environment impacts. These elements differentiate the Hybrid 6/8-Lane Widening Alternative from the other Build Alternatives. They are presented in the order they are found in this document and do not represent all of the benefits or impacts of this alternative.



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ACRONYMS

| | |
|--------|--|
| AASHTO | American Association of State and Highway Transportation Officials |
| APE | Area of Potential Effect |
| ART | Asheville Redefines Transit |
| AADT | Annual Average Daily Traffic |
| AU | Assessment Unit |
| AVL | Asheville Regional Airport |
| BLRI | Blue Ridge Parkway |
| BMP | Best Management Practices |
| BRP | Blue Ridge Parkway |
| CEQ | Council on Environmental Quality |
| CD | Compact Disc |
| CFR | Code of Federal Regulations |
| CLI | Cultural Landscape Inventory |
| CLOMR | Conditional Letter of Map Revision |
| 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 |
| DSA | Demographic Study Area |
| EA | Environmental Assessment |
| EFL | Eastern Federal Lands |
| EIS | Environmental Impact Statement |
| ESA | Endangered Species Act |
| EVAD | Enhanced Voluntary Agriculture District |
| FHWA | Federal Highway Administration |
| FLUSA | Future Land Use Study Area |
| FONSI | Finding of No Significant Impact |
| FPPA | Farmland Protection Policy Act |
| FY | Fiscal Year |
| GIS | Geographic Information Service |



| | |
|--------|--|
| HPO | North Carolina Historic Preservation Office |
| HUC | Hydrologic Unit Code |
| 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 21 st Century Act |
| MOE | Measures of Effectiveness |
| mph | miles per hour |
| MPO | Metropolitan Planning Organization |
| MSAT | Mobile Source Air Toxics |
| NAC | Noise Abatement Criteria |
| NAAQS | National Ambient Air Quality Standards |
| NEPA | National Environmental Policy Act |
| NHP | National Historic Landmark |
| NLEB | Northern long-eared bat |
| NRCS | National Resources Conservation Service |
| NRHP | National Register of Historic Places |
| NRTR | Natural Resources Technical Report |
| NCDACS | North Carolina Department of Agriculture and Consumer Services |
| NCDEQ | North Carolina Department of Environmental Quality |
| NCDOT | North Carolina Department of Transportation |
| NCDMS | North Carolina Division of Mitigation Services |
| NCDWR | North Carolina Division of Water Resources |
| NCOSBM | North Carolina Office of State Budget and Management |
| NCWRC | North Carolina Wildlife Resources Commission |
| NHL | National Historic Landmark |
| NPS | National Park Service |
| NSA | Noise Study Areas |
| ORW | Outstanding Resource Waters |
| OSA | North Carolina Office of State Archaeology |
| PDEA | NCDOT Project Development and Environmental Analysis |
| ROD | Record of Decision |

| | |
|-------|---|
| SR | Secondary Route |
| STC | Strategic Transportation Corridor |
| STIP | State Transportation Improvement Program |
| TDM | Travel Demand Model |
| TMP | Transportation Management Plan |
| TNM | Traffic Noise Model 2.5 |
| USACE | US Army Corps of Engineers |
| USEPA | US Environmental Protection Agency |
| USGS | US Geological Survey |
| UNC | University of North Carolina at Chapel Hill |
| VAD | Voluntary Agricultural District |
| VMT | Vehicle Miles Traveled |
| VPD | Vehicles per Day |
| V/C | Volume to Capacity Ratio |



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 and ending just south of Asheville. 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 2016 – 2025 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 (Exit 40). STIP Project I-4700 proposes to widen I-26 from NC 280 north to the I-40/I-240 interchange.

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 bridge over I-26, which is also included in the project study area.

Figure 2 illustrates the project study area.

Right of way acquisition is scheduled to begin in fiscal year (FY) 2018 and construction is scheduled to begin in FY 2020. According to the 2016 – 2025 STIP, the total programmed funding is \$397,264,000. For I-4400, the STIP has allocated \$2,000,000 for right of way acquisition and \$60,600,000 for construction, with \$159,000,000 unfunded. For I-4700, the STIP has allocated \$4,000,000 for right of way acquisition and \$166,200,000 for construction. The remainder of the programmed funding is for prior years' costs associated with the project. Project costs for the Build Alternatives are described in **Section 2.3.6** and detailed cost estimates are found in **Appendix D**.

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

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

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.

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.



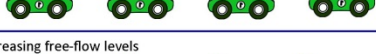


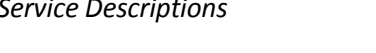
These needs are specific to STIP Project I-4400/I-4700 and will be a reasonable expenditure even if no additional transportation improvements are made in the area.

1.3 Project Purpose

The purpose of the proposed improvements to I-26, from US 25 in Henderson County north to I-40/I-240 in Buncombe County, 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.

What is Level of Service?

Level of Service is a qualitative measure used to describe the operating conditions of a roadway. The Highway Capacity Manual (Transportation Research Board 2010) generally describes Level of Service in terms of factors such as speed, travel time, freedom to maneuver, traffic interruptions, driver comfort and convenience, and safety. Level of Service is represented by a letter ranking from “A” to “F”, with “A” representing free-flow conditions and “F” representing traffic-breakdown conditions.

| LEVEL OF SERVICE | DESCRIPTION |
|------------------|--|
| A | Free-flow traffic operations  |
| B | Reasonable free-flow traffic operations  |
| C | At or near free-flow  |
| D | Decreasing free-flow levels  |
| E | Traffic operations at capacity  |
| F | Breakdown in vehicular flow  |

Level of Service Descriptions

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. The decision document, a Finding of No Significant Impact (FONSI), was completed in January 2002 and, subsequently, 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 decided to combine the analysis of STIP I-4400 with STIP I-4700 (the 8.6-mile segment from NC 280 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 northern terminus for the project is just south of the I-40/I-240 interchange. This interchange is not included in STIP Project I-4400/I-4700 because it is included in the I-26 Asheville Connector project (STIP Project I-2513). However, it should be noted that 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 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.

The southern terminus for the project is proposed at the interchange of I-26 with US 25, just south of Hendersonville. The improvements to I-26 ending 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 interchange due to a portion of traffic that will diverge from I-26 and continue traveling on US 25.

From a project development and environmental analysis standpoint, the project limits represent rational end points given the identified project needs, and the study area is sufficient for an evaluation of environmental impacts for a stand-alone widening project.

The logical termini support the need for the project by establishing limits in the evaluation of alternatives. The factors which 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**.

1.6 Existing Roadway Characteristics

I-26 is a four-lane, median-divided, full control-of-access facility between US 25 (Exit 54) in Henderson County and I-40/I-240 (Exit 31) in Buncombe County. This section of I-26 also carries the US 74 designation. The 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.

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

*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, into Buncombe County, and up to I-40/I-240.

The Blue Ridge Parkway 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 Blue Ridge Parkway is 45 mph.

The Blue Ridge Parkway is a low speed, low volume road, with an average of 5,000 vehicles per day using the Parkway bridge over I-26 during the visitor season. A typical section of the Parkway consists of two 10-foot travel lanes with grass shoulders, and it is an asphalt paved surface with over 150 bridges of varying design types.

1.7 Existing Road Network

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.

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

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 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

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.

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 Blue Ridge Parkway 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.

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.

1.8 Traffic Conditions

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. 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.

Current traffic volumes indicate that demand exceeds the available capacity of I-26 in Buncombe County (NC 280 [Airport Road] to I-40/I-240), with this segment of the roadway operating at LOS F. 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**. Taking regional population and employment growth into account, the entire roadway corridor from US 25 to 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 (**Section 2.3.5**). Therefore, the number of congestion-related crashes is expected to increase. The approximately 23-mile section of I-26 from the US 25 interchange in Henderson County to the I-40/I-240 interchange in Buncombe County experienced 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 occur 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 planning area over the next 25 years.

The *2040 Long Range 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.

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 multilane 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 2016-2025 STIP indicates that right of way acquisition will begin in FY 2019 and construction will begin in FY 2021; however, only a portion of the project is funded.
- STIP Project B-5178 is 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 is currently under construction according to NCDOT's website. The project is scheduled to be completed in May 2016. The section of I-26 widening located in the B-5178 study area will be constructed with B-5178. In this area, the median of I-26 will be paved and median barrier installed so that traffic can be maintained during construction. The limits of median paving extend in both directions on I-26 and taper to match existing pavement. The additional pavement on I-26 will be "striped out" until the remaining portion of I-4700 is constructed.
- STIP Project I-5501 proposes to retrofit the existing I-26/NC 280 (Airport Road) interchange in Buncombe County to a diverging diamond interchange configuration. The project website indicates

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 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/)

that the project is under construction and is scheduled for completion in November 2016.

- 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 2016-2025 STIP indicates that this is a Design-Build project and planning/design is in progress. Right of way acquisition and construction are currently scheduled to begin in FY 2016. 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 timing of I-5504 is not long 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 ripped out. 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.
- STIP Project R-5744 proposes a new location 4-lane expressway in Henderson County, known as Balfour Parkway, which traverses the I-4400/I-4700 study area north of US 64. The proposed Balfour Parkway extends from NC 191 (Brevard Road) to US 64, and includes a new interchange on I-26 north of US 64. According to the 2016-2025 STIP, right of way acquisition is funded and scheduled to begin in FY 2022, and construction is unfunded.
- 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 2016 – 2025 STIP indicates that R-5207 is currently under construction.
- STIP Project B-5409 is 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. According to the 2016-2025 STIP, right of way acquisition and construction are funded and scheduled to begin in FY 2018 and 2019, respectively.

- Located north of the study area boundary, STIP Project A-0010A proposes improvements to US 19/US 23 (Future I-26) to address traffic congestion, bridge conditions and pavement conditions from 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 2016-2025 STIP indicates that right of way is scheduled to begin in FY 2020 and construction in FY 2022 with 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 2016 – 2025 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 2021.

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

1.11 Population and Employment Trends

Both Henderson and Buncombe Counties have experienced moderate growth from 2000 to 2010. According to the North Carolina Office of State Budget and Management (NCOSBM), the annual population growth rate in Buncombe and Henderson Counties (1.3 percent and 1.4 percent, respectively) is expected to slow slightly over the next 20 years, but is higher than the State’s projected annual rate (0.96 percent).

Data from the North Carolina 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. 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). Most jobs are located in either Asheville or Hendersonville, and the I-26 corridor provides the main link for commuting patterns. The French Broad River MPO 2035 *Long Range Transportation Plan* anticipates continued residential and commercial growth in Asheville and along the I-26 corridor south of Asheville.

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

For more information:

NCDOT Construction Progress Reports (projects under construction)

<https://apps.dot.state.nc.us/traffictavel/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>

*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

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.



Chapter 2 ALTERNATIVES

The identification, consideration, and analysis of alternatives are fundamental to the NEPA process and objective decision-making. Consideration of alternatives leads to a solution that satisfies the transportation need and avoids and minimizes adverse impacts to environmental and community resources. This chapter describes the alternatives analyzed in detail, as well as the alternatives that were considered but eliminated.

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

Alternatives that did not meet the project's purpose and need were eliminated from further consideration. These alternatives include the No-Build Alternative, Mass Transit Alternative, Transportation Systems Management Alternative, and Transportation Demand Management Alternative. While the No-Build Alternative was eliminated, it provides a baseline for comparing the adverse impacts and benefits of the Build Alternatives.

*The following I-4400/I-4700 technical studies provided information for **Chapter 2** and are appended by reference:*

Purpose and Need and Alternatives Considered for I-26 Improvements, Merger Concurrence Points 1 and 2, June 30, 2013 [Revised per Merger Team Comments]

Purpose and Need Traffic Analysis Technical Memorandum, September 2013

Purpose and Need Traffic Analysis Technical Memorandum Addendum, October 2014

2.1.1 No-Build Alternative

The No-Build Alternative would not provide any substantial improvements to the I-26 corridor in the study area. The No-Build Alternative would not improve existing or projected roadway capacity deficiencies or improve insufficient pavement structure and deteriorating road surface conditions. Only typical maintenance activities would be provided along this section of I-26. As a result of this alternative, there would be no impacts to the natural or human environment; no right of way or construction costs; nor disruptions during construction.

For these reasons, the No-Build Alternative would not meet the purpose and need for the project and was eliminated from further consideration. However, the No-Build Alternative is carried forward in the analyses of project alternatives because it serves as the baseline that other alternatives are compared against.

2.1.2 Mass Transit Alternative

The Mass Transit Alternative considered forms of transportation other than the single-occupancy passenger vehicle. In its travel demand model (TDM) the French Broad River MPO estimates that 0.3 percent of all trips are generated by transit. 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 was not carried forward as a detailed study alternative.

2.1.3 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 the 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 was not carried forward as a detailed study alternative.

2.1.4 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 was not carried forward as a detailed study alternative.

2.2 I-26 Widening Detailed Study Alternatives

The following Build Alternatives were determined to meet the project's purpose and need and remain under consideration for implementation. Specifically, the additional traffic lanes would reduce congestion 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 of the alternatives would be designed to best fit within the existing right of way limits for I-26. Best fit alignments, or asymmetrical widening, have been evaluated and selected to improve the existing highway alignment, minimize impacts, and accommodate maintenance of traffic during construction. Right of way limits for the 6-Lane Widening Alternative and 8-Lane Alternative are shown in the **Figure 4 series**.

These alternatives are discussed in more detail in the following sections of **Chapter 2** and analyzed in **Chapter 3**.

2.3 Comparison of I-26 Widening Alternatives

2.3.1 Roadway Design Criteria

As part of this Draft EIS for STIP Project I-4400/I-4700, functional designs were developed for the three Widening Alternatives for the I-26 widening and four alternatives for modifying the I-26 interchange with US 25 (Asheville Highway). Each alternative utilized specific design criteria suitable for interstate facilities at various design speeds.

The design speed on all three I-26 Widening Alternatives is 70 mph from the beginning of the project at the US 25 interchange to the US 25 (Asheville Highway). The design speed is reduced to 65 mph from US 25 (Asheville Highway) to the northern project terminus at the I-40/I-240 interchange.

The maximum superelevation for I-26 and its loops and ramps is eight percent. The ramp designs are limited to the area required to be reconstructed to tie to the existing ramps, with the exception of the US 25 (Asheville Highway) interchange. The design speed of these ramps matched the existing design speed as indicated by the ramp's existing geometry. The US 25 (Asheville Highway) ramp alternatives all utilize a 50 mph design speed, with the exception of the ramp located in the southwest corner. Due to topography this ramp has a 30 mph design speed. Each loop utilized a 30 mph design speed. The design speed of each secondary road that crosses the mainline (ex. US 25 (Asheville Highway), NC 146, and Blue Ridge Parkway) varies based on the design and posted speed on each roadway.

The travel lane width for all of the I-26 Widening Alternatives and for the secondary roads that cross the mainline is 12 feet. The ramps utilize a 16-foot travel lane and the loops are designed with an 18-foot travel lane. The typical width of the I-26 median is 26 feet, including a median barrier wall. However, there are two areas where I-26 splits 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 inside shoulder width on the six-lane section of the 6-Lane Widening Alternative and Hybrid 6/8-Lane Widening Alternative under existing overpass structures is reduced to nine feet to avoid the complete reconstruction of existing bridges.

Superelevation is tilting the roadway to help offset centripetal forces developed as the vehicle goes around a curve. Along with friction, they are what keep a vehicle from going off the road.

*The **mainline** is the primary road under study. In this document the mainline is I-26.*

These areas will require design exceptions. The 8-Lane Widening Alternative would require reconstruction of existing bridges.

The maximum grade on the I-4400 section of I-26 is four percent and six percent for the I-4700 section, which reflects its mountainous topography. The maximum grade on the ramps and loops is 10 percent, which is necessary given the mountainous terrain.

2.3.2 Roadway Typical Sections

The 6-Lane Widening Alternative typical section includes three 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; however, under existing bridges the shoulder widths are reduced to nine feet. As previously noted, the reduction in shoulder width will require a design exception from NCDOT and FHWA. The outside paved shoulder width is 12 feet, with an additional two feet of graded shoulder.

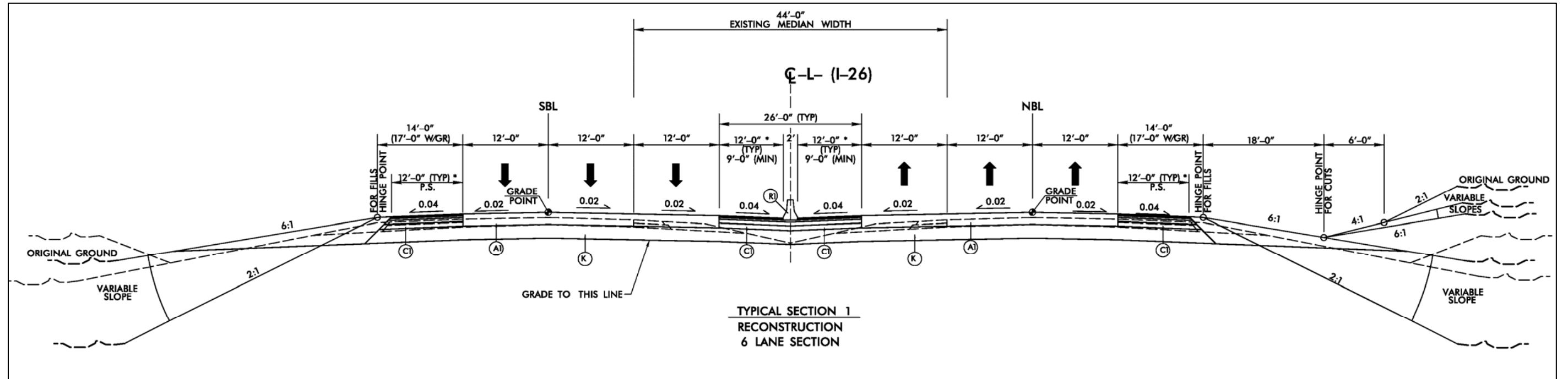
The 8-Lane Widening Alternative typical section includes four lanes in each direction, with a 26-foot median that includes a median barrier wall. The typical width for inside and outside paved shoulders is 12 feet throughout this typical section. The outside paved shoulder has an additional two feet of width beyond the pavement.

The Hybrid 6/8-Lane Widening Alternative utilizes both the 6-Lane Widening Alternative and 8-Lane Widening Alternative typical sections at different points along the alignment.

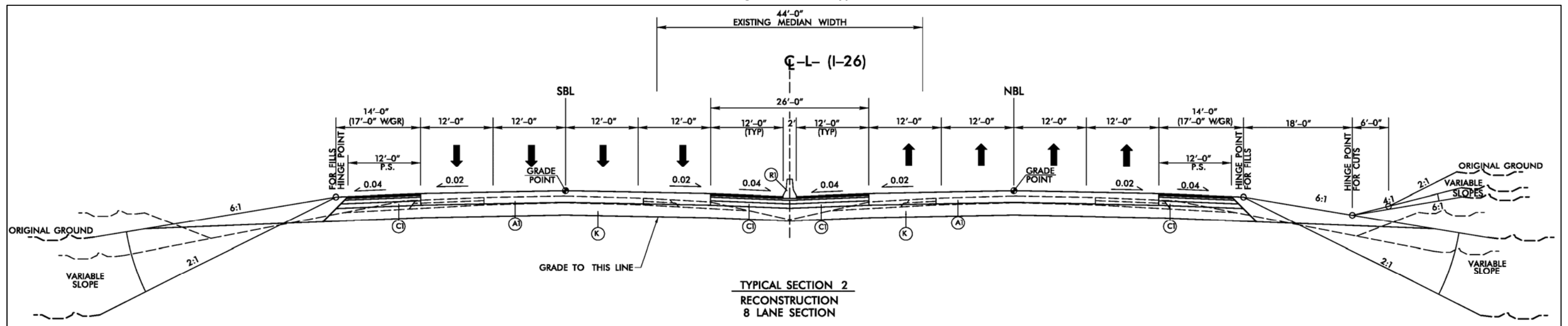
All three alternatives have two areas where the eastbound and westbound lanes separate and the median width varies.

Inset 1 illustrates the 6-Lane Widening Alternative and 8-Lane Widening Alternative typical sections.

Inset 1. 6-Lane Widening Alternative Typical Section



8-Lane Widening Alternative Typical Section



2.3.3 Interchange Modifications

The majority of the interchanges along the project would not be modified in a notable way for the 6-Lane Widening Alternative and the six-lane section of the 6/8-Lane Hybrid Widening Alternative. Most modifications would be made on the 8-Lane Widening Alternative and 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.

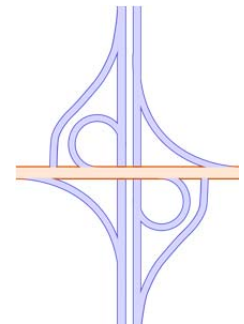
However, the *Purpose and Need Traffic Analysis Technical Memorandum* (HNTB, 2013), determined that the 8-Lane Widening Alternative in the base year 2011 and the 6-Lane Widening Alternative in the design year 2040 had operational deficiencies at the southern ramp termini where lanes would be added to or dropped from the existing system at the US 25 (Asheville Highway) interchange. Therefore, additional study was recommended to examine the cause of the operational deficiencies and to explore additional design possibilities at this location. Based on this recommendation, four alternative interchange designs were developed and evaluated. These included two partial cloverleaf interchanges (one with standard ramps and one with minimized ramps), a diverging diamond interchange (DDI), and a displaced left turn (DLT) interchange.

Interchange Alternative 1 – This alternative is a partial cloverleaf interchange design that utilizes standard ramps for existing I-26 to access US 25 (Asheville Highway) in both directions. Northbound US 25 (Asheville Highway) traffic would access I-26 westbound via a loop with a 231-foot radius (30 mph design speed). Southbound US 25 (Asheville Highway) traffic would access I-26 eastbound in the same way. Northbound US 25 (Asheville Highway) traffic would access eastbound I-26 via a standard ramp. Southbound US 25 (Asheville Highway) traffic would access westbound I-26 the same way.

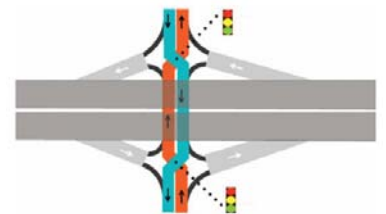
Interchange Alternative 1 would alleviate delays on US 25 (Asheville Highway) caused by left turning northbound and southbound vehicles onto I-26. The loops would remove the left turn by providing continuous access for that movement. Notable traffic operation improvements are associated with this alternative.

Interchange Alternative 2 – This alternative is also a partial cloverleaf interchange design that utilizes most of the same features and geometry as the previously described Interchange Alternative 1. The difference between the two alternatives is that Interchange Alternative 2 proposes a smaller 150-foot radius loop, which requires a less desirable 25 mph design speed. The benefits of this alternative are largely the same as Interchange Alternative 1.

Interchange Alternative 3 – This alternative utilizes a unique method, known as a diverging diamond interchange (DDI) design, to reduce conflict points and delays caused by left turning vehicles on the bridge. Eastbound and westbound US 25 (Asheville Highway) traffic will switch sides at the intersections that are placed in advance of the overpass. Traffic turning right



Partial Cloverleaf Alternative



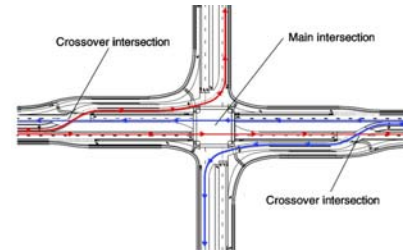
DDI Alternative

to access I-26 on-ramps will do so prior to those intersections. Thru traffic and left turning traffic will proceed through the intersections. Left turning traffic will have a continuous left turn movement available with no oncoming thru traffic. Traffic is then shifted back to the appropriate side of US 25 at the next intersection. The benefits to this alternative include fewer conflict points than a standard interchange, better sight distance at turns, shorter pedestrian crossings at ramps, and no additional cost associated with bridge widening to gain more left turn capacity.

Interchange Alternative 4 – The displaced left turn (DLT) alternative also provides a unique method to reduce conflict points and delays caused by left turning vehicles at the interchange. In this alternative, eastbound and westbound US 25 (Asheville Highway) left turning traffic will cross over the opposing thru lanes several hundred feet before the main intersection with the ramps. The left turning vehicles then proceed through the intersection and may continuously turn left onto the I-26 on ramp without opposing traffic. Benefits of this alternative are similar to those of the DDI. The major drawback to this alternative is that the existing US 25 (Asheville Highway) bridge over I-26 must be widened to accommodate the additional required lanes. This will create additional construction costs for the project.

As discussed in the *Purpose and Need Traffic Analysis Technical Memorandum Addendum* (HNTB, 2014), the four interchange alternatives were modeled and analyzed in comparison to the No-Build Alternative (the existing standard diamond interchange configuration). The results indicate that all four interchange design alternatives improve overall system and corridor performance in both peak hours for the vehicle hours traveled, speed, and delay Measures of Effectiveness (MOEs). However, the two partial cloverleaf designs (Interchange Alternatives 1 and 2) offer the most operational benefits, followed by the displaced left turns interchange design (Interchange Alternative 4) and finally, the DDI (Interchange Alternative 3). Interchange Alternatives 1 and 2 were recommended by the *Purpose and Need Traffic Analysis Technical Memorandum Addendum*. Interchange Alternative 1 is included in the Preferred Alternative.

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 the FBRMPO and is considered a priority project. Improving the interchange is not currently part of STIP Projects I-4400/I-4700; however, coordinating the improvement of the interchange with the widening of I-26 is considered advantageous. Proposed improvements include widening the bridge carrying US 64 over I-26 and eliminating the existing I-26 Southbound and Northbound on-ramp loops. The loops would be replaced with left-turns from US 64 to I-26 Southbound and Northbound on-ramps.



DLT Alternative

*The following I-4400/I-4700 technical studies provided information for **Chapter 2** and are appended by reference:*

Purpose and Need Traffic Analysis Technical Memorandum, September 2013

Purpose and Need Traffic Analysis Technical Memorandum Addendum, October 2014

2.3.4 Bridges and Drainage Structures

Existing stream crossings along the project corridor have been reviewed and evaluated based on current hydraulic design criteria in the *Hydraulic Technical Memorandum* and the *Addendum to the Hydraulic Technical Memorandum* (HNTB, 2014 and 2014, respectively) for this project. 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. At this preliminary stage, there is insufficient data to perform final designs for any crossing. **Appendix F** identifies recommended major drainage structures for each proposed Build Alternative.

Fewer impacts are anticipated for the 6-Lane Widening Alternative since all widening on I-26 will be towards the median. The proposed 8-Lane Widening Alternative incorporates widening towards the median as well as additional northbound and southbound lanes outside the existing travel lanes. This alternative is expected to have substantially more impacts than the 6-Lane Alternative due to the required roadway embankment and culvert extensions.

2.3.5 Traffic Capacity

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 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 84 segments of I-26 concluded that 68 segments provide adequate (LOS D or better) operation during both peak hours of the base year (2011). Analysis of the No-Build Alternative in 2040 projects a decrease to 34 out of 94 future freeway segments operating at LOS D or better. This was due to the projected peak hour traffic volume increases along the I-26 corridor.

Analysis of the interchanges indicate that the I-26 ramp intersections with US 25 (Asheville Highway) and the US 64 intersection with Francis Road/Sugarloaf Road operate at a LOS worse than D in at least one base year peak hour. Analysis of the No-Build Alternative in 2040 indicates that the intersection of US 64 and Carolina Village Road/Orr's Camp Road is also expected to degrade to a LOS E or LOS F during at least one peak hour.

As previously noted, the No-Build Alternative fails to provide adequate freeway traffic operations for a majority of the project corridor in the 2040 design year with 60 of 94 freeway segments projected to operate at a LOS E or F in at least one AM or PM peak hour.

Freeway operation results for the 6-Lane Widening Alternative indicate that it would mitigate all 2011 base year operational deficiencies, but would leave 17 freeway segments over capacity (LOS E or F) in the 2040 design year in at least one peak hour. These locations are located north of the NC 280 interchange.

The 8-Lane Widening Alternative capacity analysis results indicate that it will mitigate all existing 2011 base year capacity issues, along with providing adequate capacity (LOS D or better) along the corridor in the 2040 design year in both peak hours.

Capacity analysis results for the Hybrid 6/8-Lane Widening Alternative indicate that the proposed improvements 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.

2.3.6 Cost

To further refine the project costs in the STIP, detailed construction costs (March 2015) were estimated for each Build Alternative and for the US 25 (Asheville Highway) interchange are shown in **Table 1** below. Costs for relocating and constructing utilities were also estimated by NCDOT. 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 will be required for all of the Build Alternatives.

Table 1. Estimated Cost of Build Alternatives

| | 6-Lane Widening Alternative | 8-Lane Widening Alternative | Hybrid 6/8-Lane Widening Alternative |
|--------------------------|--|--|---|
| Construction Cost | \$364,800,000 | \$484,500,000 | \$440,200,000 |
| Right of Way Cost | \$9,828,500 | \$13,381,500 | \$9,311,500 |
| Utility Cost | \$5,008,760 | \$6,281,800 | \$5,229,597 |
| TOTAL COST | \$379,637,260 | \$504,163,300 | \$454,741,097 |

The detailed construction, utility, and right of way cost estimates are located in **Appendix D**. The cost to realign and replace the bridge carrying the Parkway over I-26 is included in **Table 1**. The NPS's preferred option (Option 4, see **Section 2.4**) would realign the road and install a concrete segmental bridge, at a construction cost of \$19.8 million according to the *Draft Value Analysis* (BLRI, January 2016).

Phases and funding

According to the NCDOT 2016 – 2025 STIP, right of way acquisition for I-4700 and a portion of I-4400 (US 25 (Asheville Highway) to NC 280) is scheduled in FY 2018 and construction is scheduled to begin in FY 2020. The remaining portion of I-4400 (US 25 to US 25 (Asheville Highway)) is not funded.

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 with STIP Project I-

5504. The additional pavement on I-26 will be “striped out” until the remaining portion of I-4700 is constructed. NCDOT’s 2016-2025 STIP indicates that I-5504 is a Design-Build project and planning/design is in progress. Right of way acquisition and construction are currently scheduled to begin in FY 2016.

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 (BLRI) and FHWA-EFL, 2016) (**Appendix H**) for the realignment of the Blue Ridge Parkway and replacement or reconstruction of the Blue Ridge Parkway (BRP) bridge over I-26. Ideally, the existing bridge would remain open to traffic during construction; however, one of the options under consideration will require closure of the bridge during construction. **Figure 5** shows the alignment options. The new bridge type would either be a segmental concrete box girder (NPS’s preferred bridge type) or steel plate 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 Mountains-to-Sea Trail.

One reconstruction and six replacement options were developed for consideration. However, Options 2 and 3 were considered and then dismissed from further evaluation, due to unacceptable impacts and design features. Option 6 was dismissed because it would necessitate the closure of the Blue Ridge Parkway to complete construction. These reasons are further explained in the *Blue Ridge Parkway Bridge Over Interstate 26 Technical Report* (2016), included as Appendix H. The remaining options are presented in **Table 2**. 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.

Option 4 is NPS’ preferred alternative; however, the other options are still presented for public comment. Option 7 would reconstruct the existing bridge. A steel arch could be constructed beneath the existing bridge deck. The insertion of an arch would allow for the piers closest to I-26 to be removed. Additional detail regarding these options can be found in the technical report.

Table 2. 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 | 605 feet | 2,745 feet | 8.3% |
| Option 5 | South of Existing Bridge | 575 feet | 3,255 feet | 10% |
| Option 7 | Existing Location (Reconstruction) | 605 feet | 0 feet | 0% |

¹Lengths are approximate



Kansas Corral Rail



Caltrans Type 80

Bridge railing types considered included a modified Kansas Corral Rail and a Caltrans Type 80 bridge rail (NPS’s preferred rail type). On top of the concrete rail, several modifications are under consideration, including a one-two aluminum rail, and a two-tube aluminum rail.

2.5 Preferred Alternative

2.5.1 I-26 Widening Alternative

Based on the information available to date, including this Draft EIS, the FHWA and NCDOT have identified the Hybrid 6/8-Lane Widening Alternative as the Preferred Alternative. This 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. The US 25 (Asheville Highway) partial cloverleaf interchange is a component of the Preferred Alternative. Additionally, the Blue Ridge Parkway will be realigned and the bridge carrying it over I-26 will be replaced as part of this project.

After the Draft EIS comment period ends, the FHWA and NCDOT will review agency and public comments received on this Draft EIS and at the public hearing to reassess and/or reconfirm the Preferred Alternative. Based on current circumstances and available information, this project will combine the Final EIS and ROD as mandated by Section 1319(b) of MAP-21. The Preferred Alternative identified in this Draft EIS, pursuant to guidance in Section 1319, includes the widening of I-26, the BRP bridge, and the US 25/I-26 interchange. If circumstances change and this is no longer practicable, a separate Final EIS and ROD will be prepared.

The Hybrid 6/8-Lane Widening Alternative has been identified as the Preferred Alternative based on consideration of purpose and need, cost and design, and human and natural environment impacts. These elements differentiate the Hybrid 6/8-Lane Widening Alternative from the other Build Alternatives. These reasons are presented in the order they are found in this

Statute of Limitations

According to the provisions of MAP-21, the FHWA may publish a notice in the Federal Register, pursuant to 23 USC §139(l), indicating that one or more Federal agencies have taken final action on permits, licenses, or approvals for the subject transportation project. If such notice is published, claims seeking judicial review of those Federal agency actions will be barred unless such claims are filed within 150 days after the date of publication of the notice. If no notice is published, then the periods of time that otherwise are provided by the Federal laws governing such claims will apply. NCDOT and FHWA intend to publish a notice for STIP Project I-4400/I-4700 pursuant to 23 USC §139(l).

document and do not represent all of the benefits or impacts of this alternative.

2.5.1.1 Purpose and Need

The purpose of the proposed improvements to I-26, from US 25 in Henderson County north to I-40/I-240 in Buncombe County, is to reduce congestion, with a goal of achieving an overall LOS D in the design year (2040), and to improve the pavement structure. LOS D is a standard performance goal target used by NCDOT for environmental studies where congestion is one of the needs being addressed.

Although all of the Build Alternatives would meet the purpose and need of the project by reducing congestion and improving pavement structure, the 8-Lane Widening Alternative and Hybrid 6/8-Lane Widening Alternative both meet the purpose and need goal of achieving an overall LOS D in the design year for all freeway segments in the study area. Because the 6-Lane Widening Alternative does not provide an overall LOS D, it is eliminated from further discussion in this Section.

2.5.1.2 Cost and Design Considerations

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 inside shoulder width on the 6-lane section of the Hybrid 6/8-Lane Widening Alternative under existing overpass structures is reduced to approximately 9 feet to avoid the complete reconstruction of five existing bridges. These areas will require design exceptions from NCDOT and FHWA. The reconstruction of the US 25 (Asheville Highway) interchange is necessary under all of the Build Alternatives. The 8-Lane Widening alternative would also require reconstruction of all of the other existing bridges.

While the 8-Lane Widening Alternative and Hybrid 6/8-Lane Widening Alternative both meet the purpose and need goal to provide a LOS D or better for all freeway segments in the project study area, the total cost of the Hybrid 6/8-Lane Widening Alternative is approximately \$58.4 million less than the 8-Lane Widening Alternative.

2.5.1.3 Human Environment Considerations

Although the Hybrid 6/8-Lane Widening Alternative would require 18 residential relocations, this number is lower than the 8-Lane Widening Alternative (23 residential relocations), and there remains potential for reduction through continued design innovation. Additionally, the Hybrid 6/8-Lane Widening Alternative would relocate one business, whereas the 8-Lane Widening Alternative would displace two businesses.

All of the Build Alternatives would impact Farmland Preservation Policy Act eligible soils. The Hybrid 6/8-Lane Widening Alternative would impact approximately 11 acres, compared to the 8-Lane Widening Alternative that would impact approximately 24.5 acres.

2.5.1.4 *Natural Resources Considerations*

The Hybrid 6/8-Lane Widening Alternative would have less impact on terrestrial communities, streams, and wetlands than the 8-Lane Widening Alternative while still providing similar operational benefits as the 8-Lane Alternative by achieving an overall LOS D in the design year for all freeway segments in the study area.

The above information will be considered in addition to public and agency comments received on this Draft EIS and at public hearing.

2.5.2 I-26 / US 25 (Asheville Highway) Interchange

Based on the information available to date, including the Draft EIS, the FHWA and NCDOT have identified Interchange Alternative 1, the partial cloverleaf design with standard radius ramps, as part of the Preferred Alternative. Interchange Alternative 1 would alleviate delays on US 25 (Asheville Highway) caused by left turning northbound and southbound vehicles onto I-26. The loops would remove the left turn by providing continuous access for that movement.

2.5.3 Blue Ridge Parkway Bridge Replacement

The NPS has identified Option 4 as its Preferred Alternative for the Blue Ridge Parkway realignment and bridge replacement over I-26. However, this Draft EIS presents all of the proposed options evaluated (1, 4, 5, and 7) in detail for public comment.

Chapter 3 ENVIRONMENTAL RESOURCES AND IMPACTS

This chapter describes the findings of the impact assessment conducted for the detailed study alternatives. Key characteristics of the affected environmental resources also are described. Additional information on the affected environment and the impacts of the detailed study alternatives is presented in a series of technical reports (**Appendix A**) contained on the compact disc (CD) that accompanies this Draft EIS, at public review locations identified in **Appendix C**, and on the NCDOT website at www.ncdot.gov/projects/i26Widening/. The Notable Features of the project are shown on the **Figure 6 series**.

As described in **Section 1.1**, the project study area consists of a generally 1,400-foot wide corridor along existing I-26 from US 25 in Henderson County, north to I-40/I-240 in Buncombe County. The study area expands around interchanges along I-26 and around the Blue Ridge Parkway bridge over I-26. Impacts to the Blue Ridge Parkway are described under each impact topic. Additional impact topics required for consideration for the Blue Ridge Parkway, in accordance with NPS *Directors Order #12*, but not applicable to the rest of the project, include visitor use, visitor experience, and parkway operations.

3.1 Human Environment

A *Community Characteristics Report*, *Indirect Effects Screening Report*, and *Community Impact Assessment* (HNTB, 2013, 2013, and 2015, respectively) were prepared for this Draft EIS. They are found in Appendix A and contained on the CD that accompanies this Draft EIS. County, state, and demographic data were compared to identify characteristics and trends of the study area. In these reports, three study areas were defined as a Direct Community Impact Area (DCIA), a Demographic Study Area (DSA), and Future Land Use Study Area (FLUSA). The results of the analyses are summarized within the context of the more immediate I-26 study area in this Draft EIS. Further details can be found in the referenced reports, available on the attached CD.

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, NC 280 (Airport Road), NC 146 (Long Shoals Road), and NC 191 (Brevard Road).

Community features within the DCIA are described in detail in the *Community Characteristics Report* (HNTB, 2013). The following features are within or adjacent to the study corridor and are shown on the **Figure 6 series**.

- Blue Ridge Community College (Flat Rock Campus) is located on the west side of I-26 between Upward Road and Tracy Grove Road.

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

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.

- Carolina Village Retirement Community is located just north of the I-26 and US 64 interchange in Hendersonville, which consists of approximately 265 apartments and 81 detached cottages.
- A NCDOT truck weigh station is located on both sides of I-26 just northwest of Brookside Drive at milepost 46.
- Park Ridge Hospital is located adjacent to the northeast side of I-26 just north of Byers Creek.
- Just north of the I-26 and US 25 (Asheville Highway) interchange, a residential community (Brickton) is located east of I-26 and along the west side of US 25 from Butler Bridge Road to Talley Drive.
- The Rugby Grange house and property are located on the west and east side of I-26, respectively, north of Cane Creek. The Rugby Grange house and property are listed on the National Register of Historic Places (see **Section 3.2**).
- A state-owned rest area is located on both sides of I-26 at the Buncombe/Henderson County line between mileposts 41 and 42.
- The Western North Carolina Agriculture Center, owned and operated by the North Carolina Department of Agriculture and Consumer Services, is located along the western side of the I-26 corridor at Fanning Bridge Road.
- Boiling Springs Baptist Church is located on the south side of Fanning Bridge Road and adjacent to the eastern side of I-26.
- The Asheville Regional Airport (AVL) is located nine miles south of Asheville at the I-26 and NC 280 (Airport Road) interchange. Direct access to the airport from I-26 is provided at Exit 40, NC 280 (Airport Road). Fanning Bridge Road provides additional access to the airport; however, it does not have direct access to I-26.
- Duke Energy owns and operates the 376-megawatt coal-fired Asheville Plant, 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 for the storage of waste left over after burning coal to generate electricity. The ponds and other storage facilities are within 500 feet of the eastern side of the I-26 corridor. Duke Energy announced on February 29, 2016 that this coal-fired plant will be retired by 2020 and will be replaced with two 280-megawatt units as approved by the North Carolina Utilities Commission. Transmission lines parallel and cross I-26.
- The Blue Ridge Parkway crosses I-26 north of NC 146 (Long Shoals Road). The bridge carrying the Blue Ridge Parkway is a contributing resource within the Parkway, which is a resource previously determined eligible for the NRHP. The NPS is in the process of nominating the BRP for designation as a National Historic Landmark (NHL) (see **Section 3.2**).
- A portion of the statewide Mountains-to-Sea Trail, located along the Blue Ridge Parkway, is the only existing trail within the DCIA.

- A portion of the Biltmore Estate property is located adjacent to the east side of I-26 and occupies the eastern part of the DCIA from the Blue Ridge Parkway to NC 191 (Brevard Road). Biltmore Estate is listed on the National Register of Historic Places (see **Section 3.2**).
- Sidewalks are located along US 64, NC 146 (Long Shoals Road), and a small portion of NC 191 (Brevard Road) within the DCIA. Designated bike routes are present on the following roads that cross the I-26 corridor: NC 191 (Brevard Road), Blue Ridge Parkway (the Mountains-to-Sea Trail also uses this crossing), NC 146 (Long Shoals Road), Glen Bridge Road, Fanning Bridge Road, Butler Bridge Road, Brookside Camp Road, Tracy Grove Road, and Crest Road. None of these roads have dedicated bicycle facilities.

3.1.2 Future Land Use and Development

Interviews with Henderson County and Buncombe County indicate that there are no known plans for residential, industrial, or commercial development within the DCIA. The I-26 corridor is expected to largely maintain its current mix of residential and commercial characteristics, with the exception of potential changes to land uses within the project area in proximity to Upward Road (SR 1783), Howard Gap Road (SR 1006), and the proposed Balfour Parkway (STIP Project R-5744). 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.

In its *Henderson County 2020 Comprehensive Plan* (2009) Henderson County included a figure of the “Current General Land Use [of the] I-26 Corridor”. The predominant land uses along the I-26 corridor are residential, agricultural and undeveloped. A mix of industrial, commercial, and office/institutional is clustered around the interchanges. The *Plan’s* “Future Land Use” figure indicates the desire to increase industrial development along the I-26 corridor and to include “Community Service Centers”. Community Service Centers include a mixture of commercial, community facility, and dense residential uses. Although the figure does not show exact locations, they appear to be at various interchanges along the project study corridor. The portion of I-26 that is included in STIP Project I-4400/I-4700 is considered an Urban Service Area, which is described in the *Plan’s* “Growth Management Strategy Element”. The Growth Management Strategy concentrates commercial and industrial development within the Urban Service Area, while protecting agriculture in the area.

Future land use in Buncombe County generally and along I-26 specifically is largely constrained due to the Biltmore Estate property, French Broad River, Blue Ridge Parkway, the Asheville Power Plant, and the Asheville Regional Airport. However, zoning and the *Comprehensive Land Use Plan, 2013 Update* (Buncombe County, 2013) indicate that along I-26 land use is largely residential, with some areas of commercial services and employment districts. Although largely built out where land is available, the County would prefer to

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

Community Impact Assessment, 2015

Historic Architectural Resources Survey Report Intensive Level Survey, 2014

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

Indirect Effects Screening Report, 2013

Community Characteristics Report, 2013

maintain the land use along the I-26 corridor as residential, commercial, and light industrial. There are also some areas in active agriculture production.

The *Bent Creek-Lake Julian Greenway Feasibility Study* (HNTB, 2015), included on the CD that accompanies this Draft EIS, 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 in the vicinity of STIP Project I-4700. The feasibility study produced a preferred alignment, shown on **Figure 6 series and Figure 7**. This alignment is made up of several segment alternatives, was the preferred path of the community, and has the least number of impacts of the segment alternatives considered. In general, the proposed greenway would be located west of I-26 and connect NC 191 (Brevard Road) near I-26 north of the Asheville Outlet Mall south to NC 146 (Long Shoals Road) to the entrance of Lake Julian Park. The feasibility study also includes functional designs, cost estimates for the greenway, as well as potential coordination opportunities with STIP Project I-4700 and U-3403B. STIP Project U-3403B proposes to widen NC 191 (Brevard Road) from NC 146 to north of the Blue Ridge Parkway. According to the 2016 – 2025 STIP (January 2016), the project is funded for right of way and utilities in FY 2021 and construction in FY 2023.

3.1.3 Community Impacts

This section summarizes the potential community impacts of the project addressed in the *Community Impact Assessment* (HNTB, 2015). As previously noted, the Build Alternatives proposed for STIP Project I-4400/I-4700 will use a best fit alignment, or asymmetrical widening, to minimize adverse community impacts as much as possible. However, some impacts may be unavoidable.

3.1.3.1 Physical/Relocations

Table 3 summarizes the anticipated right of way and relocation impacts as a result of STIP Project I-4400/I-4700. The full NCDOT Relocation Report and Right of Way Cost Estimate are located in **Appendices D and E** of this Draft EIS.

Table 3. Physical/Relocation Impacts

| | 6-Lane Widening | 8-Lane Widening | Hybrid 6/8-Lane Widening |
|--------------------------------|------------------------|------------------------|---------------------------------|
| Residential Relocations | 12 | 23 | 18 |
| Business Relocations | 1 | 2 | 1 |
| Graves | 0 | 0 | 0 |
| Church / Non-Profit | 0 | 0 | 0 |

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 all three Build Alternatives intend to widen I-26 within existing right of way, to the extent practicable, and none propose new location alignments, all three alternatives are 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*

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

The Buncombe County planner 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.

All three of the Build Alternatives will widen I-26 within existing right of way in the vicinity of the Hidden Creek Village neighborhood. Therefore, none of the STIP Project I-4400/I-4700 alternatives are anticipated to adversely impact the Hidden Creek Village community. However, the Brickton community 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 in the 8-Lane Widening Alternative and the Hybrid 6/8-Lane Widening Alternative. Impacts to the Brickton community are not anticipated as a result of the 6-Lane Widening Alternative.

3.1.3.5 *Indirect Land Use Impacts*

Based on the *Indirect Effects Screening Report* (HNTB, 2013) assessment of the project alternatives, there is a low to moderate concern for indirect and cumulative effects as a result of STIP Project I-4400/I-4700. Despite the appearance of a large amount of available land, local officials suggest that there are constraints to potential development, including topography and other natural environment features. In addition, this project is not expected to provide any new access or opportunities for traffic exposure to properties within the FLUSA and will generate marginal travel time savings overall. The extent of potential indirect land use effects as a result of STIP 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.

Additional discussion of this topic is presented in **Section 3.15**.

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 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 8**.

Based on Census data collected for this project, no minority populations within any block group equal or exceed 50 percent of the total population of that block group. However, four block groups within the DSA exceed the Environmental Justice threshold (10 percentage points higher than their respective County) for a non-white population, these include: Census Tract 9310, Block Groups 1 and 2 (21.2 percent and 22.4 percent, respectively), and Census Tract 9314, Block Group 2 (26.9 percent) in Henderson County and Census Tract 12, Block Group 5 (27.5 percent) 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 community (**Section 3.1.3.4**) in the vicinity of the I-26 corridor as having predominantly minority concentrations/populations. There are no minority concentrations/populations in the vicinity of 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.

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

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)

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 Hidden Creek Village, Brickton, and others along Crest Road (SR 1803), Dana Road (SR 1525), and Upward Road (SR 1783).

3.1.6 Summary of Impacts

The three Build Alternatives will widen I-26 within the existing right of way in the vicinity of 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.

The Brickton community will experience some right of way encroachment at 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 if either the 8-Lane Widening Alternative or Hybrid 6/8-Lane Widening Alternative is chosen. With the construction of either of these two Build Alternatives, two mobile home units on the northeast quadrant of I-26 and Butler Bridge Road will likely be displaced. Impacts to Brickton are not anticipated as a result of the 6-Lane Widening alternative. Although the 8-Lane Widening Alternative and Hybrid 6/8-Lane Widening Alternative will impact two residences in the Brickton community, these impacts will not affect critical services (e.g. water/sewer, business access, etc.) or access to the community. The Brickton community, located adjacent to I-26, already experiences noise levels exceeding the Noise Abatement Criteria threshold of 67 dBA (**Table 12**). However, the community is located in a potential noise abatement area (NW 15, see **Section 3.9.2.1**) that may benefit receptors. Traffic noise is further discussed in **Section 3.9** and the *Traffic Noise Analysis* (HNTB, 2015).

Each alternative is expected to have displacements throughout the project area. The 6-Lane Widening Alternative is expected to displace 12 residences, four of which are minority owned or rented. The 8-Lane Widening Alternative will require the relocation of 23 residences; six have been identified as having minority owners/tenants. Similarly, the proposed Hybrid 6/8-Lane Widening Alternative is anticipated to displace 18 residences, six of which are minority residents or tenants.

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 will be provided for the LEP language group, in addition to other measures, which include notice

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)

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.*

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 will ensure all public involvement activities and outreach materials developed for the project appropriately target LEP populations and meet all regulatory guidelines.

Census data also indicates an Indo-European language-speaking population that exceeds 50 persons within the Demographic Study Area that may require language assistance.

As recommended in the *Community Impact Assessment* (HNTB, 2015), NCDOT Public Involvement will coordinate with potentially impacted communities to ensure full and fair participation in the transportation decision-making process.

3.1.7 Farmland

3.1.7.1 Farmland Soils and Farming Operations

Henderson County has a notable agricultural industry that includes nursery, greenhouse, floriculture, and Christmas trees (2nd highest producer in the state); vegetables, fruits, nuts, and berries (3rd highest producer in the state); and livestock including milk cows (8th highest producer in the state) (NCDACS, 2015). Notable agricultural uses in Buncombe County include hay production (24th highest producer in the state); vegetables, fruits, nuts, and berries (25th highest producer in the state); and livestock including milk cows (11th highest producer in the state) and beef cows (17th highest producer in the state). Based on NCDOT GIS data, soils eligible for protection under the Farmland Protection Policy Act (FPPA) are scattered along the studied I-26 corridor and several active farming/agricultural operations are located within the DCIA.

Henderson and Buncombe Counties each have a Voluntary Agriculture District (VAD) program. Each program has numerous participating farms. Four VAD properties are within the DCIA, three in Henderson County and one in Buncombe County.

3.1.8 Farmland Impacts

The 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. **Figures 9A** and **9B** show the farmland soil types within the project study area.

The three Build Alternatives would impact the four VAD properties within the DCIA due to right of way acquisition. Three of the VADs are in Henderson County and the fourth is in Buncombe County. As shown in **Table 4**, the alternatives will directly convert existing FPPA-eligible soils to non-farmable land as a result of right of way acquisition for each 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.

Table 4. Acres to be Directly Converted

| Farmland Soil Type | County | 6-Lane Widening | 8-Lane Widening | Hybrid 6/8-Lane Widening |
|-------------------------------------|--------------|-----------------|-----------------|--------------------------|
| Prime & Unique (acres) | Henderson | 1.26 | 7.78 | 3.54 |
| | Buncombe | 0 | 0 | 0 |
| | Total | 1.26 | 7.78 | 3.54 |
| Statewide & Local Important (acres) | Henderson | 3.57 | 14.86 | 5.56 |
| | Buncombe | 0.5 | 1.77 | 1.77 |
| | Total | 4.07 | 16.63 | 7.33 |
| TOTAL (acres) | | 5.33 | 24.41 | 10.87 |

As required by the FPPA, the Form NRCS-CPA-106 (for corridor projects) was completed (see **Appendix G**) according to FHWA guidelines. The three Build Alternatives were assessed in Parts III and VI and were above the 60-point threshold, in each County respectively, and submitted to NRCS for further review. NRCS completed their review in October 2014 and each of the Build Alternatives received a total point value of less than 160 points. Therefore, the three Build Alternatives fall below the NRCS minimal criteria and will not be evaluated further for farmland impacts. No other alternatives other than those already discussed in this document will be considered without a re-evaluation of the project's potential impacts upon farmland. This project will not have a significant impact to farmland.

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; Mdm Historical Consultants, 2016), which are included on the CD that accompanies this Draft EIS. Each alternative was evaluated to consider potential visual effects on historic properties outside of the proposed I-26 right of way. This 600-foot wide corridor is considered the project's area of potential effect (APE).

During the preparation of the *Historic Architectural Resources Survey Reports*, Mdm Historical Consultants conducted a survey of all structures over fifty years of age within the APE. In addition, they also surveyed those less than fifty years of age that appeared to hold exceptional significance according to the National Register of Historic Places (NRHP) Criteria for Evaluation. This survey of the APE was conducted in the spring of 2014 and spring of 2016, and those properties considered worthy of further analysis were intensely surveyed and evaluated in the fall of 2014.

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)

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. Two properties, Rugby Grange and the Biltmore Estate, are listed on the NRHP; the Biltmore Estate is also a National Historic Landmark (NHL). Two properties, the Sholtz-Cantrell Estate and the Blue Ridge Parkway (including the bridge over I-26) were previously determined eligible for the NRHP.

Additional properties considered eligible for the NRHP include:

- McMurray House (Windy Hill) – 823 McMurray Road, Flat Rock, Henderson County
- Camp Orr (Camp Pinewood) – 300 Orrs Camp Road, Hendersonville, Henderson County
- Hyder Dairy Farm – 679 Hyder Farm Road, Hendersonville, Henderson County
- Mountain Sanitarium – 1141 Howard Gap Road, Hendersonville, Henderson County
- Cureton House – 48 Cureton Place, Hendersonville, Henderson County

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 listed and determined eligible for listing on the NRHP resources are shown on the **Figure 6 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. Site 31BN122 is a prehistoric archaeological site first recorded in 1942 and later revisited by the University of North Carolina at Chapel Hill in 1964. As stated in the October 2014 memorandum from NCDOT, Site 31BN122 was purportedly located on the south side of Ferry Road near Dellwood Lake. However, the site appears to have been destroyed by the initial construction of I-26 or incorrectly plotted on available archival mapping. Based on comparison of the houses shown on the 1964 site sketch map (prepared by archaeologists) with the current houses, it is likely that site 31BN122 was located within the path of existing I-26 and was destroyed by the I-26 embankment. If the site was incorrectly plotted on the sketch map, then it does not fall within the project limits for STIP Project I-4400/I-4700 and is likely situated further east and therefore not located within the APE.

In addition, the archaeological resource assessment found that site 31HN198 falls approximately 100 feet outside of the APE. It is situated south of Crest Road and west of I-26 in a sparsely wooded lot on a sloping ridge. The site and the APE are separated by a drainage; therefore, 31HN198 will not be impacted by the project as currently proposed.

*For more information on historic resources in the study area, refer to the **Historic Architectural Resources Survey Report Intensive Level Survey** (MdM Historical Consultants, November 12, 2014).*

A pedestrian survey of the Blue Ridge Parkway bridge replacement APE was completed by the NPS. No known archaeological sites would be impacted. The area within the APE was previously disturbed during the initial construction and grading of the Parkway. The areas outside obvious cuts and fills are on slopes greater than 20% and would not be likely locations for prehistoric occupations.

3.2.3 Cultural Landscapes

The Blue Ridge Parkway (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 structure. The BRP is a nationally significant cultural landscape eligible for listing in 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, 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.

STIP Project I-4400/I-4700 will require the realignment of a short segment of the motor road for the replacement of the bridge over I-26 to accommodate the addition of travel lanes underneath. The portion of the motor road that would be impacted varies by alternative, but ranges from approximately 2,300 feet (Option 1) to approximately 3,255 feet (Option 5). Realignment of the Parkway will be carefully considered to minimize impacts to the cultural landscape and the unique visual character of the designed landscape.

The proposed replacement bridge will retain the landscape design characteristics of material, use, aesthetics, workmanship, and alignment setting of the bridges built after the World War II Era. The types of bridges that would meet those criteria are steel girder or post tensioned precast concrete box girder construction.

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; MdM Historical Consultants, 2016), nine resources within the project study area were found to be either listed on the NRHP or were considered eligible for listing. The alternatives may require right of way from some of the resources. At meetings on May 19, 2015 and April 26, 2016, representatives of the NCDOT, FHWA, and HPO reached concurrence on the effects of the proposed alternatives on these resources. The effects findings are listed in **Table 5**. The concurrence memos are located in **Appendix G**.

Table 5. Historic Architecture Assessment of Effects

| Property and Status | Widening Alternative | Effect Finding | Reasons |
|---|---|--|--|
| McMurray House (Windy Hill) (HN1904) DE-Criterion C | 6-Lane & Hybrid 6/8 Lane | No Adverse Effect | Access road along west side of property will be temporarily closed during construction, but does not impact access to the house. |
| | 8-Lane | No Adverse Effect with commitments **4(f) de minimis | Access road along west side will be permanently closed and requires removal of a row of recently planted trees. Noise at the structure predicted to increase by 5 decibels. Access to the house will not be impacted. NCDOT will contact the property owner to discuss replanting trees and noise abatement measures such as storm windows or insulation. |
| Camp Orr (Camp Pinewood) (HN1905) DE-Criteria A&C | 6-Lane, 8-Lane, & Hybrid 6/8 Lane | 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 | 6-Lane, 8-Lane, & Hybrid 6/8 Lane | No Effect | No construction work within property boundary. Viewshed from house will not be impacted. |
| Hyder Dairy Farm (HN1906) DE-Criteria A&C | 6-Lane, 8-Lane, & Hybrid 6/8 Lane | 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 | 6-Lane, 8-Lane, & Hybrid 6/8 Lane | No Effect | No construction work within property boundary. |

Table 5. Historic Architecture Assessment of Effects

| Property and Status | Widening Alternative | Effect Finding | Reasons |
|--|---|---|--|
| Rugby Grange (HN0042) NR-Criteria A&C | 6-Lane, 8-Lane, & Hybrid 6/8 Lane | 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 | 6-Lane, 8-Lane, & Hybrid 6/8 Lane | Adverse Effect | Tree clearing adjacent to the property will constitute an adverse visual effect to the property's setting. Further, an expected 3 decibel noise increase, resulting in a 68 dBA noise level in all build alternatives, will constitute an adverse audible effect. |
| Blue Ridge Parkway (NC0001) DE-Criteria A&C | 6-Lane, 8-Lane, & Hybrid 6/8 Lane | Adverse Effect **4(f) | Bridge carrying Blue Ridge Parkway over I-26 will be demolished and replaced with a new structure developed in collaboration with Eastern Federal Lands, Blue Ridge Parkway, NCDOT, NC-HPO, and FHWA. |
| Biltmore Estate (BN0004) NR-Criteria A,B,C,&D National Historic Landmark | 6-Lane, 8-Lane, & Hybrid 6/8 Lane | 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 concurrence as a basis for a "de minimis" finding for the following properties, pursuant to Section 4(f):

1. McMurray House (Windy Hill) (HN1904)
2. Camp Orr (Camp Pinewood) (HN1905)
3. Hyder Dairy Farm (HN1906)
4. Biltmore Estate (BN0004)

3.2.4.2 *Archaeological Resources*

In its September 2014 memorandum, NCDOT recommended no further archaeological work was necessary for the majority of the undertaking. 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.

As previously noted, impacts to the Biltmore Estate property will consist of cut and fill along steep slopes where necessary, but will be restricted to areas of previous ground disturbance associated with earlier I-26 construction. No impacts to Rugby Grange or Sholtz-Cantrell Estate are anticipated.

A reconnaissance of archaeological sites 31BN122 and 31HN198 was undertaken by NCDOT in October 2014 to determine their location in relation with the STIP Project I-4400/I-4700 APE. As previously noted Site 31BN122 appears to have been destroyed by the initial construction of I-26 or was incorrectly plotted on available archival mapping. If the site was incorrectly plotted on the sketch map, then it does not fall within the project limits and is likely situated further east and therefore would not be impacted.

Furthermore, the reconnaissance found that site 31HN198 falls approximately 100 feet outside of the APE. The site and the APE are separated by a drainage; therefore 31HN198 will not be impacted by the project as currently proposed. The HPO provided their concurrence on these findings in a letter dated November 18, 2014 and concluded that no further work is needed for these sites in association with this project.

In a memorandum from the NPS-Blue Ridge Parkway archaeologist, dated July 22, 2015, it is noted that a pedestrian survey of the Blue Ridge Parkway bridge replacement APE was completed by the NPS. Review of known archaeological sites from the North Carolina Office of State Archaeology (OSA) and the NPS Archaeological Site Management Information System (ASMIS) resulted in the determination that no known sites would be impacted by the proposed bridge replacement and realignment of the parkway. The area included within the proposed APE was previously disturbed during initial construction and grading of the parkway. It is the determination of the Blue Ridge Parkway archaeologist that no archaeological sites would be affected by the proposed project.

3.2.4.3 *Cultural Landscape*

Realignment of the Blue Ridge Parkway 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. The length of the realignment of the motor road for the bridge replacement options ranges from approximately 2,300 feet (Option 1) to approximately 3,255 feet (Option 5). All of the realignment options would require cuts due to the topography north and south of the existing bridge. The deepest cut area for each option is approximately 25.25 feet high (Option 1), approximately 39.25 feet (Option 4), and approximately

45.75 feet (Option 5). The area cleared would be more extensive for deeper cuts, resulting in larger areas that would be graded and re-vegetated. Though the areas would be replanted, they would differ from the surrounding landscape of mature forest vegetation.

The design of the proposed replacement bridge over I-26 will retain the landscape design characteristics of material, use, aesthetics, workmanship, and alignment setting of the bridges along the BRP built after the World War II Era. The types of bridges that would meet those criteria are steel girder or post tensioned concrete box girder construction.

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. Potential Section 4(f) resources within the study area include park lands: the Blue Ridge Parkway (also a historic resource) and the Mountains-to-Sea Trail; and seven historic resources: Rugby Grange, Biltmore Estate, Sholtz-Cantrell Estate, McMurray House (Windy Hill), Camp Orr (Camp Pinewood), Mountain Sanitarium, and Cureton House.

Two properties in the study area, Rugby Grange and the Biltmore Estate, are listed in the NRHP; the Biltmore Estate is also a NHL. The Rugby Grange property is located adjacent to the I-26 corridor opposite of Broadmoor Golf Links. A portion of the Biltmore Estate property runs adjacent to the east side of I-26 for approximately three miles in the northeastern part of the study area from the BRP to NC 191 (Brevard Road). The west boundary for Biltmore Estate extends to the right of way of I-26.

One property in the study area, the Sholtz-Cantrell Estate, was determined eligible for the NRHP in 1995, and is located west of I-26 just north of Clear Creek Road in Hendersonville.

The McMurray House (Windy Hill), Camp Orr (Camp Pinewood), Mountain Sanitarium, and Cureton House are considered eligible for listing on the NRHP. McMurray House (Windy Hill) is located east of I-26 on McMurray Road in the vicinity of Flat Rock. Camp Orr (Camp Pinewood) is mostly located to the west of I-26; however there is a small section on the east side of the interstate. Camp Orr (Camp Pinewood) is south of US 64 in Hendersonville. The Mountain Sanitarium is east of I-26, south of Hendersonville Road on Howard Gap Road. The Cureton House is west of I-26, north of US 25 in Hendersonville.

The Blue Ridge Parkway traverses the northern portion of the study area in Buncombe County and crosses I-26 north of NC 146 (Long Shoals Road). The Parkway bridge over I-26 is a contributing resource to the Blue Ridge Parkway, which has also been determined eligible for the NRHP.

The Mountains-to-Sea Trail (MST) is officially a part of the NC parks system and overall is managed by the North Carolina Division of Parks and Recreation (NCDPR). The Mountains-to-Sea Trail follows the Blue Ridge Parkway for a

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.

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).

portion of its length, including the bridge over I-26. NCDPR works in partnership with the owners of each trail section, such as the Blue Ridge Parkway, who manages and maintains the Trail.

3.3.2 Impacts to Section 4(f) Resources

All Build Alternatives would result in the Section 4(f) use of the Biltmore Estate, Hyder Dairy Farm, Camp Orr, Blue Ridge Parkway, and MST. The 8-Lane Widening Alternative would result in the Section 4(f) use of the McMurray House. Through consultation with the officials with jurisdiction it was determined that the minor use of the Biltmore Estate, Hyder Dairy Farm, Camp Orr, McMurray House and MST would result in a *de minimis* impact. Refer to the *Draft Section 4(f) Evaluation* (HNTB, 2016) in **Chapter 6**.

All Build Alternatives would result in the Section 4(f) use of the Blue Ridge Parkway. The *Draft Section 4(f) Evaluation (Chapter 6)* includes the determination of no prudent and feasible alternatives, least overall harm analysis (also discussed in **Section 2.4** and **Section 3.14**) 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 Blue Ridge Parkway.

The Rugby Grange, Mountain Sanitarium and Cureton House are also Section 4(f) resources; however, they will not be used by the proposed project. Based on the functional designs for the project, all three Build Alternatives will not require additional right of way along the Rugby Grange, Mountain Sanitarium and Cureton House and therefore, will not impact the properties.

3.4 Visual Resources/Characteristics

3.4.1 Landscape Character

As previously noted in **Section 3.1.1**, land use throughout the Direct Community Impact Area (DCIA) 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 tracts or within subdivisions. Most of the homes in proximity to the I-26 corridor are set back from the interstate and separated by tree and vegetation buffers. Commercial development is largely concentrated near the I-26 interchanges with US 64, NC 280 (Airport Road), NC 146 (Long Shoals Road), and NC 191 (Brevard Road). Many commercial properties are also set back from the interstate along adjacent roads, with the exception of some hotels, gas stations, and restaurants, as well as Camping World of Asheville, which rely largely on interstate visibility for business.

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 DCIA. For this reason, the landscape within the DCIA is not characterized by 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 with I-26. The Mountains-to-Sea Trail uses the Parkway bridge as a crossing point over I-26. Outstanding scenery and recreational opportunities make the Blue Ridge Parkway one of the most traveled sections of the National Park System.

3.4.3 Visual Impacts

There are unlikely to be extensive direct visual impacts resulting 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 6-Lane Widening Alternative may result in 95 areas being needed for additional right of way. The 8-Lane Widening Alternative may result in 183 areas being needed for right of way. Finally, the Hybrid 6/8-Lane Widening Alternative may result in 122 areas being taken for right of way. The approximate location and amount of acreage required is shown in Appendix J.

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 most adjacent land uses are either oriented away from the interstate or are screened by trees and vegetation with no direct view of the highway.

As previously noted, the BRP bridge over I-26 will be replaced to accommodate the proposed widening of STIP Project I-4400/I-4700. NCDOT, FHWA, and the NPS are currently coordinating the proposed bridge replacement alignment in order to maintain the Parkway's scenery along this section. This section of Parkway has an average daily visitation during the BRP visitor season (May 1 – November 1) of approximately 5,000 vehicles.

3.5 Natural Environment

3.5.1 Topography

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.

3.5.2 Geology and Soils

As noted in the *Natural Resources Technical Report (NRTR)* (Carolina Ecosystems, 2014), included on the CD that accompanies this Draft EIS, the Buncombe and Henderson County soils surveys identify 35 soil types within the study area. Section 3.1 of the *NRTR* identifies the individual soil types.

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

Freshwater Mussel Survey Report (Catena Group, 2013)

Gray Bat Habitat Survey Report (Alderman Environmental Services, 2013)

Natural Resources Technical Report (Carolina Ecosystems, 2014),

Natural Resources Technical Report Addendum – BRP Addendum (NCDOT, 2015),

Natural Resources Technical Report Addendum – US 25/I-26 Interchange Addendum (Carolina Ecosystems, 2015),

Natural Resources Technical Report Addendum – US 25/I-26 Interchange Addendum (Carolina Ecosystems, 2016),

once a preferred alternative has been selected and right of way plans are complete.

3.5.3 Impacts to Topography, Geology and Soils

As noted in the *Geotechnical Pre-Scoping Report*, included on the CD that accompanies this Draft EIS, the majority of 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. Cut slopes at 2:1 (horizontal: vertical [H:V]) or flatter are recommended; however, steeper slopes (1.5:1) are 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 (US Geological Survey [USGS] Hydrologic Unit Codes [HUC] 03050105 and 06010105). One hundred seventy-five (175) jurisdictional streams were identified in the study area. The location of each water resource is shown in the figures provided in the *NRTR*, *NRTR Addendum – US 25/I-26 Interchange*, and *NRTR Addendum 3* (Carolina Ecosystems, 2014, 2015, and 2016, respectively) and the *NRTR Addendum – BRP Addendum* (NCDOT, 2015) [the three individual NRTR Addenda will be referred to collectively as *NRTR Addenda* throughout the rest of this Draft EIS, unless a specific reference is needed], and the physical characteristics of these streams are provided in Appendix F of the *NRTR* and within the text of the *NRTR Addenda*.

3.6.2 Water Quality

There are no designated anadromous fish waters or Primary Nursery Areas present in the study area. There are no designated 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 2014 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. The French Broad River (Assessment Unit [AU] 6-(54.75)b) from Mud Creek to NC 146 is listed for fecal coliform. Mud Creek (AU 6-55c2) from Clear Creek to Byers Creek is listed for Fish Community - Fair and Benthos - Fair. Devils Fork (AU 6-55-8-2b) from the first unnamed tributary west of Howard Gap Road (SR 1006) to Johnson Drainage Ditch is listed for Benthos - Poor.

3.7 Biotic Resources

3.7.1 Terrestrial Communities

Eight terrestrial communities were identified in the study area including: maintained/disturbed, montane oak-hickory forest (acidic subtype), montane

“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).

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). The location and extent of these terrestrial communities in the study area are detailed in the *NRTR* and the *NRTR Addenda*. Scientific names of all species identified, as well as a brief description of each community type are included in the *NRTR* and *NRTR Addenda*. **Table 6** presents the total coverage of each type within the study area.

Table 6. Coverage of Terrestrial Communities in the Study Area

| Community | Coverage (acres) |
|--|------------------|
| Maintained/Disturbed | 1,611.5 |
| Montane Oak-Hickory Forest (acidic subtype) | 702.1 |
| Montane Oak-Hickory Forest (white pine subtype) | 330.7 |
| Montane Alluvial Forest (small river subtype) | 144.4 |
| Acidic Cove Forest | 132.0 |
| Montane Floodplain Slough Forest | 14.1 |
| Piedmont/Mountain Semi-permanent Impoundment (shrub subtype) | 11.3 |
| Swamp Forest-Bog Complex (typic subtype) | 1.2 |
| Total | 2,947.3 |

3.7.2 Terrestrial Wildlife

Terrestrial communities in the study area are comprised of both natural and disturbed habitats that may support a diversity of wildlife species (those species actually observed are indicated with *). Mammal species that commonly exploit forested habitats and stream corridors found within the study area include species such as beaver*, black bear*, eastern chipmunk*, eastern cottontail*, gray fox, gray squirrel*, groundhog*, raccoon*, Virginia opossum*, white-footed mouse, and white-tailed deer*. Birds that commonly use forest and forest edge habitats include the American crow*, blue jay*, brown thrasher*, Carolina chickadee*, red-tailed hawk*, and tufted titmouse. Birds that may use the open habitat or water bodies within the study area include American robin*, eastern meadowlark*, killdeer*, northern cardinal*, red-winged black bird*, turkey vulture*, and wild turkey*. Reptile and amphibian species that may use terrestrial communities located in the study area include the American toad, common snapping turtle*, copperhead snake*, eastern box turtle*, eastern fence lizard, five-lined skink*, marbled salamander, rat snake, spotted salamander, timber rattlesnake, and wood frog.

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. Perennial streams in the study area could support blueheaded chub, fantail darter, northern hogsucker, redbreast sunfish, redline darter, river chub, Tennessee shiner, and warpaint shiner. Intermittent streams in the study area are relatively small in size and would support aquatic communities of spring peeper and various benthic macroinvertebrates. Pond habitats could support bluegill, channel catfish, and largemouth bass.

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. The species identified were Chinese privet (Threat), Japanese honeysuckle (Moderate Threat), Japanese stilt grass (Threat), multiflora rose (Threat), and Oriental bittersweet (Threat). 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 7** for each Build Alternative. Build Alternative impacts are measured based on an area of functional design slope stake limits plus 40 feet.

Table 7. Terrestrial Community Impacts by Build Alternative

| Community | 6-Lane Widening Alternative | 8-Lane Widening Alternative | Hybrid 6/8-Lane Widening Alternative |
|---|-----------------------------|-----------------------------|--------------------------------------|
| | Estimated Impacts* (acres) | | |
| Maintained/Disturbed | 439.4 (54.4%) | 531.0 (55.2%) | 472.4 (53.4%) |
| Montane Oak-Hickory Forest (acidic subtype) | 199.1 (24.6%) | 224.3 (23.3%) | 219.6 (24.8%) |
| Montane Oak-Hickory Forest (white pine subtype) | 98.2 (12.2%) | 116.8 (12.1%) | 106.6 (12.1%) |
| Montane Alluvial Forest (small river subtype) | 25.3 (3.1%) | 36.8 (3.8%) | 35.9 (4.1%) |
| Acidic Cove Forest | 42.2 (5.2%) | 48.7 (5.1%) | 44.7 (5.1%) |
| Montane Floodplain Slough Forest | 3.1 (<1%) | 3.7 (<1%) | 3.7 (<1%) |
| Piedmont/Mountain Semipermanent Impoundment (shrub subtype) | 0.6 (<1%) | 0.9 (<1%) | 0.9 (<1%) |
| Swamp Forest-Bog Complex (typic subtype) | 0.3 (<1%) | 0.4 (<1%) | 0.4 (<1%) |
| Total | 808.3 (100%) | 962.6 (100%) | 884.1 (100%) |

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

The NPS provided the area of vegetation that would be impacted by each bridge option in the *BLRI I-26 Technical Report* (NPS & FHWA-EFL, 2015). These impacts are shown in **Table 8**.

Table 8. Area of Vegetation Disturbance*

| Option | Clearing (acres) |
|--------|------------------|
| 1 | 2.8 |
| 4 | 4.0 |
| 5 | 5.0 |
| 7 | 0.7 |

*From Table 2, BLRI I-26 Technical Report

3.8 Streams, Wetlands, and Other Surface Waters

3.8.1 Streams

One hundred seventy-five (175) 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 cold water streams for the purposes of stream mitigation. Cane Creek and its tributaries were designated as cool water streams for the purposes of mitigation.

3.8.2 Summary of Stream Impacts

Table 9 summarizes the approximate impacts to streams by each Build Alternative. Impacts are measured based on functional design slope stake limits plus 40 feet. BRP Options 1, 4, 5, 6, and 7 have no stream impacts.

Table 9. Stream Impacts by Build Alternative

| Alternative | Impacts* (linear feet) |
|--------------------------|------------------------|
| 6-Lane Widening | 21,597 |
| 8-Lane Widening | 27,241 |
| Hybrid 6/8-Lane Widening | 24,650 |

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

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 (HUC 03050105 and 06010105). Descriptions of the terrestrial communities at each wetland are presented in the *NRTR*.

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.

3.8.4 Summary of Wetland Impacts

Table 10 lists the approximate wetland impact of each of the Build Alternative. These impacts are based on functional design slope stake limits plus 40 feet. BRP Options 1, 4, 5, 6, and 7 have no wetland impacts.

Table 10. Wetland Impacts by Build Alternative

| Alternative | Impacts* (acres) |
|--------------------------|------------------|
| 6-Lane Widening | 4.8 |
| 8-Lane Widening | 8.0 |
| Hybrid 6/8-Lane Widening | 7.7 |

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

3.8.5 Ponds

Fourteen ponds were identified in the study area totaling approximately 1.65 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. There is less than 0.1 acre of impacts to ponds for all Build Alternatives.

3.8.6 Jurisdictional Issues

3.8.6.1 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, NCDWR has the responsibility for implementation, permitting, and enforcement of the provisions of the Act.

It is anticipated that the project will 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.

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

A jurisdictional wetland regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act must be a water-saturated area that has plants growing in wet soils. Jurisdictional wetlands are classified as riparian or non-riparian wetlands. Riparian wetlands are adjacent to streams and rivers, and non-riparian wetlands have no direct association to streams and rivers.

3.8.6.2 *Anticipated Permit Requirements*

3.8.6.2.1 Coastal Area Management Act

There are no Areas of Environmental Concern in the study area that fall under the jurisdiction of the Coastal Area Management Act.

3.8.6.2.2 Construction Moratoria

A letter requesting information regarding construction moratoria was submitted to NCWRC on June 16, 2013.

Because the project includes construction on NPS land that might be within habitat that is suitable for the 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.

3.8.6.2.3 NC River Basin Buffer Rules

No state riparian buffer rules apply to the study area.

3.8.6.2.4 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. Therefore, a Section 10 permit or exemption will be required for the construction of any structure, excavation or dredging of material, or any obstruction or alteration in or over the river.

3.8.7 Wetland and Stream Mitigation

3.8.7.1 *Avoidance and Minimization of Impacts*

No water supply watersheds are present within the study area. The French Broad River (6-(54.75)b), Mud Creek (6-55c2), and Devils Fork (6-55-8-2b) are listed as 303(d) impaired waters within the study area; however, none of these streams are listed for turbidity and/or sedimentation impairments and therefore do not require special consideration. Beck Creek, and its associated tributaries, have a classification of “C;Tr” requiring Design Standards in Sensitive Watersheds be implemented in the stream and its tributaries.

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.

3.8.7.2 *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, formerly known as the Ecosystem Enhancement Program or EEP).

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.

3.8.8 Endangered Species Act Protected Species

As of July 24, 2015, the USFWS lists 16 federally protected species in Buncombe and Henderson counties. These species are listed in **Table 11**, 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 11. Federally Protected Species Listed for Buncombe & Henderson Counties

| Scientific Name | Common Name | Federal Status | Habitat Present | County | Biological Conclusion |
|---|---|----------------|-----------------|---|---|
| <i>Alasmidonta raveneliana</i> | Appalachian elktoe ¹ | E | Yes | Buncombe ¹ and Henderson | No Effect |
| <i>Epioblasma florentina walkeri</i> (= <i>E. walker</i>) | Tan riffleshell ¹ | E | Yes | Buncombe | No Effect |
| <i>Erimonax monachus</i> | Spotfin chub (=turquoise shiner) ¹ | T | No | Buncombe ¹ | No Effect |
| <i>Geum radiatum</i> | Spreading avens | E | No | Buncombe | No Effect |
| <i>Glaucomys sabrinus coloratus</i> | Carolina northern flying squirrel | E | No | Buncombe and Henderson | No Effect |
| <i>Glyptemys muhlenbergii</i> | Bog Turtle | T(S/A) | Yes | Buncombe and Henderson | Not Required ² |
| <i>Gymnoderma lineare</i> | Rock gnome lichen | E | No | Buncombe | No Effect |
| <i>Helonias bullata</i> | Swamp pink | T | Yes | Henderson | No Effect |
| <i>Isotria medeoloides</i> | Small whorled pogonia | T | Yes | Henderson | No Effect |
| <i>Microhexura montivaga</i> | Spruce fir moss spider | E | No | Buncombe | No Effect |
| <i>Myotis grisescens</i> | Gray bat | E | Yes | Buncombe | No Effect |
| <i>Myotis septentrionalis</i> | Northern long-eared bat | T | Yes | Buncombe and Henderson | May Affect Not Likely to Adversely Affect |
| <i>Sagittaria fasciculata</i> | Bunched arrowhead ¹ | E | Yes | Henderson | No Effect |
| <i>Sarracenia rubra ssp. jonesii</i> | Mountain sweet pitcher plant ¹ | E | Yes | Henderson | No Effect |
| <i>Sisyrinchium dichotomum</i> | White irisette | E | Yes | Henderson | No Effect |
| <i>Spiraea virginiana</i> | Virginia spiraea ¹ | T | Yes | Buncombe ¹ | No Effect |

E – Endangered

T – Threatened

T(S/A) – Threatened due to similarity of appearance

¹Historic record (the species was last observed in the county more than 50 years ago)²Species 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

As shown in **Table 11** above, adverse impacts to federally protected species are not anticipated as a result of the project.

The Northern long-eared bat (NLEB) was recently listed by the USFWS as a federally threatened species in May 2015, and is included in the *US 25 NRTR Addendum*. This project was reviewed for effects on the NLEB and the biological conclusion is May Affect Not Likely to Adversely Affect. According to the North Carolina Natural Heritage Program (NCNHP) Biotics Database, most recently updated October 2015, the nearest NLEB hibernacula record is 11.5 miles away and no known NLEB roost trees occur within 150 feet of the project area. NCDOT has determined that the proposed action does not require separate consultation on the grounds that the proposed action is consistent with the final Section 4(d) rule, codified at 50 CFR 17.40(o).

3.8.8.1 *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 to a distance of 660 feet on all sides, where suitable forage habitat was located within a distance of one mile. No nest trees were identified. A review of NCNHP records, updated January 2016, indicates no known bald eagle or golden eagle occurrences within 1.0 mile of the study area.

3.8.8.2 *Endangered Species Act Candidate Species*

As of July 24, 2015, the USFWS lists *Platanthera integrilabia* (White fringeless orchid) as a Candidate species in Henderson County. The White fringeless orchid was last observed in the county over 50 years ago. A review of NCNHP records, updated January 2016, indicates two historical occurrences of White fringeless orchid within 1.0 mile of the study area. There are no Candidate-listed species in Buncombe County.

3.8.8.3 *Essential Fish Habitat*

The National Marine Fisheries Service has identified no essential fish habitat in the study area.

3.9 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). A copy of these reports is on the CD included with this Draft EIS (**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 through implementing the current Traffic Noise Model (TNM) approved by FHWA and following procedures detailed in

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.*

23 CFR 772, the NCDOT Traffic Noise Abatement Policy, and the NCDOT Traffic Noise Analysis and Abatement 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 as a result of project construction activities. Construction noise control measures will be incorporated into the project plans and specifications, as appropriate.

Table 12 is the 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.

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 proposed Widening Alternatives.

**Table 12. Noise Abatement Criteria
Hourly Equivalent A-Weighted Sound Level (decibels (dBA))**

| Activity Category | Activity ¹ Criteria ² Leq(h) | 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. |

**Table 12 (continued). Noise Abatement Criteria
Hourly Equivalent A-Weighted Sound Level (decibels (dBA))**

| Activity Category | Activity Criteria ¹ Leq(h) ² | Evaluation Location | Activity Description |
|-------------------|---|---------------------|---|
| 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. |

¹The Leq(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.

²The 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 Leq(h) being the hourly value of Leq.

³Includes undeveloped lands permitted for this activity category.

3.9.1 Traffic Noise Impacts and Contours

The Traffic Noise Analysis Addendum updated the noise analysis of 29 receptors found in the original Traffic Noise Analysis. An additional 56 receptors were also studied in the Addendum. A comparison table of the receptors from each analysis is provided in Appendix A of the Traffic Noise Analysis and Addendum. The maximum number of receptors for each Build Alternative that is predicted to be impacted by future traffic noise is shown in **Table 13**. 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.

The maximum extent of the 71 and 66 dBA noise level contours measured from the center of the proposed roadway are 150 feet and 800 feet, respectively.

*For more information on traffic noise in the study area, refer to the **Traffic Noise Analysis STIP Project I-4400/I-4700 (HNTB, 2015) and Traffic Noise Analysis Addendum (HNTB, 2016).***

Table 13. Predicted Traffic Noise Impacted Receptors¹

| Traffic Noise Impact Types | | | Widening Alternatives | | |
|--|------------------|-----------------|-----------------------|------------|-----------------|
| | Existing | Future No-Build | 6-Lane | 8-Lane | Hybrid 6/8-Lane |
| Residential (NAC B) | 208 ² | 216 | 274 | 320 | 296 |
| Exterior - Places of Worship, Schools, Parks, etc. (NAC C) | 13 | 13 | 18 | 19 | 19 |
| Total³ | 221 | 229 | 292 | 339 | 315 |

¹Per TNM 2.5 and in accordance with 23 CFR Part 772.

²Total number of impacted receptors from each analysis.

³The total number of predicted impacts is not duplicated if receptors are predicted to be impacted by more than one criterion.

Future No-Build Alternative

The *Traffic Noise Analysis STIP Project I-4400/I-4700* also considered traffic noise impacts for the No-Build Alternative. If the proposed project does not occur, the traffic noise is predicted to result in 229 traffic noise impacted receptors and the future traffic noise levels will increase by approximately 0-3 dBA. Based upon research, humans barely detect noise level changes of 2-3 dBA. A 5-dBA change is more readily noticeable. Therefore, most people working and living near the roadway will not notice this predicted increase.

3.9.2 Potential Traffic Noise Abatement

Measures for reducing or eliminating the traffic noise impacts were considered for all impacted receptors in each build alternative. The primary noise abatement measures evaluated for highway projects include highway alignment changes, traffic system management measures, establishment of buffer zones, noise barriers and noise insulation (NAC D only). For each of these measures, benefits versus costs (reasonableness), engineering feasibility, effectiveness and practicability and other factors were included in the noise abatement considerations.

Substantially changing the highway alignment to minimize noise impacts is not considered to be a viable option for this project due to engineering and/or environmental factors. Traffic system management measures are not considered viable for noise abatement due to the negative impact they would have on the capacity and level of service of the proposed roadway. Costs to acquire buffer zones for impacted receptors will exceed the NCDOT base dollar value of \$37,500 plus an incremental increase of \$525 (as defined in the NCDOT Traffic Noise Abatement Policy) per benefited receptor, causing this abatement measure to be unreasonable.

3.9.2.1 Noise Barriers

Noise barriers include two basic types: earthen berms and noise walls. These structures act to diffract, absorb and reflect highway traffic noise. For this project, earthen berms are not found to be a viable abatement measure because the additional right of way, materials and construction costs are

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.

estimated to exceed the NCDOT maximum allowable base quantity of 7,000 cubic yards, plus an incremental increase of 100 cubic yards per benefited receptor, as defined in the NCDOT Traffic Noise Abatement Policy.

A noise barrier evaluation was conducted for this project utilizing the Traffic Noise Model (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 the purpose of analysis, the project area was divided into six Noise Study Areas (NSAs) based on the interchanges located along the I-26 corridor. The NSAs are defined as follows:

- NSA 1: Begin Project (US 25 interchange) to Upward Road interchange
- NSA 2: Upward Road interchange to US 64 interchange
- NSA 3: US 64 interchange to US 25 (Asheville Highway) interchange
- NSA 4: US 25 (Asheville Highway) interchange to NC 280 interchange
- NSA 5: NC 280 interchange to NC 146 interchange
- NSA 6: NC 146 interchange to End Project (near Pond Road)

NSA 1 – Barriers are not recommended in NSA 1.

NSA 2 – A barrier (NW5) is recommended along the northbound side of I-26 between Tracy Grove Road and Dana Road in the 6-Lane Widening Alternative, 8-Lane Widening Alternative, and Hybrid 6/8-Lane Widening Alternative. Based upon criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is preliminarily justified and is recommended for construction, contingent upon completion of the project design and the public involvement process.

Sound barrier NW32 is recommended along southbound I-26 just south of Dana Road in the 6-Lane Widening Alternative, 8-Lane Widening Alternative, and Hybrid 6/8-Lane Widening Alternative. Based upon criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is preliminarily justified and is recommended for construction, contingent upon completion of the project design and the public involvement process.

NSA 3 – A barrier (NW9) is recommended along I-26 northbound from south of Hart Lane to just north of West Acorn Drive in the 6-Lane Widening Alternative, 8-Lane Widening Alternative, and Hybrid 6/8-Lane Widening Alternative. Based upon criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is preliminarily justified and is recommended for construction, contingent upon completion of the project design and the public involvement process.

A sound barrier (NW12) is recommended along the I-26 northbound off-ramp to US 25 (Asheville Highway) in the 6-Lane Widening Alternative, 8-Lane Widening Alternative, and Hybrid 6/8-Lane Widening Alternative. Based upon

criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is preliminarily justified and is recommended for construction, contingent upon completion of the project design and the public involvement process.

A barrier (NW26) is recommended along the I-26 southbound off-ramp to US 25 (Asheville Highway) in the 6-Lane Widening Alternative, 8-Lane Widening Alternative, and Hybrid 6/8-Lane Widening. Based upon criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is preliminarily justified and is recommended for construction, contingent upon completion of the project design and the public involvement process.

NSA 4 – A barrier (NW14) is recommended along the northbound side of I-26 just north of Butler Bridge Road in the 6-Lane Widening Alternative, 8-Lane Widening Alternative, and Hybrid 6/8-Lane Widening Alternative. Based upon criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is preliminarily justified and is recommended for construction, contingent upon completion of the project design and the public involvement process.

A barrier (NW15) is recommended along I-26 northbound south of Fanning Bridge Road in the 6-Lane Widening Alternative, 8-Lane Widening Alternative, and Hybrid 6/8-Lane Widening Alternative. Based upon criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is preliminarily justified and is recommended for construction, contingent upon completion of the project design and the public involvement process.

NSA 5 – Barrier NW16 is recommended along I-26 northbound from south of Glenn Bridge Road to south of Mahogany Road in the 6-Lane Widening Alternative, 8-Lane Widening Alternative, and Hybrid 6/8-Lane Widening Alternative. Based upon criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is preliminarily justified and is recommended for construction, contingent upon completion of the project design and the public involvement process.

Barrier NW24 is recommended along southbound I-26 between Glenn Bridge Road and NC 280 in the 6-Lane Widening Alternative, 8-Lane Widening Alternative, and Hybrid 6/8-Lane Widening Alternative. Based upon criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is preliminarily justified and is recommended for construction, contingent upon completion of the project design and the public involvement process.

NSA 6 –A sound barrier (NW19) is recommended along the future I-26 northbound on-ramp from NC 191 in the 6-Lane Widening Alternative, 8-Lane Widening Alternative, and Hybrid 6/8-Lane Widening Alternative. Based upon criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is preliminarily justified and is recommended for construction, contingent upon completion of the project design and the public involvement process. This NSA was included in the *Traffic Noise Analysis* for this project. However, sound barrier NW19 was designed as part of STIP Project I-5504 (see **Section 1.10**), included in its Design Noise Report and will be constructed as part of that project.

Table 14 summarizes the results of the noise barrier evaluation for potential barriers that preliminarily meet feasibility and reasonableness criteria. Based upon feasibility and reasonableness criteria defined in the NCDOT Traffic Noise Abatement Policy, these barriers are preliminarily justified and likely to be constructed, contingent upon completion of the project design and the public involvement process. Refer to the *Traffic Noise Analysis STIP Project I-4400/I-4700* (HNTB, 2015) for detailed analysis of all preliminary sound barriers.

Table 14. Preliminary Noise Barrier Evaluation Results

| Alternative | Noise Barrier Location | Barrier Name | Length/ Average Height (ft) | Approx. Area (sq ft) | Number of Benefited Receptors | Square Feet per Benefited Receptor/ Allowable Square Feet per Benefited Receptor | Preliminarily Recommended for Construction ¹ |
|--------------------|------------------------|--------------|--------------------------------------|----------------------------|-------------------------------------|--|---|
| 6-Lane | NSA 2 | NW5 | 3,360 /21 | 71,400 | 50 | 1,428 /2,605 | Yes |
| 8-Lane | NSA 2 | NW5 | 3,360 /23 | 75,900 | 51 | 1,488 /2,640 | Yes |
| Hybrid | NSA 2 | NW5 | 3,360 /21 | 70,685 | 50 | 1,414 /2,605 | Yes |
| 6-Lane | NSA 2 | NW32 | 3,300 /23 | 75,000 | 38 | 1,974 /2,570 | Yes |
| 8-Lane | NSA 2 | NW32 | 3,300 /25 | 81,240 | 37 | 2,196 /2,605 | Yes |
| Hybrid 6/8-Lane | NSA 2 | NW32 | 3,300 /23 | 74,645 | 38 | 1,964 /2,570 | Yes |
| 6-Lane | NSA 3 | NW9 | 10,260 /22 | 226,795 | 116 | 1,955 /2,570 | Yes |
| 8-Lane | NSA 3 | NW9 | 10,248 /23 | 231,945 | 116 | 2,000 /2,605 | Yes |
| Hybrid 6/8-Lane | NSA 3 | NW9 | 10,260 /22 | 226,795 | 116 | 1,955 /2,570 | Yes |
| 6-Lane | NSA 3 | NW12 | 1,980 /24 | 46,620 | 28 | 1,665 /2,640 | Yes |
| 8-Lane | NSA 3 | NW12 | 1,920 /23 | 44,400 | 27 | 1,644 /2,640 | Yes |
| Hybrid 6/8-Lane | NSA 3 | NW12 | 1,980 /23 | 45,900 | 28 | 1,639 /2,640 | Yes |
| 6-Lane | NSA 3 | NW 26 | 1,320 /23 | 29,760 | 13 | 2,289 /2,605 | Yes |
| 8-Lane | NSA 3 | NW 26 | 1,320 /24 | 31,560 | 13 | 2,428 /2,605 | Yes |
| Hybrid 6/8-Lane | NSA 3 | NW 26 | 1,320 /23 | 30,480 | 15 | 2,032 /2,605 | Yes |

Table 14. Preliminary Noise Barrier Evaluation Results

| Alternative | Noise Barrier Location | Barrier Name | Length/Average Height (ft) | Approx. Area (sq ft) | Number of Benefited Receptors | Square Feet per Benefited Receptor/ Allowable Square Feet per Benefited Receptor | Preliminarily Recommended for Construction ¹ |
|-----------------|------------------------|--------------|----------------------------|----------------------|-------------------------------|--|---|
| 6-Lane | NSA 4 | NW14 | 2,280 /23 | 52,680 | 26 | 2,026 /2,535 | Yes |
| 8-Lane | NSA 4 | NW14 | 2,460 /21 | 52,140 | 24 | 2,173 /2,605 | Yes |
| Hybrid 6/8-Lane | NSA 4 | NW14 | 2,460 /21 | 52,140 | 24 | 2,173 /2,605 | Yes |
| 6-Lane | NSA 4 | NW15 | 1,860 /19 | 35,160 | 20 | 1,758 /2,570 | Yes |
| 8-Lane | NSA 4 | NW15 | 1,800 /20 | 35,460 | 20 | 1,773 /2,605 | Yes |
| Hybrid 6/8-Lane | NSA 4 | NW15 | 1,800 /20 | 35,280 | 21 | 1,680 /2,605 | Yes |
| 6-Lane | NSA 5 | NW16 | 1,620 /23 | 37,800 | 36 | 1,050 /2,640 | Yes |
| 8-Lane | NSA 5 | NW16 | 1,620 /23 | 37,620 | 28 | 1,344 /2,675 | Yes |
| Hybrid 6/8-Lane | NSA 5 | NW16 | 1,620 /23 | 37,620 | 28 | 1,344 /2,675 | Yes |
| 6-Lane | NSA 5 | NW24 | 1,860 /15 | 28,680 | 20 | 1,434 /2,570 | Yes |
| 8-Lane | NSA 5 | NW24 | 1,740 /17 | 28,740 | 20 | 1,437 /2,605 | Yes |
| Hybrid 6/8-Lane | NSA 5 | NW24 | 1,740 /17 | 28,740 | 20 | 1,437 /2,605 | Yes |
| 6-Lane | NSA 6 | NW19 | 2,040 /12 | 25,440 | 10 | 2,544 /2,640 | Yes |
| 8-Lane | NSA 6 | NW19 | 1,980 /13 | 25,380 | 10 | 2,538 /2,640 | Yes |

Table 14. Preliminary Noise Barrier Evaluation Results

| Alternative | Noise Barrier Location | Barrier Name | Length/Average Height (ft) | Approx. Area (sq ft) | Number of Benefited Receptors | Square Feet per Benefited Receptor/ Allowable Square Feet per Benefited Receptor | Preliminarily Recommended for Construction ¹ |
|-----------------|------------------------|--------------|----------------------------|----------------------|-------------------------------|--|---|
| Hybrid 6/8-Lane | NSA 6 | NW19 | 1,980 /13 | 25,200 | 10 | 2,520 /2,640 | Yes |

¹The recommendation for barrier construction is preliminary and subject to change, pending completion of final design and the public involvement process.

3.9.2.2 Summary

A preliminary noise evaluation was performed that identified ten noise barriers in each proposed Build Alternative that preliminarily meet feasibility and reasonableness criteria found in the NCDOT Traffic Noise Abatement Policy. Once a preferred alternative is identified, an updated noise study would be performed in accordance with the noise policy in effect at that time. This will be completed before the Final EIS/ROD is signed. 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 Abatement Policy, the 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 the 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.

3.10 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.

Conformance with National Ambient Air Quality Standards – The project is located in Buncombe and Henderson counties, which have been determined to comply with the NAAQS. The proposed project is located 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.

Qualitative MSAT Analysis – For each Build Alternative, the estimated vehicle miles traveled (VMT) is 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, thereby leading to increased VMT and higher MSAT emissions along the I-26 corridor. However, this increase in emissions could be offset due to increases in speeds and reductions in congestion, which are associated with lower MSAT emissions. Also, MSAT will be lower in other locations when traffic shifts away from them. On a national basis, USEPA’s vehicle and fuel regulations are projected to reduce annual MSAT emissions by more than 80 percent between 2010 and 2050. Local conditions may differ in terms of fleet mix and turnover, VMT growth rates, and local control measures; however, it is still expected that MSAT emissions within the study area are likely to be lower in the future.

Because the estimated VMT for each of the Build Alternatives are nearly the same, it is expected that there would be no appreciable difference in overall MSAT emissions among the Build Alternatives.

In sum, for each Build Alternative in the 2040 design year, it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the No-Build Alternative, due to EPA’s MSAT reduction programs.

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.

What FHWA knows about mobile source air toxics is still evolving. As the science progresses FHWA will continue to revise and update their guidance. FHWA is working with stakeholders, EPA and others to better understand the strengths and weaknesses of developing analysis tools and the applicability on the project level decision documentation process.

The 2040 Design Year traffic volumes are not projected to meet or exceed the 140,000 to 150,000 AADT criterion for performing a quantitative analysis.

3.11 Utilities

The relocation of utilities will be included in final design plans. NCDOT will coordinate construction activities with the appropriate officials to minimize damage or disruption of existing service.

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.*

*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.*

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 will be required for all three Build Alternatives. **Table 15** identifies the total estimated cost for utility relocation and construction for each Build Alternative. The detailed Utility Estimate Worksheet is located in **Appendix D**.

Table 15. Estimated Utility Cost

| Build Alternative | Estimated Utility Cost* |
|--------------------------------------|--------------------------------|
| 6-Lane Widening Alternative | \$5,008,760 |
| 8-Lane Widening Alternative | \$6,281,800 |
| Hybrid 6/8-Lane Widening Alternative | \$5,229,597 |

*Cost includes relocation and construction of utilities.

As noted in **Section 3.1.1**, 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.

As shown on **Figure 10**, 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, three monitoring wells (CB-4, CB-4B, and CB-08/08D/08BR) may be impacted by the 6-Lane Widening Alternative and five compliance wells (CB-4, CB-4B, GW-3, CB-08/08D/08BR, and MW-11) may be impacted by the 8-Lane Widening Alternative and Hybrid 6/8-Lane Widening Alternative. These impact calculations are based on the proposed Build Alternative slope stake limits plus 40 feet.

According to a coordination meeting held in February 2015, Duke Energy’s tentative schedule for coal ash removal at the Asheville Plant is estimated to 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. Duke Energy announced on February 29, 2016 that this coal-fired plant will be retired by 2020 and will be replaced with two 280-megawatt units as approved by the North Carolina Utilities Commission.

3.12 Hazardous Materials

The *Hazardous Materials Technical Memorandum* (NCDOT, 2014) is located on the CD that accompanies this Draft EIS. Based on this study, 22 possible GeoEnvironmental sites of concern were identified within the proposed project limits. These environmental sites are shown on **Figure 6** and include 18 active or former underground storage tank facilities, two landfills, a concrete plant, and a metal recycling business. Low monetary and scheduling impacts resulting from these sites are anticipated.

In addition to these 22 sites of concern, Duke Energy operates a coal fired power plant adjacent to the project, as noted in **Section 3.1.1**. Coal ash ponds are located adjacent to the existing right of way on I-26. Several ground water monitoring wells are also located in the existing and proposed right of way as shown on **Figure 10**. The relocation of these wells and the management of contaminated groundwater encountered during construction should be coordinated with Duke, NCDOT Project Development, and NCDOT GeoEnvironmental staff.

3.13 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 Federal Emergency Management Agency (FEMA) studied streams. **Table 16** summarizes the FEMA stream crossings within the proposed project study area.

Table 16. 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 |
| 25 | French Broad River | Detailed Study |
| 28 | Hominy Creek | Detailed Study |

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.

*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.*

Since detailed hydraulic computations are not being performed on these crossings, no determination of potential FEMA impacts is provided at this time. 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 17 shows the estimated impacts to floodplains by the Build Alternatives.

Table 17. Floodplain Impacts* by Build Alternative

| | 6-Lane Widening (acres) | 8-Lane Widening (acres) | Hybrid 6/8-Lane Widening (acres) |
|-------------------------|--------------------------------|--------------------------------|---|
| Henderson County | | | |
| 100-year Floodplain | 16.0 | 24.8 | 18.2 |
| 500-year Floodplain | 5.9 | 7.4 | 6.0 |
| Buncombe County | | | |
| 100-year Floodplain | 14.1 | 23.4 | 23.5 |
| 500-year Floodplain | 9.6 | 11.3 | 11.3 |
| Total | | | |
| 100-year Floodplain | 30.1 | 48.2 | 41.7 |
| 500-year Floodplain | 15.5 | 18.7 | 17.3 |

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

The NCDOT Hydraulics Unit will coordinate with the NC Floodplain Mapping Program to determine the status of the project with regard to 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 embankment that are located within 100-year floodplains were built as shown in the construction plans, both horizontally and vertically.

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) the fundamental purpose of all national parks is the enjoyment of park resources and values by the people of the United States. The NPS strives to provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the natural and cultural resources found in parks. The Blue Ridge Parkway 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 Mountains-to-Sea Trail stretches from Clingman's Dome in Great Smoky Mountains National Park to Jockey's Ridge State Park by the Atlantic Ocean. The mainline distance is 935 miles. Segments of the Mountains-to-Sea Trail along the Blue Ridge Parkway were designated as a National Recreation Trail in 2005. The Mountains-to-Sea Trail crosses I-26 using the Blue Ridge Parkway.

The proposed action, widening I-26 and replacing the Blue Ridge Parkway bridge over the interstate, may impact visitor experience of the Blue Ridge Parkway and therefore the Mountains-to-Sea Trail.

3.14.2 Impacts to Visitor Use and Experience

Visitor use of the Blue Ridge Parkway and the Mountains-to-Sea Trail would be temporarily impacted during construction of the BRP realignment and bridge replacement. The following impacts were analyzed in detail in the Draft Value Analysis located in **Appendix I** and are summarized in this section and in **Section 3.14.4**.

Realignment of a portion of the Parkway could be completed while the existing bridge and approaches remain open to traffic, with the exception of Option 7. NCDOT will coordinate with NPS to limit closure of the Parkway during construction of a new bridge and realignment of the road. Nighttime work, between dusk and dawn, will only be allowed during bridge removal activities and during the installation of new piers and segments. If other nighttime work is required, park natural resource staff will be consulted to determine if further mitigation is needed. After the new bridge and approaches are constructed, traffic would be routed to the new bridge and the existing bridge and approaches would be removed and restored to natural conditions.

Under all of the BRP realignment and replacement options, construction of the new bridge would be noticeable, and would 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 would be longer than the existing bridge and the bridge railing would be different in appearance. The railing would be higher

to provide a safer railing for pedestrians crossing the bridge, but would be at the eye height of drivers obscuring a portion of their view.

The Mountains-to-Sea Trail would be indirectly impacted by the proposed project. Although there are typically fewer hikers in the winter months, the NPS would provide detour signage to guide trail users away from the active construction area and into safe locations. Construction would 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). The length of the proposed replacement bridges ranges from approximately 605 to approximately 715 feet in length. Structure types under consideration are a concrete box girder (NPS's preferred bridge type) or a steel plate girder. Inspection methods and effort would differ. Due to the height of the bridge, it is likely that a snooper truck would be necessary to inspect a steel plate girder bridge, which would require a lane closure and traffic control during inspection. A concrete box girder could be accessed from the abutments. The steel plate girder also requires more effort to inspect because steel is more susceptible to fatigue. Inspection and maintenance of a steel plate girder bridge would have more of an adverse impact to parkway operations as it would require more cost and effort.

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), listed in **Appendix A** and found on the CD included with this Draft EIS, was prepared to assess the likelihood of possible indirect effects on land use decisions as a result 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. Due to the growing and planned expansion of sewer service throughout the FLUSA, relatively economical housing prices, anticipated growth of local jobs in the area, and expected moderate population growth,

The Future Land Use Study Area (FLUSA) is the area surrounding a construction project that could possibly be indirectly affected by the actions of others as a result of the completion of the project and combined projects. The FLUSA generally extends approximately one to two miles from the project corridor.

the local market for development is relatively robust at present. Land use throughout the FLUSA is mixed, consisting of large sections of residential areas, commercial and industrial stretches, and agricultural tracts. Commercial development is largely concentrated near the I-26 interchanges with US 64, NC 280 (Airport Road), NC 146 (Long Shoals Road), and NC 191 (Brevard Road). Buncombe and Henderson County planners expect the I-26 corridor to largely maintain its mix of residential and commercial characteristics, with the exception of changes to land uses at Upward Road, Howard Gap Road, and the proposed Balfour Parkway. Planners anticipate that improvements to these facilities will increase use by local travelers and therefore lead to development pressure. However, 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 modest travel time savings.

Based on this assessment of the currently identified project alternatives, STIP Project I-4400/I-4700 is not expected to have a notable indirect effect on land use in the FLUSA. Furthermore, any direct natural environmental 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

To analyze the potential for cumulative effects, NCDOT contracted with URS Corporation to complete the *Asheville Regional Cumulative Effects Study (CES)* (2014), included on the CD that accompanies this Draft EIS, for this project and other planned projects for Asheville and the surrounding areas. The CES examined a study area larger than the FLUSA delineated for STIP Project I-4400/I-4700, encompassing a number of projects beyond, but including, the scope of the I-26 widening. The CES analyzed the 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. The horizon year selected for the cumulative effects assessment is 2035, which corresponded with the fiscally-constrained Long-Range Transportation Plan in effect at the time of the assessment's completion.

The Cumulative Effects Tool, shown in **Table 18**, rated cumulative effects at a medium level of concern as a result 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, a number of 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

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 (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.

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.

Table 18. Alternatives Screening Matrix for Regional Cumulative Effects

| Rating | Cultural Features | | | Community Features | | | Water Quality Features | | | Natural Habitat Features | | | Result |
|----------------------|--|--------------------|--------------------|--|--------------------|--------------------|--|--------------------|--------------------|--|--------------------|--------------------|------------------------------------|
| | Past Actions | Current Activities | Future Development | Past Actions | Current Activities | Future Development | Past Actions | Current Activities | Future Development | Past Actions | Current Activities | Future Development | |
| More Concern | Unique Resources Not Protected/Recognized | | | Unique Resources Not Protected/Recognized | | | Unique Resources Not Protected / Recognized | | | Unique Resources Not Protected / Recognized | | | |
| | | | | | | | | | | | | | |
| 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, Table 5

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. The Build Alternatives are anticipated to widen within the existing right of way, and are anticipated to have limited effect on the Hidden Creek Village community. The Hybrid 6/8-Lane Widening Alternative and the 8-Lane Widening Alternative are anticipated to displace residents of the Brickton community as a result of widening I-26 under the Butler Bridge Road bridge. The displacements will impact all populations equally.

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 2014 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 of the projects will address increases in impervious surfaces and associated stormwater runoff in the individual project design through the use of 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, the 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 EVADs 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 *Cumulative Effects Study* (URS Corporation, 2014) 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 in the vicinity of noise-sensitive receptors. Temporary and localized construction noise impacts may occur as a result of these activities. During daytime hours, the predicted effects of these impacts could be temporary speech interference for passers-by and those individuals living or working near the project. During evening and nighttime hours, steady-state construction noise, for example paving operations, could be audible, and may cause impacts to activities such as sleep. Sporadic evening and nighttime construction equipment noise such as from backup alarms, lift gate closures ("slamming" of dump truck gates), etc., will be perceived as distinctly louder than it would be during the day, and could impact the general peace and usage of noise-sensitive areas – particularly residences, hospitals, and hotels.

Although construction noise impact mitigation should not place an undue burden upon the financial cost of the project or the project construction schedule, pursuant to the requirements of 23 CFR 772.19, it is the recommendation of the *Traffic Noise Analysis* (HNTB, 2015) and *Traffic Noise Analysis Addendum* (HNTB, 2016) that:

- Earth removal, grading, hauling, and paving activities in the vicinity of residences should be limited to weekday daytime hours.
- If meeting the project schedule requires that earth removal, grading, hauling and/or paving must occur during evening, nighttime and/or weekend hours in the vicinity of residences, the Contractor shall notify NCDOT as soon as possible. In such instance(s), all reasonable attempts shall be made to notify and to make appropriate arrangements for the mitigation of the predicted construction noise impacts upon the affected property owners and/or residents.
- If construction noise activities must occur during context-sensitive hours in the vicinity of noise-sensitive areas, discrete construction noise abatement measures including, but not limited to portable

noise barriers and/or other equipment-quieting devices should be considered.

- Some construction activities could create extreme noise impacts for nearby noise-sensitive land uses. For example, pile driving activities can pose an extreme noise impact for distances of up to one-quarter mile. It is recommended that consideration be given to any nearby residences for all evening and/or nighttime periods (7:00 p.m. – 7:00 a.m.) throughout which extremely loud construction activities might occur.

For additional information on construction noise, please refer to 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. Care will be taken to ensure burning will be done at the greatest distance practical from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Burning will be performed under constant surveillance. Operational agreements that reduce or redirect work or shift times to avoid community exposures can have positive benefits. 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 15 NCAC 2D.0520.

3.16.1.4 Water Quality and Drainage

Impacts to water resources may result from activities associated with project construction. Activities that would result in impacts are clearing and grubbing on water conveyances, riparian canopy removal, in-water construction, fertilizer and pesticide use for re-vegetation, obstruction and redirection of surficial groundwater flows, and pavement/culvert installation.

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. Adherence to these regulations, as well as the implementation of NCDOT's Best Management Practices 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.

The North Carolina 2014 Final 303(d) list of impaired waters (DWR, 2015) includes the French Broad River, Mud Creek, and Devils Fork in the project study area. However, these waters are not listed for turbidity or sedimentation and do not require specific mitigation measures.

3.16.2 Irretrievable or Irreversible Commitment of Resources

Implementation of any of the I-26 Widening Alternatives 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 period 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 will 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 will 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 will benefit from the improved quality 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.

Existing homes and businesses within the selected alternative's right of way will 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.

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

Air Quality Analysis, Widening of I-26 from US 25 to I-40/I-240, June 2014

Asheville Regional Cumulative Effects Study, June 2014

Geotechnical Pre-Scoping Report, July 2006

Hazardous Material Report, February 2014

Natural Resources Technical Report (NRTR), Widening I-26 from NC 255 (US 25 Connector) to NC 280, August 2014

NRTR Addendum – BRP Addendum, July 2015

NRTR Addendum – US 25/I-26 Interchange, December 2015

NRTR Addendum 3, April 2016

Traffic Noise Report, March 2015

3.17 Summary of Impacts

The three Build Alternatives would result in impacts to resources in the study area. **Table 19** indicates anticipated impacts to the human environment and natural resources as a result of the three Build Alternatives.

Table 19. 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) | 18 (6) |
| Business Relocations | 1 | 2 | 1 |
| Grave Site Relocations | 0 | 0 | 0 |
| Neighborhood & Community Cohesion | No | No | No |
| Recurring Community / Neighborhood Impacts | No | Yes; minor relocation impacts to Brickton community. | Yes; minor relocation impacts to Brickton community. |
| 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 and Cureton House | Yes; Blue Ridge Parkway and Cureton House | Yes; Blue Ridge Parkway and Cureton House |
| Section 4(f) Impacts | Yes; Blue Ridge Parkway. | | |
| Section 4(f) <i>de minimis</i> | Yes; Biltmore Estate, Hyder Dairy Farm, Camp Orr (Camp Pinewood), and Mountains to Sea Trail | Yes; Biltmore Estate, Hyder Dairy Farm, Camp Orr (Camp Pinewood), McMurray House (Windy Hill), and Mountains to Sea Trail | Yes; Biltmore Estate, Hyder Dairy Farm, Camp Orr (Camp Pinewood), and Mountains to Sea Trail |
| Visual Resources/Characteristics | No | No | No |
| Traffic Noise Impacts (# of receptors) | 292 | 339 | 315 |
| Air Quality | No | No | No |
| Farmland* (acres) | 5.5 | 24.5 | 11.0 |
| Hazardous Materials | Minimal monetary and scheduling impacts. | | |

Table 19. 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 but not likely to adversely affect the NLEB. No effect ¹ for species in Henderson and Buncombe Counties. | | |
| Jurisdictional Streams* (linear feet) | 21,597 | 27,241 | 24,650 |
| Jurisdictional Wetlands* (acres) | 4.8 | 8.0 | 7.7 |
| Floodplains: | | | |
| 100-year Floodplain* (acres) | 30.1 | 48.2 | 41.8 |
| 500-year Floodplain* (acres) | 15.5 | 18.6 | 17.3 |
| Ponds* (acres) | 0.03 | 0.06 | 0.05 |
| Indirect and Cumulative Effects | <p>Based on this assessment of the three Build Alternatives, STIP Project I-4400/I-4700 is not expected to have a notable indirect effect on land use in the FLUSA. Potential land use effects as a result of STIP Project I-4400/I-4700 are somewhat tempered by the fact that the project is not expected to provide any new access or opportunities for traffic exposure to properties in the FLUSA, and will generate marginal travel time savings.</p> <p>Some amount of regional cumulative impacts can be expected for notable cultural, community, water quality, and natural habitat features. This is due to features having minimal incorporation in local planning protections and/or policies. The Cumulative Effects Tool indicated that cumulative effects were rated as a medium level of concern as a result of the reasonably-foreseeable transportation projects in the region.</p> | | |
| <p>¹ Impacts based on functional proposed slope stake limits plus 40 feet. ² NCDOT will follow NPS mitigation protocol as detailed in the Special Commitments (Green Sheets) and Section 3.8.6.2.2.</p> | | | |

Chapter 4 COMMENTS AND COORDINATION

4.1 History

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. Subsequent to 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 to I-40/I-240, into one comprehensive EIS. This EIS addresses logical termini and cumulative effects in accordance with NEPA. The CES 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 Draft EIS (**Section 3.15**).

4.2 Citizen and Agency Involvement

Early participation from the public, elected officials, government agencies and other stakeholders in the decision-making process for the project is encouraged. 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 following timeline (**Table 20**) lists those events that have included involvement of the public, local officials, agencies, and other stakeholders. Some important, but non-public involvement and specific project events have also been included in the timeline for reference. Other public outreach efforts have included newsletters, a project website, and small group meetings.

Table 20. 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 | <i>Asheville Regional Cumulative Effects Study (CES)</i> 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. |
| 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 Blue Ridge Parkway bridge over I-26. |

What is Merger?

Merger is a process to streamline the project development and permitting processes, as agreed to by the USACE, NCDWR, FHWA, and NCDOT and supported by other stakeholder agencies and local units of government. The Merger process provides a forum for appropriate agency representatives to discuss and reach consensus on ways to facilitate meeting the regulatory requirements of Section 404 of the Clean Water Act during the NEPA process.

Table 20. Public, Local Government, and Agency Participation Timeline

| | |
|--|--|
| 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 Blue Ridge Parkway bridge over I-26. |
| April 30, 2014 | NCDOT meeting to discuss the proposed greenway along the I-26 corridor. |
| June 3, 2014 | CEIS 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 Blue Ridge Parkway 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 |
| 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 Blue Ridge Parkway bridge over I-26. |
| April 23, 2015 May 12, 2015 May 18, 2015 | Meeting of NCDOT, NPS, and FHWA to discuss the Blue Ridge Parkway bridge over I-26. |
| May 15, 2015 | Meeting of NCDOT and HPO to discuss effects to historic resources. ² |

Table 20. Public, Local Government, and Agency Participation Timeline

| | |
|---|--|
| June 4, 2015 June 18, 2015 July 14, 2015 August 20, 2015 September 15, 2015 | Meeting of NCDOT, NPS, and FHWA to discuss the Blue Ridge Parkway bridge over I-26. |
| July 2015 | <i>Bent Creek-Lake Julian Greenway Feasibility Study</i> 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 Blue Ridge Parkway 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 Blue Ridge Parkway bridge over I-26. |
| January 2016 | <i>Draft Value Analysis Report (NPS)</i> 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 Blue Ridge Parkway bridge over I-26. |
| March 3, 2016 | <i>Blue Ridge Parkway over Interstate 26 Technical Report (NPS-BLRI & FHWA-EFL)</i> completed. ⁴ |
| 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 Blue Ridge Parkway 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 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 Blue Ridge Parkway 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 Blue Ridge Parkway bridge over I-26. |

Table 20. Public, Local Government, and Agency Participation Timeline

| | |
|----------------------|--|
| <p>July 20, 2016</p> | <p><i>Blue Ridge Parkway over Interstate 26</i> Technical Report (NPS-BLRI & FHWA-EFL) updated to include decisions from Section 106 Consultation (June 30, 2016).⁴</p> |
|----------------------|--|

¹Meeting minutes and public meeting materials are included in Appendix K.

²Correspondence is included in Appendix G.

³Appendix I

⁴Appendix H

Additional public involvement opportunities will take place following the preparation of the Draft EIS, including a Public Hearing

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Chapter 6 DRAFT 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 protects those properties that are included in or eligible for inclusion in the National Register of Historic Places (NRHP). **Chapter 3** of the Draft EIS identifies and describes the historic architectural resources and public parks that would be affected by the Build Alternatives under consideration for STIP Project I-4400/I-4700.

Through consultation with the North Carolina State Historic Preservation Office (HPO), it was determined that there are eight historic sites (including the Blue Ridge Parkway) listed in or eligible for listing in the NRHP in the vicinity of the three I-26 widening Build Alternatives that are subject to Section 4(f) requirements. Of these eight sites, five have the potential to be affected by STIP Project I-4400/I-4700 Build Alternatives (**Figure 11**). Through this consultation, it was determined that one of these sites, the Blue Ridge Parkway (also considered a recreational site) will be adversely affected and have a Section 4(f) use by the Build Alternatives. It was also determined that impacts to four historic properties result in no adverse effect. 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) and North Carolina Department of Transportation (NCDOT) intend to make a *de minimis* finding based on HPO's concurrence with the Section 106 determination of "No Adverse Effect" for Biltmore Estate, Hyder Dairy Farm, Camp Orr (Camp Pinewood), and McMurray House (Windy Hill) properties.

There are two existing public parks and recreational sites that are subject to Section 4(f): Blue Ridge Parkway (introduced above) and Mountain-to-Sea 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 and NCDOT intend to make a *de minimis* finding 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.

This chapter documents the location and characteristics of each of these historic sites and public parks, describes the potential impacts of the Build Alternatives to each of them, and discusses avoidance measures taken to minimize harm to each. There are no wildlife and waterfowl refuges affected by the Build Alternatives. 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 the Draft EIS.

6.2 Proposed Action

6.2.1 Project Purpose and Need

The NCDOT, in cooperation with the FHWA, proposes to improve an approximately 22.2-mile segment of I-26. The project is located 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 **Chapter 1, Sections 1.2 and 1.3** of the DEIS.

The needs to be addressed by the project are:

- To 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.
- To improve insufficient pavement structure and deteriorating existing road surface conditions. The existing I-26 roadway surface has undergone major rehabilitation twice, with the latest being in 2011. In addition, during past rehabilitation efforts, Divisions 13 and 14 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 suffice for providing a quality facility

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.

The purpose of the proposed improvements to I-26, from US 25 in Henderson County north to I-40 in Buncombe County, is to improve capacity deficiencies, with a goal of achieving an overall level of service (LOS) D in the design year (2040), and to improve the pavement structure.

6.2.2 Alternatives

The following I-26 widening Build Alternatives were determined to meet the project purpose and need and remain under consideration for implementation. Specifically, the additional traffic lanes would improve capacity deficiencies 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 6 lanes between US 25 and the I-26/US 25/Asheville Highway interchange and widen to 8 lanes from the I-26/US 25/Asheville Highway to the I-26/I 40/I-240 interchange. The Hybrid 6/8-Lane Widening is the **Preferred Alternative**.

Chapter 2 of the Draft EIS provides additional detail regarding the proposed Build Alternatives and the selection of the Preferred Alternative (**Section 2.5**). All three Build Alternatives would require a longer bridge to carry the Blue Ridge Parkway Bridge over I-26. The replacement of the bridge provides an opportunity to improve the curvature of the Blue Ridge Parkway in its approaches to the bridge. A realignment of the Blue Ridge Parkway is proposed. The replacement Blue Ridge Parkway Bridge would also carry the Mountains-to-Sea Trail (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.

6.3 Description of Section 4(f) Properties

6.3.1 Blue Ridge Parkway

Description of the 4(f) property: The Blue Ridge Parkway Bridge that crosses I-26 is a contributing resource within the Parkway, which is a resource previously determined to be eligible for 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. Beginning in

Virginia at Rockfish Gap, at the southern end of Skyline Drive in Shenandoah National Park, the Parkway extends 469 miles through the Southern Appalachian Mountains and ends 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 Blue Ridge Parkway is primarily a mountain road; however, its location changes every few miles in order 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 Blue Ridge Parkway consists of a two-lane motor road with 10-foot travel lanes and grassed shoulders. The Blue Ridge Parkway spans I-26 with a 512-foot long bridge. The Blue Ridge Parkway 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 Blue Ridge Parkway are listed in the draft National Historic Landmark NRHP nomination (October 2015) as contributing resources. These resources reflect the design development of the Parkway through its completion in 1987.

Ownership and type of 4(f) property: The Blue Ridge Parkway is a National Park Service unit and is owned by the US Government.

Features and functions: Land uses within the Blue Ridge Parkway are primarily forested natural and recreation areas. The Blue Ridge Parkway motor road runs through the property. The Blue Ridge Parkway is a property eligible for the NRHP.

6.3.2 Mountains-to-Sea Trail:

Description of 4(f) property: The Mountains-to-Sea Trail (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 Blue Ridge Parkway were designated as a National Recreation Trail in 2005.

Ownership and type of 4(f) property: The MST is officially a part of the State Parks System, and overall is managed by the North Carolina Division of Parks & Recreation (NCDPR). The NCDPR works in partnership with the owners of each trail section. For the section of trail located within the Blue Ridge Parkway, the NPS owns the property the trail utilizes. The NCDPR also has jurisdiction as the trail administrator.

Features and functions: Within the project area, the trail intersects the Blue Ridge Parkway at three locations, from west to east: at milepost 392.1 the MST crosses the Blue Ridge Parkway; at milepost 391.9 the MST converges

with the Blue Ridge Parkway; and at milepost 391.7 the MST diverges from the Blue Ridge Parkway (**Figure 12**). There are posts with directional arrows and the MST logo at these locations. The trail travels along the motor road for approximately 0.2 mile, crossing I-26 on the Blue Ridge Parkway Bridge. There is no designated shoulder or sidewalk for trail users traveling along the motor road and bridge; they travel along the roadway shoulder and share the travel lane on the bridge. The MST's approved plan (the NPS's Asheville Corridor Mountains-to-Sea Trail Trailhead Parking Improvement Plan) proposes improved trail parking at milepost 391.5 and milepost 392.1.¹

6.3.3 Biltmore Estate

Description of the 4(f) property: 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 National Historic Landmark (NHL; designated in 1963). In 2005, the original 1963 NHL nomination (identified then as the Biltmore Estate and Biltmore Forestry School Site National Historic Landmark) 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 Blue Ridge Parkway. 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.

Ownership and type of 4(f) property: The Biltmore Estate is privately owned. As a National Historic Landmark, 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

¹ The NPS will reassess the location of the proposed parking improvements in light of the current project.

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 of the 4(f) property: 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.

Ownership and type of 4(f) property: The Hyder Dairy Farm is privately owned. The HPO is the official with jurisdiction.

Features and functions: The twenty-two 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 Camp Orr (Camp Pinewood)

Description of the 4(f) property: Camp Orr, now known as Camp Pinewood, occupies forty-nine 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 fifty resources, twelve are noncontributing due to age. Camper cabins built within the last fifty 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.

Ownership and type of 4(f) property: 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.

6.3.6 McMurray House (Windy Hill)

Description of the 4(f) property: The McMurray House, built circa 1890 with a front addition in 1914, is a two-story, Queen Anne dwelling. It rests on a brick foundation and features intersecting shingle-covered gables with wide overhanging eaves and cutaway corners. In 1914, architect Erle Stillwell designed a second story façade sleeping porch with casement windows, a kitchen, and pantry. It tops the original lower level front porch with bold square paneled posts and a square balustrade. Windows and doors throughout are original. Inside, the house follows a central-passage plan. Behind the house stand a well-preserved collection of outbuildings from the late nineteenth and first half of the twentieth century, including: servants' quarters; a Delco building that housed the generator that powered the farm's buildings; a two-part garage and washhouse; a wood shed; a small shed; and a concrete block smokehouse. The 4.48-acre site of the McMurray House is a significant designed and natural landscape that contributes to the property's significance. The McMurray House, also known as Windy Hill, is eligible under Criterion C for the intact Queen Anne house built circa 1890 and expanded in 1914 according to the plans of prominent Hendersonville architect Erle Stillwell (1885-1971), who designed a variety of buildings in the southeast from 1912 to 1971. The house remains one of the best examples of the Queen Anne style in rural Henderson County. Accompanying the house and contributing to the property's significance is the extensive collection of early- to mid-twentieth century frame and wood outbuildings.

Ownership and type of 4(f) property: The McMurray House is privately owned. The HPO is the official with jurisdiction.

Features and functions: The approach from the east is down a heavily shaded dirt lane that circles the house. Towering oaks and pines shade the north side of the property where the drive is located. The area containing the outbuildings is grassy lawn with rhododendron and other shrubs planted

close to the buildings. South of the house and outbuildings the landscape consists of large trees and pasture.

6.4 Impacts to the Section 4(f) Properties

All Build Alternatives would result in the Section 4(f) use of the Biltmore Estate, Hyder Dairy Farm and Camp Orr, Blue Ridge Parkway, and MST. Through consultation with the HPO, 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 and Camp Orr in any of the Build Alternatives. The HPO also determined that the use of land at the McMurray House in the 8-Lane Widening Alternative would result in no adverse effects with commitments under Section 106 (refer to **Section 3.2.4** of the Draft EIS). No adverse effects would occur to the McMurray House in the 6-Lane Widening and the Hybrid 6/8-Lane Widening alternatives. Through consultation with the HPO, it was determined that the proposed use of the Biltmore Estate, Hyder Dairy Farm, Camp Orr, and McMurray House results in *de minimis* finding. The FHWA and NCDOT intend to make a *de minimis* finding for the proposed use of the MST through continued coordination with NPS and NCDPR.

6.4.1 Blue Ridge Parkway

Because of the proximity of the existing Blue Ridge Parkway Bridge's high piers to the current travel lanes of I-26, the I-26 widening project would require their relocation. Though none of the Build Alternatives would require additional right of way from the Blue Ridge Parkway, reconstruction or demolition and replacement of the existing bridge would be required so that the bridge piers could be moved. The right of way granted by the NPS to the NCDOT for the original construction of I-26 is sufficient to accommodate any of the Build Alternatives. The Blue Ridge Parkway would be realigned in its approaches to the proposed replacement bridge to flatten the bridge and roadway curvature to improve safety and user experience. The proposed realignment of the Blue Ridge Parkway and the replacement bridge is approximately 600 (0.11 mile) to 4,000 feet (or 0.76 mile) in length depending on the bridge replacement option (refer to **Section 2.4** of Draft EIS and **Section 6.7**, Least Overall Harm Analysis for more information).

6.4.2 Mountains-to-Sea Trail:

Within the project area, the MST intersects the Blue Ridge Parkway at three locations (**Figure 12**). Posts with directional arrows and the MST logo mark these locations. The realigned Blue Ridge Parkway would shift approximately 70 feet to the south in the location of the trail crossing at milepost 392.1. This shift would require minor improvements to the trail at the relocated crossing, including the resetting of wayfinding markers; however, the trail would remain on the existing alignment. At milepost 391.9, the Blue Ridge Parkway realignment would 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 would be relocated to the proposed new Blue Ridge Parkway Bridge to cross

I-26. The realigned Blue Ridge Parkway would 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 would require minor improvements to the trail at the relocated crossing, including the resetting of wayfinding markers; however, the trail would 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 would remain on the existing alignment – except as it crosses I-26 on the replacement Blue Ridge Parkway 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). Therefore, FHWA and NCDOT intend to make a *de minimis* finding for the minimal direct use of the MST through coordination with NPS and NCDPR and following public comment.

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 in all Build Alternatives. The 6-Lane Widening Alternative would require approximately 4 acres from within the NHL; the 8-Lane Widening Alternative and the Hybrid 6/8-Lane Widening Alternative would each 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 Build Alternatives. The minimal direct use of the Biltmore Estate and no adverse effect finding from the HPO constitutes a *de minimis* use under Section 4(f).

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 in all Build Alternatives. The 6-Lane Widening Alternative and the Hybrid 6/8-Lane Widening Alternative would each require approximately 1.65 acres from within the NRHP eligible boundary; the 8-Lane Widening Alternative would require 3.14 acres 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 Build Alternatives and the viewshed from the house would not be impacted. The minimal direct use of the Hyder Dairy Farm and no adverse effect finding from the HPO constitutes a *de minimis* use under Section 4(f).

6.4.5 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 6-Lane Widening Alternative and the Hybrid 6/8-Lane Widening Alternative would each require approximately 0.57 acre from within the NRHP eligible boundary; the 8-Lane Widening Alternative would require 0.78 acre 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 Camp Orr's historic significance would be impacted by the Build Alternatives. The minimal direct use of the Camp Orr and no adverse effect finding from the HPO constitutes a *de minimis* use under Section 4(f).

6.4.6 McMurray House (Windy Hill)

In the 8-Lane Widening Alternative, approximately 0.51 acre would be required along the west side of the McMurray House historic eligible boundary to close the existing access road and remove a row of recently planted trees. The no adverse effect determination includes commitments that the NCDOT will contact the property owner to discuss replanting the trees and noise abatement measures, such as storm windows or insulation, since a 5 decibel noise increase is expected at the house. The minimal direct use of the McMurray House (Windy Hill) and no adverse effect finding from the HPO constitutes a *de minimis* use under Section 4(f).

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 Prudent and Feasible Alternative

I-26 is perpendicular to the Blue Ridge Parkway and MST, traveling under the motor road and recreational trail. An avoidance alternative to realign I-26 to a location that would accommodate the widening while avoiding both the Blue Ridge Parkway and MST is not feasible. The piers of the existing Blue Ridge Parkway 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 Blue Ridge Parkway. Since the MST uses

the existing Blue Ridge Parkway Bridge to cross I-26, removal of the bridge will similarly use the MST. 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 Blue Ridge Parkway 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 Blue Ridge Parkway 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 Blue Ridge Parkway (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.

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 followed by an analysis of the Blue Ridge Parkway Bridge Alignment 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 Blue Ridge Parkway 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 Blue Ridge Parkway 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 Blue Ridge Parkway. 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 Blue Ridge Parkway. 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 Blue Ridge Parkway 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 Blue Ridge Parkway 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 Blue Ridge Parkway.

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

The MST shares the Blue Ridge Parkway Bridge in the current and proposed conditions and is the only other Section 4(f) property impacted by the Blue Ridge Parkway Bridge Alignment Options. Impacts to the MST are proportionately equal to impacts to the Blue Ridge Parkway. 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 EFL, FHWA and NCDOT, have evaluated the Blue Ridge Parkway Bridge Alignment Options in *Blue Ridge Parkway Bridge Over Interstate 26: Conceptual Alternatives, Impact Topics Considered, Environmental Consequences, VA/CBA Study Factors* (March 3, 2016) (**Appendix H**) and *Draft Value Analysis Study* (January 2016) report (**Appendix I**). According to the *Draft Value Analysis Study* (January 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 Blue Ridge Parkway Bridge Alignment 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 Blue Ridge Parkway Bridge Alignment Alternatives are contained within the Blue Ridge Parkway, 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 Blue Ridge Parkway Bridge Alignment Option 4 would improve the conditions of the Blue Ridge Parkway and MST from an operational perspective resulting in the least overall harm to the Section 4(f) properties. Further, 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.

6.8 Measures to Minimize Harm

Since there is no feasible and prudent avoidance alternative, the preferred Blue Ridge Parkway Bridge Alignment 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 through the use of 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 Blue Ridge Parkway.
- Aesthetic design of the bridge. Through coordination with the stakeholders and property owners, and through the Value Analysis Study, a context sensitive bridge design is being pursued.

- A re-vegetation/landscaping plan would be developed and implemented to re-establish native vegetation and provide for a continuous visual experience for the motor road user.
- Stipulations of the Section 106 Memorandum of Agreement (MOA). The MOA would be completed and executed prior to the Record of Decision.

Potential mitigation strategies are being explored through continued coordination with NPS, FHWA, HPO and NCDOT. These stipulations on the project would be documented in the Section 106 Memorandum of Agreement (MOA). The MOA would be completed and executed prior to the Record of Decision (ROD). Potential mitigation strategies include:

- Photo-documentation and archival research of the bridge; and
- NPS and HPO review of bridge plans at appropriate design milestones.

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 Blue Ridge Parkway Bridge Alignment Option 4 includes several public benefits in its proposed design. As previously mentioned, the existing Blue Ridge Parkway 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 Blue Ridge Parkway. As a result, the preferred Blue Ridge Parkway Bridge Alignment Option 4 would provide benefits to the motor road user, including bicyclists and pedestrians, for improved safety and sight-distance lines, resulting in an improved user experience.

6.8.2 Mountains-To-Sea Trail

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

- Temporary or nighttime closures would only be permitted from November 1 until April 31, during periods of low probable usage (i.e., winter).
- To the extent feasible, trail closure, specifically where the trail crosses the motor road will be avoided; temporary detours would be provided and signed.
- A re-vegetation/landscaping plan would be developed and implemented to re-establish native vegetation and provide for a continuous visual experience for the trail user.

Additional measures to minimize harm are also being explored through continued coordination with NPS, FHWA, NCDPR and NCDOT. These stipulations would be coordinated with the Blue Ridge Parkway's comprehensive study of the Asheville commuter zone and MST access.

The preferred Blue Ridge Parkway Bridge Alignment Option 4 includes several public benefits in its proposed design. Currently there is no designated shoulder or sidewalk for MST users traveling along the motor road and bridge; they travel along the roadway shoulder and share the travel lane on the bridge. The proposed new bridge would accommodate the MST and improve sight distance for drivers and hikers.

6.9 Consultation and Coordination

A review of the Section 4(f) Evaluation includes 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.

North Carolina Historic Preservation Office (HPO): Coordination under Section 106 of the National Historic Preservation Act found that the proposed project would have an adverse effect on the Blue Ridge Parkway (NC0001), determination of eligibility criteria A & C. The Draft Section 4(f) Evaluation will be submitted to the HPO for review and comment.

North Carolina Division of Parks and Recreation (NCDPR): The Draft Section 4(f) Evaluation and all relevant documentation will be submitted to NCDPR for review and comment. For the purposes of this project, NCDPR defers to the NPS. However, NCDPR will still be given the opportunity to review and comment.

US Department of Interior (DOI): The Draft Section 4(f) Evaluation will be submitted to DOI's Office of Environmental Compliance and Policy for review and comment.

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 will be submitted to ACHP for review and comment.

The *de minimis* findings for the Biltmore Estate, Hyder Dairy Farm, Camp Orr and McMurray House (in the 8-Lane Widening Alternative only) have been coordinated with HPO (**Appendix G**). The official with jurisdiction over the Blue Ridge Parkway, the NPS, has been consulted throughout the duration of project development, as it applies to the Blue Ridge Parkway and the MST. Following public comment and through consultation with NPS and NCDPR, FHWA intends to make a *de minimis* finding for the MST (**Appendix G**).

In a letter dated December 4, 2013, the Blue Ridge Parkway 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 Park 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 on May 26, 2015. The NPS accepted the role as a cooperating agency on July 21, 2015. These letters are included in **Appendix G** of the Draft EIS.

The Blue Ridge Parkway 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 in order to further evaluate the options. Representatives from NPS, EFL, FHWA and NCDOT attended the Value Analysis/Choosing by Advantages workshop. Blue Ridge Parkway Bridge Alignment 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.

6.10 Summary

Three Build Alternatives which meet the purpose and need for STIP Project I-4400/I-4700 are currently under consideration in the Draft EIS. As described within this Section 4(f) Evaluation, the Blue Ridge Parkway and the MST meet 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. 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, Camp Orr and McMurray House, the FHWA has found a *de minimis* use for these resources. Following public comment and through continued coordination with NPS and NCDPR, FHWA intends to make a *de minimis* finding for the use of the MST.