



# ENVIRONMENTAL ASSESSMENT

Corridor K, Appalachian Highway Development System

STIP Project No. A-0009C

WBS Element No. 32572.1.FS10

FA No. APD-0074(178)



# ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to the National Environmental Policy Act  
42 USC 4332(2)(c) and 49 USC 303

## Corridor K, Appalachian Highway Development System

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FEDERAL HIGHWAY ADMINISTRATION  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION 14  
UNITED STATES ARMY CORP OF ENGINEERS  
UNITED STATES FOREST SERVICE

8/26/2020

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PREPARED FOR  
NCDOT HIGHWAY DIVISION 14

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# A NOTE TO THE READER

## What's in this document?

This Environmental Assessment (EA) summarizes the potential environmental impacts and benefits of proposed improvements to a portion of Appalachian Development Highway System (ADHS) Corridor K in Graham County.

This document is streamlined to address issues and resources relevant to the project setting and the decision-making process. The National Environmental Policy Act (NEPA) of 1969 encourages documents to “concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail” (40 CFR 500.1). To maintain brevity, supporting technical studies (such as a traffic analysis, cultural resource studies, noise analysis, and others) are incorporated by reference (40 CFR 1502.21).

The North Carolina Department of Transportation (NCDOT) prepared this environmental document in accordance with the requirements set forth in the NEPA. NCDOT and Federal Highway Administration (FHWA) are the respective state and federal lead agencies for the proposed project.

## How did the project evolve to what it is today?

This project was first proposed under the Appalachian Regional Development Act of 1965 and has reached various points in the project development process over the past several decades. Historically, the Graham County portion of Corridor K was presented as a four-lane, median divided highway on new location with 0.5-mile dual tunnels under Stecoah Gap. This design was pursued for a number of years, resulting in a Final Environmental Impact Statement (Final EIS) in 1984 and a Draft Supplemental EIS in 2008. After a pause in 2011 to conduct a regional study and develop County Comprehensive Transportation Plans, the project was restarted in 2015.

In July 2015, transportation and resource agency leadership met to reinstate studies under a “fresh look” approach that emphasized early and continuous input and participation of local elected officials and local government staffs as well as Tribal staff and federal/state regulatory and resource agencies. This team worked together to identify the needs of the study area and conduct studies to determine design options that would meet those needs. Traffic studies were used to evaluate the number and type of lanes for the project with the goal of finding a ‘right-size’ design that best addresses mobility and reliability needs while minimizing impacts. As such, the alternatives described in this EA evaluate two-lane design options with passing and climbing lanes as needed to meet the project’s purpose and need.

## What happens next?

A Public Hearing will be held in Summer/Fall 2020 during which the public can review and make comments on the EA, technical studies, and maps of the preliminary alternative. After a 30-day comment period following the Public Hearing, NCDOT and FHWA along with the environmental resource agencies will evaluate all input received, as well as, the potential impacts and evaluation summarized in this EA and identify the Recommended Alternative.

Unless additional studies are required, a final environmental document called a Finding of No Significant Impact (FONSI) is anticipated. The FONSI will describe how the Least Environmentally Damaging and Practicable Alternative was identified and include responses to comments received during the Public Hearing and comment period.

### This EA explains:

- Project Need & Purpose
- Alternatives Considered
- Impacts & Benefits
- Avoidance & Minimization Measures
- Mitigation Measures

This Environmental Assessment is available online at the project website:

<https://www.ncdot.gov/projects/corridor-k>

and can be viewed at the following locations:

NCDOT District 14 Office  
191 Robbinsville Road  
Andrews, NC 28901

NCDOT Graham County Maintenance Yard  
2447 Tallulah Road  
Robbinsville, NC 28771

If you have any comments about the proposed project, please send your comments to:

Corridor K Project Management Team  
c/o TGS Engineers  
706 Hillsborough Street, Suite 200  
Raleigh, NC 27603  
CorridorK@tgsengineers.com

## **PROJECT COMMITMENTS**

**STIP Project No. A-0009C  
WBS Element No. 32572.1.FS10  
Corridor K, Appalachian Highway Development System  
Graham County**

### **Division 14 Construction and Geotechnical Unit – Acidic Rock**

Excavation in the ZWE unit is being studied under thin section microscopy and NNP (acid-base accounting) as part of current geotechnical investigations that run through Summer 2021. Mitigation is determined by acid-producing-potential levels. If needed, the North Carolina Department of Transportation (NCDOT) will develop a Project Special Provision to deal with any necessary handling and treatment of acidic rock.

### **Division 14 Construction – Waste Material**

Hazardous waste material is anticipated to result from construction. NCDOT will not place hazardous waste in areas with jurisdictional resources.

### **Division 14 Construction – Trout Streams**

The Wildlife Resources Commission (WRC) will coordinate with NCDOT on moratorium needs during further project development or during project permitting. Trout supporting streams and a 25-foot buffer will be identified on erosion control plans and later delineated in the field so that the contractor avoids disturbance in those streams and their buffers during the prescribed moratorium period. A trout buffer variance, most likely along Sweetwater and Stecoah creeks, may also be required on the project and coordinated with the Division of Environmental Quality (DEQ), Division of Land Resources.

Implement Guidelines for Construction of Highway Improvements Adjacent to or Crossing Trout Waters in North Carolina during design and construction.

### **Division 14 Project Development – Hazardous Spill Basins**

Investigate on the potential implementation of hazardous spill basins at Hydraulic Sites 2 and 3 during final design.

### **Division 14 Project Development – Vegetation**

Herbicide treatments will be coordinated with the US Forest Service on the road easement.

**Division 14 Project Development Team; Biological Surveys Group – Indiana bat and Northern long-eared bat**

A tree clearing moratorium will be held from October 15 – April 15 during construction duration for Indiana bat and northern long-eared bat.

**Division 14 Project Development – Archaeology**

Section 106 effects determinations pending the results of an intensive archaeological survey report for the Preferred Alternative. The results of the intensive study and the project's effects on archeological resources will be documented in the Finding of No Significant Impact (FONSI).

Archaeological Sites 31GH34, 31GH78, 31GH94, 31GH599, 31GH673, and 31GH691 are eligible for listing on the National Register of Historic Places (NRHP) under Criterion D and currently fall within the Area of Potential Effects (APE) for the proposed project. Although avoidance is recommended, the sites do not warrant preservation in place. If portions of the sites are determined to be adversely affected, those areas will be mitigated by a data recovery plan once right-of-way and easements are acquired.

Archaeological Site 31GH46 is NRHP-eligible under Criterion D and may be eligible as Criterion A depending upon further research. This site will be avoided during the construction phase of the project including any staging activities. If avoidance is determined not possible, consultation with SHPO and consulting parties is required.

Archaeological Sites 31GH45 could not be assessed for the NRHP due to denial of access by the landowner, while Archaeological Site 31GH723 could not be fully assessed for the NRHP due to adjacent impervious material and other disturbances. Subsurface testing (including additional deep trench testing) at these sites and other properties that were inaccessible during the survey will be done once right-of-way and easements are acquired by NCDOT.

If these sites or any newly identified sites are determined eligible for the NRHP, NCDOT will coordinate with State Historic Preservation Office (SHPO) and other consulting parties as identified on appropriate mitigation. All potential mitigation at these sites will be covered in the e106 Form for adverse effect and incorporated in the stipulations of a Memorandum of Agreement (MOA).

**Division 14 Project Development - Design Team; Division 14 Construction – Historic Architecture**

- John and Mattie Colvard House: Tree surveying to avoid trees during construction – replace any balled/burlapped trees that cannot be avoided.
- John and Ruby Cody House: Protective measures for stone wall that lines driveway.
- Cheoah Historic District: Minimize tree cutting and restore landscaping after temporary detour is removed.

**Division 14 Project Development - Design Team; Division 14 Construction – Historic Architecture, Archaeology**

As a result of the meeting held with the Advisory Council on Historic Preservation (ACHP) on August 10, 2020, NCDOT and Federal Highway Administration (FHWA) committed to enter into a Section 106 Programmatic Agreement (PA). A PA is appropriate when it is difficult to fully determine how a particular undertaking may affect historic properties or the location of historic properties and their significance and character. The PA will outline procedures, roles and responsibilities, and continued consultation through final design, right of way and construction.

The PA will include consultation from the consulting parties identified during the Section 106 process. It will also include signatory parties from entities with land ownership, such as the US Forest Service and the Eastern Band of Cherokee Indians (EBCI). The following topics may be covered in the PA:

- Effects calls from June 1 including conditions
- Periodic design reviews and consultation points
- Principles to follow
- Avoidance and mitigation measures
- Archaeology reviews
- Unanticipated discovery
- Course of action to develop a memorandum of agreement (MOA) if necessary for archaeology
- Specifications or aspects of the roadway alignment

The intent of the PA is to get a No Adverse Effect (NAE) call for the entire project for both historic and archaeology sites. The PA will be executed prior to the Finding of No Significant Impact (FONSI).

**Division 14 Construction and Project Development - Design Team – Appalachian Trail Parking Lot**

Ensure adequate turnaround for vehicles exiting the Appalachian Trail parking lot on NC 143.

Access to the Appalachian Trail will be maintained during construction.





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# 1.0 PURPOSE AND NEED

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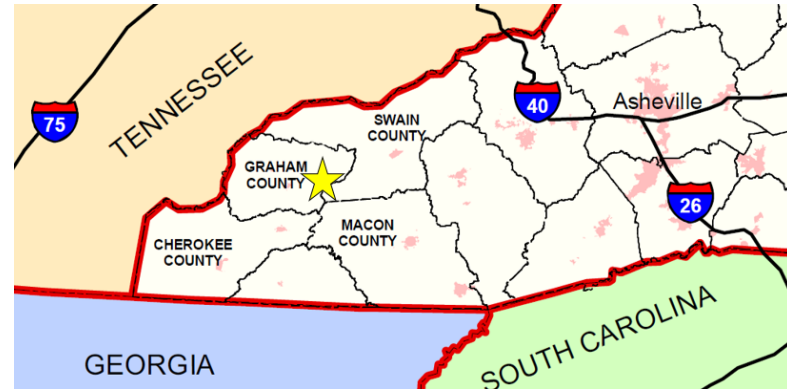
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## What is being studied?

The North Carolina Department of Transportation (NCDOT) is studying roadway improvements from Robbinsville to Stecoah in Graham County to provide the transportation infrastructure necessary for the well-being of residents and regional travelers. Doing so would improve reliability and mobility in the area.

This region is known as Corridor K of the Appalachian Development Highway System (ADHS) – a network of road corridors that Congress established in 1965 to provide a safe, efficient transportation system for the Appalachian Region. Corridor K extends from Dillsboro in Jackson County to I-75 in Cleveland, Tennessee.



Given the challenges associated with the region's mountainous terrain and sensitive natural habitat, the proposed project is among the last of the ADHS corridors to be completed.

After a four-year pause from 2011 to 2014, NCDOT reinitiated studies for Corridor K improvements in 2015. Local officials, state and federal agencies, external stakeholders, and the public were engaged early in the process on the best use of NCDOT's balance of funds for ADHS to improve reliability and mobility in the area.

Corridor K is a complex project given the area's abundant natural and cultural resources.



A project team comprised of approximately 35 individuals from various federal, state, and local organizations, participated in a highly collaborative planning process. This process allowed for the exploration of a wide range of options, refining the project scope and resulting in the improvements assessed in this Environmental Assessment (EA). Additional details on early studies can be found in the [Design Study Report](#) (DSR).<sup>1</sup>

## Why is the project needed?

### EXISTING ROADWAY CHARACTERISTICS

Roadways within the study area typically have steep grades and sharp curves. Roadways may have paved or unpaved shoulders of varying widths or no shoulders at all. The roadway network in Graham County is limited with only three highways: US 129, NC 143, and NC 28. Grades often exceed 6% in mountainous areas, most notably near Stecoah Gap on NC 143, where the grade reaches 8%. The posted speed limit in Robbinsville along US 129 and NC 143 is 35 miles per hour (mph). South of the Five Point Road intersection, the posted speed limit on US 129 is 45 mph. East of the US 129/NC 143 intersection in Robbinsville, the posted speed limit is 45 mph for approximately one mile before transitioning to 55 mph. The posted speed limit on NC 28 is 55 mph. There are locations throughout the corridor where advisory speeds are 35, 40 and 45 mph respectively.

<sup>1</sup> NCDOT. [Design Study Report](#) prepared for ADHS Corridor K. November 2019.

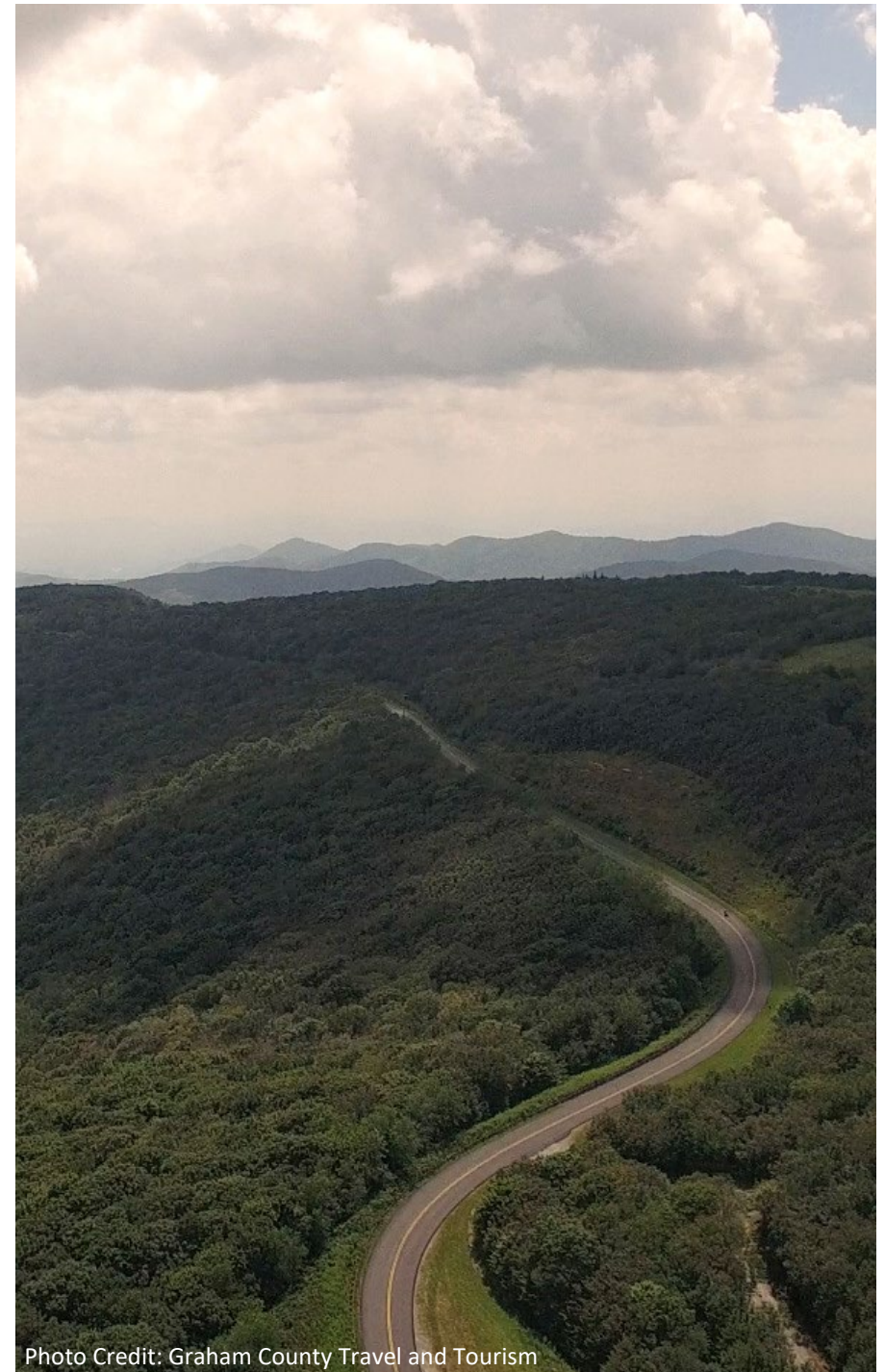


Photo Credit: Graham County Travel and Tourism



## PHYSICAL NEEDS

**Limited roadway options:** Local travel from Robbinsville to Stecoah in Graham County is limited to three two-lane roads: US 129, NC 143, and NC 28. Reliability of these two-lane roadways is impaired by any type of blockage or disruption due to winter weather, fog, washouts, landslides, fallen trees, traffic incidents, vehicle breakdowns, or slow-moving vehicles. Such situations adversely affect travel time as travelers must wait or back track.

**Steep grades, narrow shoulder widths, and sharp curves** on US 129, NC 143, and NC 28 affect travel speed and opportunities to pass slower vehicles.

**Over-capacity** of roadway segments: US 129 between NC 143 and SR 1155, and NC 143 between 3-lane section at SR 1275 and SR 1277 are predicted to be over capacity by 2040 {2015 Graham County CTP}.

## MOBILITY NEEDS

Local officials and the public residing in the area desire **improved access to employment, medical facilities, commercial centers, and educational facilities** to better serve the 67% of employed Graham County residents that **commute to jobs outside of the county**. Approximately 1,000 jobs in Graham County are filled by workers that commute in from other counties, most commuting in from Cherokee County {2015 Graham County CTP}.

All paved roads into and out of Graham County are primarily two-lane and there is an **inability to pass slower vehicles over substantial distances** ("up to 19 miles") {2015 Graham County CTP}.

A combination of steep grades, tight curves, and heavy vehicles causes **impaired mobility** and constrained freight movement {2015 Graham County CTP}.

**Emergency medical service response times** are frequently affected by roadway conditions and the volume/type of traffic encountered while responding to emergencies. This factor has resulted in the loss of life according to input provided by local officials {Project Team Meeting September 30, 2015 through October 1, 2015}.





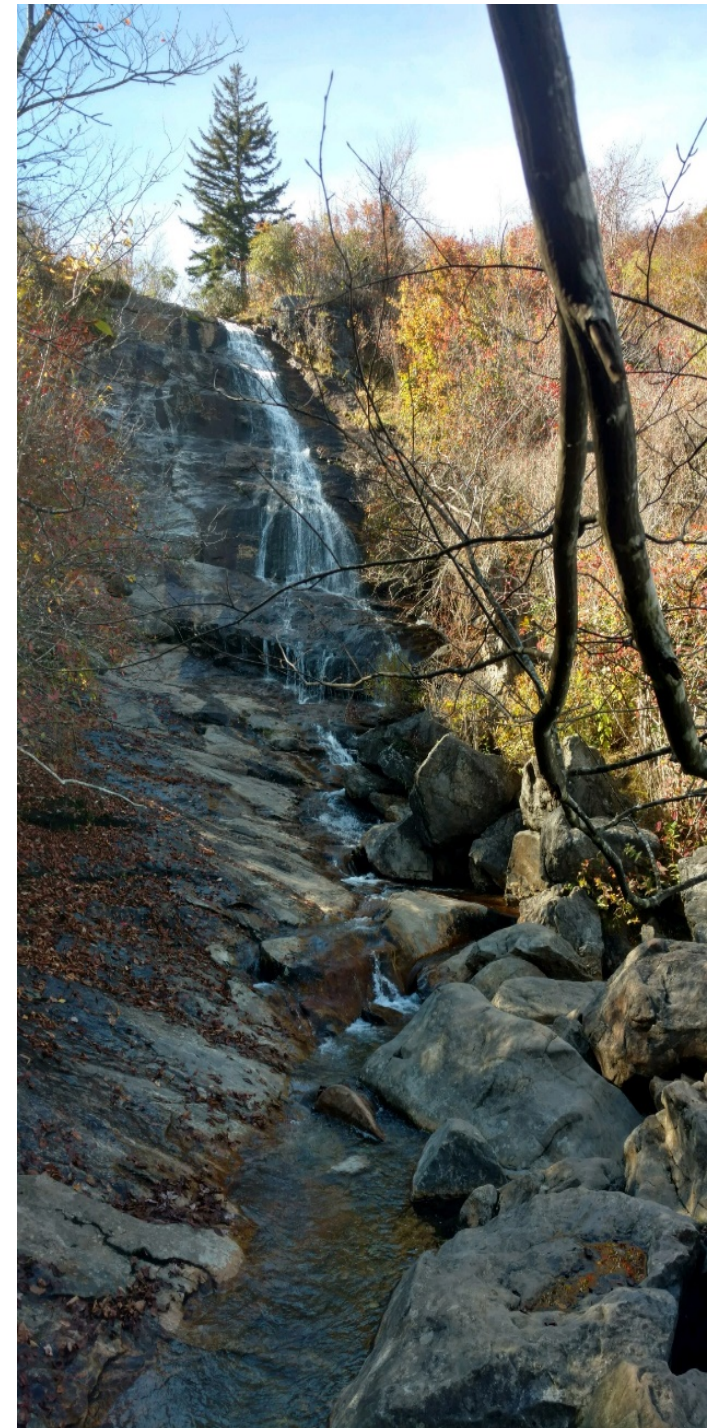
## *What is the purpose of the project?*

The project purpose is to provide the transportation infrastructure necessary for the well-being of local residents by improving mobility and reliability between the existing four-lane section on NC 28 at Stecoah and US 129 in Robbinsville.

This project is following the NEPA/404 Merger process, which is described in further detail in the box below.

## **WHAT IS THE NEPA/404 MERGER PROCESS?**

It is a process that combines the NEPA environmental review with Section 404 permitting to streamline project development and permitting for projects that have competing resources. It is a shared-decision making process that allows agencies to discuss and reach agreement on various project decisions (called Concurrence Points).





The [Design Study Report](#) (Section 3.0) provides detailed information on Quantm studies and study corridors.

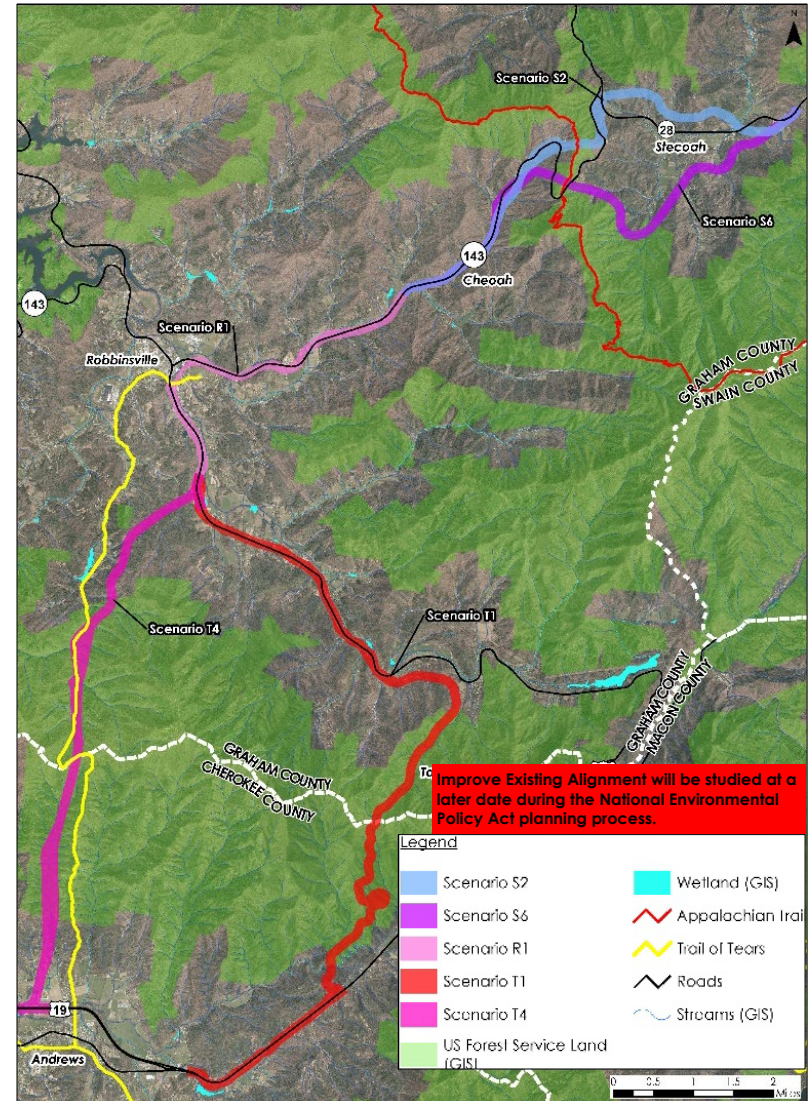
# 2.0 ALTERNATIVES

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## 2.1 PRELIMINARY ALTERNATIVES CONSIDERED & DROPPED

Prior to entering the NEPA environmental review stage, FHWA and NCDOT team members utilized an innovative corridor planning tool called Quantm™. Quantm is an alignment optimization program that develops optimized routes in consideration of design criteria inputs, construction costs, and environmental features. The software can be used to obtain a representational cost range for potential study alignments and can be used to refine an existing alignment within an established roadway corridor. These corridors were analyzed and documented in the [Design Study Report](#) (DSR).

Public meetings were held in February 2019 to present the public with proposed study corridors from Andrews to Stecoah. Input from the public, feedback provided by environmental advocacy groups, and the lack of available funding for the entire corridor contributed to the decision to remove the Andrews to Robbinsville portion of the project from the current study area. The State Transportation Improvement Program (STIP) identifies the remaining portion of Corridor K from Robbinsville to Stecoah as A-0009C (which includes the previously designated 'B' portion from Robbinsville to Cheoah).

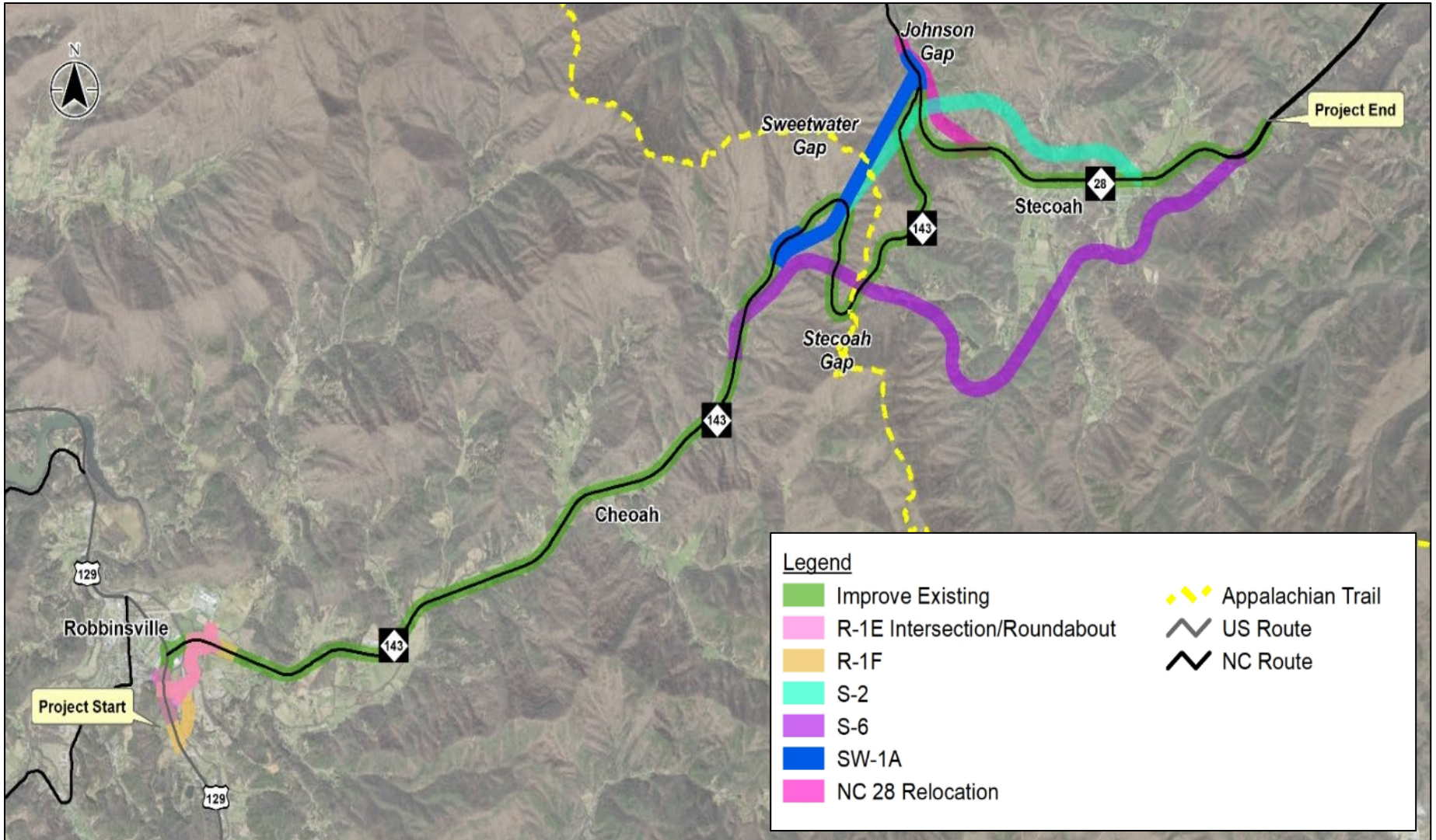


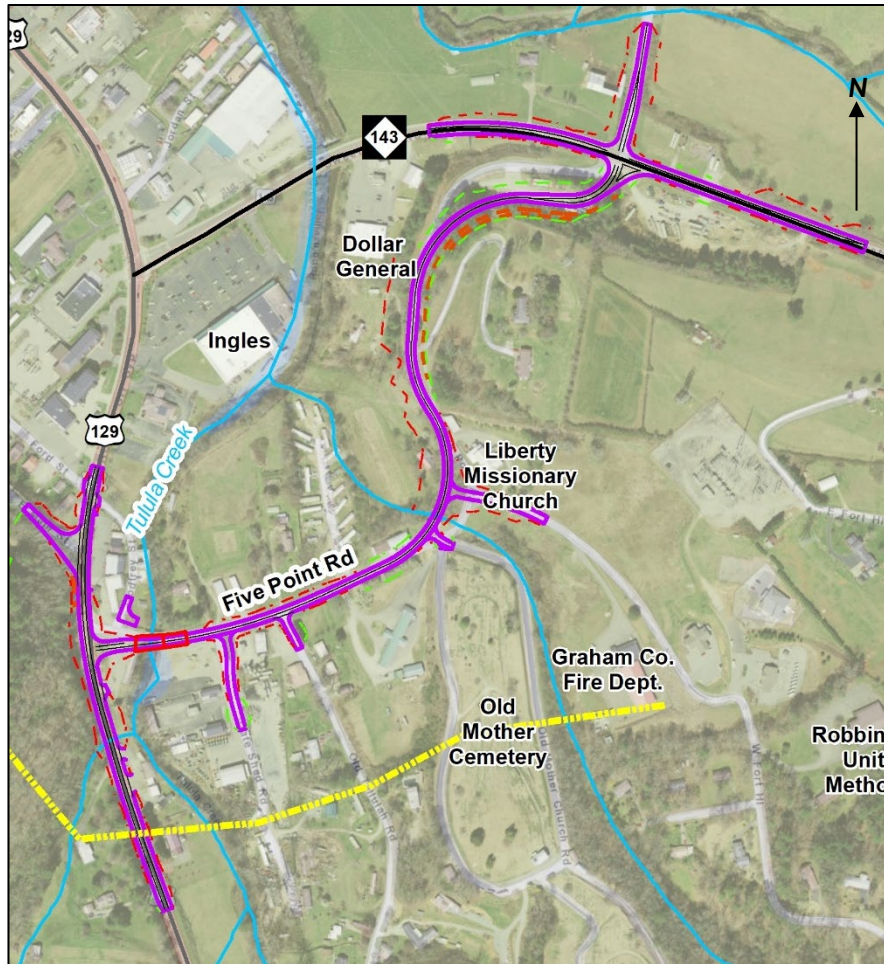
Scenarios Presented at February 2019 Public Meetings



## 2.2 DETAILED ALTERNATIVES CONSIDERED & DROPPED

Many alternatives were considered through the NEPA process, but ultimately dropped due to design constraints, local input, cost restraints, and environmental impacts. The alternative sections shown below result in nine alternatives and are detailed on the following pages.

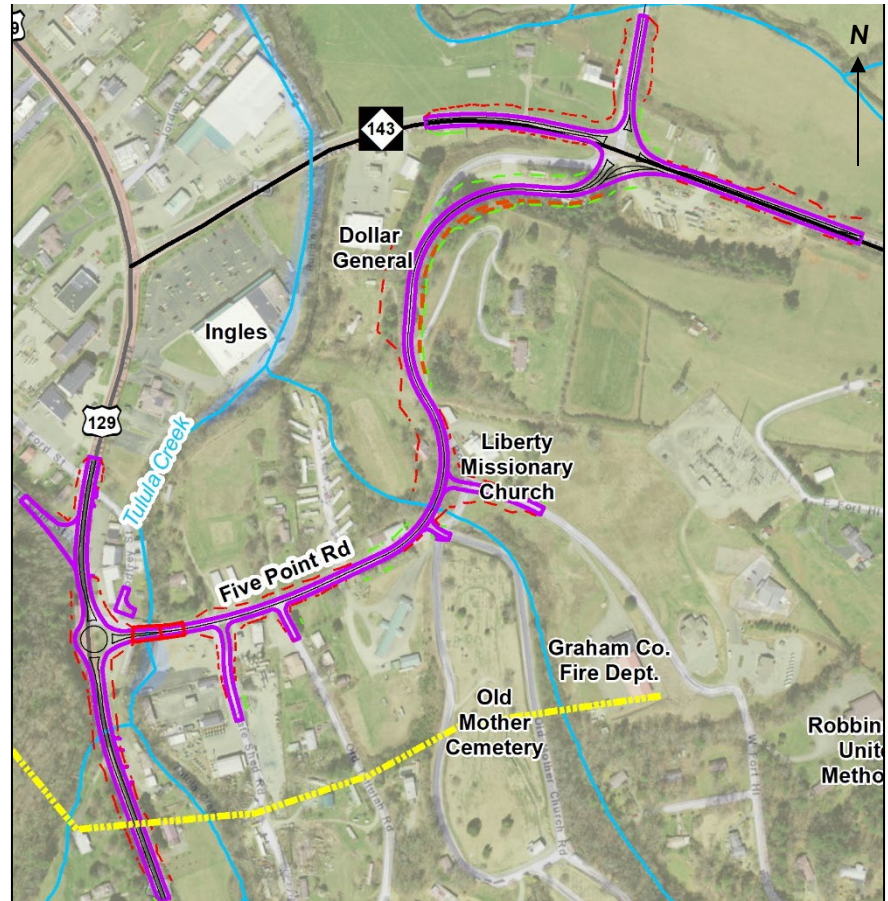




Legend	
	Proposed Edge Of Travel
	Proposed Lane Lines
	Proposed Retaining Wall
	Proposed Roadway Bridge
	Proposed Slope Cut
	Proposed Slope Fill
	Trail of Tears (NHT Route)
	US Route
	NC Route
	NHD Streams

### R-1E Intersection/Roundabout

These alternative sections, included in Alternatives 3, 4, 5, 6, 7, 8, and 9, utilized Five Point Road (SR 1275) between its intersections with US 129 and NC 143. The realignment provided a new alternative section for through-traffic traveling between US 129 south of Robbinsville and NC 143 east of Robbinsville, reducing traffic at the current US 129/NC 143 intersection. It would have corrected horizontal and vertical curvature on SR 1275 to NC route standards. Intersections could be addressed with either T-intersections or roundabouts at the intersections of the realigned Five Point Road (SR 1275) and US 129 and NC 143.





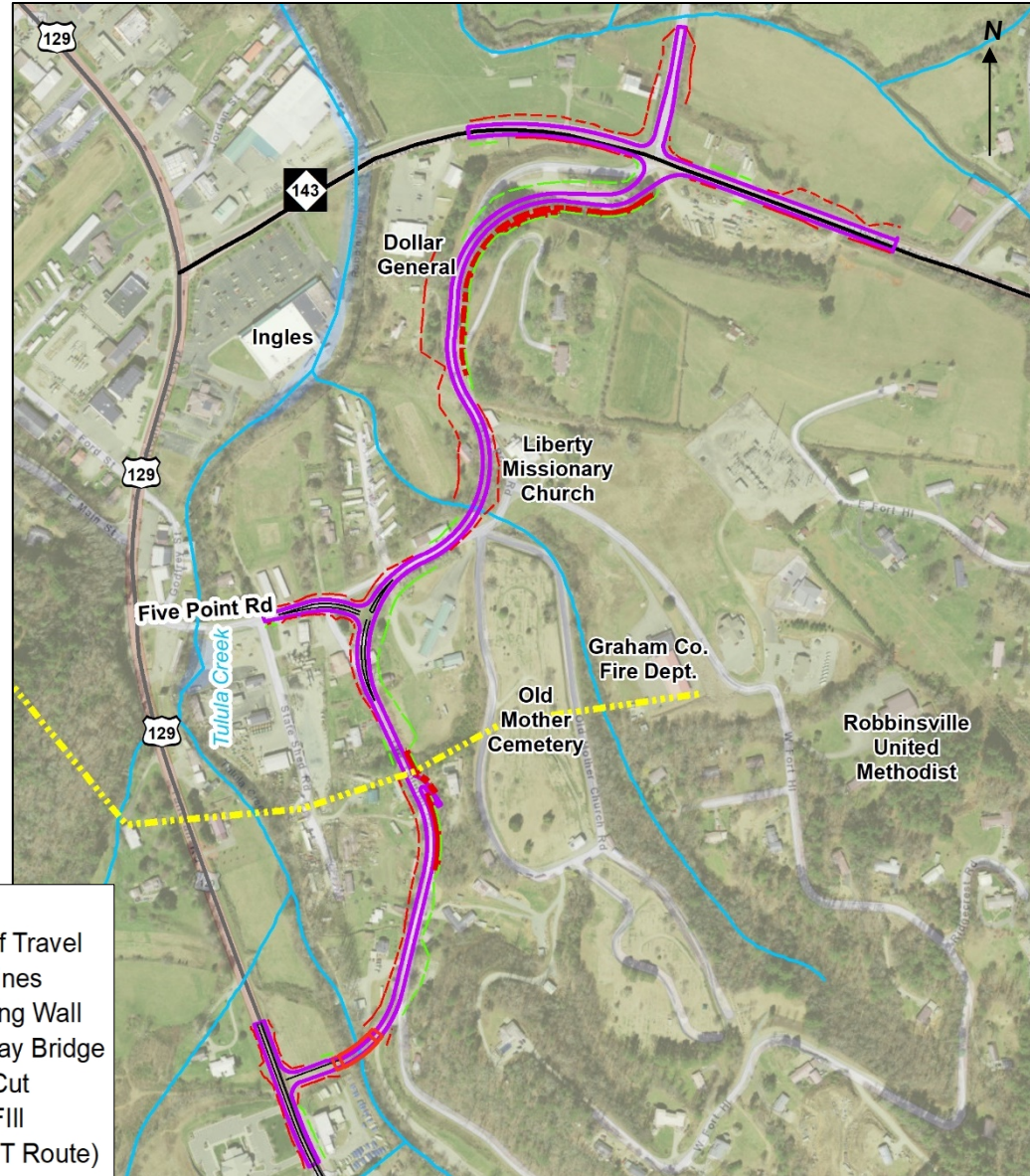


### R-1E Refined

The R-1E alternative initially included a long bridge on Five Point Road (SR 1275) over Tulula Creek. R-1E Refined was developed and studied to provide an alternate crossing to Tulula Creek. The alternate crossing was proposed to be further south on US 129.

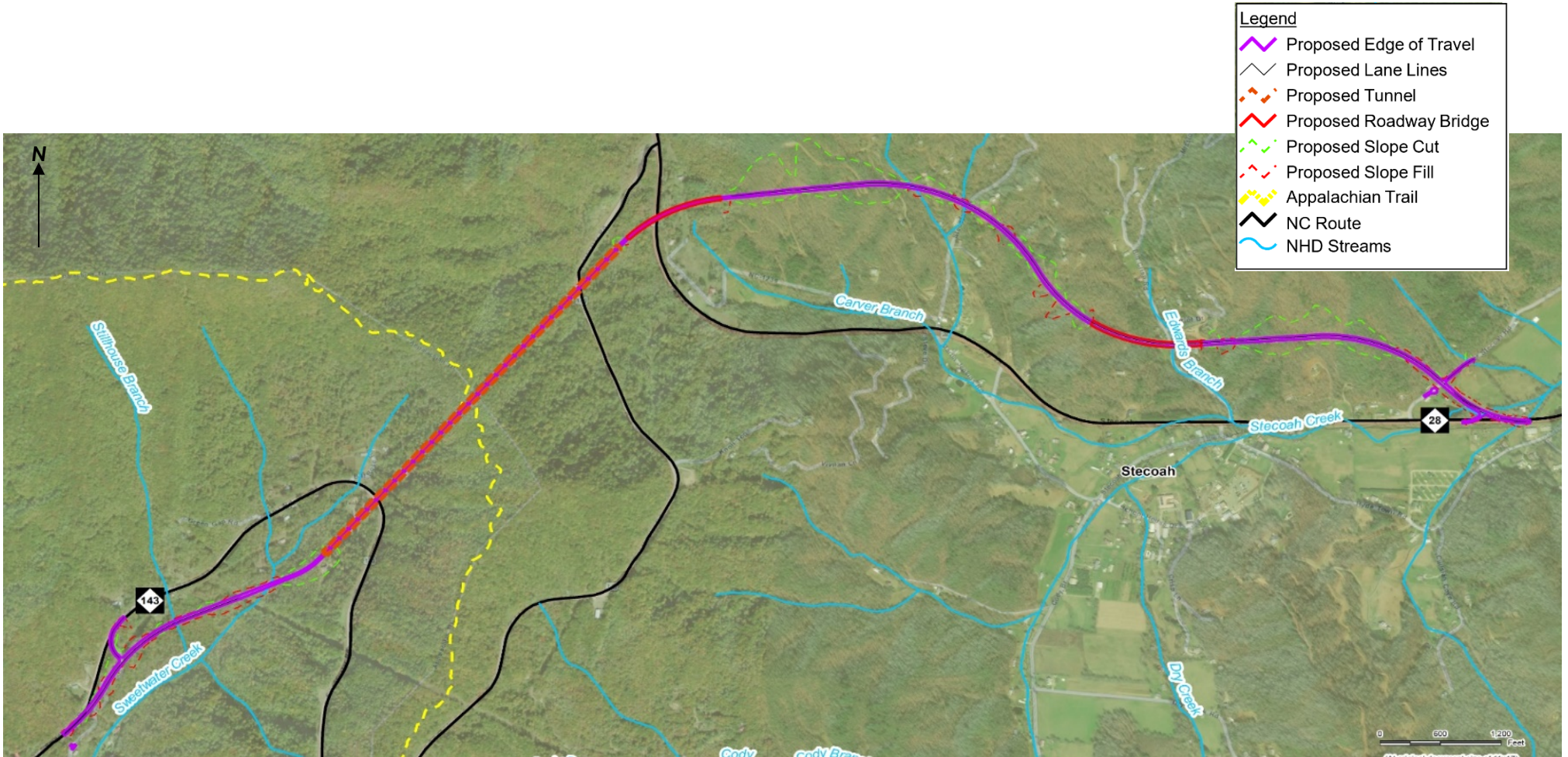
**Legend**

- Proposed Edge of Travel
- Proposed Lane Lines
- Proposed Retaining Wall
- Proposed Roadway Bridge
- Proposed Slope Cut
- Proposed Slope Fill
- Trail of Tears (NHT Route)
- US Route
- NC Route
- NHD Streams





**S-2** This alternative section, included in Alternatives 2, 5, and 8, included improving existing NC 143 from SR 1275 (Five Point Road) to just east of SR 1222 (Orr Branch Road). East of Orr Branch Road, the alternative section transitioned to new location north of NC 143 to a two-lane 4,445-foot long tunnel under existing NC 143 and the Appalachian Trail. The alternative section then crossed over NC 28 on a new 1,050-foot long bridge and over SR 1238 (Bill Crisp Road) and Edwards Branch on a new 1,130-foot long bridge before terminating at the existing four-lane section of NC 28. The new location section included 2.0 miles of climbing lanes.





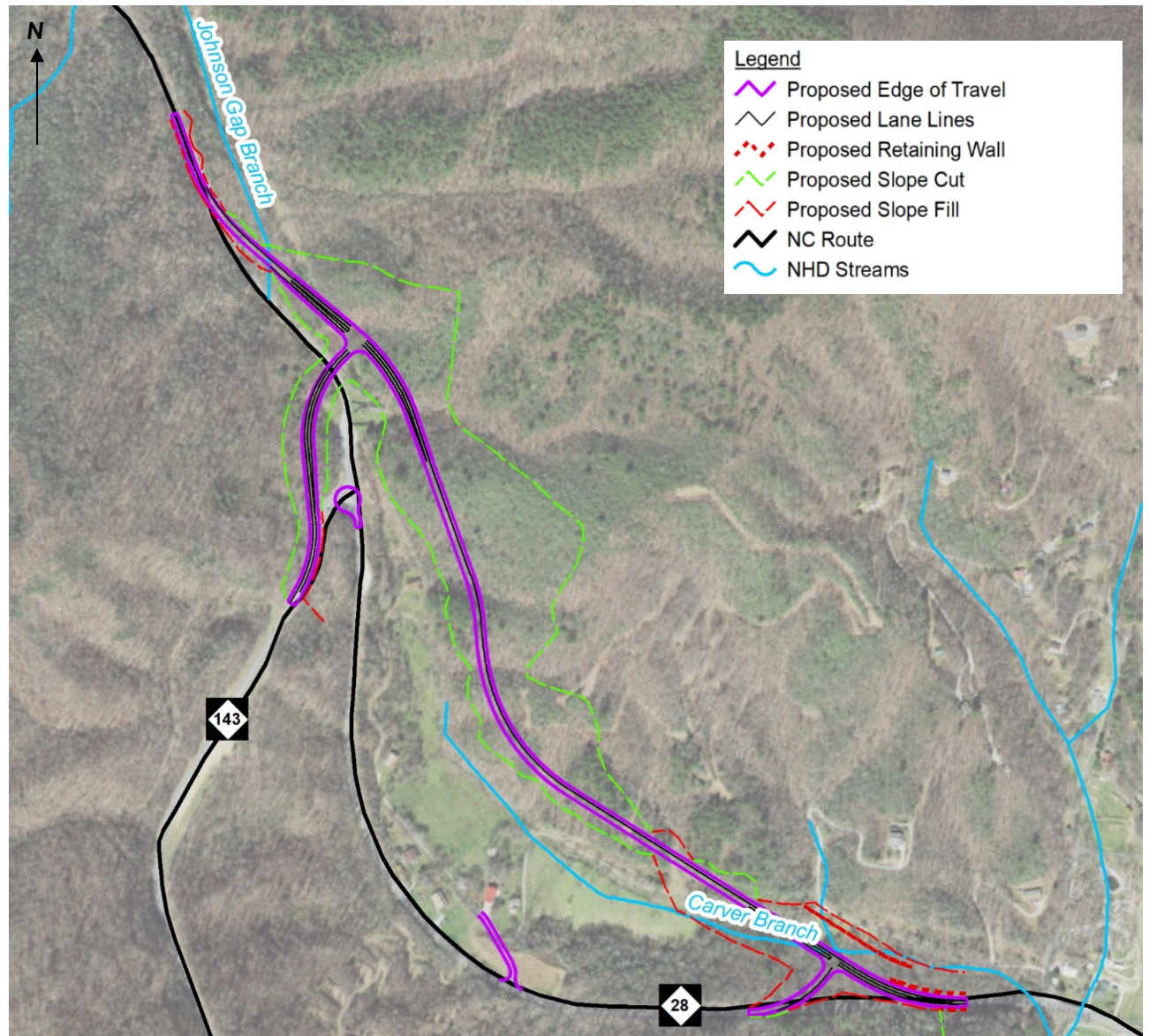
**SW-1A** This alternative section, included in Alternatives 3, 6, and 9, was inspired by ideas offered by environmental stakeholders. It included improving existing NC 143 from SR 1275 (Five Point Road) to just east of SR 1222 (Orr Branch Road). East of Orr Branch Road, the alternative section transitioned to new location south of NC 143, which included a two-lane, 5,416-foot long tunnel under existing NC 143 and the Appalachian Trail. East of the proposed tunnel, the section intersected NC 28 and widened NC 28 to a three-lane facility with alternating passing/climbing lanes. The new location section included 0.5-mile of climbing lanes.





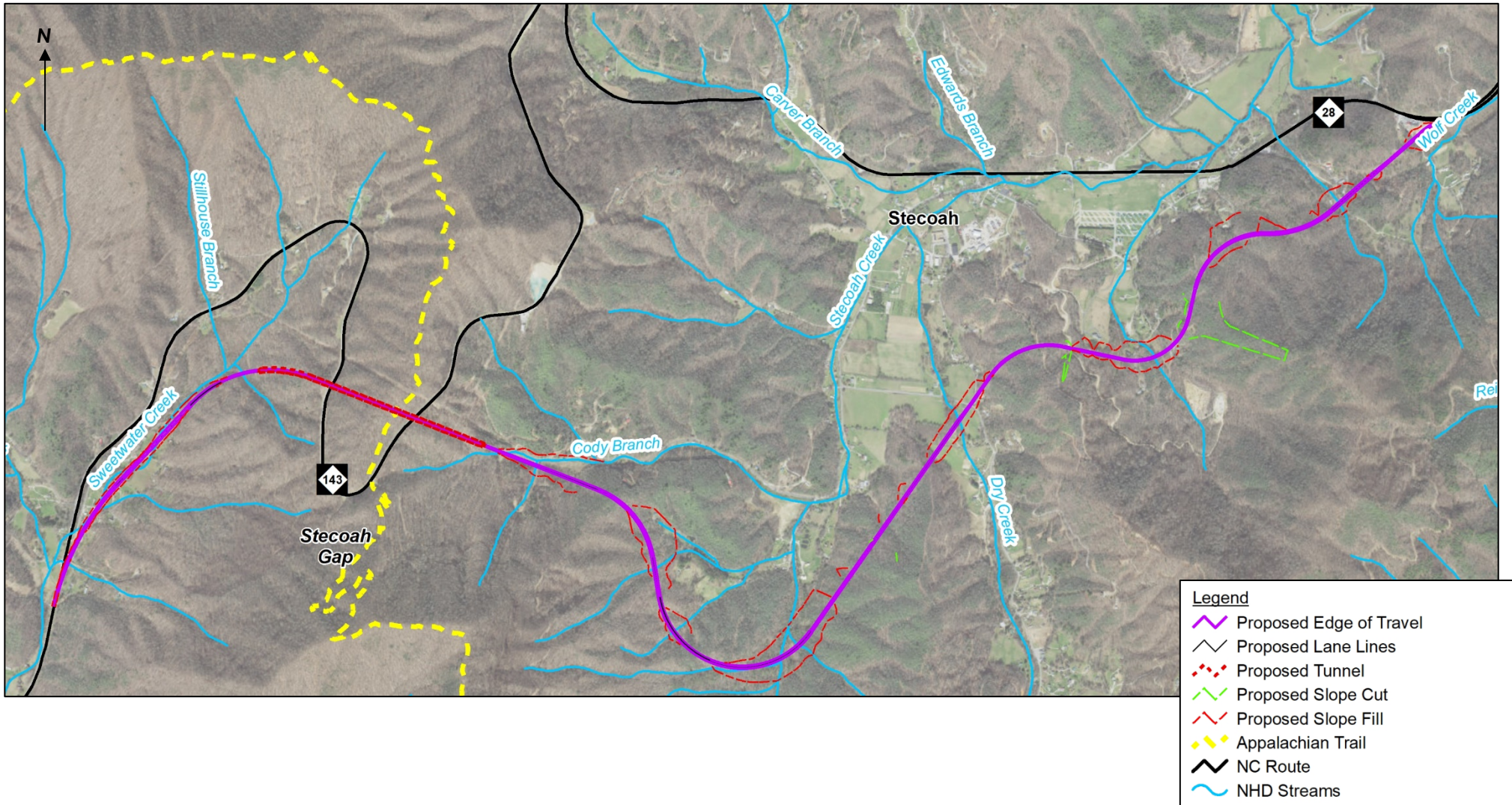
### NC 28 Relocation

This alternative section originated out of coordination with local officials, residents, and environmental stakeholders wishing to see an alternative section that improved the existing NC 143/NC 28 intersection, relocated NC 28 to address the winter hazards associated with Barbershop Hill, and avoided the Stecoah Heights community north of existing NC 28. The section relocated NC 28 to the eastern side of Barbershop Hill.





**S-6** This alternative section included improving existing NC 143 from SR 1275 (Five Point Road) to Stillhouse Branch. At Stillhouse Branch, the option transitioned to a new location section, including a 3,263-foot long tunnel underneath NC 143 and the Appalachian Trail. The alternative section continued on new location westward, paralleling Cody Branch before turning northward following the south side of Stecoah Valley.





## WHY ALTERNATIVES WERE DROPPED?

ALTERNATIVE	DROPPED WHEN?	WHY?
<b>R-1E Intersection or Roundabout</b>	May 20, 2020 Merger Concurrence Point 2 Meeting	The alternative section would create a high number of business relocations and is not supported by Graham County government officials for this reason.
<b>R-1E Refined</b>	January 29, 2020 Project Team Meeting	R-1E Refined was an interim alternative section developed to investigate ways to minimize aquatic impacts incurred by R-1E. The need for R-1E Refined was eliminated as subsequent hydraulic design reduced aquatic impacts in R-1E. Local officials agreed that there was no longer a need for R-1E Refined. This alternative section was eliminated before detailed alternatives were identified.
<b>S-2</b>	May 20, 2020 Merger Concurrence Point 2 Meeting	<p>The S-2 operations and maintenance costs associated with the tunnel are estimated to be a notable portion of the Division 14 annual maintenance budget. Construction costs would exceed bi-annual allocation for Division 14 and available funding through ADHS. Based on high construction costs, high annual operations and maintenance costs, and the lack of available funding, S-2 was not carried forward.</p> <p>In addition to the tunnel costs, there are the following impacts and challenges:</p> <ul style="list-style-type: none"> <li>- A high number of relocations in the Stecoah Heights community.</li> <li>- An area of high acid-producing rock requiring a mitigation plan and double corrosive protected anchors. Any water wells impacted by construction would need to be replaced and monitored in perpetuity.</li> <li>- S-2 is located within an Indiana bat roost boundary (federally protected species).</li> <li>- Two tall, long, curved bridges with steep grades. They present a large long-term financial investment and challenges for managing travel during icy weather.</li> </ul>
<b>SW-1A</b>	May 20, 2020 Merger Concurrence Point 2 Meeting	Like S-2, the SW-1A operations and maintenance costs are estimated to be a notable portion of the Division 14 annual maintenance budget. Construction costs would exceed the bi-annual allocation for Division 14 and available funding through ADHS. This alternative section is not carried forward due to these costs and the lack of available funding.
<b>NC 28 Relocation</b>	January 29, 2020 Project Team Meeting	The alternative section is not feasible due to hydraulic design concerns associated with potential deviation from established drainage patterns within the watershed. The design was also located in a cut section which did not achieve the purpose of improving the roadway's exposure to sunlight. This alternative section was eliminated before detailed alternatives were identified.
<b>S-6</b>	October 9, 2019 Merger Concurrence Point 2 Meeting	S-6 impacts the most sensitive, restrictive USFS management areas. It is the most intrusive alternative section to the Appalachian Trail visual field; and most impactful to known listed species. This alternative section was eliminated before detailed alternatives were identified.

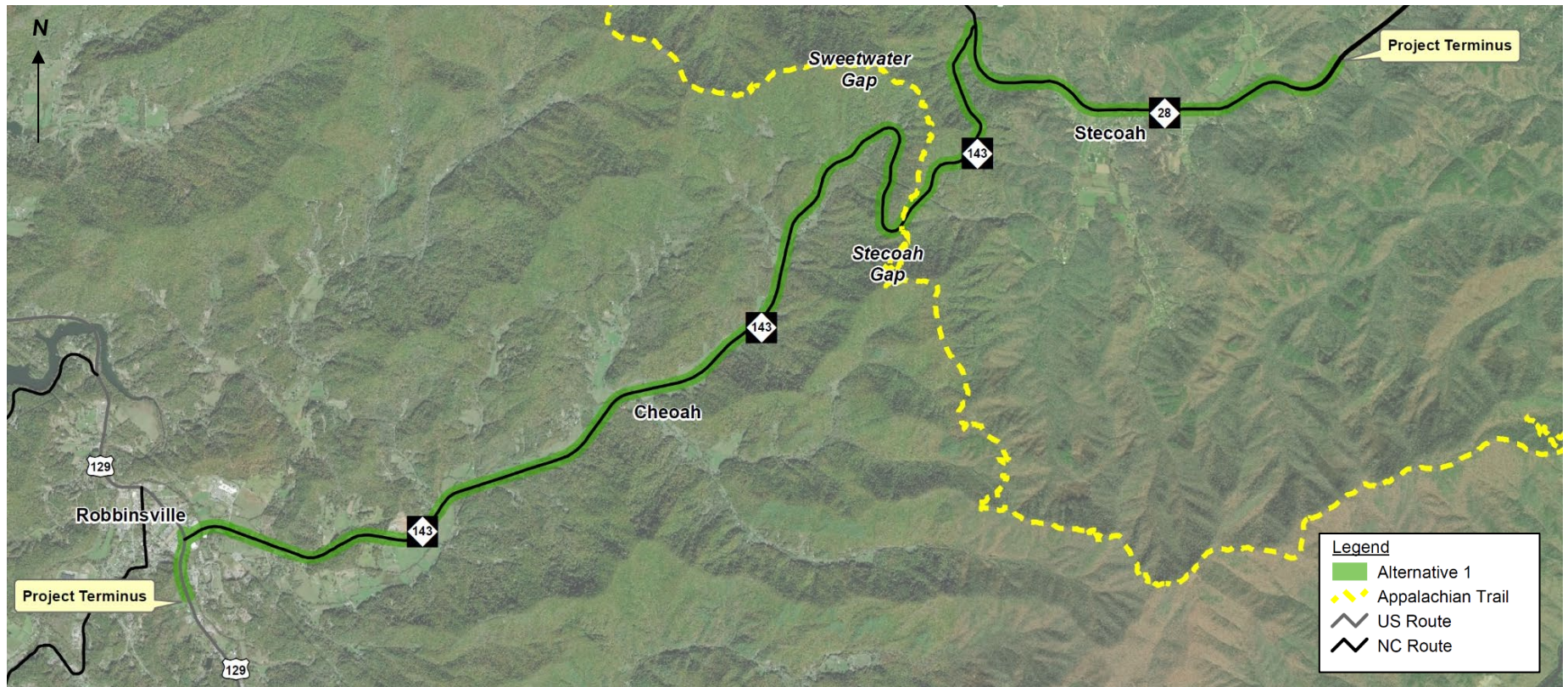


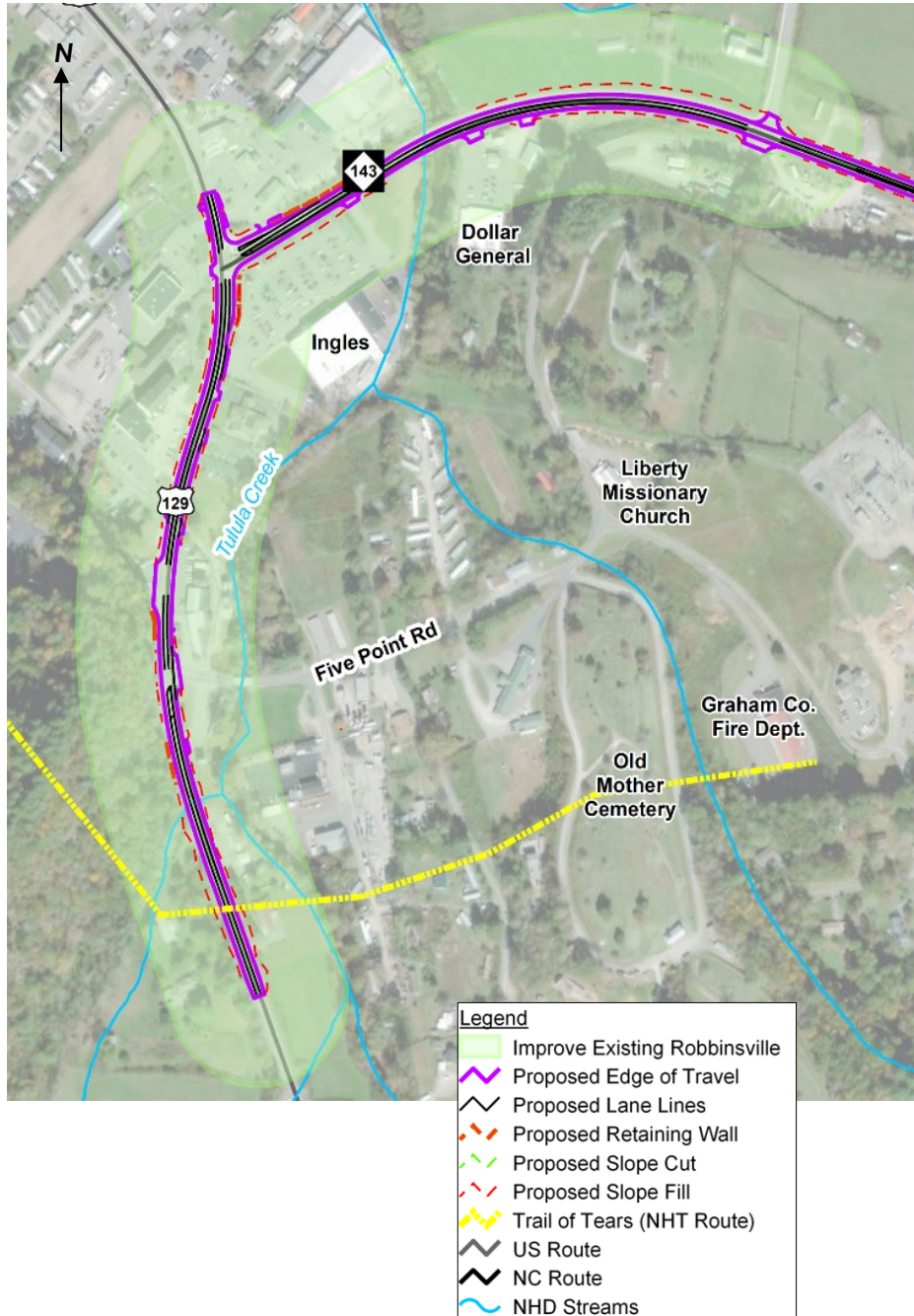
### 2.3 PREFERRED ALTERNATIVE

The selection of the Improve Existing Alternative (Alternative 1) as the Preferred Alternative was based on early public input, interagency coordination, and meetings with local officials.

This alternative would improve the existing alignments of US 129, NC 143, and NC 28 between Robbinsville and Stecoah, increasing shoulder widths and adding passing/climbing lanes for the length of the project.

The following pages show sections of Alternative 1. Detailed mapping of Alternative 1 can be found [here](#).





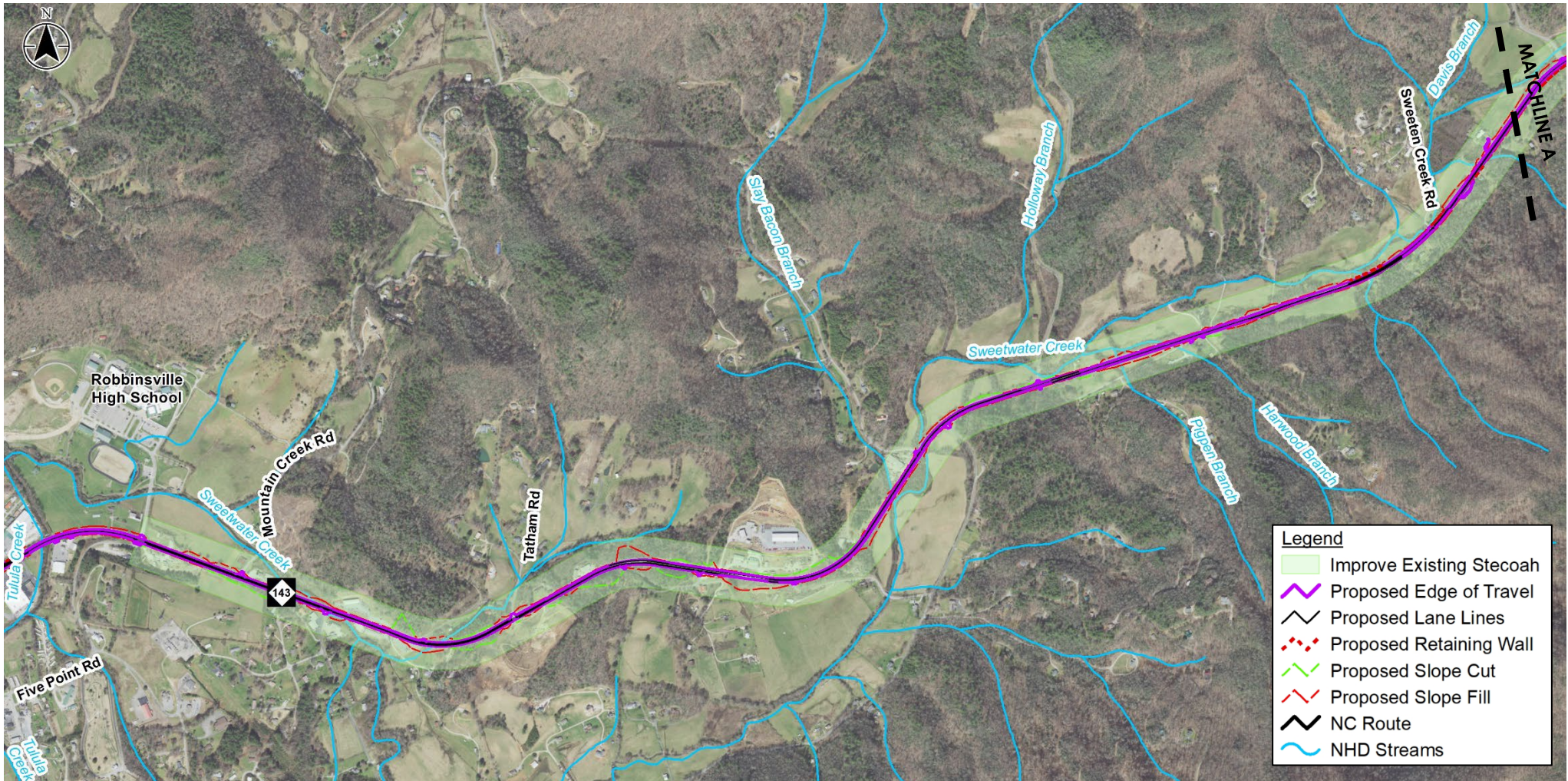
Proposed improvements in Robbinsville include resurfacing, adding a right-turn lane from US 129 to NC 143, and sidewalks from Robbinsville High School's entrance on NC 143 to the intersection of US 129 and SR 1275 (Five Point Road).

### COST ESTIMATES

The table below reflects cost estimates for Alternative 1.

Cost Estimates	Alternative 1
Roadway Construction	\$104,200,000
Right-of-Way	\$14,795,888
Utility Relocation	\$6,611,000
Land Bridge	\$5,000,000
<b>Total Cost</b>	<b>\$130,606,888</b>





Alternative 1 would include passing lanes and eight-foot paved shoulders eastward along NC 143 toward Cheoah. Alternative 1 includes dedicated left-turn lanes at Robbinsville High School, Five Point Road, Mountain Creek Road, Tatham Road, and Sweeten Creek Road.

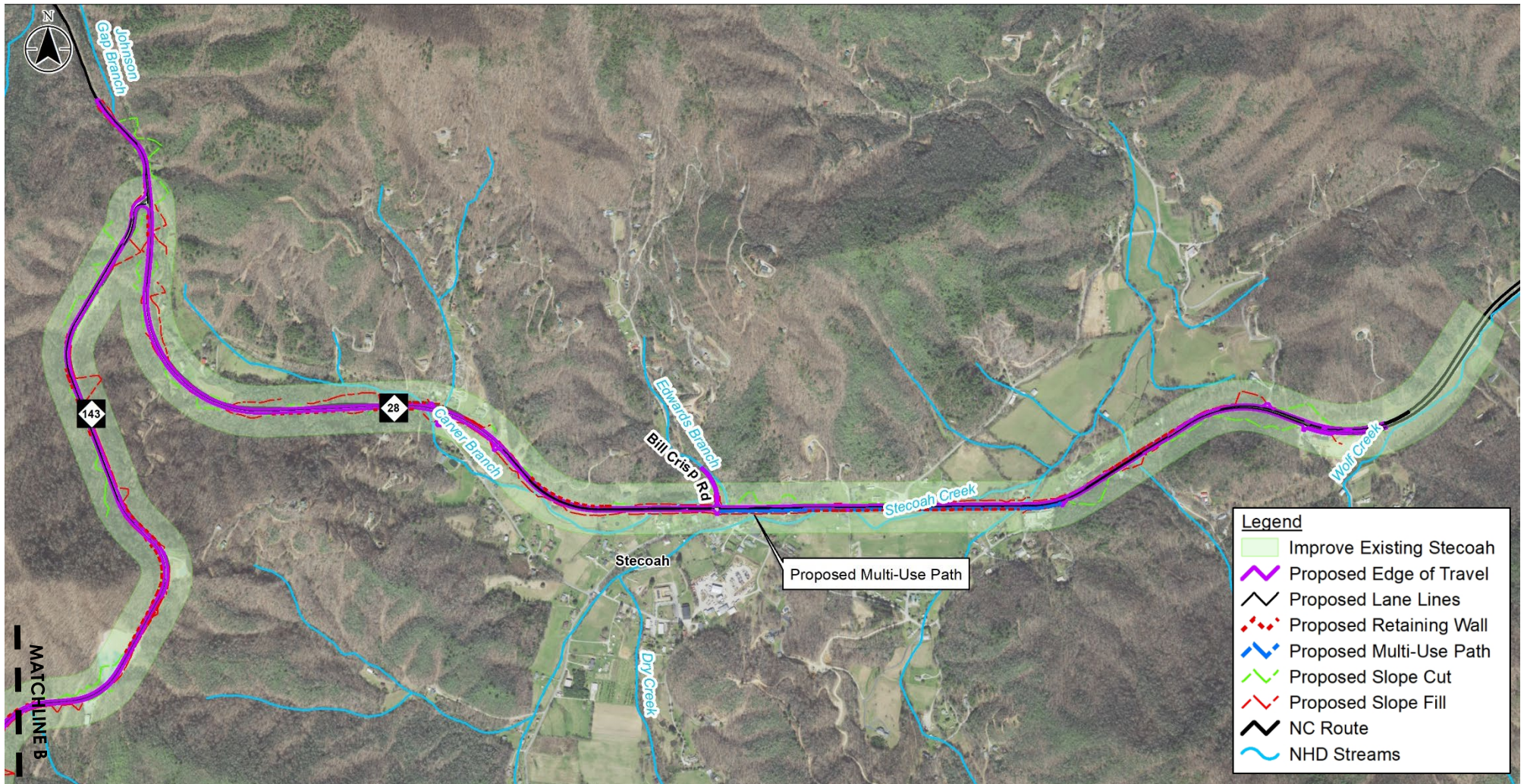


Near the Appalachian Trail (AT), Alternative 1 would provide both eastbound and westbound climbing lanes and eight-foot paved shoulders on NC 143. A land bridge would provide a grade-separated crossing for both pedestrian users of the AT and wildlife.





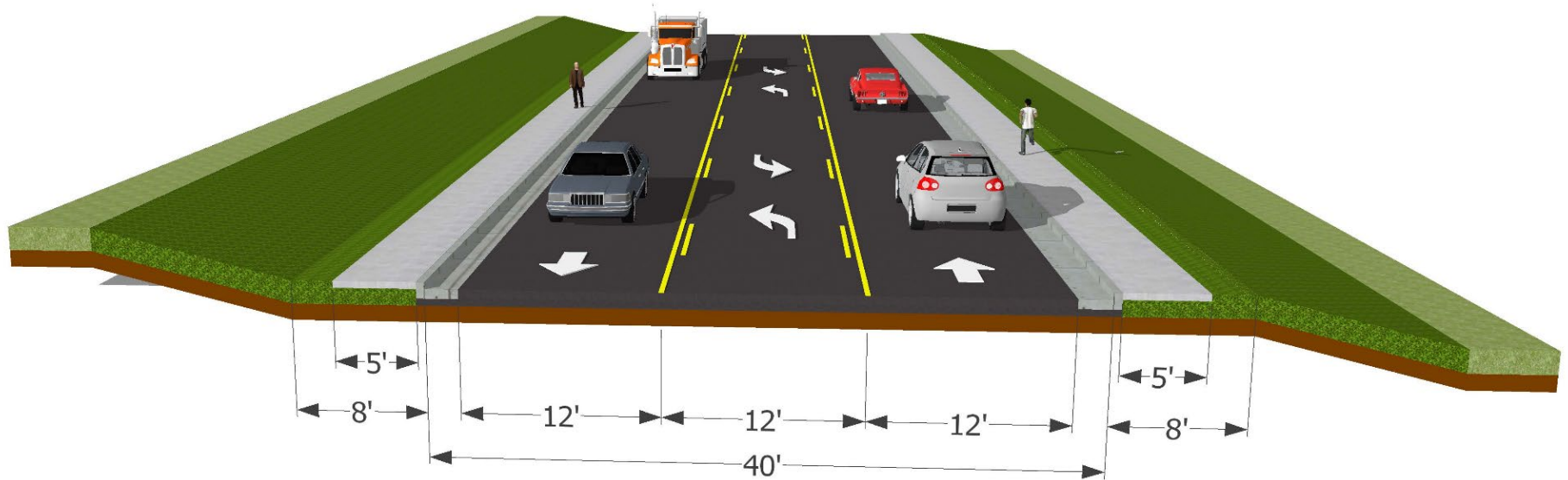
Alternative 1 would provide alternating passing/climbing lanes, a multi-use path, and an eight-foot paved shoulder along existing NC 28 in Stecoah. It would also include a slight realignment of Bill Crisp Road to create a four-leg intersection with NC 28 and Stecoah Road.





## 2.4 TYPICAL SECTIONS

Along US 129 and NC 143 in Robbinsville, the proposed typical section is three lanes including a center turn lane or occasional left and right turning lanes, and five-foot sidewalks. Sidewalks are proposed on NC 143 from the Robbinsville High School entrance to the US 129 and SR 1275 (Five Point Road) intersection.

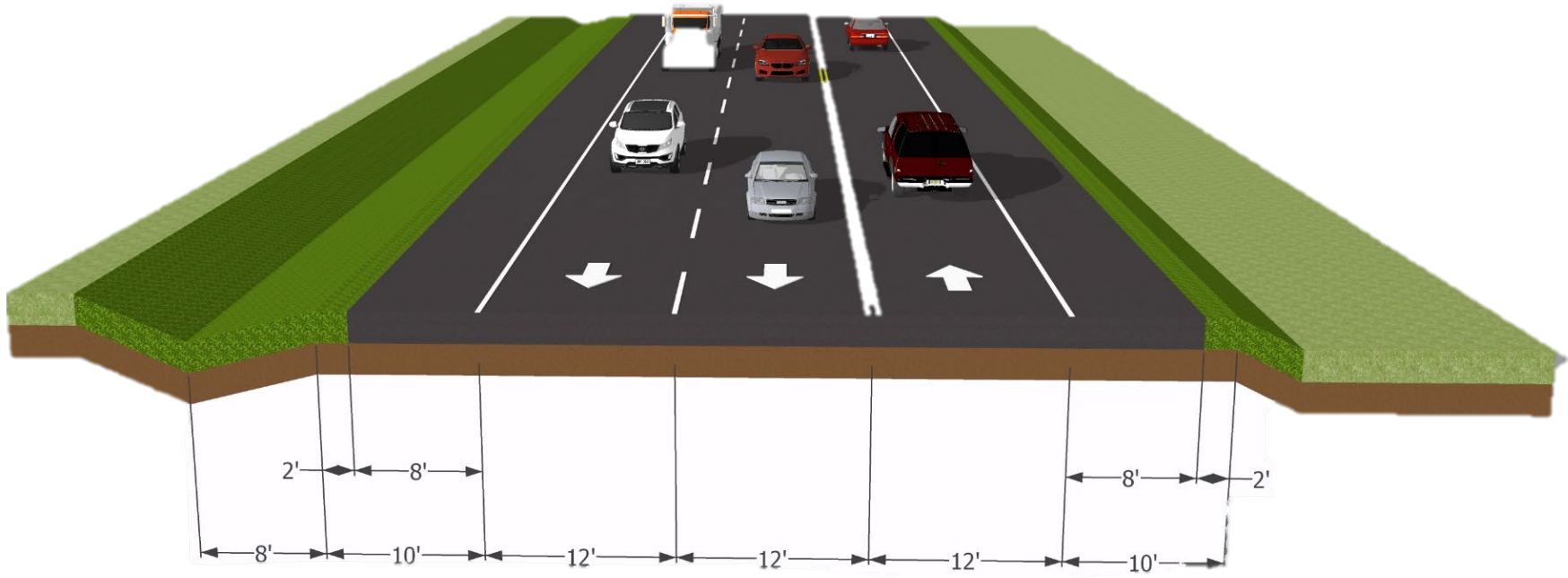


Center Turn Lane Typical Section  
NC 143/US 129 in Robbinsville

\*shoulder typical may vary in final design



The typical section for much of the remainder of the project includes two 12-foot lanes with 10-foot shoulders, including eight feet of pavement and two feet of grass, with passing and climbing lanes throughout.

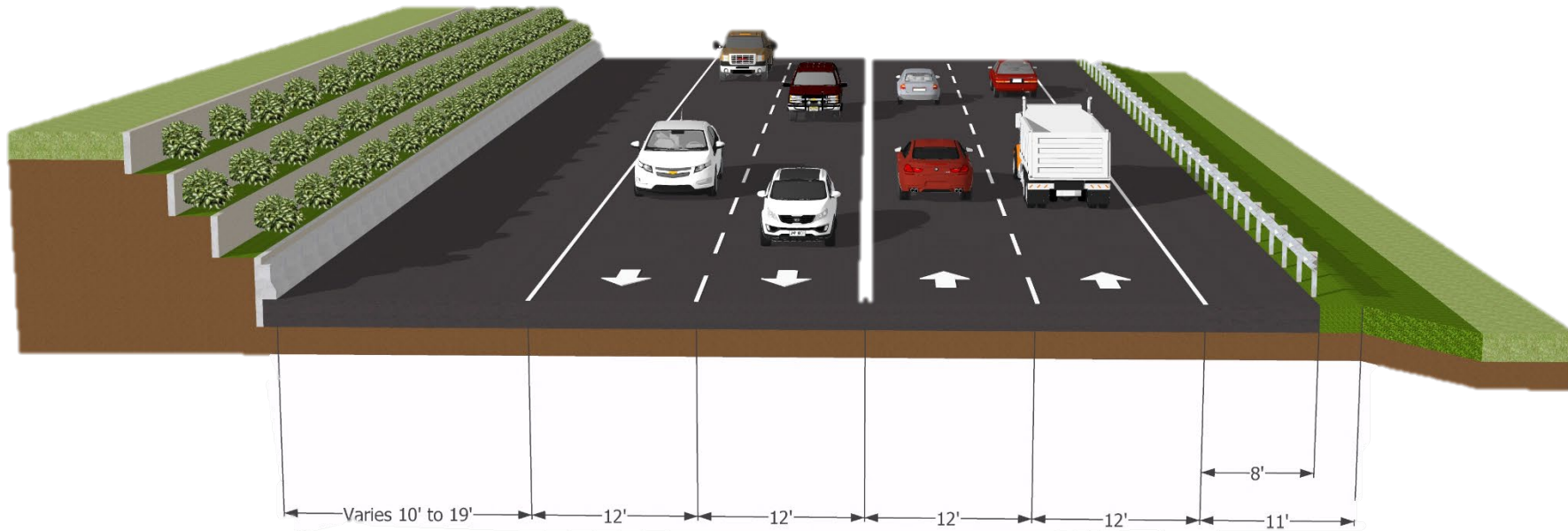


*Passing/Climbing Lane Typical Section  
NC 143/NC 28*

\*shoulder typical may vary in final design



The typical section at the Appalachian Trail includes four 12-foot lanes with eight-foot paved shoulders, two-foot grass shoulders, and a tiered retaining wall.

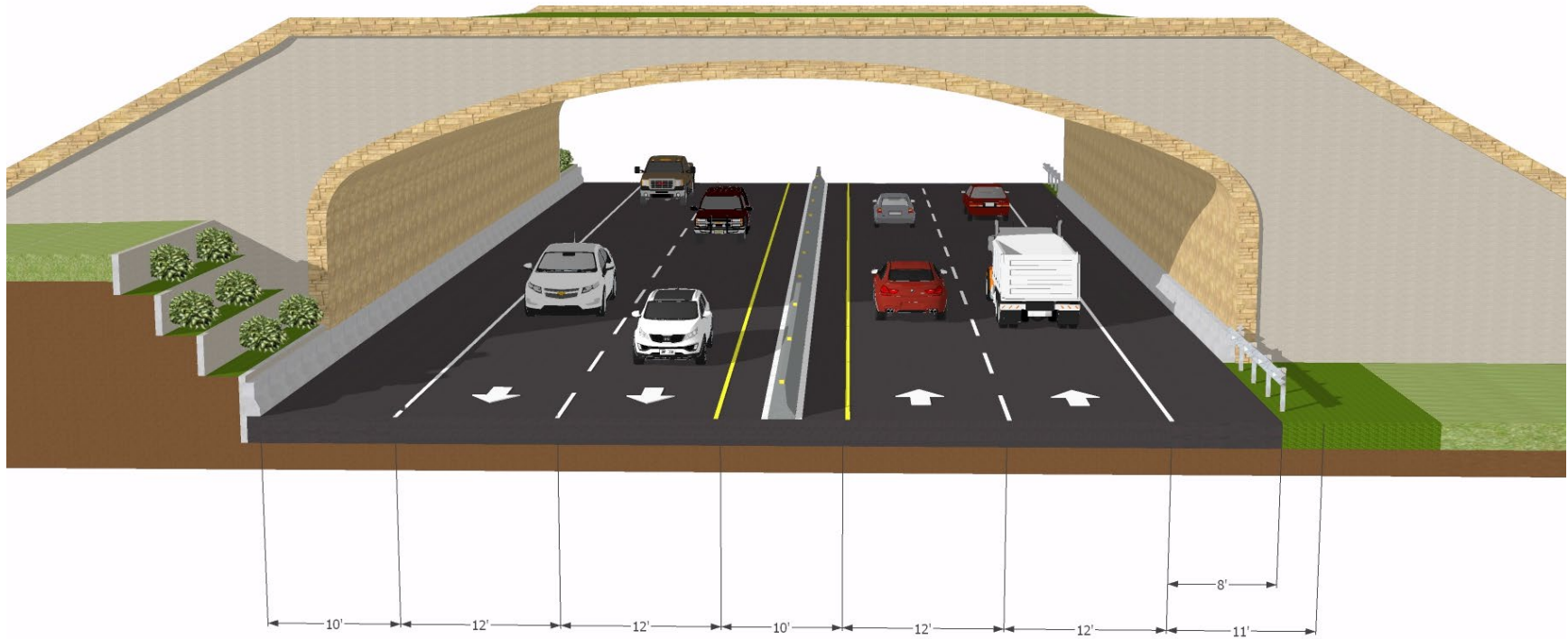


*Appalachian Trail Typical Section*

\*shoulder typical may vary in final design



A land bridge is proposed to facilitate the crossing of wildlife and pedestrians across NC 143, and would relocate the Appalachian Trail in the middle of the land bridge. The land bridge would be approximately 160 feet long, 220 feet wide, and 29-feet tall filled with earth material and planted.



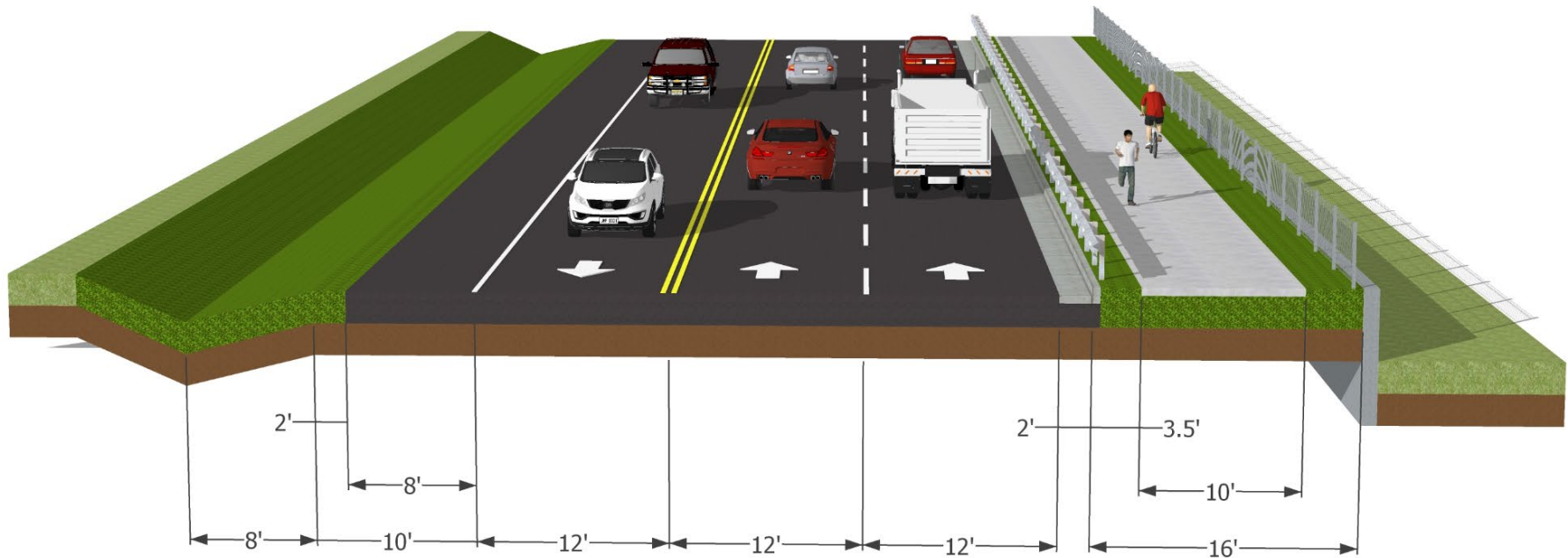
*Land Bridge Typical Section*

\*shoulder typical may vary in final design





A multi-use path is proposed along NC 28 from Hyde Town Road (SR 1230) from its western intersection with NC 28 to its eastern intersection with NC 28. The typical section here includes three 12-foot lanes with a 10-foot paved multi-use path.



Multi-Use Path Typical Section  
NC 28


\*shoulder typical may vary in final design





# 3.0 PROJECT IMPACTS

## What are the Impacts Associated with the Preferred Alternative?

 Anticipated impacts to National Forest System (NFS) land are shaded blue for quick reference.

**Background**  
Background is provided where additional context may help the reader understand the basis for an impact conclusion.

TABLE 3.1: PROJECT IMPACTS

Resource	Significant Impact?	Measures to Address Impacts
<p>3.1 <a href="#">Historic Architecture Resources</a><sup>1</sup></p>	<p><b>No.</b> The proposed project would not have an adverse effect on any historic architecture resources as determined in coordination with the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP). Of the 38 historic properties and two historic districts (HDs) (Robbinsville Downtown HD and Cheoah HD) identified within the area of potential effect (APE), 17 buildings, 2 historic districts (HDs), and the Appalachian Trail are eligible for the National Register of Historic Properties. (The Appalachian Trail was previously determined eligible for the NRHP but has not been officially listed to date.)</p> <p><b>Background</b> On June 1, 2020, the effects of the proposed project on historic architecture resources were assessed on 16 properties: 13 buildings, 2 districts, and the AT. Of the 20 eligible properties, it was determined that 4 buildings were located outside of the revised Area of Potential Effect and, thus, effect calls were not made on them. The results of the <a href="#">effects determinations</a> are as followed:</p> <p><b>No Adverse Effect (7 sites):</b> Appalachian Trail, John and Mattie Colvard House, Cody House, John and Ruby Cody House, John A. Cody House, Randolph-Stewart House, and Cheoah Historic District.</p> <p><b>Appalachian Trail:</b> On June 1, 2020 there were 2 designs for the AT, both involving a pedestrian bridge. Each design received Section 106 Effects determinations. A 2-lane design received a No Adverse Effect call; a 4-lane design received an Adverse Effect call.</p>	<p>As a result of the meeting held with the Advisory Council on Historic Preservation (ACHP) on August 10, 2020, the NCDOT and FHWA committed to enter into a Section 106 Programmatic Agreement (PA). A PA is appropriate when it is difficult to fully determine how a particular undertaking may affect historic resources or the location of historic resources and their significance and character. The PA will outline procedures, roles and responsibilities, and continued consultation through final design, right of way and construction.</p> <p>The intent of the PA is to get a No Adverse Effect (NAE) call for the entire project for both historic and archaeology sites. The PA will be executed prior to the Finding of No Significant Impact (FONSI).</p> <p>The PA will include consultation from the consulting parties identified during the Section 106 process. It will include signatory parties from entities with land</p>

<sup>1</sup> [Historic Architecture Survey Report](#). prepared for ADHS Corridor K. April 2020.



Resource	Significant Impact?	Measures to Address Impacts
<p>3.1 <a href="#">Historic Architecture Resources</a> (cont.)</p>	<p>Since June, NCDOT continued to explore design options at the AT, including how to accommodate animal passage as suggested during coordination with various environmental advocates. The current design in the preferred alternative at the AT involves four lanes and a land bridge which will carry the AT over the road. NCDOT, in coordination with the USFS, NPS, Appalachian Trail Conservancy and the NC SHPO, was able to determine a placement of the land bridge, which involves a relocation of a portion of the AT, such that visual effects on the AT would be greatly reduced.</p> <p>On August 10, 2020, in a <a href="#">meeting</a> involving the SHPO, EBCI THPO, NCDOT Cultural Resources, FHWA, and the ACHP, it was agreed to move forward declaring a No Adverse Effect (NAE) at the Appalachian Trail with a commitment to enter a PA that outlines procedures, roles &amp; responsibilities, and continued consultation through the project.</p> <p><b>No Effect (9 sites):</b> Robbinsville First Baptist Church, Old Mother Church and Cemetery, Patton Gywnn Denton House, The Hut, Robbinsville Downtown Historic District, Delma and Mary Ruth Shuler House, Stecoah School, Stecoah Baptist Church, and the Boxed House.</p> <p>For additional information, see the <a href="#">concurrence form</a> for assessment of effects for the Preferred Alternative and meeting minutes from August 10, 2020.</p> <p>One NRHP-eligible historic resource, the Appalachian Trail, is located on NFS land.</p>	<p>ownership, such as the US Forest Service (USFS) and the Eastern Band of Cherokee Indians (EBCI). The following topics may be covered in the PA:</p> <ul style="list-style-type: none"> <li>• Effects calls from June 1 including conditions (see below)</li> <li>• Periodic design reviews and consultation points</li> <li>• Principles to follow</li> <li>• Avoidance and mitigation measures</li> <li>• Archaeology reviews</li> <li>• Unanticipated discovery</li> <li>• Course of action to develop a Memorandum of Agreement (MOA) if necessary for archaeology</li> <li>• Specifications or aspects of the roadway alignment</li> </ul> <p>On June 1, 2020, the following conditions were identified at the Section 106 Effects <a href="#">meeting</a>. These conditions will be included in the PA.</p> <p>John and Mattie Colvard House: Tree surveying to avoid trees during construction—replace any trees that cannot be avoided.</p> <p>John and Ruby Cody House: Protective measures for stone wall that lines driveway.</p> <p>Cheoah Historic District: Minimize tree cutting and restore landscaping after temporary detour is removed.</p>



Resource	Significant Impact?	Measures to Address Impacts
<p>3.2 Archaeology Resources<sup>2</sup></p>	<p><b>None anticipated.</b> Section 106 effects determinations for archaeological resources are pending the results of an intensive archaeological survey report for the Preferred Alternative. Project commitments have been developed to identify actions needed to complete field surveys for remaining unassessed areas and to document the results of investigations conducted on artifacts identified during field surveys.</p> <p><b>Background</b> The management summary addresses 87 archaeological sites, including 73 sites that were identified or revisited during the 2019-2020 field investigations and two previously recorded sites (31GH35 and 31GH45) that could not be revisited due to lack of access.</p> <p>Also discussed are 10 previously recorded sites that did not require additional survey as they had been delineated within the current Area of Potential Effects (APE) during past episodes of fieldwork. The two other sites, 31GH700 and 31GH709, are road traces that are documented in an appendix to the management summary. Both are located outside of the project alternatives and were therefore not assessed for National Register of Historic Places (NRHP) eligibility but were investigated to better understand former travelways in the Stecoah Gap and Fort Hill areas.</p> <p>Of the 73 sites from the 2019-2020 archaeological investigations, 54 sites were either not eligible for listing in the NRHP, or the portions of the sites within the surveyed corridor would not alone contribute to any potential eligibility of the sites; eleven sites were eligible for listing in the NRHP; and, three sites identified as unassessed for listing in the NRHP that should be further investigated should project activities be determined to impact these sites. Five sites are located on EBCI land with effects determinations still pending. [The results of ongoing coordination with the EBCI Tribal Preservation Office (THPO) will be documented in the Finding of No Significance (FONSI).]</p> <p>Of these sites, one (31GH696) is located on NFS land.</p>	<p>Archaeological resources will also be captured under the Section 106 Programmatic Agreement (PA) that was mentioned above in Section 3.1. In the event that an archaeological site eligible for the NRHP has a finding of adverse effect, the PA will spell out a process where a Memorandum of Agreement (MOA) would be developed.</p> <p>An intensive archaeological survey of the Preferred Alternative will be completed prior to the Finding of No Significant Impact (FONSI). Evaluation of identified archaeological resources, including previously identified but unassessed sites, shall be conducted.</p> <p>Archaeological Sites 31GH34, 31GH78, 31GH94, 31GH599, 31GH664, 31GH673, and 31GH691: while avoidance is recommended, the sites do not warrant preservation in place. If portions of the sites are determined to be adversely affected, those areas will be mitigated by a data recovery plan once right-of-way and easements are acquired.</p> <p>Archaeological Site 31GH46: this site will be avoided during the construction phase of the project including any staging activities. Its locations will be added to the design plans as environmentally sensitive. If avoidance of Site 31GH46 is</p>

<sup>2</sup> Draft Archaeological Investigations Management Summary prepared for ADHS Corridor K. June 2020.



Resource	Significant Impact?	Measures to Address Impacts
3.2 Archaeology Resources (cont.)	<i>See discussion on previous page.</i>	determined not possible, consultation with SHPO and consulting parties is required.  Archaeological Sites 31GH45 and 31GH723: subsurface testing (including additional deep trench testing) at these sites will be completed once right-of-way and easements are acquired by NCDOT.  If these sites or any newly identified sites are determined eligible for the NRHP, NCDOT will coordinate with SHPO and other consulting parties to identify appropriate mitigation. All potential mitigation at these sites will be covered in the 106 Form for adverse effects and incorporated in the stipulations of a Memorandum of Agreement.
3.3 Section 4(f) Resources	<p><b>No.</b> The following resources were determined to have No Adverse Effect for Section 106 and de minimis for Section 4(f): John and Mattie Colvard House, Patton Gwynn Denton House, Cody House, John A. Cody House, Cheoah Historic District, and Randolph-Stewart House and the Appalachian Trail. See Section 3.1 for additional details on historic resources. With regard to the Appalachian Trail as a Section 4(f) resource, with mitigation, the Preferred Alternative would not adversely impact the AT. See Section 3.18 for additional discussion of parks and recreational resources.</p> <p><b>Background</b> <b>The Appalachian Trail (AT):</b> The trail is both a Section 106 resource and Section 4(f) resource due to and its eligibility for listing on the NRHP and its protected recreational function.</p> <p><b>The Trail of Tears:</b> The Trail of Tears is an approximately 5,000-mile long trail that represents the path traveled by Native Americans during forced relocation in the 1830s. Available data on the exact location of the Trail of Tears is imprecise and there is uncertainty about the exact location of this portion of the Trail of Tears. As</p>	Mitigation for impacts related to the realignment of the AT are being developed in coordination with the NPS, USFS, and ATC and will be included in the Section 106 Programmatic Agreement (PA) discussed in Section 3.1. The proposed land bridge and AT realignment fall within the USFS Management Area (MA) for the Appalachian Trail. <sup>3</sup> The land bridge and AT realignment will be developed to avoid and minimize impacts to the AT MA to the full extent practicable, and is anticipated to result in a de minimis finding in accordance with Section 4(f) regulations. Section 4(f) determinations

<sup>3</sup> The Appalachian Trail falls within Management Area (MA) 14 of the [Nantahala and Pisgah Land and Resource Management Plan \(N&P LRMP\)](#) which is described as the Appalachian National Scenic Trail and its visual foreground zone and is managed to maintain scenery and visual quality.



Resource	Significant Impact?	Measures to Address Impacts
<p>3.3 Section 4(f) Resources (cont.)</p>	<p>such, there is the “Trail of Tears National Historic Trail” and a second alignment (“Trail of Tears – Potential Route”) that is based on research conducted as part of the study “Removal Period (1835-1838) Cultural Resources in the Proposed TIP Project A-9 Highway Corridor: Historical and Physical Evidence” (Riggs, 1998). Both areas are being studied as part of the STIP A-0009C project. Additional right-of-way proposed as part of the Preferred Alternative would encroach on 21.4 linear feet of the National Historic Trail route; however, no construction impacts are anticipated.</p> <p>The USFS concurred with FHWA’s findings that only one Section 4(f) resource, the AT, is located on NFS lands.</p>	<p>will be finalized following coordination with the USFS and other appropriate agencies.</p> <p>John and Mattie Colvard House: Tree surveying to avoid trees during construction—replace any trees that cannot be avoided.</p> <p>John and Ruby Cody House: Protective measures for stone wall that lines driveway.</p> <p>Cheoah Historic District: Minimize tree cutting and restore landscaping after temporary detour is removed.</p>
<p>3.4 <a href="#">Threatened and Endangered Species</a><sup>4/5</sup></p>	<p><b>No.</b> With the exception of the Indiana bat and the northern long-eared bat, the project would have <i>No Effect</i> on federally threatened and endangered species. The project may impact forested areas that the Indiana bat and northern long-eared bat potentially use in the summer months for roosting and foraging, there is a <i>May Affect, Not Likely to Adversely Affect</i> finding for both species. To avoid potential effects to roosting and foraging habitat, NCDOT will maintain a construction moratorium for specified months, developed in coordination with the USFWS. For additional information, see USFWS coordination.</p> <p><b>Background</b> An informal consultation letter has been provided to USFWS regarding the biological conclusions outlined below but official approval has not yet been received. Biological conclusions have been developed in conjunction with USFWS. No changes are anticipated.</p> <p>Six federally endangered species have the potential to occur within the project area; gray bat, Indiana bat, Carolina northern flying squirrel, Appalachian elktoe, rusty-patched bumble bee, and rock gnome lichen.</p>	<p>Construction authorization will not be requested until ESA compliance is satisfied for the Indiana bat and northern long-eared bat. A tree clearing moratorium will be held from October 15 – April 15 during construction for Indiana bat and northern long-eared bat.</p> <p>Golden-winged warbler will be evaluated through a conference opinion. NCDOT is committed to working with the USFWS and other relevant partners to develop a mitigation plan for the golden winged-warbler that is mutually beneficial to all involved parties upon proposed listing of the species.</p>

<sup>4</sup> Preliminary Draft Programmatic Biological Assessment prepared for ADHS Corridor K. July 2020 and [Natural Resources Technical Report](#) prepared for ADHS Corridor K. October 2019.



Resource	Significant Impact?	Measures to Address Impacts
<p>3.4 <a href="#">Threatened and Endangered Species</a> (cont.)</p>	<p>Five federally threatened species have the potential to occur within the project area; Bog turtle, Northern long-eared bat, small whorled pogonia, Spotfin chub, and Virginia spiraea.</p> <p>Surveys were conducted for the Indiana bat, Northern long-eared bat, and gray bat in 2008 and in 2009; however, no species surveys (mist netting or acoustic) were conducted as part of this effort. Bridge, culvert and structure surveys were conducted in 2019. Mine, cave and non-traditional winter habitat surveys were conducted in late 2019 / early 2020. No Indiana bats were recorded in mist nets, bridges, or culverts; however, the eastern end of the project study area intersects a known Indiana bat maternity roost buffer. The northern long-eared bat was captured in mist net surveys in the project area. The gray bat was not documented within the project area nor was its associated winter and summer habitats. Due to past species captures of northern long-eared bat and proximity to the Indiana bat maternity roost buffer, presence is assumed for both bat species. The project may impact forested areas that the <b>Indiana bat</b> and <b>northern long-eared bat</b> potentially use in the summer months for roost trees and foraging, resulting in a <b>May Affect, Not Likely to Adversely Affect</b> finding for both species. Based upon the lack of habitat and evidence of bats during species surveys, a biological conclusion of <b>No Effect</b> was rendered for the <b>gray bat</b>.</p> <p>Suitable habitat for the <b>Carolina northern flying squirrel</b> does not exist within the project area. The species typically occurs at elevations above 4,500 feet. Due to a lack of suitable habitat, a biological conclusion of <b>No Effect</b> was rendered for the Carolina northern flying squirrel.</p> <p>Suitable habitat for the <b>rock gnome lichen</b> was not found in the survey area. Due to a lack of suitable habitat, a biological conclusion of <b>No Effect</b> was rendered for the rock gnome lichen.</p> <p>Habitat for <b>Appalachian elktoe</b> is marginal in the study area and according to the USFS no habitat exists within the Nantahala National Forest areas of the project (USFS 2000). USFWS did not require surveys for the species due to species range and lack of habitat. Due to a lack of suitable habitat, a biological conclusion of <b>No Effect</b> was rendered for the Appalachian elktoe.</p>	<p><i>See discussion on previous page.</i></p>



Resource	Significant Impact?	Measures to Address Impacts
<p>3.4 <a href="#">Threatened and Endangered Species</a> (cont.)</p>	<p>The <b>spotfin chub</b> is not known to occur in the project area. The only known population is related to restoration work and is located more than a mile from the project area. USFWS did not require surveys for the species due to species range and lack of habitat. Due to a lack of suitable habitat, a biological conclusion of <b>No Effect</b> was rendered for the spotfin chub.</p> <p>Surveys for <b>small whorled pogonia</b> and <b>Virginia spiraea</b> failed to detect the species within the project area but suitable habitat for both species was found. A biological conclusion of <b>No Effect</b> was rendered for <b>small-whorled pogonia</b> and <b>Virginia spiraea</b>.</p> <p>The golden-winged warbler is listed as a Forest Concern species, but due to declining populations this species is being considered for federal listing. Singing bird surveys documented Golden-winged warblers and suitable habitat within the project area. Since the <b>golden-winged warbler</b> may be listed in the future, NCDOT will work with the USFWS to evaluate the effects for the species under a conference opinion so that the project will not be delayed if the species is listed.</p> <p>The southern population of the <b>bog turtle</b> is listed as Threatened due to Similarity of Appearance to the northern population; therefore, the southern population is <b>not afforded protection</b> under Section 7 of the ESA.</p> <p>Golden-winged warbler and northern long-eared bat occurrences are located within the NFS land surveyed for the project. Biological conclusions match those outlined above.</p>	<p><i>See discussion on previous page.</i></p>
<p>3.5 Water Quality</p>	<p><b>No.</b> The proposed project is not located in any sensitive watersheds. A seasonal construction moratorium would be implemented to protect trout waters during construction. NCDOT will implement erosion and sediment control measures during construction. Although additional impervious surface would be created by the proposed project, it will not create a notable effect on water quality given the project study area's rural setting within a well-established riparian system.</p> <p>As discussed in the <a href="#">Indirect and Cumulative Effects (ICE) Assessment</a>,<sup>5</sup> analysis of future development patterns indicates there is limited available land for development, which limits the potential for adverse water quality effects associated with development.</p>	<p>A moratorium on all work within a 25-ft buffer disturbance zone will be placed on trout supporting streams identified by NC Wildlife Resources Commission. The moratorium will be in place from January 1<sup>st</sup> to April 15<sup>th</sup> of any given year. NCDOT will implement <i>Guidelines for Construction of Highway Improvements Adjacent to or Crossing Trout Waters in North Carolina</i> in the design and construction of this project.</p>

<sup>5</sup> [Indirect and Cumulative Effects](#) prepared for ADHS Corridor K. March 2020.



Resource	Significant Impact?	Measures to Address Impacts
<p>3.5 Water Quality (cont.)</p>	<p><b>Background</b> Waters within the study area drain to Santeetlah and Fontana Lakes within the Little Tennessee River basin. Beech Creek, Harwood Branch, Orr Branch, Pigpen Branch, Slay Bacon Branch, Sweetwater Creek, Tulula Creek, and their tributaries carry the Water Supply (WS) WS-III classification because they are upstream of Robbinsville’s water supply intake on Tulula Creek. In total, the project study area contains 7,846 linear feet of WS-III-designated surface waters. The portion of Tulula Creek from the water supply intake to one half mile upstream is classified as the Water Supply Watershed Critical Area (WS-III, CA). The closest hydraulic crossing to the CA is located approximately 1.0-mile upstream. Hydraulic Site 3 is within one mile upstream of the water supply intake on the Cheoah River. This is not a concern, however, because this site is not within the 0.5-mile Water Supply Watershed Critical Area.</p> <p>Sweetwater, Stecoah, and Tulula Creeks also carry the Trout Waters (Tr) supplemental classification. The remaining streams are classified as C waters which are protected for secondary recreation, fishing, wildlife, fish consumption, aquatic life including propagation, survival, and maintenance of biological integrity, agriculture and other uses suitable for Class C. Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized or incidental manner.<sup>6</sup></p> <p>The project study area contains 11,734 linear feet (40 streams) of Trout “Tr” Waters. Some of those streams may be classified by NC Wildlife Resources Commission (NCWRC) as trout streams requiring additional protections during construction. To avoid potential adverse effects on trout populations, NCDOT will maintain a construction moratorium for trout streams identified by the NCWRC from January to April of any given year and implement construction guidelines for trout waters. Preferred Alternative is anticipated to impact 10,366 linear feet of Trout Waters.</p> <p>There are no designated Outstanding Resources Waters (ORW), designated High Quality Waters (HQW), or water supply watersheds (WS-I or WS-II) within or within 1.0 mile downstream of the study area. The North Carolina 2018 Final 303(d) list did not identify an impaired water within the study area.</p>	<p>Further investigation on the potential implementation of hazardous spill basins at Hydraulic Site 3 during final design.</p>

<sup>6</sup> North Carolina Department of Environmental Quality, Division of Water Resources (DWR). [Surface Water Classifications](#).





Resource	Significant Impact?	Measures to Address Impacts
3.5 Water Quality (cont.)	The majority of the streams within the NFS land are classified as “C” for their best use classification by NCDEQ. Unnamed tributaries to Stecoah Creek within NFS land are also classified as “Tr” waters. 97 linear feet of Trout water impacts are anticipated on NFS land.	<i>See discussion on previous page.</i>
3.6 <a href="#">Wetlands/ Waters of the U.S.</a> <sup>7</sup>	<p><b>No.</b> No significant impacts to wetlands or surface waters are anticipated. Based on a 35-foot buffer of the construction limits, up to 15,004 linear feet of impacts to streams could be created by the proposed project (approximately 1,275 linear feet of impacts at culvert extensions and 13,729 linear feet due to fill placement); however, it is anticipated that a large portion of these impacts will be less than the amount calculated within the 35-foot buffer as there are a number of valley streams parallel NC 143 and NC 28 where impacts can be avoided and/or reduced through the use of retaining walls and other measures to be evaluated during final design using more detailed survey data.</p> <p><b>Background</b> The project is located within the following watersheds: Beech Creek, Carver Branch, Cody Branch, Edwards Branch, Harwood Branch, Johnson Gap Branch, Orr Branch, Pigpen Branch, Slay Bacon Branch, Stecoah Creek, Stillhouse Branch, Sweetwater Creek, Tulula Creek, and Wolf Creek. Field surveys identified perennial and intermittent streams, wetlands and surface water features within the Preferred Alternative project limits. Wetlands are located throughout the project limits and concentrated near Carver Branch, Harwood Branch, Pigpen Branch, Slay Bacon Branch, Sweetwater Creek, and Wolf Creek, and their associated tributaries. A total of 1.12 acres of wetland impacts are anticipated with the proposed project.</p> <p>Of the total project stream and wetland impacts, 261 linear feet of stream impacts and 0.01 acres of wetland impacts are anticipated on NFS lands.</p>	<p>A mitigation plan for unavoidable impacts to streams and wetlands will be developed in consultation with the USACE.</p> <p>To comply with Section 404 of the Clean Water Act, the project would request authorization under Regional General Permit 31.</p> <p>Stream relocations will be evaluated in final design as an option to minimize stream impacts.</p>
3.7 Forest Service Land (NFS Land)	<b>No.</b> With mitigation, the Preferred Alternative would meet Nantahala and Pisgah Land and Resource Management Plan (N&P LRMP) standards. <sup>8</sup> Construction of the proposed land bridge for the Appalachian Trail would support the N&P LRMP management objectives for Management Areas (MAs) 4C and 4D “to provide a	All seeding mixes will be approved by USFS personnel and not include any invasive nonnative species.

<sup>7</sup> [Natural Resources Technical Report](#) prepared for ADHS Corridor K. October 2019.

<sup>8</sup> United States Forest Service (USFS). 1994. [Final Supplement to the Final Environmental Impact Statement and Land and Resource Management Plan, Amendment 5. Nantahala and Pisgah National Forests, North Carolina. Cheoah Ranger District, Nantahala National Forest. Asheville, NC.](#)



Resource	Significant Impact?	Measures to Address Impacts
<p>3.7 Forest Service Land (NFS Land) (cont.)</p>	<p>remote forest setting mostly closed to motor vehicles” and MA 4D objectives to “maintain high-quality wildlife habitat and preferred black bear habitat.”</p> <p>MA 14 is discussed in Section 3.20. The proposed right-of-way for the Preferred Alternative requires 7.03 acres of NFS land outside existing right-of-way. Impacted areas include the proposed location for the land bridge and tiered retaining walls in the AT vicinity, which would be vegetated in accordance with a planting plan developed in coordination with the USFS.</p> <p>Direct impacts from the project do not occur to these species. Indirect effects could occur from the potential introduction of additional invasive species due to changes in the existing forest canopy from road construction activities. With exception of golden-winged warbler, this proposal may impact local subpopulations of these species but is not likely to cause a trend toward Federal listing or loss of viability.</p> <p><b>Background</b> A Biological Evaluation was completed within NFS land in the project area. The evaluation included aquatic, terrestrial and botanical surveys. In addition to the Threatened and Endangered species already discussed above, eighteen Forest Concern or Sensitive species were considered in the analysis: mountain catchfly, sweet white trillium, Cumberland azalea, purple sedge, Carey’s sedge, northern shorthusk, eastern small-footed bat, tricolored bat, Cheoah bald salamander, black mountain disc, little brown bat, golden-winged warbler, cerulean warbler, ramp cove supercoil, open supercoil, crossed dome, dusky azure, and tawny crescent.</p> <p>The <b>Golden-winged Warbler</b> uses early successional habitat within the project area particularly in and around Stecoah Gap. The finding for this species is unresolved pending approved mitigation measures.</p>	<p>All off road equipment to be used for construction shall be pressure washed to remove propagules (seeds or vegetative parts capable of reproduction) of nonnative invasive plant species prior to being brought into the project area.</p> <p>NCDOT shall coordinate with the Forest Service on the timing, location, and method of all chemical treatments in order to ensure there are no undesirable effects to non-target species.</p> <p>A land bridge is proposed to facilitate the crossing of wildlife and pedestrians across NC 143, and would relocate the Appalachian Trail in the middle of the land bridge. The land bridge would be approximately 160 feet long, 220 feet wide, and 29-feet tall filled with earth material and planted.</p>
<p>3.8 <a href="#">Air Quality</a><sup>9</sup></p>	<p><b>No.</b> There may be localized areas where Vehicle Miles Traveled (VMT) would increase, and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in Multiple Source Air Toxics (MSAT) emissions may occur.</p>	<p>N/A</p>

<sup>9</sup> [Air Quality Report](#) prepared for ADHS Corridor K. February 2020.



Resource	Significant Impact?	Measures to Address Impacts
<p>3.8 Air Quality (cont.)</p>	<p><b>Background</b> The localized increases in MSAT emissions would likely be most pronounced where the design will shift closer to buildings or outdoor areas of use along the project corridor. However, even if these increases do occur, they too will be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations. In the 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.</p> <p>It is also expected there would be reduced MSAT emissions in the immediate area of the project on NC 143 adjacent to NFS lands.</p>	<p>N/A</p>
<p>3.9 <a href="#">Farmland Soils and Agriculture</a></p>	<p><b>No.</b> The Preferred Alternative scored 66 out of a maximum of 260 points on the <a href="#">NRCS farmland conversion impact rating form</a> which is below the 160 point threshold for protective measures. As such the Preferred Alternative will not be further evaluated for farmland impacts.</p> <p><b>Background</b> There are 2,465 acres of farmland soils in the project study area. Approximately 24.5 acres of direct impacts to farmland soils are anticipated with the proposed right-of-way, including 6.9 acres of prime farmland, 12.8 acres of farmland of local importance, and 4.8 acres of farmland of statewide importance.</p> <p>There are no active farms or agricultural land on NFS lands.</p>	<p>N/A</p>
<p>3.10 Geologic Resources and Soils</p>	<p><b>No.</b> The Preferred Alternative is anticipated to include excavation of approximately 27,564 cubic yards of geological unit ZWE (acidic rock) along NC 28 and Bill Crisp Road, based on a 35-foot buffer of the construction limits. Excavation in the ZWE unit is being studied under thin section microscopy and NNP (acid-base accounting) as part of current geotechnical investigations that run through Summer 2021. Mitigation is determined by acid-producing-potential levels. The selection of the Preferred Alternative reduces excavation in general and allows this material to be selectively excavated without likelihood of mixing with other materials or being unaccounted for in the construction process.</p> <p><b>Background</b> The proposed and existing corridors traverse rocks that make up the NW limb of the Murphy Syncline, denoted as ZWE and ZHHA on the NC State Geologic Map. These are meta-sandstones, meta-greywacke, meta-siltstones and mica schists. ZWE is present in the Edwards Gap cut and along the north side of</p>	<p>The amount of potential excavation is small enough that even very high results could be economically and feasibly dealt with at the scale of total encapsulation if necessary. Treatment protocol is likely to be at the level of chemical neutralization (lime) within selected lifts of waste or embankment above base-flow water levels or selected non-perennial stream locations. A Project Special Provision will ultimately be produced to deal with any necessary handling and treatment.</p>



Resource	Significant Impact?	Measures to Address Impacts
3.10 Geologic Resources and Soils (cont.)	<p>Stecoah Valley with ZHHA making up the rest of the project area from the intersection of NC 143/NC 28 over Stecoah Gap and through the Sweetwater Valley. ZWE is considered an acidic rock due to its richness in iron sulfide. As such, it poses a high risk of generating acid runoff. Acid runoff can destroy aquatic habitats and degrade water quality, making it unfit for consumption.</p> <p>Graham County is located along the Appalachian Mountains within the Southern Blue Ridge Mountain Physiographic Province (MLRA 130B). Topography consists of very steep mountains, rolling intermountain hills, and narrow valleys. In general, the rock types are competent and durable, with weaker zones defined by the mica rich bands of schist and sericite. Slope instability in the region is notably on a small scale per incident due to the lack of large developed planar features- but occurs often due to the increased pore pressure surface coupled with large amount of precipitation and groundwater. The majority of the soils in Robbinsville along US 129 and NC 143 have a low level of steepness. Approximately 33% of the soils in Stecoah along NC 143 and NC 28 have a medium level of steepness and 28% of the soils have a high-level steepness. There are stability issues with the current alignment, but they are known and can be repaired with the preferred alternative.</p> <p><b>No acidic rock excavation is anticipated on NFS lands.</b></p>	See discussion on previous page.
3.11 Vegetation and Habitat	<p><b>No.</b> The proposed project includes improvement to an existing road with edge habitats that are of slightly lesser quality than forests further from existing development. Of the total 225.7 acres of general habitat within a 35-foot buffer of the construction limits, 175.0 acres are maintained/disturbed habitat (including existing right-of-way), 72.3 acres of upland forest communities, 7.8 acres of riparian habitat, and 0.66 acres of wet meadows.</p> <p><b>Background</b> Outside of maintained/disturbed areas, upland forested land, more specifically Rich Cove Forest is the primary type of vegetative cover within the project area. Additional upland forested areas include Acid Cove Forest, Canada Hemlock Forest, Montane Oak-Hickory Forest, Dry-Mesic Oak-Hickory Forest, Rich Cove Forest, and White Pine Forest. Vegetative communities in riparian areas includes Montane Alluvial Forest, Headwater Forest and Seeps. Non-forested</p>	See Section 3.7 for NFS vegetation mitigation.



Resource	Significant Impact?	Measures to Address Impacts
3.11 Vegetation and Habitat (cont.)	<p>riparian wetlands were classified as wet meadows. Early successional habitat is found within and on the edges of utility corridors, roadsides, and where agricultural land is no longer in production. Early successional habitat found around Stecoah Gap is suitable habitat for the golden-winged warbler.</p> <p>A North Carolina Natural Heritage Natural Area is located on the south side of Stecoah Gap adjacent to the project. This area is known as Stecoah Gap Cove Forests and is rated as an exceptional Cove Forest community. The total area of this Natural Area is 171 acres. Based on construction limits plus an extended 35-foot buffer, the Preferred Alternative would impact 0.23 acres of the Stecoah Gap Cove Forests within a 35-foot buffer of the construction limits.</p> <p>Within the Stecoah Gap area on NFS lands and adjacent existing right-of-way, direct impacts will occur across approximately 5 acres of rich cove forest, 5 acres of basic montane oak-hickory forest, and 10 acres of either existing road/shoulders or other disturbed and maintained areas including powerline corridors (based on construction limits plus a 35-foot buffer). Within these disturbed areas and in the surrounding undisturbed forest, the project has the potential to increase the amount of invasive nonnative plants on NFS due to introductions during construction or during future maintenance of the road</p> <p>The amount of encroachment of nonnative plant introductions into undisturbed NFS adjoining the project area would be expected to be minimal (&lt;50 feet) due to shading that is offered by the existing mature forested areas of nearby NFS. The road alternative now under consideration has a relatively lower potential to introduce non-native plants into NFS land because it is on existing alignment and not a new surface location alternative cutting through currently uninterrupted NFS land. Therefore, the project will not be introducing considerably more to the NFS land adjacent to the roadway.</p>	See Section 3.7 for NFS vegetation mitigation.



Resource	Significant Impact?	Measures to Address Impacts
3.12 Noxious Weeds	<p><b>No.</b> No large areas of noxious weeds or invasive species were found during plant surveys.</p> <p><b>Background</b> Invasive species were found scattered throughout the project area particularly in areas classified as maintained/disturbed and on the edges of forest land and riparian areas.</p> <p>Within these disturbed areas and in the surrounding undisturbed forest, the project has the potential to increase the amount of invasive nonnative plants due to introductions during construction or during future maintenance of the road. Clearing of large areas for road cuts and fills and subsequent ground cover establishment has the potential to introduce invasive nonnative plants.</p> <p>The amount of encroachment of invasive nonnative plant introductions into undisturbed NFS lands adjoining the project area differs based on the rate of spread and the shade tolerance of the species. Species such as oriental bittersweet (<i>Celastrus orbiculatus</i>) and privet (<i>Ligustrum sinense</i>) already near the project area have the greatest potential to encroach into the more shaded canopy. Other species such as multiflora rose (<i>Rosa multiflora</i>) and mimosa (<i>Albizia julibrissin</i>) would primarily persist only along the roadside edge and trails where more sunlight reaches the ground.</p> <p>The Preferred Alternative has a lower potential to introduce nonnative plants into adjunct undisturbed land because it is on existing alignment and not a new surface location alternative cutting through an existing forested landscape. This minimizes the amount of new edges between disturbed areas and NFS where nonnative species encroachments could occur. Nonetheless, there are risks and mitigation could be implemented to lower the potential spread.</p>	<p>The project area will require routine maintenance of both invasive and non-invasive vegetation. Vegetation management will occur within right-of-way or easement and is anticipated to include a two to five year long-arm mowing schedule with targeted broadcast herbicide treatment generally within 25 feet from the edge of pavement, though wider areas may be managed if vegetation interferes with sight lines.</p> <p>Herbicide treatments and other vegetation management will be coordinated with the NFS Cheoah Ranger District on the road easement. See Section 3.7 for additional mitigation measures for Forest Service vegetation management.</p>
3.13 Land Use	<p><b>No.</b> The proposed project is consistent with local, regional, and state plans on transportation, land use, and economic development. The project is included in the Graham County CTP and would foster the implementation of local planning efforts related to tourism, walking, and biking. Given the small amount of developable land, limited water and sewer services, and lack of development and growth in the project area, the project is not anticipated to cause indirect effects associated with induced land use changes.</p>	N/A



Resource	Significant Impact?	Measures to Address Impacts
3.13 Land Use (cont.)	<p><b>Background</b> The project study area is sparsely populated with scattered residential properties located mainly along valley streams and small coves. Approximately 18% of the land within the project study area is used for agriculture, hay, corn, and pastureland. A majority of the rugged terrain is undeveloped woodland. NFS lands comprise 67% percent of the land in Graham County including a portion within the project study area in the Stecoah Gap. Most development is near the intersection of US 129 and NC 143 in Robbinsville. A grocery store, small retail shops, a high school and middle school, several service stations, and a fast food restaurant are located near this intersection. A few small businesses and community facilities are located in Stecoah, including a community center located in a converted historic school building. The Preferred Alternative would not significantly alter land use as impacts are constrained to widening the existing roadway.</p> <p>The Preferred Alternative would not significantly alter land use on NFS lands, as impacts are constrained to widening the existing roadway.</p>	N/A
3.14 <a href="#">Community</a> <sup>10</sup>	<p><b>Transit, Community Resources, Community Cohesion: No.</b> Analysis and coordination has determined that transit, community resources (schools, churches, etc.) and community cohesion will not be impacted by the project.</p> <p><b>Bicycle/Pedestrian Facilities: No.</b> Minimal temporary impacts to pedestrian facilities in Robbinsville are anticipated. All facilities will be restored after construction. The addition of sidewalks from Robbinsville High School's entrance on NC 143 to the intersection of US 129 and SR 1275 (Five Point Road), a multi-use path in Stecoah, and AT land bridge will positively impact bicycle and pedestrian mobility and safety within the project area.</p> <p><b>Background</b> Outside Robbinsville, there are no other pedestrian facilities along the corridor. There are no bicycle or pedestrian facilities located on NC 143 adjacent to NFS lands, therefore no impacts are anticipated. The project corridor includes a multi-use path around Robbinsville Middle and High Schools, a bicycle road path along NC 143 a sidewalk on the north side of NC 143 from SR 1275 (Five Point Road) to US 129, and a sidewalk on the north and south side of US 129.</p>	N/A

<sup>10</sup> [Community Impact Assessment](#) prepared for ADHS Corridor K. February 2020.



Resource	Significant Impact?	Measures to Address Impacts
<p>3.14 <a href="#">Community</a> (cont.)</p>	<p><b>Emergency Services: No.</b> Although construction activities have the potential to create temporary delays that could increase emergency response times, the proposed project would ultimately have a beneficial effect by allowing emergency response services the ability to pass slower moving vehicles; tractors or other farm equipment on the roadway; accidents; and other obstructions such as fallen rock/landslides.</p> <p><b>Background</b> EMS services located in the vicinity of the project corridor include Graham County Fire Department, Graham County Sheriff, and Stecoah Fire Department. US 129, NC 143, and NC 28 are the primary routes used when transporting individuals to surrounding hospitals. Emergency medical service response times are frequently affected by the lack of mobility and reliability of the transportation network within the project study area.</p> <p>Poor infrastructure causes challenges for EMS when transporting individuals to the closest hospital (approximately a 31-mile drive from Robbinsville). Improvements include passing and climbing lanes throughout. These improvements would facilitate safer travel and improved mobility throughout the project corridor, allowing for quicker EMS response times and improved health conditions as a result.</p> <p><b>Community Concerns: No.</b> Community concerns include impacts to environmental resources, travel times for those who commute, reliability of additional routes when main roads are blocked, and impacts to prominent historical or environmental features such as the Trail of Tears or Appalachian Trail. The Preferred Alternative would increase reliability and mobility with the addition of passing and climbing lanes, therefore providing a positive impact on the above community concerns regarding mobility and reliability.</p> <p><b>Background</b> Historically, Graham County’s population has contained a higher percentage of retired senior citizens and a lower percentage of working-age individuals than statewide averages. Many working-age adults move out of the county to be closer to employment centers. The proposed project would improve mobility and reliability for those commuting outside of or into Graham County.</p>	<p>N/A</p>





Resource	Significant Impact?	Measures to Address Impacts
3.14 <a href="#">Community</a> (cont.)	<p>Additional right-of-way proposed as part of the Preferred Alternative would encroach on 21.4 linear feet of the National Historic Trail route; however, no construction impacts are anticipated.</p> <p>No community impacts or concerns regarding NFS lands were received during public involvement in February 2019.</p>	N/A
3.15 Environmental Justice	<p><b>No.</b> The <a href="#">project relocation report</a> indicates that two of the nine residential relocations are minority occupied, which does not create a disproportionate impact to low-income or minority populations.<sup>11</sup> Benefits and burdens resulting from the project are anticipated to be equitably distributed throughout the community. No disparate impacts are anticipated under Title VI and related statutes.</p> <p><b>Background</b> Census data indicates a notable presence of low-income populations meeting the criteria for Environmental Justice and low-income communities were observed within the study area during a field visit. Two census block groups exceed the threshold for poverty. One mobile home park is located in Robbinsville on SR 1275 (Five Point Road).</p> <p>There are no residences located on NFS lands; therefore, no EJ impacts are anticipated.</p>	N/A
3.16 <a href="#">Relocations and Right-of-Way</a>	<p><b>No.</b> The proposed project would relocate nine residences and five businesses, as indicated in the <a href="#">project relocation report</a>.<sup>11</sup> Given Last Resort Housing Programs and proper lead time, decent, safe and sanitary housing will be made available to those persons being displaced.</p> <p>Although the Preferred Alternative would relocate five businesses, there are suitable replacement business locations within Robbinsville, thereby limiting the effect on businesses and local employment opportunities.</p> <p><b>Background</b> Development is concentrated in Robbinsville, transitioning to rural development along US 129 and NC 143 outside Robbinsville and NC 28 in Stecoah.</p> <p>Anticipated right-of-way cost is \$14.8M.</p> <p>There are no residential relocations on NFS lands. The total amount of proposed right-of-way on NFS land is 7.03 acres.</p>	Relocation assistance in accordance with NCDOT policies and in accordance with 49 CFR 24, the Uniform Relocation and Real Property Acquisition Act of 1970, as Amended.

<sup>11</sup> [Relocation Report](#) prepared for ADHS Corridor K. August 2020.



Resource	Significant Impact?	Measures to Address Impacts
3.17 Major Utilities	<p><b>No.</b> No impacts to major utilities are associated with the Preferred Alternative.</p> <p><b>Background</b> There are a number of power distribution lines within the project study area. There is one power substation to the south of NC 143 and east of SR 1275 (Five Point Road). There are no pipelines or other major utilities within the project study area.</p> <p>There are no impacts to major utilities on NFS land.</p>	N/A
3.18 Parks/ Recreational Resources	<p><b>No.</b> The Preferred Alternative would improve mobility throughout the project study area, facilitating local government goals to foster ecotourism.</p> <p><b>Background</b> The eastern portion of the project study area contains NFS land that is part of the Nantahala National Forest. As the largest of the North Carolina National Forests, the Nantahala National Forest stretches 531,148 acres and gives visitors the opportunity for hiking, mountain biking, whitewater rafting, bird watching and camping, among other outdoor activities. Due to the amount of NFS lands within the project study area, there are many recreational resources within the area. Notable resources include the Appalachian Trail (a Section 106 and Section 4(f) resource), Brown Fork Shelter and multiple gaps and coves.</p> <p>See Sections 3.1 and 3.3 for additional discussion of the Appalachian Trail.</p>	Mitigation for impacts to NFS lands will be developed in coordination with the USFS.
3.19 Noise <sup>12</sup>	<p><b>No.</b> There is no predicted impact on any noise receptors within the study area.</p> <p>There is no predicted impact on any noise receptors on NFS lands.</p>	N/A
3.20 Visual Resources/ Aesthetics <sup>13</sup>	<p><b>No.</b> No visual impacts anticipated in Robbinsville due to developed nature of the Town. Low-moderate visual impacts anticipated in Stecoah due to road widening. Positive visual impacts are anticipated along the AT with the land bridge and trail relocation.</p>	A land bridge is proposed to facilitate the crossing of wildlife and pedestrians across NC 143, and would relocate the Appalachian Trail in the middle of the

<sup>12</sup> [Traffic Noise Report](#) prepared for ADHS Corridor K. April 2020.

<sup>13</sup> [Visual Impact Assessment](#) prepared for ADHS Corridor K. July 2020.



Resource	Significant Impact?	Measures to Address Impacts
3.20 Visual Resources/ Aesthetics (cont.)	<p><b>Background</b> The visual environment of the project area in Stecoah is defined by rugged, mountainous terrain with steep slopes leading to ridges, knobs and gaps; a rural, mountainous landscape typical of western North Carolina.</p> <p>With mitigation, the Preferred Alternative would meet Nantahala and Pisgah Land and Resource Management Plan (N&amp;P LRMP) standards.<sup>14</sup> The proposed land bridge, realignment of the Appalachian Trail, and tiered retaining walls in the vicinity of the AT would meet Management Area (MA) 14 Visual Management System objectives for the Appalachian National Scenic Trail and its foreground zone.</p>	land bridge. The land bridge would be approximately 160 feet long, 220 feet wide, and 29-feet tall filled with earth material and planted.
3.21 Energy	<p><b>No.</b> Construction of Preferred Alternative is anticipated to require less energy utilization than the no-build alternative. An initial consumption of energy and resources, that would not otherwise occur, would take place during construction. However, the increase in efficiency provided by an improved facility would more than compensate for the initial expenditure of resources. The proposed improvement project would increase energy efficiency by improving horizontal alignments and vertical grades, as well as providing opportunities to pass slower-moving vehicles, resulting in more efficient vehicle operation, decreased vehicle delay, and more efficient local and regional trips.</p> <p>The portion of the Preferred Alternative on NFS land would result in energy efficiency benefits as described above.</p>	N/A
3.22 <a href="#">Hazardous Materials</a> <sup>15</sup>	<p><b>No.</b> Low monetary and scheduling impacts to hazardous materials sites are anticipated to result from construction of the Preferred Alternative. No direct impacts to hazardous materials are anticipated with Preferred Alternative. Indirect effects will be minimized during the construction.</p> <p><b>Background</b> Nine sites of concern were identified within the study area. These include abandoned, relocated, and active underground storage tanks (USTs) associated with active and former gas stations, a distributing facility, and NCDOT maintenance yard.</p> <p>There are no hazardous material sites NFS land.</p>	N/A

<sup>14</sup> United States Forest Service (USFS). 1994. [Final Supplement to the Final Environmental Impact Statement and Land and Resource Management Plan, Amendment 5. Nantahala and Pisgah National Forests, North Carolina. Cheoah Ranger District, Nantahala National Forest. Asheville, NC.](#)

<sup>15</sup> [Phase 1 GeoEnvironmental Report](#) prepared for ADHS Corridor K. December 2020.



Resource	Significant Impact?	Measures to Address Impacts
3.23 <a href="#">Indirect/Cumulative Impacts</a> <sup>16</sup>	<p><b>No.</b> The project will not cause significant indirect and cumulative effects on the human and natural environment. Given the small amount of developable land, limited water and sewer services, and lack of development and projected growth, the project is not anticipated to cause indirect effects. It is unlikely the proposed project would have a large-scale influence over the type or rate of development within the area.</p> <p><b>Background</b> The absence of notable planned/funded public or private actions, including other major transportation projects, private residential developments, public water/sewer expansions, or new/expanded commercial developments strongly limit anticipated cumulative effects from the proposed project. Over two-thirds of Graham County is owned by the US Forest Service, severely limiting opportunities for development within the county. In addition, there are no known developments planned within the project area.</p> <p>The Graham County Watershed Ordinance applies protections to watersheds as designated by the NC Environment Management Commission.</p> <p>The project will not cause significant indirect and cumulative effects on NFS lands.</p>	N/A
3.24 Section 6(f) <sup>10</sup>	<p><b>No.</b> There are no Section 6(f) resources within the project area.</p> <p>There are no Section 6(f) resources on NFS lands.</p>	N/A

<sup>16</sup> [Indirect and Cumulative Effects](#) prepared for ADHS Corridor K. March 2020.



# 4.0 AGENCY & PUBLIC INVOLVEMENT

⚡ Detailed information on early [public outreach](#) and [agency coordination](#) can be found [here](#).

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## *What Outreach and Opportunities for Stakeholder Participation were Provided?*

Since mid-2015, FHWA and NCDOT have coordinated a number of [project team meetings, stakeholder group meetings](#), local officials' meetings, and a [public meeting](#). Early meetings focused on developing and reaching consensus on the planning approach for A-0009C; subsequent meetings focused on subjects related to implementing the process.

In July 2015, transportation and resource agency leadership met to reinitiate studies and identify themes for a new project approach. A "fresh look" approach was developed

with a focus on early and ongoing collaboration to help avoid schedule delays by identifying and addressing concerns as they developed. The new process placed emphasis on early and continuous input and participation of local elected officials and local government staff as well as tribal staff, and federal/state regulatory and resource agencies. This group is collectively referred to as the "project team."

Local officials from Graham and Cherokee Counties have served key roles in the project through participation in project team meetings, helping to identify project needs, and vetting potential design options. At the October 11, 2017 [project team meeting](#), NCDOT and FHWA emphasized that local input would drive the project.



### 4.1 AGENCY COORDINATION SUMMARY

The table below shows coordination since the project's restart in 2015. Meeting information for 2019 and 2020 can be found [here](#).

<b>KEY</b>
Agency Meetings
AT Stakeholders Meetings
Environmental Stakeholders Meetings
Public and Local Officials' Meetings
Tribal Coordination

TABLE 4.1: AGENCY COORDINATION SUMMARY

<b>2015</b>	<b>8/27: FHWA &amp; Chief of EBCI Coordination Meeting</b>
<b>7/2: Agency Leadership Kickoff Meeting</b>	<b>8/30: New Team Members Orientation</b>
<b>9/30-10/1: Project Team Meeting</b>	<b>9/27: USACE Leadership Update Meeting</b>
<b>12/5: Project Team Teleconference</b>	<b>9/28: Local Officials' Teleconference</b>
<b>2016</b>	<b>10/19: Local Officials' Meeting</b>
<b>3/17: Project Team Meeting</b>	<b>10/31: Local Officials' Teleconference</b>
<b>5/19: Project Team Meeting</b>	<b>12/12: Design Study Report Webinar</b>
<b>8/23-24: Design Workshop</b>	<b>12/17: Project Team Meeting</b>
<b>2017</b>	<b>2019</b>
<b>8/8: New Team Members Orientation</b>	<b>2/11: Business Stakeholders Meeting</b>
<b>9/14 &amp; 9/17: Design Study Report Webinars</b>	<b>2/11: Environmental Stakeholders Meeting</b>
<b>9/26: Project Team Teleconference</b>	<b>2/12 &amp; 2/14: Public Meetings</b>
<b>10/10: Agency Leadership Meeting</b>	<b>4/9: Local Officials' Meeting</b>
<b>10/11: Project Team Meeting</b>	<b>5/3: FHWA, USFS, USACE Coordination</b>
<b>10/31: FHWA, USACE &amp; NCDOT Coordination Call</b>	<b>5/16: Project Team Coordination Meeting</b>
<b>11/13: Local Officials' Meeting</b>	<b>6/27: Project Team Teleconference</b>
<b>2018</b>	<b>7/19: FHWA, DEQ, USACE, USFS, NCDOT Meeting</b>
<b>2/12: Local Officials' Meeting</b>	<b>7/25: Cultural Resources Teleconference</b>
<b>3/5: AT Stakeholders Teleconference</b>	<b>7/31: AT Stakeholders Teleconference</b>
<b>4/16: AT Stakeholders Teleconference</b>	<b>8/8: Town of Robbinsville NHS Resolution</b>
<b>6/1: AT Stakeholders Teleconference</b>	<b>8/20: Stecoah Heights Meeting</b>
<b>6/14: Local Officials' Meeting</b>	<b>9/3: Cherokee County Board of Commissioners</b>
<b>6/18: FHWA, Bureau of Indian Affairs Teleconference</b>	<b>9/12: Environmental Stakeholders Teleconference</b>
<b>8/23: New Team Members Orientation</b>	<b>9/16: Merger Screening Meeting with USACE, DEQ, FHWA</b>
	<b>9/17: Historic Architecture Coordination Meeting</b>
	<b>10/1: AT Stakeholders Teleconference</b>



10/3: USACE/FHWA Pre-Merger Discussion  
 10/7: Graham County Emergency Management  
 10/9: Concurrence Points 1 & 2 Meeting  
 10/10: Local Officials' Meeting  
 10/15: Section 7 Coordination Teleconference  
 10/21: Environmental Stakeholders Teleconference  
 10/23: State Historic Preservation Office Meeting  
 10/24: Swain County Board of Commissioners  
 11/5: Graham County Board of Commissioners  
 11/14: EBCI Natural Resources Coordination Call  
 11/15: AT Stakeholders Teleconference  
 11/18: EBCI Attorney General's Office Coordination Call  
 11/19: Graham County Board of Commissioners  
 11/20: Concurrence Point 2A Meeting  
 11/22: Environmental Stakeholders Teleconference  
 11/25: Southwestern RPO Public Meeting  
 12/3: Graham County NHS Resolution  
 12/10: Lake Santeetlah NHS Resolution  
 12/10: Environmental Stakeholders Teleconference  
 12/16: AT Stakeholders Teleconference  
 12/16: Local Officials' Meeting  
 12/17: EBCI Attorney General's Office Teleconference  
 12/18: Fontana Dam NHS Resolution  
 2020  
 1/7: Project Team Teleconference  
 1/22: Project Team Teleconference  
 1/27: EBCI THPO Call  
 1/29: Project Team Teleconference

1/29: USACE, NCDWR, NCWRC Teleconference  
 2/7: USFWS Coordination Teleconference  
 2/19: FHWA, NCDOT & EBCI Councilmember Work Session  
 3/6: AT Stakeholders Teleconference  
 3/13: Cultural Resources Teleconference  
 3/27: USFS Teleconference  
 4/8: Section 106 AT Pre-Effects Meeting  
 4/16: AT Stakeholders Teleconference  
 4/22: USACE Teleconference  
 5/5: Environmental Stakeholders Teleconference  
 5/20: Concurrence Point 2 Meeting (Revisit)  
 6/1: Section 106 Effects Meeting  
 6/11: USFWS Coordination Teleconference  
 6/17: WaysSouth Teleconference  
 7/1: Environmental Stakeholders Teleconference  
 7/1: AT Stakeholders Teleconference  
 7/25: EBCI Attorney General's Office Teleconference  
 7/30: AT Stakeholders Teleconference  
 8/10: FHWA, NCDOT, NCSHPO, Advisory Council on Historic Preservation Meeting  
 8/11: FHWA, USACE, NCDWR, & NCDOT Pre-CP 3/4A Meeting  
 8/13: USFS Environmental Assessment Comments Discussion  
 8/17: USFS Environmental Assessment Comments Discussion

**KEY**  
 Agency Meetings  
 AT Stakeholders Meetings  
 Environmental Stakeholders Meetings  
 Public and Local Officials' Meetings  
 Tribal Coordination



### 4.2 STAKEHOLDER MEETINGS

As shown in Table 4.1, NCDOT and FHWA have coordinated with several groups who have provided input throughout the project development process. These groups include the Appalachian Trail (AT) stakeholders, environmental advocacy stakeholders, and local business stakeholders. The AT stakeholder group is comprised of FHWA, the AT Conservancy (ATC), National Park Service (NPS), State Historic Preservation Office (SHPO), and the US Forest Service (USFS). AT stakeholder discussions center around both direct and visual impacts to the AT and impacts to USFS lands. Coordination with AT stakeholders is ongoing.

The environmental advocacy group is comprised of Waysouth, the Southern Environmental Law Center (SELC), Defenders of Wildlife, Wilderness Society, Mountain True, and Hiwassee River Watershed Coalition. Coordination with environmental advocacy groups is ongoing.

The local business stakeholder group is represented by the Graham Revitalization Economic Action Team (GREAT), Stecoah Valley Center, Graham County Travel and Tourism, Graham County Schools, Cherokee County Economic Development, and Robbinsville Envisioning Vital Vibrant Economic Development & Urban Prosperity (REVVED UP). Additionally, the Appalachian Regional Commission (ARC) participated in local business stakeholder meetings.

### 4.3 TRIBAL COORDINATION

As shown in Table 4.1, tribal coordination has been ongoing since the project’s restart in 2015 and will be maintained for the duration of the project. Tribes that have been coordinated with on this project include the Cherokee Nation, Eastern Band of Cherokee Indians, United Keetoowah Band of Cherokee Indians, Catawba Nation, and the Muscogee (Creek) Nation.

### *What Additional Opportunities for Stakeholder Participation will be Provided?*

### 4.4 MERGER PROCESS

Future project team meetings will be conducted through the NCDOT Merger Process concurrence points (CPs) and will continue to draw on local input from Graham County local officials and government staff.

Concurrence Point	Date
1: Purpose and Need and Study Area	10/09/2019
2: Detailed Study Alternatives	10/09/2019 Revisited 05/20/2020
2A: Bridging Decisions	11/20/2019
3: Least Environmentally Damaging Practicable Alternative (LEDPA)	Summer/Fall 2020
4A: Avoidance and Minimization Measures	Summer/Fall 2020
4B: Drainage Design	April 2021 *
4C: Permit Drawings	October 2021 *

\* Exact date to be determined





## 4.5 PUBLIC HEARING

Two public meetings were held in February 2019 after the distribution of the Draft Design Study Report and prior to initiating NEPA studies. Detailed information on this early public outreach can be found [here](#).

A Public Hearing is anticipated in September 2020. A 30-day comment period will follow the Public Hearing in 2020, during which citizens can submit comments on the recommended alternative.

After the comment period ends, the project team will review and identify the Least Environmentally Damaging Practicable Alternative (LEDPA).


## 4.6 SECTION 404 PUBLIC NOTICE

Prior to construction of any project, NCDOT is required to obtain necessary state and federal permits. The Clean Water Act (CWA) Section 404 permit process requires the US Army Corps of Engineers (USACE) to announce that a permit is being sought for a project and initiates a 30-day comment period. During the 30-day comment period, the public can provide comments to the USACE regarding the project.



# 5.0 PREFERRED ALTERNATIVE

Alternative 1 is the preferred alternative. It would improve existing US 129, NC 143, and NC 28 to include passing/climbing lanes, and paved shoulders between Robbinsville and Stecoah. A description and mapping of Alternative 1 can be found in Section 2.0; detailed mapping can be found [here](#). Alternative 1 was identified as the preferred alternative for the following reasons:

 View [detailed alternative mapping](#) and information on [agency coordination](#).

- *Alternative 1 will provide more reliable facilities with the addition of passing and climbing lanes and extending/adding shoulders. All hot spots (locations of high vehicular crashes) on the existing roads will be addressed with Alternative 1. Travel times are expected to become more consistent and reliable for the segments through Robbinsville, along NC 143 to NC 28, and through Stecoah. Traffic operations and mobility within the project study area are expected to improve.*
- *Based on agency and stakeholder coordination and input to date, coupled with environmental study and analysis, impacts associated with Alternative 1 have been avoided or minimized to the extent possible. Those impacts that are unavoidable do not reach a threshold of significant concern and they will be further addressed with mitigation measures that have been developed in coordination with resource and regulatory agencies.*
- There is adequate funding available to construct Alternative 1 in the near term versus uncertainty related to the funding of constructing any design options that would include a tunnel to avoid impacts to the Appalachian Trail.
- There is a limited amount of ADHS funding available to North Carolina, and as included in the Concurrence Point 2 [meeting minutes](#), it is unclear whether additional funding will be received in the future. A summary of the Concurrence Point 2 revisit meeting with additional details is located [here](#).
- Graham County Commissioners expressed support for Alternative 1 at their April 4, 2020 Board Meeting.



- A revisit of [Concurrence Point 2](#) was held on May 20, 2020 in light of construction and operations/maintenance costs associated with tunnel design options. The Merger Team reached concurrence on retaining **Alternative 1 (Improve Existing)** and the **No Build Alternative**. This decision was reached after evaluating funding availability, tunnel operations and maintenance costs, and design considerations.
- Because the No-Build Alternative would not meet the project purpose to address the mobility and reliability needs of area residents, Alternative 1 is the Recommended Alternative. By providing opportunities for passing slower moving vehicles and providing additional space to allow vehicles to pass crashes, landslides, farm equipment, and other obstructions, it would satisfy the project's purpose to improve mobility and reliability in the project area.

It is anticipated from the findings of this Environmental Assessment that a Finding of No Significant Impact (FONSI) would be appropriate for this project. However, the determination on the format for the final National Environmental Policy Act (NEPA) documentation for this project will be based on the comments received at the Public Hearing and the comments received on this document.



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