
ENVIRONMENTAL ASSESSMENT

Great Smoky Mountains National Park

Rehabilitation of Newfound Gap Road Phase II
From the Collins Creek Picnic Area South to the Park Boundary
Swain County, North Carolina

Project PRA-GRSM 1B19



U.S. Department of the Interior, National Park Service

Prepared in cooperation with the
U.S. Department of Transportation
Federal Highway Administration
Eastern Federal Lands Highway Division

July 2005

*Prepared pursuant to the Council on Environmental Quality's regulations for implementing the
National Environmental Policy Act (43 CFR 1500) and 42 U.S.C 4332(2)(C)*

Abstract

This Environmental Assessment (EA) addresses the proposal by the National Park Service (NPS) to rehabilitate the pavement and drainage on Newfound Gap Road within the study area and to construct left-turn lanes at seven intersections along the same corridor. The project is located in the Great Smoky Mountains National Park, Swain County, North Carolina.

The location of this proposed project is Newfound Gap Road, a north-south roadway within the Great Smoky Mountains National Park that stretches from the Oconaluftee Visitor Center in Cherokee, North Carolina to the Sugarlands Visitor Center near Gatlinburg, Tennessee. The study area extends from 500 feet north of the Collins Creek Picnic Area to the southern boundary of the Park. Portions of the pavement on Newfound Gap Road are badly deteriorated and require rehabilitation to provide a safe driving surface. Some drainage facilities also are in very poor condition. Existing traffic volumes on Newfound Gap Road approach or exceed roadway capacity during peak visitor seasons. Some intersections within the proposed project limits have poor roadway geometry that results in less than adequate sight distances for approaching motorists. A high number of accidents, including one fatal accident and several with injuries, have been documented at some of these intersections. The frequency and type of accidents, combined with the high traffic volumes, indicate a need for improvements at these intersections to increase public safety and improve traffic operations.

The Park's goal in selecting a preferred build alternative is to provide a safe, long-lasting driving surface for visitors and Park staff. Although safety is a primary concern, significant effort has been given to preserving the Park's natural and cultural resources by minimizing impacts to the environment by the proposed improvement.

This document determines which aspects of the proposed action have potential for social, economic, or environmental impact and it identifies measures that may mitigate adverse environmental impacts. The public involvement and coordination/consultation with other government agencies is also presented.

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1.0 Purpose and Need for Action

1.1 Introduction

Newfound Gap Road (NPS Route 10) is a principal north-south roadway within Great Smoky Mountains National Park, and the only roadway that completely traverses the Park. It stretches approximately 31 miles from the Oconaluftee Visitor Center in Cherokee, North Carolina, to the Sugarlands Visitor Center near Gatlinburg, Tennessee. The Park encompasses approximately 521,347 acres (over 800 square miles) and is the most visited National Park, drawing more than 9 million visitors each year. The Park is located in the Appalachian Mountains of North Carolina and Tennessee, and is distinguished by the extraordinary diversity of its natural resources, the abundance of its cultural resources, and the sanctuary it affords for these resources. The purpose and mission of the Park is to preserve these diverse resources and, at the same time, provide for public benefit and enjoyment of these resources. Some of the activities offered to visitors include birding, camping, hiking, fishing, and historic tours.

Elevations in the Park range from 875 feet to 6,643 feet. Topology affects local weather, with temperatures averaging 10 to 20 degrees cooler on the mountaintops than in the lower elevations. Annual precipitation averages 65 inches in the lowlands to 88 inches in the high country. Spring often brings unpredictable weather, particularly at higher elevations. Summers can be hot and humid in the lower portions, but more pleasant at higher elevations. Fall has warm days and cool nights and is the driest period. Frosts occur starting late September. Winter is generally moderate, but extreme conditions can occur. The peak tourist months are from June to August and again in October. The lowest visitation occurs during the winter months of December to February.

In anticipation of the creation of Great Smoky Mountains National Park, the states of Tennessee and North Carolina initiated construction of a north-south road through the future Park to link Gatlinburg, Tennessee with Cherokee, North Carolina. This initial road was completed in 1930. From the time the Park was officially created through the 1960s, the National Park Service realigned sections of the road to take advantage of more scenic views and less steep grades, and to adhere to National Park Service design guidelines.

In 1934, the people of North Carolina and Tennessee donated the original lands of the Park to the Federal Government, creating Great Smoky Mountains National Park. President Franklin Delano Roosevelt officially dedicated the Park on September 2, 1940. The Park was recognized as an International Biosphere Reserve in 1976 and as a World Heritage Site on December 6, 1983. The International Biosphere Reserve Program is a voluntary program that promotes the preservation and protection of biological resources. The World Heritage Site designation reflects the Park's preserved Appalachian culture.

1.2 Study Area Description, Culture, and History

The project study area is located within Swain County, North Carolina, and extends along Newfound Gap Road from approximately 500 feet north of the Collins Creek Picnic Area to the southern Park boundary (approximately 6 ½ miles), and 500 feet along each of the side roads along that corridor. **Figure 1** shows the location of the study area. The intersecting side roads included in this analysis are the Collins Creek Picnic Area entrance, the Smokemont Campground entrance, Tow String Road, Park Circle Drive, the entrances to the Oconaluftee Visitor Center, the Blue Ridge Parkway, and the Big Cove Connector Road (Saunooke Bridge Road). Along this corridor, a number of trails intersect Newfound Gap Road, including the Mingus Creek Trail, the

Hughes Ridge Trail, the Newton Bald Trail, and the Bradley Fork Trail. There are picnicking sections at the Collins Creek Picnic Area and the Smokemont Campground, equestrian facilities at the Smokemont Campground and Tow String Road, and camping sites and a ranger station at the Smokemont Campground. The historic Mingus Mill is located on the west side of Newfound Gap Road south of the Smokemont Campground and the Oconaluftee Visitor Center is located on the east side of Newfound Gap Road between Mingus Mill and the Blue Ridge Parkway.

The Cherokee Indians have lived in the southern Appalachian Mountains for centuries, and had built a substantial nation by the 1600s. When settlers of European descent arrived in the Great Smoky Mountains in the late 1700s, they found a well-established network of Cherokee towns, trails, and crops. As more settlers moved to the region, they began timbering and farming in the mountainous area and building a network of roads and highways. Following the discovery of gold in nearby Georgia, President Andrew Jackson ordered the removal of the Cherokee to Oklahoma in 1838, which led to the infamous “Trail of Tears.” Many Cherokees took refuge in the mountains, refusing to leave. Their descendents are now known as the Eastern Band of Cherokee Indians, many of whom live in the reservation adjacent to the Park. The settlers remained independent and continued to live in the Smokies. Logging became a big business in the late 19th and early 20th centuries, and greatly changed the appearance of the land. With the assembly of land for the Great Smoky Mountains National Park in the 1930s, the farmers were forced to leave their homes and the logging companies sold their holdings. The development of the Park has preserved the remaining forested lands and remnants of the early farming communities.

1.3 Purpose of the Action

The purpose of this project is to rehabilitate the surface and drainage of Newfound Gap Road to provide a safe, long-lasting driving surface for visitors and Park staff. During the rehabilitation, the Park would provide improvements on Newfound Gap Road to safely and efficiently accommodate vehicular traffic—particularly vehicle turning movements—while adhering to National Park Service Park Road Standards and preserving the adjacent natural and cultural resources along the road corridor.

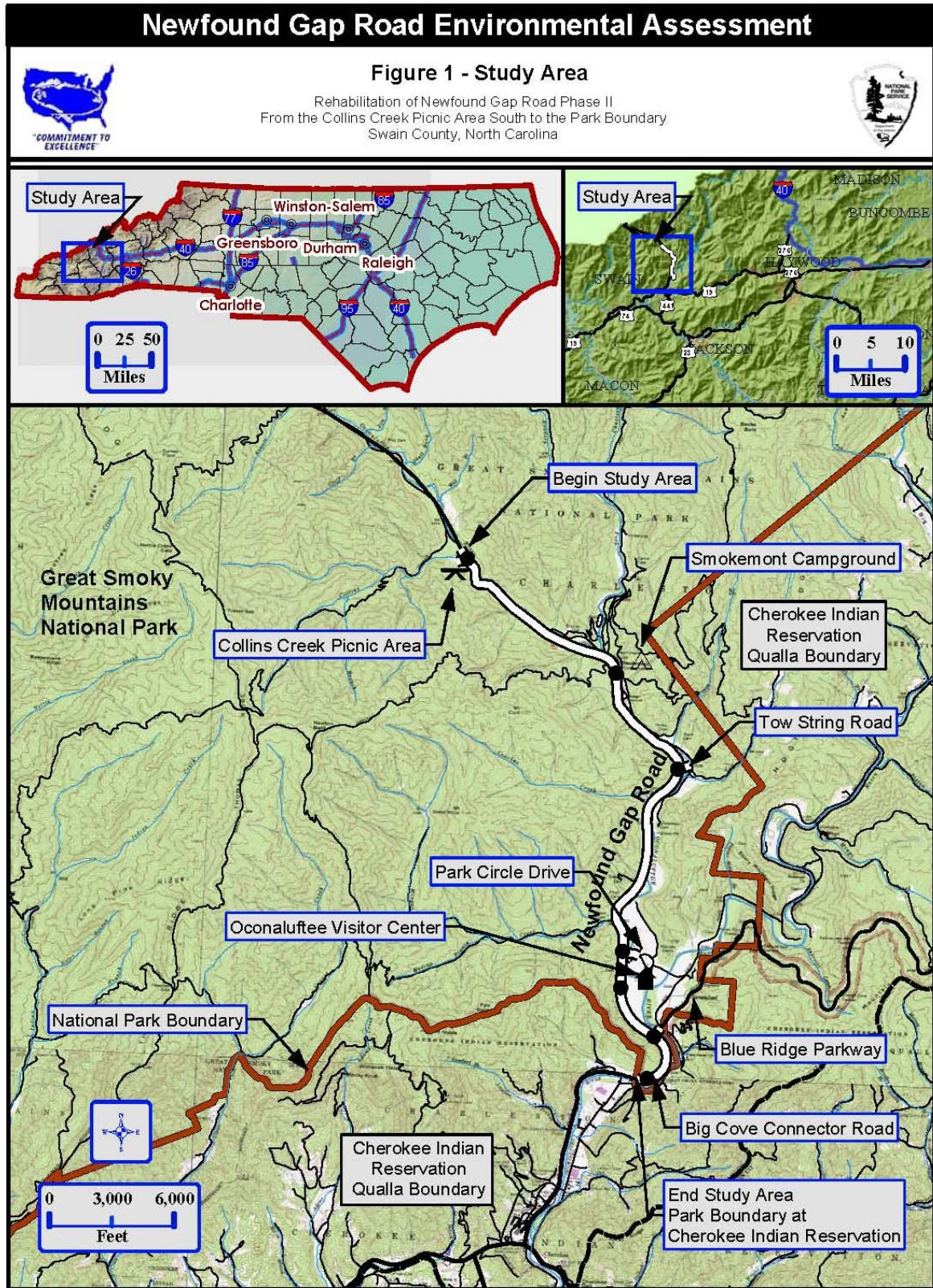
1.4 Need for the Action

Portions of the pavement on Newfound Gap Road are badly deteriorated and require rehabilitation to provide a safe driving surface. Existing traffic volumes on Newfound Gap Road approach or exceed roadway capacity during peak visitor seasons. Analysis has shown that turn lanes at intersections along Newfound Gap Road are needed to promote improved safety and traffic operations for motorists, particularly during the peak tourist periods. The intersection of Newfound Gap Road with Tow String Road also has poor roadway geometry that results in less than adequate sight distances for approaching motorists. A high number of accidents, including one fatal accident and several with injuries, have been documented at some of these intersections. The frequency and type of accidents, combined with the high traffic volumes, indicate a need for improvements at these intersections to increase public safety and improve traffic operations.

1.5 Decision to be Made

The National Environmental Policy Act of 1969 (NEPA) requires consideration of the environmental impacts of proposed federal actions. This Environmental Assessment (EA) has been prepared to assist NPS and FHWA decisionmakers in developing solutions to accommodate additional turn lanes and other intersection improvements and to consider the environmental effects of the preferred actions.

Figure 1: Study Area



1.6 Issues and Impact Topics

Specific impact topics are considered to address the potential natural, cultural, and social impacts that might result from the proposed construction work. These topics are derived from the issues identified above and address federal laws, regulations and orders, Great Smokey Mountain (GRSM) management documents, and NPS knowledge of limited or vulnerable resources. These topics are then used to focus the information presented and discussed in the affected environment and environmental consequences sections of this document. Each impact topic relates to a specific aspect of the Park and its surrounding community, which are essential to protect.

A brief rationale for the selection or rejection of each impact topic is given below.

- **Wetlands** — Executive Order 11990 (Protection of Wetlands) requires federal agencies to minimize the loss, destruction, or degradation of wetlands and to enhance their natural and beneficial values. The NPS Management Policies, Director’s Order 2 (Planning Process Guideline) and Director’s Order 12 (NEPA Guideline) provide direction on developments proposed in floodplains and wetlands. Wetlands are located in the vicinity of two intersections within the study area and therefore will be addressed in this document.
- **Environmental Justice** — Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, signed February 1994, requires federal agencies to identify and address any disproportionately adverse effects on human health or the human environment of minority and/or low income populations resulting from federal programs, policies and activities. When compared with existing county and state demographic statistics, a higher percentage of minorities and those living below the poverty level reside within the study area. Impacts to low-income and minority citizens will be addressed for each alternative.
- **Cultural Resources** — Cultural Resources will address both Historical and Archaeological resources. Any actions that could potentially affect the Historical and Archaeological resources of the Park, in the project area, will be addressed.

As outlined in 36 CFR, Part 800, regulations issued by the Advisory Council on Historic Preservation implementing section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470 et seq.), the potential impacts on cultural resources must be addressed. Under the “Criteria of Effect” (36 CFR Part 800.9(a)), Federal undertakings are considered to have an effect when they alter the character, integrity, or use of a cultural resource, or qualities that qualify a property for listing on the National Register of Historic Places. In addition to the National Historic Preservation Act, the National Environmental Policy Act of 1969 (NEPA), the 1916 NPS Organic Act, NPS Management Policies, and NPS-28 further require the NPS to consider the effects of their proposed actions on cultural resources.

- **Natural Environment** — The NEPA requires an examination of impacts on the components of affected ecosystems. NPS policy requires the protection of the natural abundance and diversity of all the Park’s naturally occurring communities. Impacts to resources such as soil, vegetation, and wildlife are included in this topic and will be addressed for each alternative.
- **Special Status Species** — Section 7 of the Endangered Species Act directs all Federal agencies to use their authority in the furtherance of the conservation of rare, threatened, and endangered species. Federal agencies are required to consult with the U.S. Fish and Wildlife Service (FWS) to ensure that any action authorized, funded, and/or carried out by the agency does not jeopardize the continued existence of any listed species or critical habitat. NPS policy also

requires examination of the impacts on federal candidate species and state-listed threatened, endangered, candidate, rare, declining, or sensitive species. Protection and preservation of special status species at the Park are of critical importance and are discussed as part of this document.

- **Water Quality** — The 1972 Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977, establishes a national policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters; to enhance the quality of water resources; and to prevent, control, and abate water pollution. The 2001 NPS Management Policies provides direction for the preservation, use, and quality of water originating, flowing through, or adjacent to Park boundaries. The NPS seeks to restore, maintain, and enhance the quality of all surface and ground waters within the parks consistent with the Clean Water Act and other applicable federal, state, and local laws and regulations. Since the proposed action has the potential to impact water quality through storm water runoff, this topic will be discussed further.
- **Floodplains** — Development within floodplains and floodways is regulated by federal and state laws to reduce the risk of property damage and loss of life due to flooding and to preserve the natural benefits floodplain areas have on the environment. Executive Order 11988 (Floodplain Management) requires all federal agencies to avoid construction within 100-year floodplains unless no other practical alternative exists. Floodplains are located within the study area and impacts to floodplains will be addressed by each alternative.
- **Visitor Use, Park Operations, and Public Safety** — Since the proposed action has the potential to impact visitor use and operations, this topic will be discussed further.
- **Socioeconomic Environment** — Since the proposed action has the potential to impact Park visitors, staff, and the local economy, this topic will be discussed further.
- **Air Quality** — The 1963 Clean Air Act, as amended (42 U.S.C. 7401 *et seq.*), requires federal land managers to protect Park air quality. The act also assigns the federal land manager (Park Superintendent) an affirmative responsibility to protect the Park's air quality related values — including visibility, plants, animals, soils, water quality, cultural and historic resources and objects, and visitors — from adverse air pollution impacts. Section 118 of the 1963 Clean Air Act requires the NPS to meet all federal, state, and local air pollution standards. Since air quality may be negatively impacted during construction, this topic will be discussed further.
- **Energy** — Data was collected for use in modeling energy expenditures. Vehicular energy consumption was calculated using procedures in the FHWA publication *Procedure for Estimating Highway User Costs, Fuel Consumption and Air Pollution* (No. PB80-159957, March 1980). Both the direct (e.g, fuel consumption) and indirect (e.g., from construction and maintenance) energy requirements were evaluated. Since energy consumption is anticipated to decrease based on turn lane improvements, this topic will be discussed further.
- **Hazardous Materials and Waste** — To determine where the hazardous materials existed within the vicinity of Newfound Gap Road, Environmental Data Resources, Inc. (EDR) reviewed both Federal and State hazardous materials databases. No active potential hazardous material sites were identified within the project study area, and therefore this topic has been dismissed. Earthen materials contained acid-producing materials could potentially cause environmental problems resulting from disturbance during construction. This topic is discussed under Geology.

1.7 Permits

A project scoping letter was sent to FWS, who also attended the initial project scoping meeting. Additional correspondence is expected to be received from FWS following distribution of the EA. Based on field investigations and coordination with FWS, it is not expected that the project will impact any threatened and endangered species.

Persons who conduct any activity that involves the alteration of waters of the State require a State and possibly a Federal permit. Permits will need to be authorized by the Department of the Army (DA) pursuant to Section 10 of the 1899 Rivers and Harbors Act and/or, Section 404 of the Clean Water Act (CWA). In addition to mitigation for federal permits, North Carolina Department of Environment and Conservation may also require an Aquatic Resource Alteration Permit (ARAP) pursuant to North Carolina Water Quality Control Act.

1.8 Interrelationship with Other Plans and Projects

- ***The General Management Plan for the Park*** — The 1982 General Management Plan (GMP) for the Great Smoky Mountains National Park serves as a guide for meeting the objectives established for the Park and as a public statement of National Park Service management intentions. The GMP establishes long-range strategies for resource management, visitor use, and development of an integrated park system. The proposed action is compliant with the Park’s stated primary purpose of providing “for visitor enjoyment compatible with preserving the rich assemblage of natural resources.”
- ***The National Park Service Organic Act of August 25, 1916*** – This Act states that the fundamental purpose of National Parks is “to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations.” The proposed action is supportive of this Act because it is minimally obtrusive on the natural and historic environment, and maintains the historic road corridor for future Park visitors.

2.0 Alternatives Analysis

This project is comprised of two potential actions: rehabilitation of Newfound Gap Road, and turn lane improvements at the seven study intersections. To address these actions, three alternatives were considered for this project: No Action, Partial Build, and Full Build.

- **No Action** is the “do nothing” alternative. This alternative neither includes rehabilitation of Newfound Gap Road nor turn lane improvements.
- **Partial Build** includes the rehabilitation as described below, but not the turn lane improvements.
- **Full Build** (Preferred Alternative) includes both rehabilitation of Newfound Gap Road in the study corridor and turn lane improvements at all seven study intersections.

The design criteria used for the turn lane options is given in **Appendix A**. In addition, non-construction alternatives were considered that included traffic demand management, signage, and speed limit reduction. A more detailed discussion of eliminated turn lane options and non-construction alternatives are also provided in **Appendix A**.

No new guardrails or guardwalls are identified for inclusion in this project. However, if new guardrail or guardwall is needed, it would be designed to match the existing design themes of those already existing within the Park. Existing stone headwalls would be maintained where possible, but existing conditions may prohibit retaining all stone headwalls. In that situation, NPS first would attempt to repair them. If this is not feasible, they would try to reconstruct the walls with the salvaged stone. Finally, if this option does not work, they would replace the stone headwall using new granite that matches the Ashler stone pattern.

2.1 No Action Alternative

Under the No Action Alternative, no substantial improvements would be performed other than routine maintenance operations. The surface and drainage of Newfound Gap Road from north of the Collins Creek Picnic Area to the southern Park boundary would continue to be in poor condition and overall driver safety concerns would remain unresolved.

2.2 Partial Build Alternative

Under the Partial Build Alternative, Newfound Gap Road from north of the Collins Creek Picnic Area to the southern Park boundary would be rehabilitated. The rehabilitation would include the following items:

- resurfacing Newfound Gap Road and existing roadside pullouts and parking areas, including the parking areas at Oconaluftee Visitor Center, Mingus Mill, and on Tow String Road;
- full-depth pavement reconstruction in deteriorated and/or settled areas;
- milling asphalt surface along stone curbing;
- repointing, resetting, and/or replacing stone curbing;
- repair or replacement of drainage structures;
- stabilizing and reestablishing roadside ditches;
- replacement of existing guardrail with steel-backed timber guardrail;
- shoulder stabilizing and reseeding;
- pavement markings; and
- turf establishment.

No roadway widening would occur, nor would the turn lane improvements be constructed and overall driver safety concerns would remain unresolved. Temporary traffic control along with appropriate erosion control and Best Management Practices would be used during construction to minimize impacts to the Park and to the public.

2.3 Full Build Alternative

The Full Build Alternative would provide the same rehabilitation elements as the Partial Build Alternative, and in addition it would include turn lane improvements at the intersections of Newfound Gap Road with the Collins Creek Picnic Area, the Smokemont Campground Entrance, Tow String Road, Park Circle Drive, the Oconaluftee Visitor Center, the Blue Ridge Parkway, and the Big Cove Connector Road. The typical turn lane proposed includes an 11-foot wide turn lane with 75 feet of storage, a 100-foot bay taper, and a 550-foot widening taper. In addition to turn lane improvements, the Full Build Alternative also includes revision of the parking lot access and circulation at the Oconaluftee Visitor Center.

Sections 2.3.1 through 2.3.6 describe the turn lane options retained as a part of the Full Build Alternative. **Section 2.3.7** summarizes proposed mitigation measures for this project. **Section 2.6** describes the turn lane options that were considered and eliminated.

2.3.1 Collins Creek Picnic Area

The turn lane option retained at the Collins Creek Picnic Area (**Figure 2**) widens on the east side of Newfound Gap Road for a northbound left-turn lane. This option requires extending the existing box culvert in the area. This option was selected for further consideration because it would have the least impacts on Collins Creek.

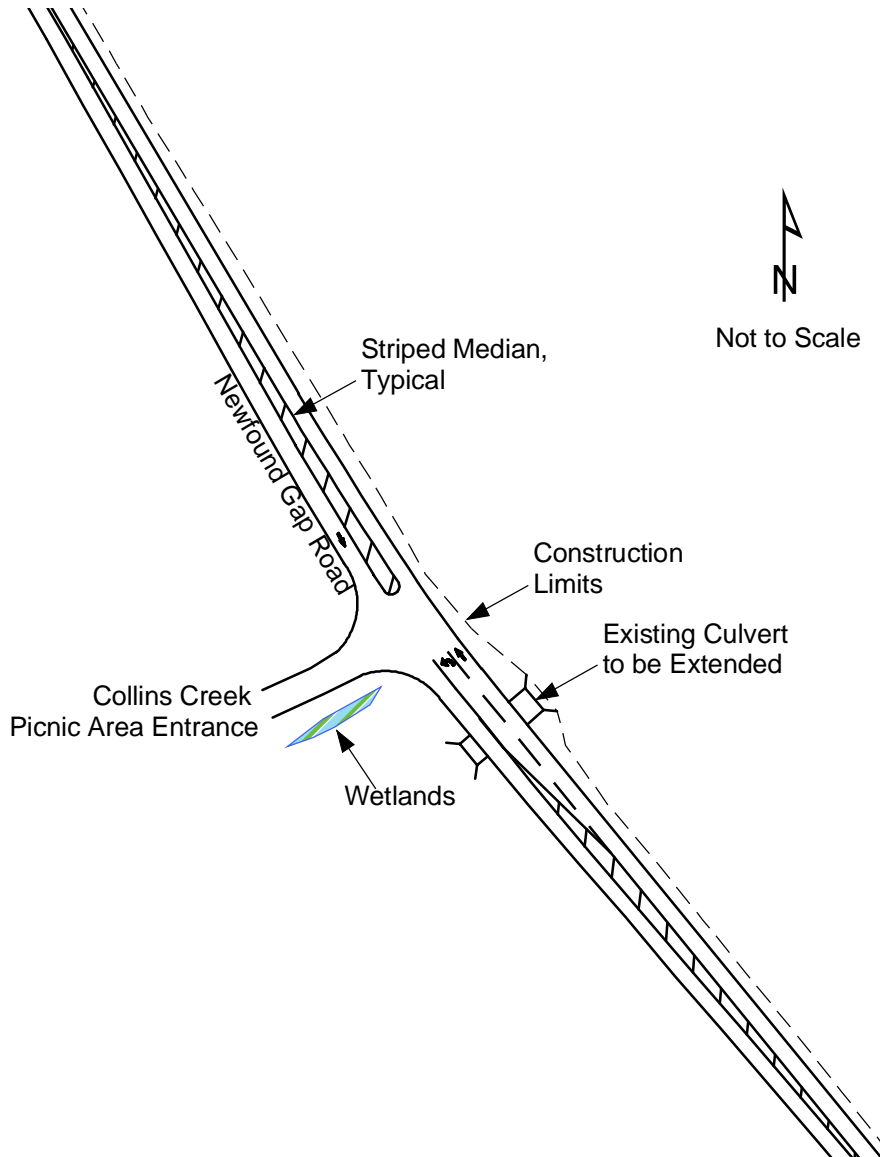


Figure 2: Collins Creek Picnic Area Turn Lane Option

2.3.2 Smokemont Campground Entrance

The turn lane option retained at the Smokemont Campground entrance (**Figure 3**) widens on the west side of Newfound Gap Road for a southbound left-turn lane. This option would infringe on the existing paved pullout adjacent to the southbound lane and include replacing the impacted pullout. This option was selected for further consideration because land-use impacts were similar to other options but it would not bring a travel lane closer to the existing bridge over the Oconaluftee River.

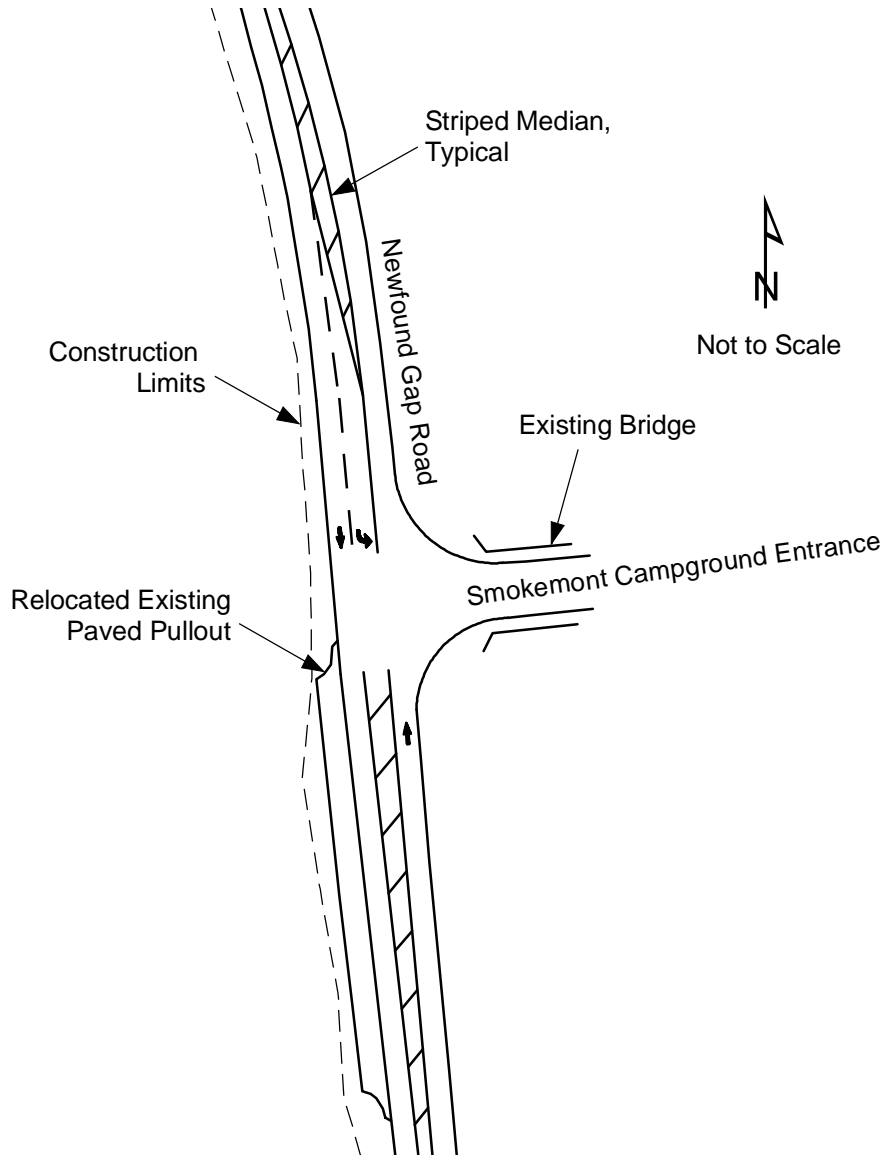


Figure 3: Smokemont Campground Entrance Turn Lane Option

2.3.3 Tow String Road

The turn lane option retained at Tow String Road (**Figure 4**) realigns Tow String Road to the north beginning at the existing parking area in order to provide better sight distance at its intersection with Newfound Gap Road. The revised alignment for this option would provide the required sight distance for both left and right turns from Tow String Road onto Newfound Gap Road. This option also includes widening Newfound Gap Road to the east to allow for the inclusion of a left-turn lane from Newfound Gap Road. This option was selected for further consideration because it has fewer impacts to wetlands than similar options that provide the same benefits. The location of the realigned Tow String Road was selected for further consideration to minimize impacts on wetlands and large trees in the vicinity of the intersection.

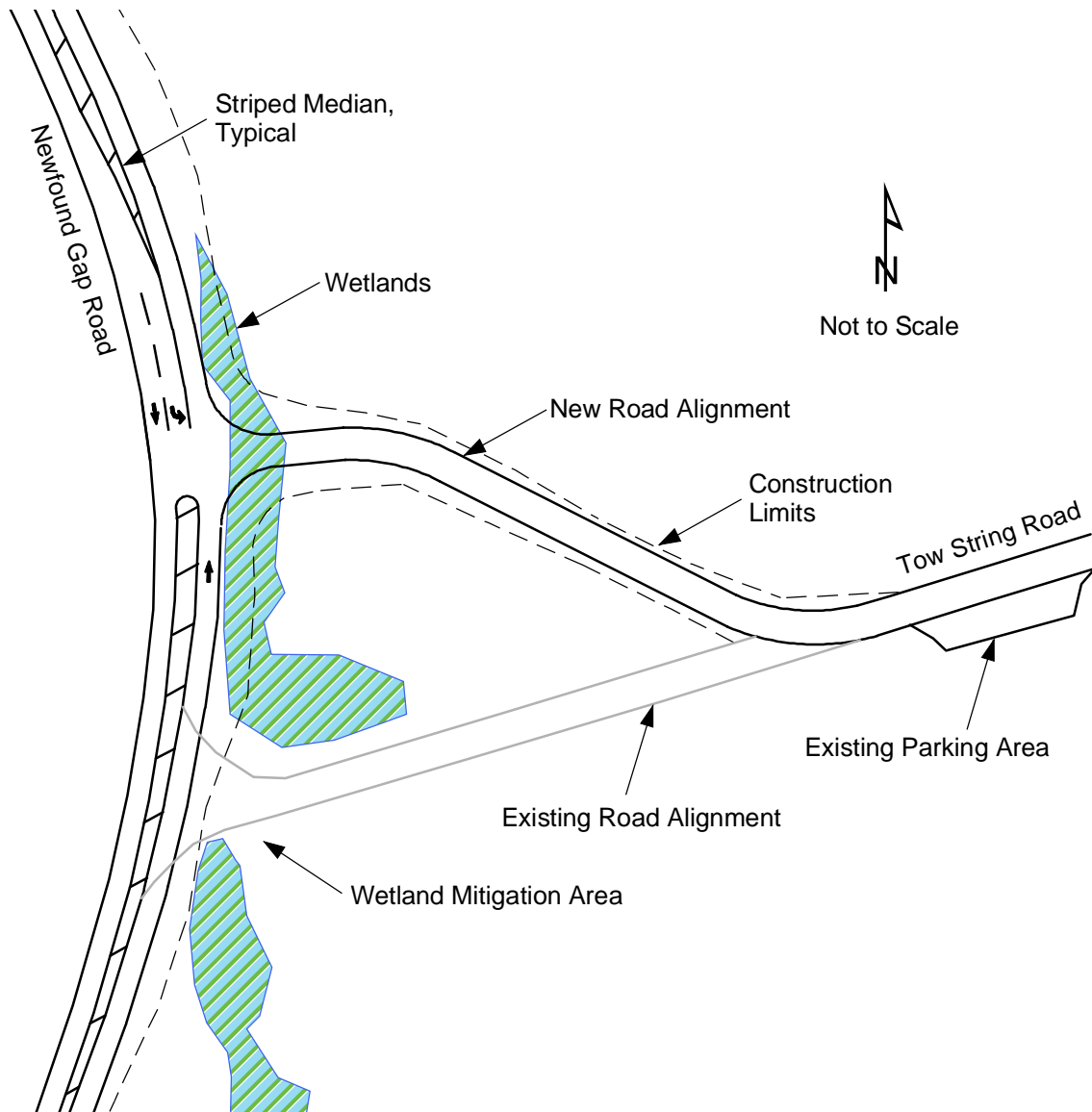


Figure 4: Tow String Road Turn Lane Option

2.3.4 Park Circle Drive and Oconaluftee Visitor Center

Due to the proximity of Park Circle Drive and the Oconaluftee Visitor Center, the turn lane options at these two locations have been combined to calculate impacts (Figure 5). This option includes widening on the west side of Newfound Gap Road for a southbound left-turn lane at Park Circle Drive. The widening continues to the Oconaluftee Visitor Center, where a longer left-turn lane would be added to the central intersection.

This option includes reconfiguring traffic patterns within the Visitor Center parking areas to allow vehicles to move one-way through both sections of the parking lot. Vehicles would enter the parking lot through the central intersection, turn either right or left to access the north and south parking lots, and exit through either the northern or southern intersections. To accommodate this new traffic pattern, Newfound Gap Road would be widened on the west side at the central intersection to provide a longer left-turn lane into the entrance. A 2-foot concrete median would be installed on southbound Newfound Gap Road at the southern intersection to provide vehicles exiting the southern intersection with a designated acceleration lane. Also, approximately 800 feet of the outside northbound lane would be converted to grass leading up to the Visitor Center entrance. This directs all traffic into one northbound lane, allowing drivers turning right into the Visitor Center entrance to use a designated right-turn lane beginning north of the southern intersection. This option was selected for further consideration because it improved safety conditions and traffic operations at the Visitor Center more than other options.

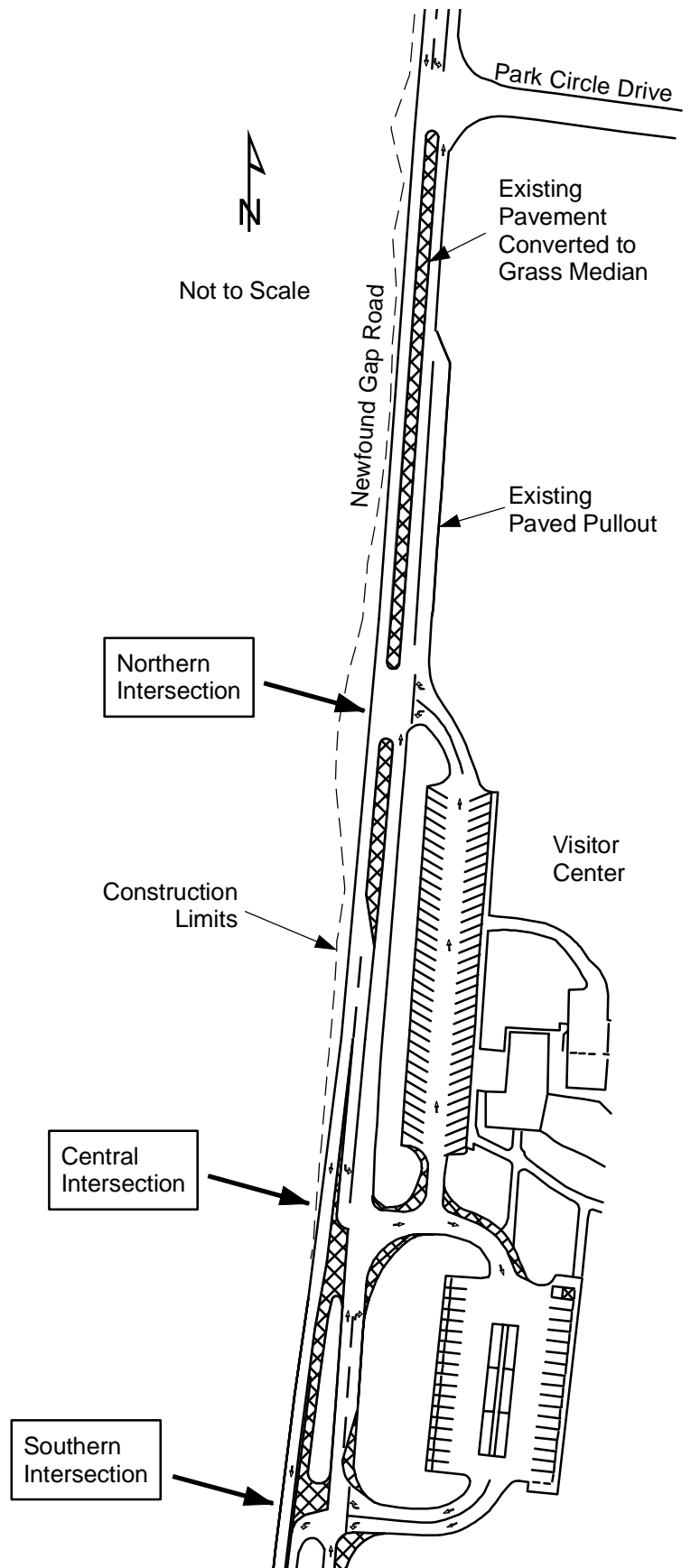


Figure 5: Park Circle Drive and Oconaluftee Visitor Center Turn Lane Option

2.3.5 Blue Ridge Parkway

The turn lane option retained at the Blue Ridge Parkway (Figure 6) adds a southbound left-turn lane from Newfound Gap Road onto the Blue Ridge Parkway by widening to the east within the existing median. This option was selected for further consideration because the decision was made to retain four lanes between the Visitor Center and the Blue Ridge Parkway, and this option would have the least impacts of similar options.

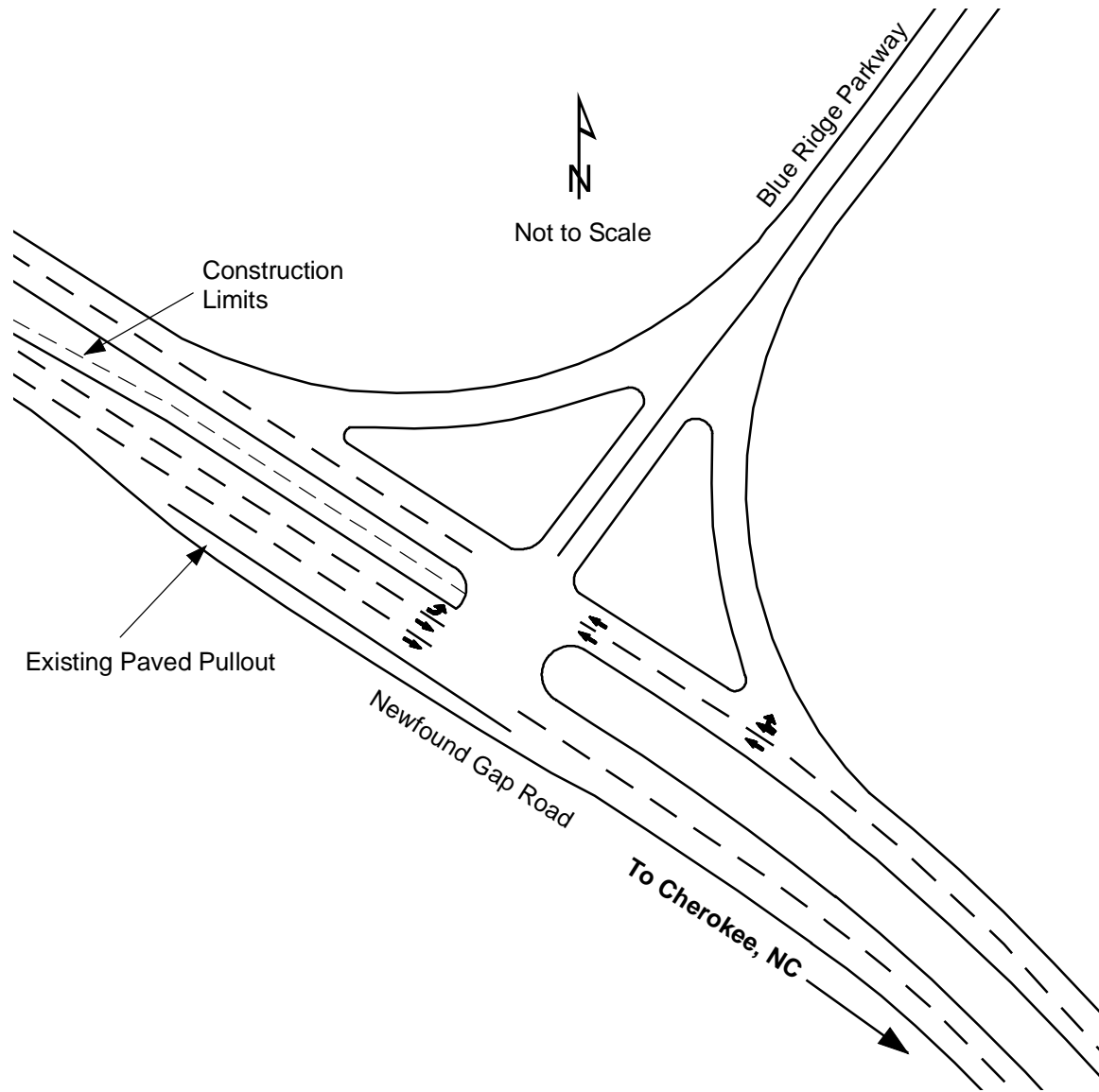


Figure 6: Blue Ridge Parkway Turn Lane Option

2.3.6 Big Cove Connector Road

The turn lane option retained at the Big Cove Connector Road (**Figure 7**) widens on the west side of Newfound Gap Road for a southbound left-turn lane. (Directions are based on the north-south overall orientation of Newfound Gap Road.) The widening continues to the south to provide an acceleration lane for left turns from Big Cove Road onto Newfound Gap Road toward Cherokee. This option was selected for further consideration because it would have fewer impacts and greater benefits than other options.

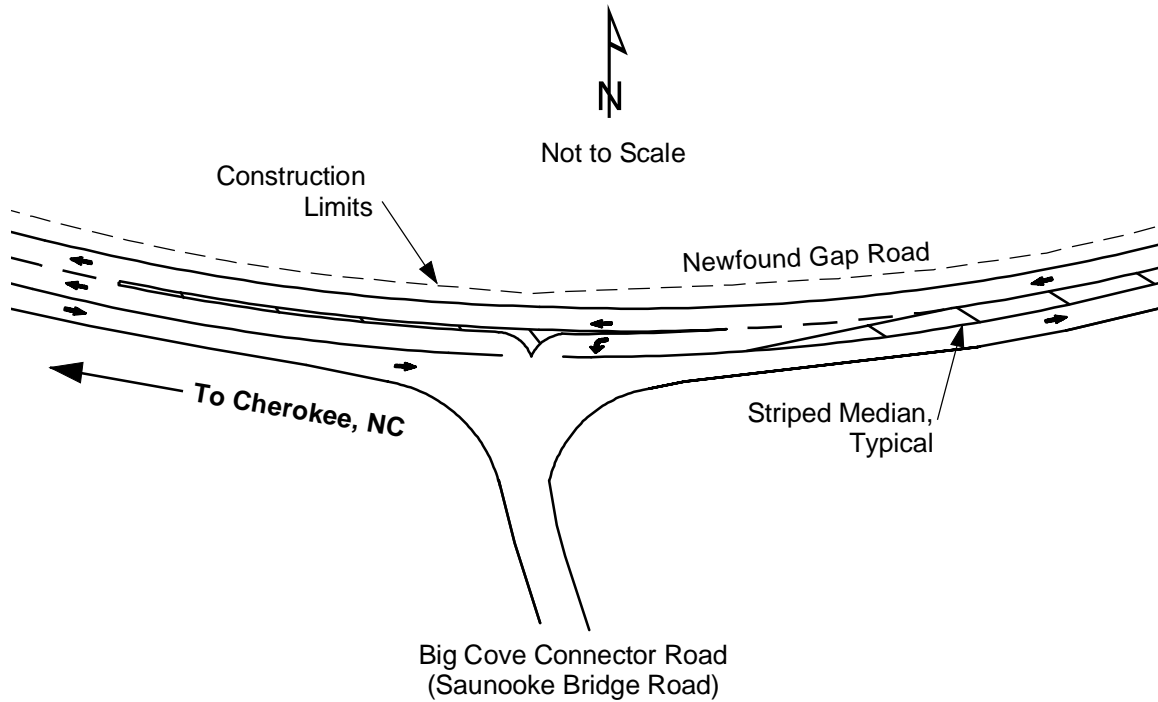


Figure 7: Big Cove Connector Road Turn Lane Option

2.3.7 Summary of Mitigation

The Full Build Alternative includes mitigation for the impacts of pavement and drainage rehabilitation and for the construction of turn lanes. The following mitigation measures are included in this alternative:

1. The least damaging construction alternative has been selected. Improvements at each intersection included in the Full Build Alternative were evaluated for impact to the environment, and the least damaging alternative was selected. In particular, alignments were selected that would avoid or minimize habitat loss, cutting into hillsides, stream impact, and wetland impact.
2. Consultation with SHPO and THPO has been initiated to address mitigation of historic and archaeological resources. A Memorandum of Agreement is being developed to detail the mitigation measures.
3. Wetlands impacted at Tow String Road would be fully mitigated. Wetlands would be created to replace the impacted wetlands, in accordance with Park policy.
4. Best Management Practices (BMPs) would be used during construction to prevent or minimize erosion, sedimentation, and other water quality impacts.
5. The chance of encountering pyritic or Anakeesta rock during construction has been judged to be very low. However, if any such material is encountered, appropriate measures would be taken to ensure that no leachate is released into the surrounding streams.
6. Impact to biotic communities and habitat would be minimized by restricting land clearing and construction operations within the project limits. Material staging and stockpiling would occur in parking lots or other disturbed areas.
7. Vegetation would be replaced in construction areas adjacent to the new pavement. In the area where Tow String Road is proposed to be relocated, the pavement would be removed and replaced with vegetation similar to or compatible with existing surrounding vegetation. Pavement removed as part of the proposed improvement in the Oconoluftee Visitor Center area would be replaced with grass.
8. Any tree removal would occur only between October 15 and April 15 to avoid the roosting season of the endangered Indiana bat.
9. The spread of invasive species would be avoided or minimized by following NPS procedures regarding revegetation of disturbed areas. NPS procedures regarding revegetation include inspecting topsoil for contamination of exotic species prior to importation to the project site, not using imported topsoil which is contaminated with exotic species, the use of less aggressive fescues and annual ryegrass supplemented with native Forbes and grasses to establish areas within mow zones, obtaining stored plant materials from the National Resource Conservation Service to supplement revegetation, and to selectively remove existing vegetation within the project limits prior to disturbance for eventual reuse upon completion of the construction work.
10. Temporary road closings during construction would be scheduled and coordinated by the Park to minimize user inconvenience. Lanes would not be closed during peak visitor seasons and hours. Temporary signs would be used as appropriate, and advance notice would be made through local news media to alert the public of traffic restrictions or other construction related activity.
11. A traffic plan would be developed during design to define truck routes and parking areas for construction vehicles.
12. The Park would monitor construction noise and would require abatement where limits would be exceeded. Work that produces objectionable noise would be limited to occur outside peak visitor hours.

13. Air quality impacts would be mitigated by limiting the duration of idling of construction equipment and trucks that are not actively completing work, not allowing on-site incineration of construction materials, minimizing the period of time that open excavations are left unstabilized, and minimizing the development of dust from open excavations by adding water.
14. Construction would be coordinated with local utilities in order to avoid or minimize temporary disruption of service.

2.4 Environmentally Preferred Alternative

As defined by the Council on Environmental Quality (CEQ): “The environmentally preferred alternative is the alternative that will promote the national environmental policy as expressed in NEPA’s Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources” (CEQ 2005a).

The environmentally preferred alternative is the alternative that best:

1. fulfills the responsibilities of each generation as trustee of the environment for succeeding generations.
2. ensures for all Americans, safe, healthful, productive, and esthetically and culturally pleasing surroundings.
3. attains the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
4. preserves important historic, cultural, and natural aspects of our national heritage and maintains, wherever possible, an environment that supports diversity and variety of individual choice.
5. achieves a balance between population and resource use that will permit high standards of living and a wide sharing of life’s amenities.
6. enhances the quality of renewable resources and approaches the maximum attainable recycling of depletable resources.

The environmentally preferred alternative is the Partial Build Alternative. This alternative would not impact any resources outside of the existing road prism. If the pavement rehabilitation work proposed in the Partial Build Alternative is not completed, the condition of the road would continue to deteriorate, increasing sedimentation, failure of drainage systems, rutting of pavement, and creating an unsafe driving surface. The Partial Build Alternative best meets all of the above criteria except safety, included in items 2 and 3, because it would not include turn lanes. However, the Partial Build Alternative does not fully meet the Purpose and Need of the project, which includes improving safety.

2.5 Preferred Alternative

The preferred alternative is the Full Build Alternative. If the pavement rehabilitation work proposed in the Full Build Alternative is not completed, the condition of the road would continue to deteriorate, increasing sedimentation, failure of drainage systems, rutting of pavement, and creating an unsafe driving surface.

This alternative would also improve traffic operations, visitor use, and safety. Overall vehicle delay would decrease slightly with the provision of a separate turn lane for left-turning vehicles, since through vehicles traveling in the same direction would not have to stop or slow. The provision of turn lanes also would improve the safety of the road by reducing conflict points

between left-turning and through vehicles. In addition, the turn lanes would help drivers identify the location of intersections when approaching, and would enable drivers not turning to bypass slow-moving left turning vehicles. The proposed realignment of Tow String Road would improve the sight distance for vehicles turning onto Newfound Gap Road. At the Visitor Center, changing circulation within the parking areas to a one-way traffic pattern would reduce vehicle conflicts within the parking areas. Drivers exiting the south parking lot to the left would be able to use the proposed acceleration lane. Improved lane geometry south of the Visitor Center would improve safety for drivers heading north past the Visitor Center or turning right into the parking lots.

2.6 Turn Lane Options Considered and Eliminated

2.6.1 Collins Creek Picnic Area

Two options eliminated were to widen to the west or widen symmetrically to construct a northbound left-turn lane from Newfound Gap Road into the Collins Creek Picnic Area. These options were eliminated because they both had greater stream impacts than the retained option and were without any additional benefits.

2.6.2 Smokemont Campground Entrance

Two options eliminated were to widen to the east or widen symmetrically to construct a southbound left-turn lane from Newfound Gap Road into the Smokemont Campground Entrance. These options were eliminated because the land-use impacts were similar to the retained options but both would bring a travel lane closer to the existing bridge over the Oconaluftee River. The proximity of the new travel lane to the bridge wing walls has the potential to inhibit turn movements of oversized vehicles traveling in the northbound lane of Newfound Gap Road and turning right onto Smokemont Road.

2.6.3 Tow String Road

Five options were eliminated at Tow String Road. Each of the options was eliminated because they had greater impacts than the retained option and were without any additional benefits.

1. Realign Newfound Gap Road by extending tangent sections and insert a wider curve radius at this location with a left-turn lane for drivers heading south on Newfound Gap Road.
2. Realign Newfound Gap Road by inserting a compound curve near the intersection of Tow String Road, in addition to a left-turn lane for drivers heading south on Newfound Gap Road.
3. Realign Newfound Gap Road by inserting a curve, which realigns the road westward into the mountain.
4. Realign Tow String Road to the north and also widen Newfound Gap Road to the west for the inclusion of a left-turn lane from Newfound Gap Road.
5. Reduce the posted speed for vehicles traveling in this section of Newfound Gap Road and widen Newfound Gap Road to the west to construct a southbound left-turn lane.

2.6.4 Park Circle Drive

Two options eliminated were to widen to the east or widen symmetrically to construct a southbound left-turn lane from Newfound Gap Road into Park Circle Drive. These options were eliminated because they would impact a steep bank along the Oconaluftee River and would eliminate an area currently used by seasonal Park employees and volunteers to walk to and from their lodgings.

2.6.5 Oconaluftee Visitor Center

Four options were eliminated at the Oconaluftee Visitor Center.

1. Add a full southbound left-turn lane into the northern entrance and stripe a dedicated left-turn lane into the southern entrance. The inside southbound lane and the outside northbound lane south of the southern entrance would be removed, with the exception of a right-turn lane that would remain for northbound access to the southern entrance. The current northbound right-turn lane between the southern and northern entrances would also be removed. This option was eliminated because the geometry was inferior to the retained option.
2. Widen on the west side of Newfound Gap Road to provide a southbound left-turn lane into the northern entrance, and stripe a dedicated left-turn lane into the southern entrance. Both of the inside lanes south of the southern entrance would be removed and a right-turn lane would be added for northbound access to the southern entrance. The current northbound inside lane between the southern and northern entrances would also be removed.
3. Add a full southbound left-turn lane into the northern entrance and stripe a dedicated left-turn lane into the southern entrance. The inside southbound lane and the outside northbound lane south of the southern entrance would be removed, with the exception of a right-turn lane that would remain for northbound access to the southern entrance. The current northbound right-turn lane between the southern and northern entrances also would be removed.

Options 2 and 3 were eliminated because the decision was made to retain four lanes between the Visitor Center and the Blue Ridge Parkway.

4. Add a full southbound left-turn lane into the northern entrance while maintaining the existing flow of traffic on the northbound lanes. This option was eliminated because it did not address the circulation issues within the parking lots.

2.6.6 Blue Ridge Parkway

Three options were eliminated at the Blue Ridge Parkway.

1. Remove the inside travel lane on both the northbound and southbound sections of Newfound Gap Road, provide a left-turn lane using existing pavement, and lengthen the northbound right-turn lane on Newfound Gap Road at the Blue Ridge Parkway. This option was eliminated because extending the right-turn lane beyond the existing pavement would have greater impacts than using existing pavement for a right-turn lane, and because the decision was made to retain four lanes between the Visitor Center and the Blue Ridge Parkway.
2. Remove the inside southbound travel lane and the outside northbound travel lane, except for the portions needed for a right-turn and acceleration lanes. This option was eliminated because the decision was made to retain four lanes between the Visitor Center and the Blue Ridge Parkway.
3. Retain the existing roadway width from the southern Park boundary through the Blue Ridge Parkway intersection, designating the right lane as a right-turn only lane south of the Blue Ridge Parkway. North of the intersection, northbound traffic would shift to the outside lane in order to remove the inside travel lane. This option was eliminated because the decision was made to retain four lanes between the Visitor Center and the Blue Ridge Parkway.

2.6.7 Big Cove Connector Road (Saunooke Bridge Road)

Two options eliminated were to widen to the east or widen symmetrically to construct a southbound left-turn lane from Newfound Gap Road into Big Cove Connector Road. These options were eliminated because they would impact the relatively steep bank along the Oconaluftee River, require construction on Big Cove Connector Road, and impact the existing Oconaluftee Trail. Any widening to the east is also undesirable geometrically because it would worsen the pavement transition between Newfound Gap Road and Big Cove Connector Road, and would also move the intersection closer to a sharp curve on Big Cove Connector Road.

3.0 Affected Environment and Environmental Consequences

The following information addresses the affected environment and the environmental consequences for the No Action Alternative, the Partial Build Alternative, and the Full Build Alternative. Definitions of different types of impacts are located below:

Temporary Impacts — Impacts anticipated during construction only; upon completion of the construction activities, conditions are likely to return to those that existed prior to construction

Short-Term Impacts — Impacts that may extend past the construction period, but are not anticipated to last more than a couple of years

Long-Term Impacts — Impacts that may extend well past the construction period, and are anticipated to last more than a couple of years

Negligible — Little or no impacts (not measurable)

Minor — Changes or disruptions may occur, but do not result in a substantial resource impact

Major — Easily defined and measurable, resulting in a substantial resource impact

3.1 Land Use

3.1.1 Affected Environment

Traffic on Newfound Gap Road consists of visitors, adjacent residents, and Park personnel. For the purpose of this report, only land uses within the study area and immediately adjacent to the study area corridor are being considered. Most land uses within the study area are related to Great Smoky Mountains National Park, including public recreational activities such as hiking, camping, picnicking, and sightseeing. Facilities for these activities are described in **Section 3.8**. Park Circle Drive leads to Park maintenance and ranger facilities, to employee housing, and to the Job Corps area. Tow String Road leads to a residential area within the Cherokee Indian Reservation, which is outside the study area yet generates residential and school traffic on Newfound Gap Road. The only way to access the Tow String community by vehicle is through the Park.

3.1.2 Environmental Effects

3.1.2.1 No Action Alternative

The No Action Alternative would not impact land use.

3.1.2.2 Partial Build Alternative

The Partial Build Alternative would not impact land use. Rehabilitation of Newfound Gap Road would not impact any land outside of the existing roadway prism.

3.1.2.3 Full Build Alternative

Parkland is the only impacted land use for the Full Build Alternative. **Table 1** summarizes the total impact area (not including existing pavement) for each location. In addition, some existing pavement would be converted to grassland at Tow String Road, Park Circle Drive, and the Visitor Center. Adding left-turn lanes at Tow String Road and Big Cove Connector Road would complement the planned residential and school land uses outside the study area. The existing pavement that would be converted to grassland (a total of 0.48 acres) would help mitigate for the

existing pervious area that would be paved with the Full Build Alternative (a total of 2.52 acres), for a net impact of 2.04 acres.

Table 1: Land Use Impacts

Location	Total Impact Area (acres)	Pavement Converted to Grassland (acres)
Collins Creek Picnic Area	0.30	0
Smokemont Campground	0.34	0
Tow String Road	0.69	0.09
Park Circle Drive	0.43	0.11
Oconaluftee Visitor Center	0.34	0.28
Blue Ridge Parkway	0.12*	0
Big Cove Connector Road	0.30	0
Total	2.52	0.48

* Proposed turn lanes are located in the previously disturbed area within the median.

3.1.2.4 Conclusion

The No Action and Partial Build Alternatives would have no impact on land use. The Full Build Alternative would have a minor impact. A total of 2.52 acres would be impacted due to the proposed turn lanes, while 0.48 acres of existing paved area would be converted to grassland, resulting in a net impact of 2.04 acres. No impairment to Parkland would occur under any of the alternatives.

3.2 Socioeconomics and Community

3.2.1 Affected Environment

3.2.1.1 Demographics

To determine the demographic characteristics of the census study area, Census 2000 data were used. Detailed demographic data is included in **Appendix B**. The percentage of people over the age of 65 in the study area is less than the average for the county or the state, while the percentage of people between the ages of 5 to 21 is higher. Overall, the average age within the study area is lower than that for the county or state. Minority populations are one element of Environmental Justice considerations (see **Section 3.3**). The minority concentrations within the census study area were analyzed to determine the location of high minority populations. The table shows that, of the population defining themselves by one race, the study area includes approximately 80 percent minority populations, primarily American Indian and African American populations adjacent to the study area.

3.2.1.2 Economics

To better understand Swain County and the study area from an economic perspective, several economic factors were examined. Detailed economic data is included in **Appendix B**. The percent of people below the poverty level in the block groups in and adjacent to the study area is higher than in the county, the state, or the country. Correspondingly, the median household income and the per capita income in the census block study area are lower than for the county, state, or country.

Unemployment rates in Swain County have consistently been higher when compared with those in North Carolina or the United States. However, both the unemployment rate in Swain County and the difference between unemployment percentages in the county and the state have been declining, from a difference of 9.3% in 1998 to 2.1% in 2002.

3.2.2 Environmental Effects

3.2.2.1 No Action Alternative

The No Action Alternative would have a minor long-term impact on socioeconomic factors and the community. Lack of action would result in continuing poor pavement conditions, unsafe traffic operations at intersections, and inadequate sight distances at the intersection of Newfound Gap Road with Tow String Road, which affects the community indirectly.

3.2.2.2 Partial Build Alternative

The Partial Build Alternative would have a negligible-to-minor temporary impact on socioeconomic factors and the community. Lack of action would result in continuing unsafe traffic operations at intersections and inadequate sight distances at the intersection of Newfound Gap Road with Tow String Road, which affects the community indirectly.

3.2.2.3 Full Build Alternative

Socioeconomic and community impacts include changes in Park continuity and travel patterns, and impacts on Park facilities, traffic, safety, social groups, and the local economy. The Full Build Alternative would temporarily impact Park continuity, travel patterns, and accessibility during construction, with resultant negligible-to-minor impacts on Park facilities and services, social groups, and the local economy. The Full Build Alternative is anticipated to have a minor long-term positive impact on traffic, pedestrians, and public safety.

3.2.2.4 Conclusion

The No Action Alternative would have a minor long-term impact on socioeconomic factors and the community, as it would perpetuate unsafe traffic operations at intersections and inadequate sight distances at the intersection of Newfound Gap Road with Tow String Road, which affects the community indirectly. The No Action Alternative also perpetuates unsafe driving conditions due to poor roadway pavement. The Full Build Alternative would address these issues, resulting in a safer driving condition for the community and a minor long-term positive impact. The Full Build and Partial Build alternatives would have negligible-to-minor temporary impacts on the local economy due to road closures during construction. Road closings would be coordinated by the Park to minimize inconvenience to road users and to Park activities.

3.3 Environmental Justice

3.3.1 Affected Environment

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, directs federal agencies to consider proposed actions on minority and/or low-income populations to ensure that their actions do not have an adverse or disproportionate impact on these communities, and that the communities have the opportunity to participate in the EA process.

Minority populations comprise more than 80 percent of the study area population. Between 34 and 44 percent of households in the study area census blocks are also below poverty level. Since these percentages are both above the averages for Swain County, North Carolina, and the United States, environmental justice is an important concern for this project. Special effort has been given to minimize or eliminate impacts to these groups, and to involve them in the EA process. Outreach to minorities has included holding meetings in Cherokee, advertising all meetings in the Cherokee *One Feather*, inviting tribal officials to interagency meetings, and both mail and telephone contact with tribal officials.

3.3.2 Environmental Effects

3.3.2.1 No Action Alternative

The No Action Alternative would have a negligible impact on minority populations. Lack of action would result in continuing poor pavement conditions, unsafe traffic operations at intersections, and inadequate sight distances at the intersection of Newfound Gap Road with Tow String Road, which affects the community indirectly. Since the study area is primarily minority and has a high percentage of residents below the poverty level, these citizens are likely to be affected.

3.3.2.2 Partial Build Alternative

The Partial Build Alternative would have a negligible impact on minority populations. Unsafe driving conditions would be addressed, but turn lanes would not be added. Lack of action would result in continuing unsafe traffic operations at intersections and inadequate sight distances at the intersection of Newfound Gap Road with Tow String Road, which affects the community indirectly, including the minority and low-income community within and adjacent to the study area.

3.3.2.3 Full Build Alternative

The Full Build Alternative is anticipated to have a minor positive impact on low income or minority communities affected by the proposed turn lanes at the Collins Creek Picnic Area, the Smokemont Campground entrance, Park Circle Drive, the Oconaluftee Visitor Center, and the Blue Ridge Parkway. The new turn lanes would have a slight benefit to these communities by providing safer conditions to drivers turning left onto the minor street or driveway. The Full Build Alternative is anticipated to have a positive impact on low income or minority communities at Tow String Road and Big Cove Connector Road. The impact at these two locations is expected to be higher than at the other five since their use by minority community members is estimated to be greater due to the Tow String Community and the proposed school off of Big Cove Connector Road.

3.3.2.4 Conclusion

The No Action Alternative would have a negligible negative impact on minority populations. Since the community in and adjacent to the study area is primarily minority, these citizens would likely be adversely affected by unsafe driving conditions. The Partial Build Alternative would have a negligible impact, since unsafe driving conditions would be addressed but turn lanes would not be added. The Full Build Alternative is anticipated to have a minor positive impact on minority and low-income citizens due to the safety benefits gained by adding turn lanes to the seven intersections within the study area, and by improving the condition of the pavement on Newfound Gap Road.

3.4 Cultural Resources

3.4.1 Affected Environment

3.4.1.1 Archaeological Resources

A preliminary archaeological resource study was conducted by New South Associates, Inc., in February 2004. The work included a review of previously recorded archaeological sites in the general vicinity of the project area on file at the North Carolina State Historic Preservation Office and at the library and archives of the National Park Service, Great Smoky Mountains National Park. A discussion of site potential and relevant regional research issues was held with the archaeologists on staff at the Park office prior to field survey work. Information was compiled on regulatory requirements such as: type, general location, and National Register of Historic Places (NRHP) status of existing archaeological resources, and the probability of resources being located in unsurveyed areas.

Appendix B includes detailed findings of the archaeological study. In summary, the intersections included as part of this study contain the following attributes relative to known sites:

- Collins Creek Picnic Area — No sites noted on Office of State Archaeology maps
- Smokemont Campground — No sites noted on the western side of the Oconaluftee River according to maps on file at the Office of State Archaeology. Sites 31SW75, SW84, and SW85 are located on the eastern side of the Oconaluftee River
- Tow String Road — In the vicinity of 31SW82
- Park Circle Drive — North of 31SW240
- Oconaluftee Visitor Center — In the vicinity of the northern boundaries of 31SW240
- Blue Ridge Parkway — Near the southern boundaries of 31SW240 (part of the Oconaluftee Archaeological District)
- Big Cove Connector Road – East of 31SW134 and south of 31SW135

Based on previous work, the entire project area was considered to have a high probability for containing archaeological resources. Therefore, a Phase I survey was conducted at all seven intersections from August 23 - 26, 2004 (*Management Summary: Phase I Archaeological Survey of Seven Intersections, Newfound Gap Road*).

During this survey, four archaeological sites were identified: two early twentieth-century sites at the intersection of the Smokemont Campground entrance, one previously recorded prehistoric site north of Tow String Road, and one prehistoric site at the Big Cove Connector Road. All four sites exhibited the necessary material, uniqueness, and relevance to provide information important to a better understanding of the nearby Oconaluftee Archaeological District's prehistory and history. Accordingly, the four sites identified during the Phase I archaeological survey are recommended as potentially eligible to the NRHP.

Based on the results of that survey, a Phase II archaeological survey of three of these sites was conducted from November 3 - 9, 2004 (*Final Report: Archaeological Survey and Testing*). The sites excavated included the two sites at the intersection at the Smokemont Campground entrance and the site at the Big Cove Connector Road. It was determined that the site north of Tow String Road would not be impacted by the Full Build Alternative. Based on the results of the additional

excavations and testing, it was concluded that all four sites are eligible for nomination to the NRHP as well as considered significant archaeological resources.

3.4.1.2 Historic Resources

A preliminary historic resources study was conducted by Edwards Pitman Environmental, Inc. in February 2004. The focus of the study was on Great Smoky Mountains National Park and relevant study area architecture. Information was compiled for this report on regulatory requirements; type, general location, and NRHP status of existing architectural resources; and the probability of resources being located in unsurveyed areas. Edwards-Pitman then conducted an intensive survey of historic architectural resources for the project area in September 2004 (report available by request, *Historic Architectural Resources Survey Report: Intensive Investigation and Evaluation for Newfound Gap Road, GRSM*). **Appendix B** includes detailed findings of the historic studies.

This study identified nine significant historic resources in the vicinity of the proposed project. The nine resources include two properties listed in the NRHP, one property on the North Carolina State Study List, one property determined to be eligible for the NRHP, one historic district that is considered to be eligible for the NRHP, and four additional resources.

NRHP Listed Resources

The NRHP is the nation's official list of districts, sites, buildings, structures, and objects significant in American history, architecture, engineering, archaeology, and culture. The National Park Service nominated Mingus Mill and Smokemont Baptist Church for the NRHP in the early 1970s and both properties were listed by federal nomination.

Mingus Mill – Located along a creek that provides its power, Mingus Mill stands to the west of Newfound Gap Road beyond a parking area and comfort station (**Figure 8**). Built for Abraham Mingus in the 1870s by Sion Thomas Early, Mingus Mill was the finest and most advanced gristmill in the Smokies, using a penstock and turbine to power two sets of grinding stones — one for corn and one for wheat. The mill operated regularly until 1936. The mill and intact mill race occupy a densely wooded site that is screened from the roadway. No boundaries for the mill are stated in the nomination, although the nominated acreage is identified as 0.1 acres. Eligible boundaries for Mingus Mill would likely be limited to an area closely surrounding the mill and mill race and removed from the roadway. The mill was listed under Criterion A, Agriculture and Commerce, in the nomination prepared in 1972. The mill has local significance.

Smokemont Baptist Church – Smokemont Baptist Church sits to the east of Newfound Gap Road on a steeply sloped site overlooking the Oconaluftee River, as shown on **Figure 8**. The congregation was organized in 1836, although the present frame building was constructed in 1912. Regular services were held in the building until 1935. The church is the only remnant of the small community associated with the lumber camp at Smokemont. The church occupies a densely wooded site, although winter views of the roadway are possible. No boundaries are stated in the nomination for the church; eligible boundaries for Smokemont Baptist Church would likely be limited to an area closely surrounding the building. The church was listed under Criterion A, Religion/Philosophy, in the nomination prepared in 1973. The church has local significance.

NC State Study List

The North Carolina State Study List is an instrument used by the State Historic Preservation Office to identify properties that may be potentially eligible for the NRHP. Based on preliminary research, properties are reviewed by the State Historic Preservation Office staff and National Register Advisory Committee to determine whether or not a property warrants further study for nomination to the NRHP. Properties that appear to meet the criteria for listing are approved for the Study List and are considered potentially eligible for the NRHP. The Oconaluftee Visitor Center is the only property within the general project area that is on the North Carolina State Study List.

Oconaluftee Visitor Center – The Oconaluftee Visitor Center, a rustic stone building designed by Knoxville architect Charles I. Barber, was placed on the North Carolina State Study List in 1989. The main building is located on the east side of Newfound Gap Road with a large parking area lying to the south of the Visitor Center (**Figure 8**). The Visitor Center is surrounded by ancillary structures and extensive stone landscape features including retaining walls and walkways. Potential boundaries for the Visitor Center would likely include the main building, garage, parking areas, sidewalks, terraces, retaining walls, and drinking fountains. The National Park Service prepared a National Register nomination for the Oconaluftee Visitor Center in 1989, but the listing was never finalized because the Visitor Center was included in the 1995 Historic Resource Study. (See discussion of Park Development Historic District below.)

NRHP Eligible

For purposes of compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, a property that is determined to be eligible for the NRHP but not listed is given the same consideration as a listed property.

Blue Ridge Parkway – The Blue Ridge Parkway, a property owned and managed by the National Park Service, was determined eligible for the NRHP as a part of an environmental review. The historic resources study and National Historic Landmark nomination for the Blue Ridge Parkway are currently in draft form. The intersection of the Blue Ridge Parkway and Newfound Gap Road marks the southern terminus of the 469-mile scenic highway. Eligible boundaries for the Blue Ridge Parkway would likely include everything within the maintained right-of-way for the road.

Park Development Historic District – The Southeast Regional Office of the National Park Service initiated a Historic Resources Study of the Park in 1995, and as a result of the study a nomination for the Park Development Historic District was prepared in 1999 by Robert W. Blythe, a National Park Service historian. The historic district nomination encompasses the original automobile circulation system and major developed areas accessed by that system. The draft nomination, which was circulated for review and comments, did not specify a boundary for the district. Resources present within and contributing to the district and located in the study area include Newfound Gap Road, Clingman's Dome Road, the Rockefeller Memorial, the Oconaluftee Visitor Center, and the Smokemont Campground, along with numerous other landscape features, including bridges, culverts, tunnels, walls, and other elements. The nomination states that the district is nationally significant under National Register Criterion A for its associations with the expansion of the National Park System in the eastern United States during the 1930s and for its association with the President Franklin D. Roosevelt's New Deal administration of work relief programs such as the Civilian Conservation Corps (CCC) and Works Progress Administration. According to the nomination the district is also significant under National Register Criterion C for its design component, which represents an outstanding embodiment of the National Park Service's design principles.

The National Park Service has received comments from the Historic Preservation Offices of North Carolina and Tennessee. Although there are no known objections to the potential eligibility of the district and its resources, the nomination remains in draft form. Further coordination with the National Park Service is needed to determine the final scope of the nomination and inventory of resources contained within the eligible district.

Cultural Landscape Inventory

Newfound Gap Road – Newfound Gap Road has been identified by the NPS as a potentially eligible cultural landscape through the Cultural Landscapes Inventory (CLI). A relatively new program, the CLI is a comprehensive inventory of all historically significant landscapes within the National Park System.

Potentially Eligible for the National Register

Luten Bridges – In consultation with National Park Service staff, two ancillary resources were identified within the general project area. The resources are both concrete arch bridges designed by the Luten Bridge Company and constructed in 1921 by Swain County as part of the local road system. Bridge 97S is a 59’6”-long by 20’8”-wide reinforced concrete closed spandrel bridge located in the Smokemont campground. Topped with a gravel road surface and currently closed to vehicular traffic, Bridge 97S rests on concrete abutments and features paneled concrete parapets with corbelled caps and bases. Situated on Big Cove Road over Raven Fork, Bridge 105P is a 108’-long and 20’2”-wide reinforced concrete closed spandrel bridge with paneled concrete parapets and corbelled caps and bases. Bridge 105P is supported on concrete abutments and is topped by an asphalt road surface. Though badly deteriorated, both bridges may be potentially eligible for the National Register. Eligible boundaries for both resources would likely be limited to the immediate footprint of the bridge.

Not Eligible for the NRHP

Mountain Farm Museum – The Mountain Farm Museum, an open-air museum situated adjacent to the Visitor Center, occupies an open valley between the Oconaluftee River and Newfound Gap Road (see **Figure 8**). The museum represents an effort to preserve the cultural heritage of the Smokies. Most of the buildings date from the late nineteenth and early twentieth centuries, but were moved from their original locations throughout the Park and reconstructed on this site. Because all of the buildings were moved, the Mountain Farm Museum is not eligible for the National Register, but the National Park Service maintains and preserves the structures in accordance with the Secretary of the Interior’s Standards for the Treatment of Historic Properties.

3.4.2 Environmental Effects

3.4.2.1 No Action Alternative

Archaeological Resources

No archaeological resources would be affected under the No Action Alternative.

Historic Resources

No historic resources would be affected under the No Action Alternative.

3.4.2.2 Partial Build Alternative

Archaeological Resources

No archaeological resources would be affected under the Partial Build Alternative.

Historic Resources

No historic resources would be affected under the Partial Build Alternative.

3.4.2.3 Full Build Alternative

Archaeological Resources

Based on the Phase II survey, it was determined that the Tow String Road site would not be impacted by the proposed improvements. Based on the preliminary results of the Phase II test site excavations, it was found that the site directly across the bridge from the Smokemont Campground and the site directly across from the Big Cove Connector Road displayed sufficient integrity to be eligible for the National Register of Historic Places. Construction of the Full Build Alternative would adversely impact those sites. Therefore, in consultation with the State Historic Preservation Office (SHPO) and the Tribal Historic Preservation Office (THPO) an agreement will be developed that will take into account the effects of the undertaking and which will develop mitigation measures to alleviate the adverse effects. The details of the data recovery are being developed in consultation with the SHPO and THPO.

Historic Resources

Among the identified resources, Mingus Mill, Smokemont Baptist Church, the Blue Ridge Parkway, the Mountain Farm Museum, and the two Lutten bridges are located outside the construction footprint and Area of Potential Effect for the planned improvements and would not be impacted by the project. The Oconaluftee Visitor Center, Newfound Gap Road, and contributing resources to the Park Development Historic District are identified as significant resources within the Area of Potential Effect for the planned improvements that may be affected by the project.

Newfound Gap Road would be adversely affected by the planned improvements. Other road-related resources adversely impacted by the planned improvements include two pipe culverts with stone headwalls and an automobile pullout with stone curbing at the entrance to Smokemont Campground, pipe culverts with stone headwalls at Tow String Road and Park Circle Drive, and the landscaped island separating Newfound Gap Road and the original visitor parking area at the Oconaluftee Visitor Center. All of these resources contribute to the Park Development Historic District, and represent common elements found throughout the district. Most of the resources were built according to standardized plans that guided the overall aesthetic character of the Park. Adequate documentation does not exist to determine the impacts on vegetation and other landscaping work conducted by the CCC in the 1930s. Determination of the effects on historic resources and mitigation measures would be developed in consultation with the SHPO and THPO, which began in March 2005.

3.4.2.4 Conclusion

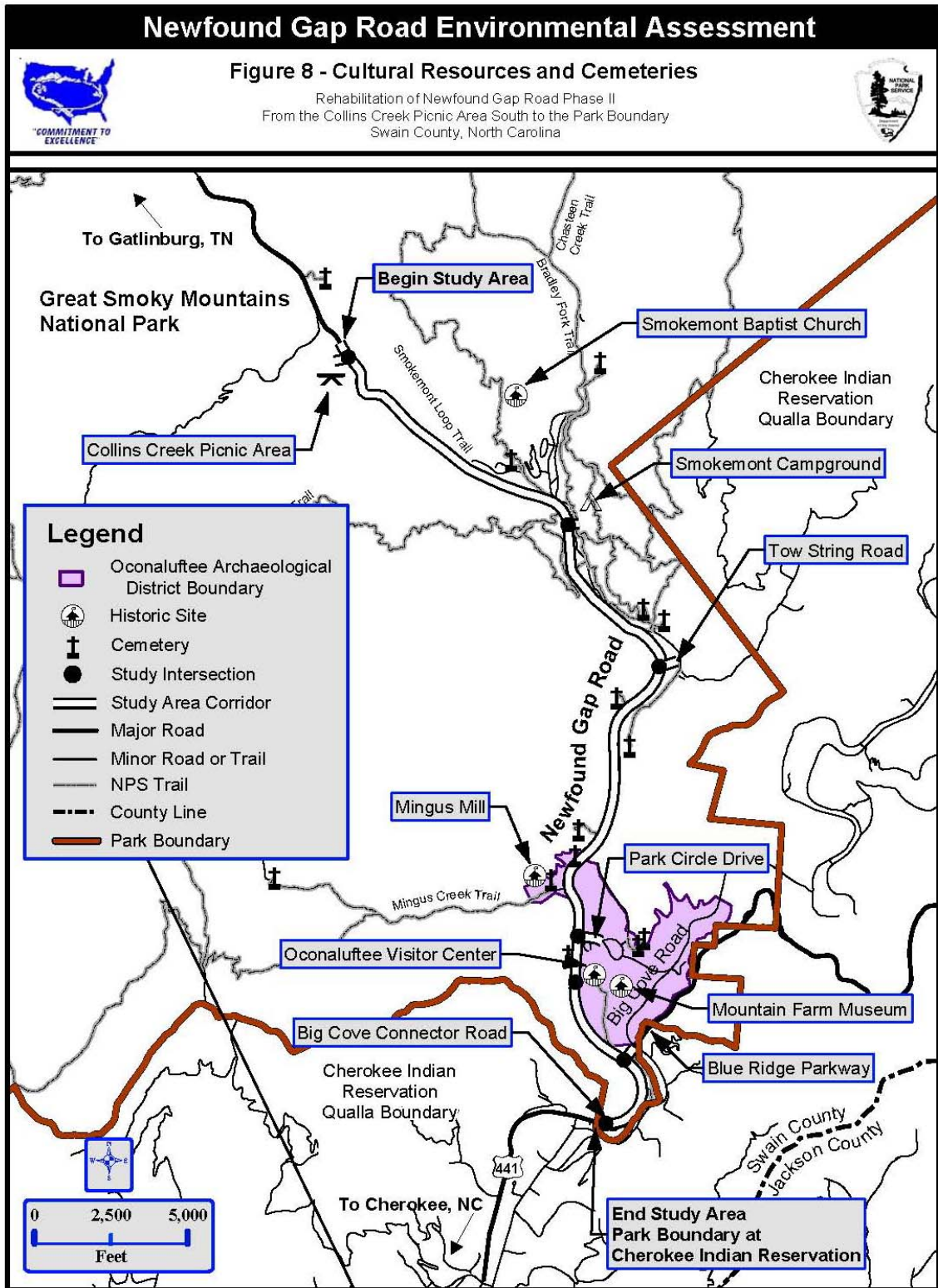
Archaeological Resources

No archaeological resources would be affected under either the No Action or Partial Build Alternatives. Consultation with the SHPO and THPO was initiated in March 2005 to determine the procedures and scope of recovery. The Full Build Alternative would have a minor impact on archaeological resources, impacting the sites across from the Smokemont Campground and the Big Cove Connector Road. A Memorandum of Agreement is being developed to address the extent of mitigation efforts required if the Full Build Alternative is selected as the preferred alternative. No impairment to archaeological resources would occur under any of the alternatives.

Historic Resources

No historic resources would be affected under either the No Action or Partial Build Alternatives. The Full Build Alternative would have a minor impact on three resources identified as significant resources within the Park: Newfound Gap Road, Oconaluftee Visitors Center, and the Park Development Historic District. Consultation has been initiated with the SHPO and THPO and will continue until an agreement has been developed. No impairment to historic resources would occur under any of the alternatives. No new guardrails or guardwalls are identified for inclusion in this project. However, if new guardrail or guardwall is needed, it would be designed to match the existing design themes of those already existing within the Park. Existing stone headwalls would be maintained where possible, but existing conditions may prohibit retaining all stone headwalls. In that situation, NPS first would attempt to repair them. If this is not feasible, they would try to reconstruct the walls with the salvaged stone. Finally, if this option does not work, they would replace the stone headwall using new granite that matches the Ashler stone pattern. All design details affecting historic resources will be reviewed with Park historic staff as well as with the SHPO and THPO during design.

Figure 8: Cultural Resources and Cemeteries



3.5 Natural Resources

3.5.1 Affected Environment

3.5.1.1 Jurisdictional Wetlands

To determine if potential wetlands exist within the study area, National Wetland Inventory (NWI) mapping was reviewed for the Swain and Jackson County United States Geological Survey (USGS) quads. These wetlands are shown on **Figure 9**.

The seven intersections were also assessed in the field for jurisdictional wetlands in accordance with guidelines for wetland delineation as outlined in the *1987 Corps of Engineers Wetland Delineation Manual*. This approach incorporates three criteria in delineating wetlands: (1) the presence of hydrophytic vegetation, (2) the presence of hydric soils, and (3) evidence of wetland hydrology. Areas with the presence of hydric soils and evidence of wetland hydrology, or evidence of all three criteria, were delineated as wetlands for this project.

The NPS uses the Cowardin wetland definition developed by the USFWS that classifies wetlands from a more ecological standpoint. This classification system is used for mapping wetlands for the National Wetlands Inventory (NWI) Project. Wetlands in the USFWS classification must only have one or more of the parameters listed above (Cowardin et al., 1979). These wetlands are referred to as NPS wetlands, whereas wetlands regulated by the U.S. Army Corps of Engineers (USACE) are referred to as jurisdictional wetlands. All wetlands identified in the study area were both jurisdictional and NPS wetlands.

On March 8, 2004, wetland locations were delineated and Global Positioning System (GPS) was used to locate the boundaries of the jurisdictional wetlands. One wetland was located at the Collins Creek Picnic Area intersection and two were located at the Tow String Road intersection.

The wetland located southwest of the Collins Creek Picnic Area intersection is associated with the floodplain of Collins Creek. The soil was saturated at the surface due to groundwater discharge. In addition to the jurisdictional wetland, Collins Creek is a perennial stream which would also be considered jurisdictional.

Two wetlands are associated with the Tow String intersection. The two wetlands are separated by a culvert under Tow String Road. The wetland receives runoff from Newfound Gap Road and the adjacent area west of the intersection. The soil was saturated to the surface with evidence of flow in portions of the wetland. The jurisdictional wetland is located on the northeast side of the intersection of Newfound Gap Road. The wetland hydrology appears to be maintained by runoff from the adjacent side slopes, groundwater seepage, and runoff from Newfound Gap Road and Tow String Road. A culvert draining under Tow String Road likely provides grade control for maintaining the existing hydrology. **Figure 9** shows the location of the wetlands, which are located in the floodplain of the Oconaluftee River.

There is also a wetland adjacent to Newfound Gap Road south of the Visitor Center parking area, and one along Newfound Gap Road south of the Smokemont bridge. Both of these wetlands are outside of the study area. There are no impacts anticipated to these areas.

3.5.1.2 Floodplains

Generically, the term “floodplain” refers to the area near streams (which may be active or dry waterways) that may be submerged by flood waters. For streams that have undergone detailed analysis by the Federal Emergency Management Agency (FEMA) as a part of the National Flood Insurance Program, the term “floodplain” is more specifically defined as the area that would be expected to be submerged during a 100-year flood (often referred to as the “regulatory flood”). The 100-year flood serves as the “base” flood for purposes of floodplain management measures. The “flood profile elevation” is an associated term that refers to the water level elevation at any point along a stream during a 100-year flood event.

FEMA has conducted a detailed evaluation of floodplains within the study area. Based on that evaluation, FEMA has published documents that describe the floodplain and flood profile elevation within the current area of concern. The Flood Insurance Rate Maps (FIRM) for Swain and Jackson Counties were used to determine the location of floodplains in the study area. Within or adjacent to the study corridor, there are 100-year floodplains adjacent to Newfound Gap Road from Tow String Road to the southern Park boundary (see **Figure 9**).

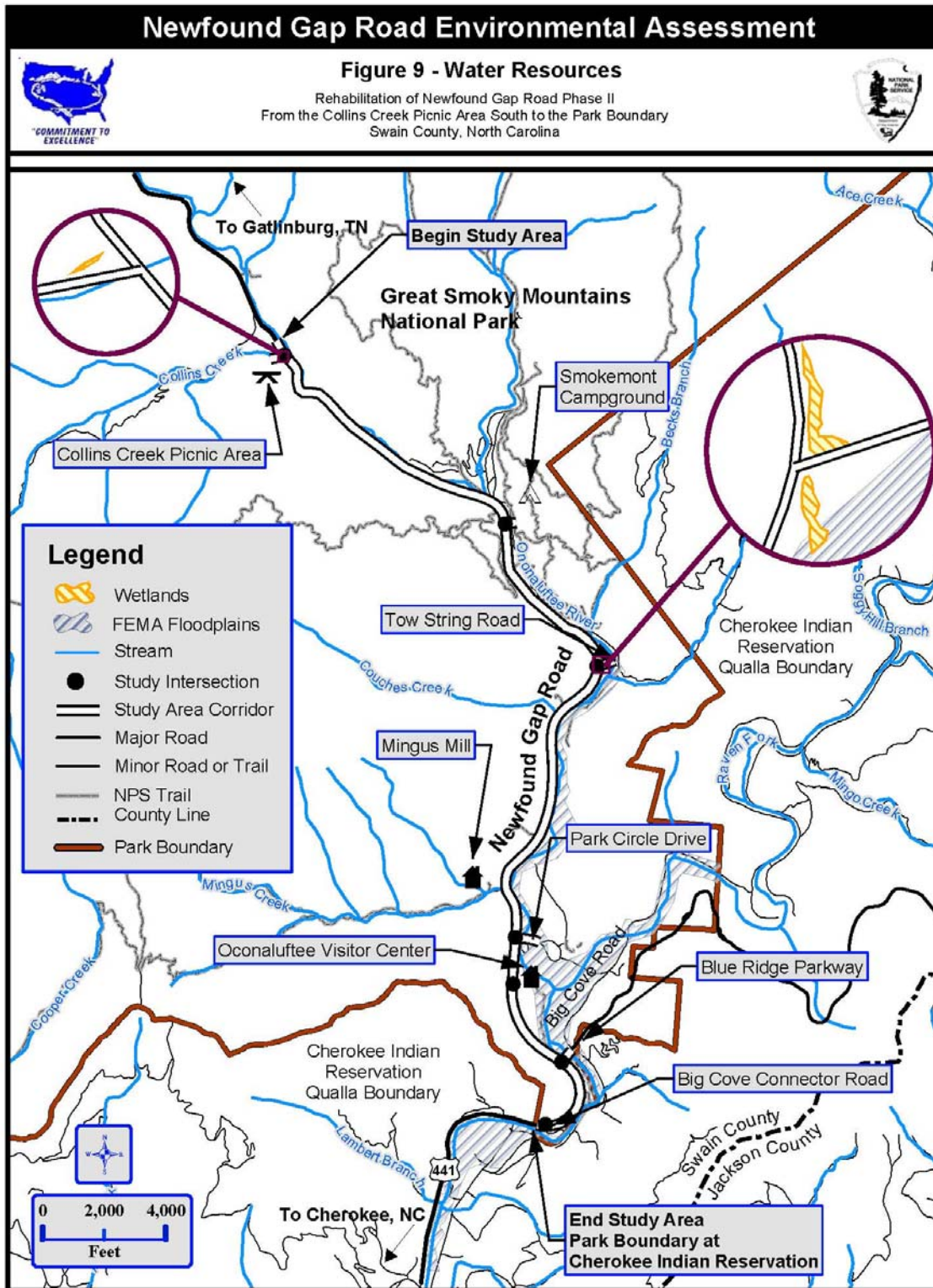
3.5.1.3 Water Quality

Water quality is a vital concern for Great Smoky Mountains National Park. Effects from visitors, development, and nature, compounded with the presence of acidic bedrock, create potential threats to the Park’s aquatic ecosystem. The potential presence of acidic bedrock is described further in **Section 3.5.1.4 (Geology)**.

Streams, creeks, and tributaries within the project study region are part of the Little Tennessee River Basin. The Oconaluftee River (Hydrologic unit #06001020303) flows through the project study area. Many creeks drain into the Oconaluftee River, including Collins Creek, Bradley Fork, Becks Branch, Couches Creek, Madcap Branch Creek, and Tow String Creek, along with numerous unnamed tributaries. The Oconaluftee River and its tributaries upstream of the confluence of Bradley Fork are classified by the state of North Carolina Division of Water Quality as Class B trout waters with a supplemental designation of high quality water. Class B denotes freshwaters protected for primary recreation and other suitable uses. Primary recreational activities include frequent and/or organized swimming and other human contact. The river and its tributaries downstream of the confluence of Bradley Fork are classified as Class C trout waters with a supplemental designation of high quality water downstream from the confluence with Bradley Fork. Class C refers to waters that are protected for secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, agriculture, and other uses found suitable for Class C waters. Raven Fork and its tributaries, which flow through the southern portion of the study area, are classified as Class C trout waters. **Figure 9** shows water resources in the study area.

The quality of aquatic habitat within the project study area is considered high due in large part to a natural mix of riffles, runs, and pools. Woody debris located throughout the stream provides habitat, shade, and concealment pockets for several aquatic species. Aquatic invertebrates are a major component of aquatic ecosystems. They are primary and secondary consumers and prey for organisms higher in the food chain.

Figure 9: Water Resources



3.5.1.4 Physiography, Geology, and Soils

Physiography

Swain County is situated in the western portion of the Mountain physiographic province in North Carolina. The geography of the county consists predominantly of very steep uplands, with gentler slopes in the major river valleys. Narrow, nearly level floodplains are along most of the streams in the region; however, steep gorges are not uncommon. Elevations in the project area range from approximately 2,024 feet above Mean Sea Level (MSL) to 2,600 feet above MSL as depicted on the Smokemont, North Carolina, USGS topographic quadrangle map.

Geology

The Mountain physiographic province of North Carolina is composed of parent material dating back 500 million to one billion years. This parent material is associated with the Blue Ridge Belt, which is part of the Ocoee Supergroup of Copper Hill formation. The geology is typically composed of metagraywacke, which is massive with graded bedding common, and includes dark-gray slate, mica schist, and nodular calc-silicate rock. Other geology features may be composed of biotite granitic gneiss, which is pinkish gray to light gray, massive to well foliated, granitic to quartz monzonitic, and may include variably mylonitized orthogneiss and paragneiss, interlayered amphibolite, calc-silicate rock and marble.

An investigation to determine the probability to generate acid drainage was conducted by Dr. Don W. Byerly, PhD, PG in February 2004. This investigation included a megascopical examination of the exposed bedrock where present at the six intersection locations in order to determine whether the earth materials contained acid-producing materials that could cause environmental problems resulting from disturbance during construction. After examining the geology at all six sites, Dr. Byerly concluded that the probability of generating acid drainage for the sites, taken as a whole, is low. (The Big Cove Road Connector intersection was not included in the study at the time of Dr. Byerly's research, but was determined to be similar to conditions at the Blue Ridge Parkway intersection.) A summary of the results for each site is listed below, with a more detailed description of each site in **Appendix B**.

- **Collins Creek Picnic Area** – The probability of acid drainage problems at this site is very low to non-existent.
- **Smokemont Campground** – There is a very low probability for acid drainage being generated from the earth materials at this site.
- **Tow String Road** – There is a low to medium probability for generating acid drainage at this site. However, despite the fact that the megascopic evaluation is benign, if excavation is necessary at this site, close inspection of the excavated rock is warranted.
- **Park Circle Drive/ Oconaluftee Visitor Center** – The probability of acid drainage is extremely low at this site.
- **Blue Ridge Parkway** – There is a very low probability that acid drainage problems would occur should excavation be necessary.
- **Big Cove Road Connector** – There is a very low probability that acid drainage problems would occur should excavation be necessary.

Soils

Soil types and availability of water directly influence composition and distribution of flora and fauna in any biotic community. Factors influencing soil formation include parent materials,

climate, biota, time, and topography. This section briefly describes the soil characteristics of the project study area. More detail is provided in **Appendix B**.

Soil associations are defined as a group of defined and named taxonomic soil units occurring together in an individual and characteristic pattern over a geographic region. Based on mapping obtained from the U.S. Department of Agriculture Natural Resource Conservation Service office for Swain County, the soils within the project study area are composed of three main associations: Rosman-Reddies, Evard-Cowee, and Dellwood-Smokemont, along with nine separate soils series including Plott, Soco, Stecoah, Ditney, Unicoi, Cullowhee, Statler, Spivey, and Santeetlah.

3.5.2 Environmental Effects

3.5.2.1 No Action Alternative

Jurisdictional Wetlands

The wetlands of the area would not be impacted under the No Action Alternative.

Floodplains

The floodplains of the area would not be impacted under the No Action Alternative.

Water Quality

The No Action Alternative would not substantially affect water quality in the area; however, the continued deterioration of the road may result in increased sediment deposits in the Oconaluftee River and Collins Creek, a negligible impact.

Geology and Soils

The geology and soils of the area would not be impacted under the No Action Alternative.

3.5.2.2 Partial Build Alternative

Jurisdictional Wetlands

The wetlands of the area would not be impacted under the Partial Build Alternative.

Floodplains

The floodplains of the area would not be impacted under the Partial Build Alternative.

Water Quality

The Partial Build Alternative would have negligible temporary impacts during construction.

Geology and Soils

The geology and soils of the area would not be impacted under the Partial Build Alternative.

3.5.2.3 Full Build Alternative

Jurisdictional Wetlands

Tow String Road is the only location with impacts to wetlands (0.08 acres). This is considered a minor impact. Mitigation for wetland impacts would include expanding the wetland area by lowering the ground elevation adjacent to the existing wetland and/or transplanting vegetation salvaged from the road construction into the newly created wetland area. The current grade control of the existing culvert should be maintained so as not to alter the existing wetland hydrology.

Floodplains

Tow String Road is the only location with a minor impact to floodplains (0.01 acres). The Tow String Road relocation is located in the floodplain of the Oconaluftee River at the toe of the fill slope of Newfound Gap Road.

Water Quality

The Full Build Alternative is anticipated to have negligible long-term impact on water quality. The increase in impervious surface area is negligible and would not cause a substantial increase in runoff.

Some minor temporary impacts to water quality are expected from the construction activity. Specifically, the existing culvert at the Collins Creek Picnic Area is proposed to be extended by 15 feet and the proposed Tow String Road intersection realignment would have some temporary effects on water quality due to the location of wetlands and floodplains. All other locations are anticipated to have negligible temporary impacts on water quality. Although a total of 1.53 acres of existing pervious area would be paved for the other five location alternatives, this additional impervious area would have only a negligible impact on water quality of nearby streams and rivers since this addition is a very small percentage of the existing impervious area.

Aquatic organisms are acutely sensitive to changes in their environment and environmental impacts from construction activities may result in long term or irreversible effects. Impacts usually associated with in-stream construction include alterations to the substrate and impacts to adjacent streamside vegetation. Such disturbances within the substrate lead to increased siltation which can clog the gills and/or feeding mechanisms of benthic organisms, fish, and amphibian species. Siltation may also cover benthic macroinvertebrates with excessive amounts of sediment that inhibit their ability to obtain oxygen.

The removal of streamside vegetation and placement of fill material during construction increases erosion and possible sedimentation. Revegetation of these areas may help reduce impacts by supporting the underlying soils. Erosion and sedimentation may carry soils, toxic compounds, trash, and other materials into the aquatic communities at the construction site. As a result, bars may form at and downstream of the site. Increased light penetration from the removal of streamside vegetation may increase water temperatures. Warmer water contains less oxygen and can reduce aquatic life that depends on high oxygen concentrations.

Precautions should be taken to minimize impacts to water resources in the project study area during construction. Aquatic organisms are very sensitive to discharges and inputs resulting from construction. Appropriate measures must be taken to avoid spillage and control runoff. Potential impacts associated with construction of the proposed project include increased sedimentation, scouring of the streambed, soil compaction, and loss of shading due to vegetation removal. Increased sedimentation from lateral flows is also expected. Measures to minimize these potential impacts include formulating an erosion and sedimentation control plan, providing a means for storage and disposal of waste materials off site, implementing stormwater management measures, and taking appropriate road maintenance measures.

Due to the potential for water quality impacts during construction, it is likely that the North Carolina Wildlife Resources Commission (NCWRC) would request that in-stream construction be restricted to specific times of year to limit the effects on sensitive trout species. Trout are present within the project study area. An in-stream and 25-foot buffer work moratorium would likely apply October 15 to April 15 for brown and brook trout.

Temporary impacts to adjacent land during construction would occur resulting from movement of workers and materials through the area and associated construction activities. Erosion and sedimentation caused by construction activities could affect drainage patterns and water quality. An erosion and sedimentation control plan would be prepared as part of the construction plans and specifications, and would include the following items:

- Using berms, dikes, silt barriers, and catch basins
- Vegetating or covering disturbed areas
- Conforming with proper clean-up practices

Geology and Soils

Some excavation would be required for the Full Build Alternative. The Full Build Alternative would result in negligible long-term impacts to soils in the area, with potential minor temporary impacts during construction. Because the probability of encountering acid producing rock is judged to be low to extremely low, and because little excavation is anticipated, there would be negligible temporary and long-term impacts to geological features. The only site which is judged to have low to moderate probability of encountering acid producing rock is at Two String Road, where no excavation is anticipated. If pyritic material is present at the project site, then appropriate mitigation measures would be taken to ensure that no leachate is released into the surrounding streams. No impairment to geology or soils would occur under any of the alternatives.

3.5.2.4 Conclusion

Jurisdictional Wetlands

The wetlands of the area would not be impacted under the No Action and Partial Build Alternatives. The Full Build Alternative would impact 0.08 acres of a wetland at Tow String Road. Since this impact is less than the NPS threshold of 0.10 acres (as described in Director's Order #77-1: Excepted Actions), a statement of finding is not required for this minor impact. Potential mitigation for wetland impacts include expanding the wetland area by lowering the ground elevation adjacent to the existing wetland and/or transplanting vegetation salvaged from the road construction into the newly created wetland area. No impairment to jurisdictional wetlands would occur under any of the alternatives.

Floodplains

The floodplains of the area would not be impacted under the No Action and Partial Build Alternatives. The Full Build Alternative would impact 0.01 acres of the floodplain at Tow String Road, a minor impact. No impairment to floodplains would occur under any of the alternatives.

Water Quality

The No Action Alternative would not substantially affect water quality in the area; however, the continued deterioration of the road may facilitate increased sediment deposits in the Oconaluftee River and Collins Creek, a long-term negligible impact. The Partial Build Alternative would have potential minor temporary impacts during construction. The Full Build Alternative is anticipated to have negligible long-term impacts on water quality. Some temporary impacts to water quality are expected from the construction activity. Specifically, the existing culvert at the Collins Creek Picnic Area is proposed to be extended by 15 feet and the proposed Tow String Road intersection realignment would have some temporary effects on water quality due to the location of wetlands and floodplains. All other locations are anticipated to have negligible temporary impacts on water quality. Precautions that should be taken during construction to minimize impacts to water resources in the study area include formulating an erosion and sedimentation control plan,

providing a means for storage and disposal of waste materials off site, implementing stormwater management measures, and taking appropriate road maintenance measures. No impairment to water quality would occur under any of the alternatives.

Geology and Soils

The geology and soils of the area would not be impacted under the No Action and Partial Build Alternatives. Excavation would be required for the Full Build Alternative. The Full Build Alternative would result in negligible long-term impacts to soils in the area, with potential minor temporary impacts during construction. Because the probability of encountering acid producing rock is judged to be low to extremely low, and because little excavation is anticipated, there would be negligible temporary and long-term impacts to geological features. If pyritic material is present at the project site then appropriate mitigation measures would be taken to ensure that no leachate is released into the surrounding streams. No impairment to geology or soils would occur under any of the alternatives.

3.6 Biological Communities

3.6.1 Affected Environment

3.6.1.1 Terrestrial Habitat

Fourteen forest communities were identified in the project study area by the Vegetative Classification of Great Smoky Mountains National Park (unpublished report). A field investigation conducted on October 30, 2003 identified dominant plant species confirming the vegetative mapping conducted by the Park. The forest communities identified within the immediate area of the seven intersections included eastern hemlock, sub mesic to mesic oak/hardwood, graminoid and herbaceous, montane alluvial forest, human influence, northern hardwoods, and cove mixed hardwoods. The human influence within the project study area includes maintained use areas such as grassed shoulders on existing roads, maintained fields, and public use areas. **Appendix B** describes the biological communities at each intersection.

3.6.1.2 Animal Species

The project study area exhibits a diverse amphibian population. Species such as the eastern newt (*Notophthalmus viridescens*) and various salamanders including the mountain dusky (*Desmognathus ochrophaeus*), blackbelly (*D. quadramaculatus*), two-lined (*Eurycea bislineata*), Jordan's (*Plethodon jordani*), and red (*Pseudotriton ruber*) likely exist within the project study area. Newts and salamanders forage on aquatic and terrestrial insects, crustaceans, worms, and other organisms along the forest floor and in the many creeks. Salamanders can be found in a variety of habitats, although most are associated with small streams and seepages. Species such as the mountain dusky, Jordan's, and the ravine salamander are found primarily in terrestrial habitats under rocks, leaves, and woody debris. In addition, other amphibians such as spring peepers (*Hyla crucifer*) and pickerel frogs (*Rana palustris*) are likely present.

Reptile species including snakes, lizards, and turtles can be found throughout the project study area. Several snake species likely to be present within the study area include the rat snake (*Elaphe obsoleta*), timber rattlesnake (*Crotalus horridus*), brown snake (*Storeria dekayi*), and northern water snake (*Nerodia sipedon*). Lizard species likely to be observed within the study area include the five-lined skink (*Eumeces fasciatus*) and broadhead skink (*E. laticeps*). A turtle species likely to be found within the study area is the eastern box turtle (*Terrapene carolina*).

Bird species inhabiting or migrating through the study area may include hairy woodpecker (*Picoides villosus*), downy woodpecker (*P. pubescens*), eastern wood-pewee (*Contopus virens*), blue jay (*Cyanocitta cristata*), Carolina chickadee (*Parus carolinensis*), tufted titmouse (*Parus bicolor*), white-breasted nuthatch (*Sitta carolinensis*), American robin (*Turdus migratorius*), yellow warbler (*Dendroica petechia*), and northern cardinal (*Cardinalis cardinalis*). Game species such as ruffed grouse (*Bonasa umbellus*), wild turkey (*Meleagris gallopavo*), and woodcock (*Scolopax minor*) may also be present. Predatory birds such as red-tailed hawk (*Buteo jamaicensis*) and eastern screech owl (*Otus asio*) are also likely to be found in the project vicinity.

A diverse mammal population is expected in and surrounding the project study area. Virginia opossum (*Didelphis virginiana*), eastern cottontail (*Sylvilagus floridanus*), eastern chipmunk (*Tamias striatus*), woodchuck (*Marmota monax*), gray squirrel (*Sciurus carolinensis*), eastern harvest mouse (*Reithrodontomys humulis*), muskrat (*Ondatra zibethicus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), mink (*Mustela vison*), eastern spotted skunk (*Spilogale putorius*), American beaver (*Castor canadensis*), white-tailed deer (*Odocoileus virginianus*), and black bear (*Ursus americanus*) are likely inhabitants of the project area. In addition, bats such as the little brown myotis (*Myotis lucifugus*), silver-haired (*Lasionycteris noctivagans*), eastern pipistrelle (*Pipistrellus subflavus*), and red (*Lasiurus borealis*) may be present in the project study area.

3.6.1.3 Aquatic Habitat

The high quality waters of the project area, including the Oconaluftee River and its tributaries, contain diverse macro benthic species which include caddisfly (Order: Tricotera), crane fly (Family: Tipulidae), mayfly (Order: Ephemeroptera), and stonefly (Order: Plecoptera). Macroinvertebrates in root mats and organic material along the edge of the bank including dragonfly and damselfly (Order: Odonata) larvae also likely exist. Rainbow trout (*Oncorhynchus mykiss*) and brown trout (*Salmo trutta*), along with numerous other fish species, can be found throughout the project study area.

3.6.1.4 Threatened and Endangered Species

Federal law under the provisions of Section 7 of the Endangered Species Act (ESA) of 1973, as amended, requires that any action likely to adversely affect a federally-protected species be subject to review by the USFWS. Other species may warrant protection under separate state laws. The Park considers State Threatened and Endangered Species to have the same level of importance as Federal Threatened and Endangered Species.

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the ESA. For the purposes of this document, state protected species are listed as well. State protected animals and plants are protected under different statutes and their status is determined by different agencies. Animal status is determined by the Wildlife Resources Commission and the Natural Heritage Program. Endangered, Threatened, and Special Concern species of mammals, birds, reptiles, amphibians, freshwater fishes, and freshwater and terrestrial mollusks have legal protection status in North Carolina (NC Wildlife Resources Commission). Plant statuses are determined by the Plant Conservation Program (NC Department of Agriculture) and the NC Natural Heritage Program (NC Department of Environment and Natural Resources). Endangered, Threatened, and Special Concern species are protected by state law (Plant Protection

and Conservation Act, 1979). According to the NC Natural Heritage Program, there are a total of 63 federally and state protected species listed for Swain County.

“Critical habitat,” as defined in the ESA, is a term for habitat given special protection for the benefit of a listed species. Critical habitat, as defined by the USFWS, is designated for several species listed in Swain County, which include the Spotfin chub (*Cyprinella monacha*), spruce-fir moss spider (*Microhexura montivaga*), and the Appalachian Elktoe (*Alasmidonta raveneliana*).

Table 2 contains federally listed species with habitat present in the study area. **Table 3** contains state listed species with habitat present in the study area. Species that are both state and federally listed are included only with the federally listed species.

Table 2: Federally Protected Species for Swain County, North Carolina

Major Group	Scientific Name	Common Name	Federal Status ¹	State Status ²	Habitat Requirement
Mammal	<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	FSC	T	roosts in old buildings, caves, and mines, usually near water
Mammal	<i>Myotis leibii</i>	Eastern Small-footed Myotis	FSC	SC	roosts in hollow trees (warmer months), in caves and mines (winter)
Mammal	<i>Myotis sodalis</i>	Indiana Bat	LE	E	roosts in hollow trees or under loose bark (warmer months), in caves (winter)
Mammal	<i>Neotoma floridana haematoxia</i>	Eastern Woodrat — Southern Appalachian Population	FSC	SC	rocky places in deciduous or mixed forests, in southern mountains and adjacent Piedmont
Mammal	<i>Sylvilagus transitionalis</i>	Appalachian Cottontail	FSC	SR	dense cover of montane woods and thickets
Bird	<i>Sphyrapicus varius appalachiensis</i>	Appalachian Yellow-bellied Sapsucker	FSC	SC	mature, open hardwoods with scattered dead trees [breeding season only]
Reptile	<i>Pituophis melanoleucus melanoleucus</i>	Northern Pinesnake	FSC	SC	dry and sandy woods, mainly in pine/oak sandhills
Amphibian	<i>Cryptobranchus alleganiensis</i>	Hellbender	FSC	SC	large and clear fast-flowing streams
Fish	<i>Cyprinella monacha</i>	Spotfin Chub	LT	T	Little Tennessee River
Fish	<i>Moxostoma sp 1</i>	Sicklefin Redhorse	FSC	SR (PT)	Little Tennessee and Hiwassee rivers
Fish	<i>Percina squamata</i>	Olive Darter	FSC	SC	Tennessee drainages
Mollusk	<i>Alasmidonta raveneliana</i>	Appalachian Elktoe	LE	E	Tennessee drainages; only in Little Tennessee and Nolichucky drainages at present
Mollusk	<i>Pegias fabula</i>	Littlewing Pearlymussel	LE	E	Little Tennessee River; formerly in Valley River in Cherokee County
Insect	<i>Speyeria diana</i>	Diana Fritillary	FSC	SR	rich woods and adjacent edges and openings; believed extirpated from the lower Piedmont; host plants — violets (<i>Viola</i>)
Vascular plant	<i>Buckleya distichophylla</i>	Piratebush	FSC	E	bluffs, dry slopes, forests on lower slopes
Vascular plant	<i>Spiraea virginiana</i>	Virginia Spiraea	LT	E	riverbanks
Vascular plant	<i>Monotropsis odorata</i>	Sweet Pinesap	FSC	SR-T	dry forests and bluffs
Vascular plant	<i>Silene ovata</i>	Mountain Catchfly	FSC	SR-T	rich slopes, cove forests, montane oak-hickory forests
¹ Federal Status: LT=Listed Threatened, LE=Listed Endangered, FSC=Federal Species of Concern. ² State Status: T=Threatened, E=Endangered, SC=State Special Concern, SR=Significantly Rare, PT= Proposed Throughout, -T=Throughout					
Source: NC Natural Heritage Program, http://www.ncnhp.org U.S. Fish and Wildlife Service, http://endangered.fws.gov/wildlife.html Only species with habitat in the study area are shown.					

Table 3: State Listed Protected Species for Swain County, North Carolina

Major Group	Scientific Name	Common Name	State Status ¹	Habitat Requirement
Mammal	<i>Myotis septentrionalis</i>	Northern Myotis	SC	roosts in hollow trees and buildings (warmer months), in caves and mines (winter)
Reptile	<i>Crotalus horridus</i>	Timber Rattlesnake	SC	rocky, upland forests
Fish	<i>Clinostomus funduloides</i> ssp 1	Little Tennessee River Rosyside Dace	SC	Little Tennessee drainage
Fish	<i>Etheostoma vulneratum</i>	Wounded Darter	SC	streams of Little Tennessee system
Fish	<i>Noturus flavus</i>	Stonecat	E	Nolichucky, French Broad, and Little Tennessee drainages
Mollusk	<i>Alasmidonta viridis</i>	Slippershell Mussel	E	Little Tennessee River
Mollusk	<i>Appalachina chillhoweensis</i>	Queen Crater	SC	southern half of the mountains
Mollusk	<i>Elliptio dilatata</i>	Spike	SC	Little Tennessee and New rivers
Mollusk	<i>Fumonelix jonesiana</i>	Big-tooth Covert	T	Newfound Gap area of Great Smoky Mountains National Park (endemic to this area)
Mollusk	<i>Fusconaia barnesiana</i>	Tennessee Pigtoe	E	Little Tennessee River
Mollusk	<i>Glyphyalinia junaluskana</i>	Dark Glyph	SC	southwestern mountains
Mollusk	<i>Glyphyalinia pentadelphina</i>	Pink Glyph	SC	southwestern mountains
Mollusk	<i>Haplotrema kendeighi</i>	Blue-footed Lancetooth	SC	southwestern mountains
Mollusk	<i>Lampsilis fasciola</i>	Wavy-rayed Lampmussel	SC	French Broad, Pigeon, and Little Tennessee rivers; currently known only in last river
Mollusk	<i>Paravitrea lamellidens</i>	Lamellate Supercoil	SC	southern half of the mountains
Mollusk	<i>Paravitrea placentula</i>	Glossy Supercoil	SC	Madison, Mitchell and Swain counties
Mollusk	<i>Patera clarki</i>	Dwarf Proud Globe	SC	southwestern mountains
Mollusk	<i>Stenotrema depilatum</i>	Great Smoky Slitmouth	SC	Great Smoky Mountains National Park (essentially endemic to this area)
Mollusk	<i>Villosa iris</i>	Rainbow	SC	French Broad, Hiwassee, and Little Tennessee rivers; currently only known in the state from the last river
Mollusk	<i>Zonitoides patuloides</i>	Appalachian Gloss	SC	southwestern mountains
Vascular plant	<i>Hydrastis canadensis</i>	Goldenseal	E-SC	cove forests, other rich deciduous forests

¹ State Status: T=Threatened, E=Endangered, SC=State Special Concern, SR=Significantly Rare, PT= Proposed Throughout, -T=Throughout

Source: NC Natural Heritage Program, <http://ncnhp.org>
 U.S. Fish and Wildlife Service, <http://endangered.fws.gov/wildlife.html>
 Only species with habitat in the study area are shown.

3.6.1.5 Exotic Species

Exotic species are those species that are not part of the indigenous ecosystems. These non-native species are of concern because they can be aggressive invaders and can out-compete native species. The National Park Service is working to eliminate problem exotics within the Park. Hemlock wooly adelgid (*Adelges tsugae*), kudzu (*Pueraria lobata*), mimosa (*Albizia julibrissin*), Asian princess-tree (*Paulownia tomentosa*), multiflora rose (*Rosa multiflora*), and the European wild boar (*Sus scrofa*) are among the Park's most prolific exotics and the subject of extensive Park eradication efforts. Numerous other exotic species exist within the park and within the project study area. **Appendix B** shows the locations of various invasive exotic plants within the project study area.

3.6.1.6 No Action Alternative

Terrestrial Habitat and Animal Species

The No Action Alternative would not impact terrestrial habitat.

Aquatic Habitat

The No Action Alternative would not impact aquatic habitat in the area.

Threatened and Endangered Species

The No Action Alternative would not impact threatened and endangered species in the area.

Exotic Species

The No Action Alternative would not perpetuate exotic species in the area.

3.6.1.7 Partial Build Alternative

Terrestrial Habitat and Animal Species

The Partial Build Alternative would not impact terrestrial habitat.

Aquatic Habitat

The Partial Build Alternative would not impact aquatic habitat in the area.

Threatened and Endangered Species

The Partial Build Alternative would not impact threatened and endangered species in the area.

Exotic Species

The Partial Build Alternative would not perpetuate exotic species in the area.

3.6.1.8 Full Build Alternative

Terrestrial Habitat and Animal Species

Biological impacts are based on biological mapping provided by the Park which were determined from aerial mapping. **Table 4** lists the impacts of the Full Build Alternative.

Table 4: Impacts to Plant Communities

Location	Total Impact Area (acres)	Plant Community
Collins Creek Picnic Area	0.30	Eastern Hemlock
Smokemont Campground	0.34	Southern Appalachian Early Successional Hardwoods
Tow String Road	0.69	Graminoid and Herbaceous
Park Circle Drive	0.43	Mesic to Mesic Oak/Hardwood
Oconaluftee Visitor Center	0.34	Cove Mixed Hardwoods
Blue Ridge Parkway	0.00	N/A (existing grass median)
Big Cove Connector Road	0.30	Chestnut Oak/Hardwood
Total	2.40	

With minor disturbance to plant communities anticipated as a result of the roadway improvements, substantial impacts to terrestrial wildlife populations are not expected. Some loss of wildlife is an unavoidable aspect of construction. Temporary fluctuations in populations of animal species that inhabit these communities are anticipated during the course of construction.

Slow-moving, burrowing, and/or subterranean organisms would be directly impacted by construction activities, while mobile organisms would be displaced to adjacent communities. Competitive forces in the adapted communities would result in a redefinition of population equilibria.

Construction, staging, and stockpiling operations may result in the temporary disruption of the resident wildlife population. The clearing of habitats, human activity, and noise from construction operations may result in the displacement of mobile wildlife. Non-mobile species would be lost as habitat is converted to construction areas. This impact is expected to be negligible because of the small extent and relatively short duration of construction activities.

These temporary impacts to biotic communities would be minimized as much as possible by restricting land clearing and construction operations within the project limits. Location of off-site or on-site materials staging and stockpiling would be directed by the Park in an effort to disrupt the least amount of natural habitat area. These areas would typically be located in parking lots or other disturbed areas.

Aquatic Habitat

Aquatic organisms are acutely sensitive to changes in their environment and minor temporary impacts may result from construction activities. Impacts usually associated with in-stream construction include alterations to the substrate and impacts to adjacent streamside vegetation. Such disturbances within the substrate lead to increased siltation, which can clog the gills and/or feeding mechanisms of benthic organisms, fish, and amphibian species. Siltation may also cover benthic macroinvertebrates with excessive amounts of sediment that inhibit their ability to obtain oxygen.

The removal of streamside vegetation and placement of fill material during construction increases erosion and possible sedimentation. Quick revegetation of these areas helps to reduce the impacts by supporting the underlying soils. Erosion and sedimentation may carry soils and other materials into the aquatic communities near the construction site. Proper sedimentation and erosion control measures would prevent the discharge of sediment into the surrounding aquatic habitat. The Full Build Alternative would result in negligible long-term impacts.

Threatened and Endangered Species

Based on limited habitat and elevation, none of the ten federally listed species occurring within Great Smoky Mountains National Park are known to inhabit the project area. However, transient species are possible.

Negligible impacts may occur with birds and other wildlife avoiding habitat within and adjacent to the proposed project area under the Full Build Alternative. Since the proposed project area is part of an existing roadway, it is likely that these areas are already avoided to some extent and no additional impact would result. Similar habitat is present throughout the Park and would remain protected under current management plans. The project is considered a maintenance activity and would require minimum disturbance outside of the existing roadway prism. Some natural vegetation outside of the grassy road shoulder may be disturbed. The NPS would coordinate potential removal of any trees in accordance with the established roosting season of the Indiana bat (*Myotis sodalis*). The Full Build Alternative is not anticipated to impact the Indiana bat, as all tree removal would only occur between October 15 and April 15.

Individual butternut trees have been identified within the Park. A review of the Full Build Alternative by the Park has shown that no butternut trees would be impacted by this project.

Exotic Species

Any new disturbance has the potential to create a suitable environment for aggressive non-native species to become established. During construction it is important that any materials brought into the Park are free of exotics. In accordance with Executive Order 13112: Invasive Species, signed by President Clinton on February 3, 1999, and NPS/DOI standards and regulations, the Federal Highway Administration, which oversees the construction of the proposed action, would require that only invasive-free mulches, topsoil, and seed mixes be used on the project. The final construction plans would include directions and specifications to the Contractor for revegetating disturbed areas with non-invasive species as specified by the NPS.

3.6.1.9 Conclusion

Terrestrial Habitat and Animal Species

The No Action and Partial Build Alternatives would not impact terrestrial habitat, other than retaining unsafe conditions for drivers which, if improved, may reduce the number of vehicle accidents in the vicinity of Newfound Gap Road. Due to the minimal disturbance of plant communities anticipated as a result of the roadway improvements, impacts to terrestrial wildlife populations are expected to be negligible as a result of the Full Build Alternative. Temporary, negligible impacts are anticipated during construction. These temporary impacts to biotic communities would be minimized as much as possible by restricting land clearing and construction operations within the project limits. No impairment to terrestrial habitat or animal species would occur under any of the alternatives.

Aquatic Habitat

The No Action and Partial Build Alternatives would not impact aquatic habitat in the area. Minor temporary impacts and negligible long-term impact to aquatic habitat would occur under the Full Build Alternative. The removal of streamside vegetation and placement of fill material during construction increases erosion and possible sedimentation. Quick revegetation and proper sedimentation and erosion control measures would reduce the impact of construction on the surrounding aquatic habitat. No impairment to aquatic habitat would occur under any of the alternatives.

Threatened and Endangered Species

The No Action and Partial Build Alternatives would not impact threatened and endangered species in the area. The Full Build Alternative is not anticipated to impact any threatened and endangered species provided that all trees scheduled for removal are removed between October 15 and April 15. No native species would be extirpated from the Park, and no rarity ranked species of G3 or rarer would have a population lost as a result of this project. Therefore, there is no impairment to threatened and endangered species under any of the alternatives.

Exotic Species

The No Action Alternative would not affect exotic species habitat in the area. Construction of the Partial Build and Full Build Alternatives would create an opportunity for invasive non-native species to become established. To reduce that opportunity, final construction plans would specify that only invasive-free mulches, topsoil, and seed mixes would be used on this project. Every effort would be made to prevent the spread of exotic species during the course of this project.

3.7 Human Environment

3.7.1 Affected Environment

3.7.1.1 Aesthetics and Viewsheds

The study area surrounding Newfound Gap Road is forested from the Collins Creek Picnic Area to the Oconaluftee Visitor Center and periodically interspersed with roadside clearings for scenic overlooks. Picnicking sections and campgrounds are located adjacent to the road, typically outside the field of view of motorists. Some parking is available along the road. The area surrounding Newfound Gap Road from the Visitor Center to the southern Park boundary is primarily Park-maintained grassland with occasional trees and plants. Informational signs at recreational facilities and crossroads along Newfound Gap Road are of a style consistent with the historic nature of the Park.

3.7.1.2 Air Quality

Congress passed the Clean Air Act (Act) in 1970, establishing national policy toward preserving, protecting, and enhancing air quality. The 1977 Clean Air Act Amendments designated all national parks that exceeded 6,000 acres in size as mandatory Class I areas worthy of the greatest degree of air quality protection under the Act. The 1990 Amendments to the Act left intact the requirements for Class I area protection, while providing additional tools to accomplish the protection. Under the Act, the federal land manager has been given the responsibility to assure that air quality and the air quality-related values in Class I areas, such as the Great Smoky Mountains National Park, do not deteriorate, and that an aggressive role is taken in protecting, preserving and enhancing the Park's resources.

Monitoring and research conducted over the past 22 years in the Smoky Mountains has shown that airborne pollutants emitted outside the Park and transported into the Park are significantly impacting Park resources (streams, soils, vegetation, and visibility), visitor enjoyment, and public health. Visibility at the Park has been seriously degraded over the last 50 years by human-made pollution. Since 1948, based on regional airport records, annual average visibility in the southern Appalachians has decreased 60% overall, 80% in summer, and 40% in winter. In April of 1999, EPA promulgated the Regional Haze Rule that requires visibility in the Class I areas, including the Smoky Mountains, to improve the haziest days to natural conditions by 2064 and to preserve the clearest days presently being experienced. The Tennessee Valley Authority announced in Fall 2001 that they will be implementing SO₂ controls on three of the power plants closest to the Park. These controls are expected to reduce SO₂ emissions from these plants by more than 90 percent.

According to the Environmental Protection Agency (EPA), the portions of Haywood and Swain counties in the Great Smoky Mountains National Park were in non-attainment as of April 15th, 2004. By June of 2009, this area is required to have a maintenance plan in place.

3.7.1.3 Noise

The most common source of noise or unwanted sound within the vicinity of Newfound Gap Road is vehicular noise. To assess whether highway noise levels are compatible with various land uses, the Federal Highway Administration has developed noise abatement criteria and procedures to be used in the planning and design of highways. These abatement criteria and procedures are in accordance with the Title 23 Code of Federal Regulations (CFR), part 772, U.S. Department of Transportation, Federal Highway Administration, Procedures for Abatement of Highway Traffic

Noise and Construction Noise. A summary of the Federal Highway Administration Noise Abatement Criteria for various land uses is in **Appendix B**.

For a planning level noise analysis, the goal was to assess the level of impact of a roadway improvement project on the surrounding noise sensitive locations within the study area. To accomplish this, existing ambient noise levels within the study area were recorded. Based on this, field noise measurements were recorded along the study corridor in April 2004 when ambient noise levels reflect typical Park use. Field noise measurements were taken at 12 different locations along Newfound Gap Road within the study area using a noise meter to assess the existing ambient noise levels. Noise measurement readings were taken at each location's peak traffic time. The existing ambient noise levels neither approached nor exceeded the threshold set by the FHWA for recreational areas. **Appendix B** included more detailed information about study methodology and results.

3.7.1.4 Energy

Energy requirements associated with the study area relate to the change in fuel consumption as a result of vehicular delays. Vehicular energy consumption was calculated using procedures in the Federal Highway Administration publication *Procedure for Estimating Highway User Costs, Fuel Consumption and Air Pollution* (No. PB80-159957, March 1980). Since no additional vehicles were anticipated as a result of the proposed roadway improvements, energy consumption was based on the predicted reduction in delays of through vehicles at the intersections due to the opportunity for left-turning vehicles to wait in a separate left-turn lane.

3.7.1.5 Utilities

An existing water line follows Newfound Gap Road from the southern Park boundary to Mingus Mill Road, and also follows Park Circle Drive to the housing, maintenance, and Job Corps areas. An existing sewer line follows Big Cove Road from the southern Park boundary to Blue Ridge Parkway, where it continues north to the housing and Job Corps areas along Park Circle Drive.

New water and sewer lines are proposed within the study area under a separate project. Alternative locations are being studied by the EBCI in cooperation with the Park. In Alternative 1, the water and sewer lines would follow Newfound Gap Road from Mingus Mill Road to south of Tow String Road where they would cross the Oconaluftee River and generally follow the river to the Smokemont Waste Water Treatment area where the sewer line would end and the water line would continue north to the Smokemont Campground. In Alternative 2, the water and sewer lines would follow Newfound Gap Road and cross the Oconaluftee River at the Smokemont Waste Water Treatment area where, again, the sewer line would end and the water line would continue north to the Smokemont Campground. **Figure 10** shows the existing and proposed utilities.

3.7.2 Environmental Effects

3.7.2.1 No Action Alternative

Aesthetics and Viewshed

The viewshed along Newfound Gap Road would remain unchanged under the No Action Alternative. However, continued degradation of the roadway would result in a minor impact to aesthetics in the area.

Air Quality

Air quality would not be affected by the No Action Alternative.

Noise

Noise would not be affected by the No Action Alternative, although continued deterioration in pavement would result in a negligible increase in vehicle noise.

Energy

Energy consumption levels would remain unchanged under the No Action Alternative.

Utilities

The No Action Alternative would not impact any existing or proposed utilities in the area.

3.7.2.2 Partial Build Alternative

Aesthetics and Viewshed

The viewshed along Newfound Gap Road would remain unchanged under the Partial Build Alternative. The rehabilitation of the roadway surface would result in a negligible positive impact on aesthetics.

Air Quality

Air quality would not be impacted under the Partial Build Alternative other than minor temporary impacts.

Noise

The Partial Build Alternative would have negligible positive impact by improving the roadway surface, and a minor temporary negative impact from construction noise.

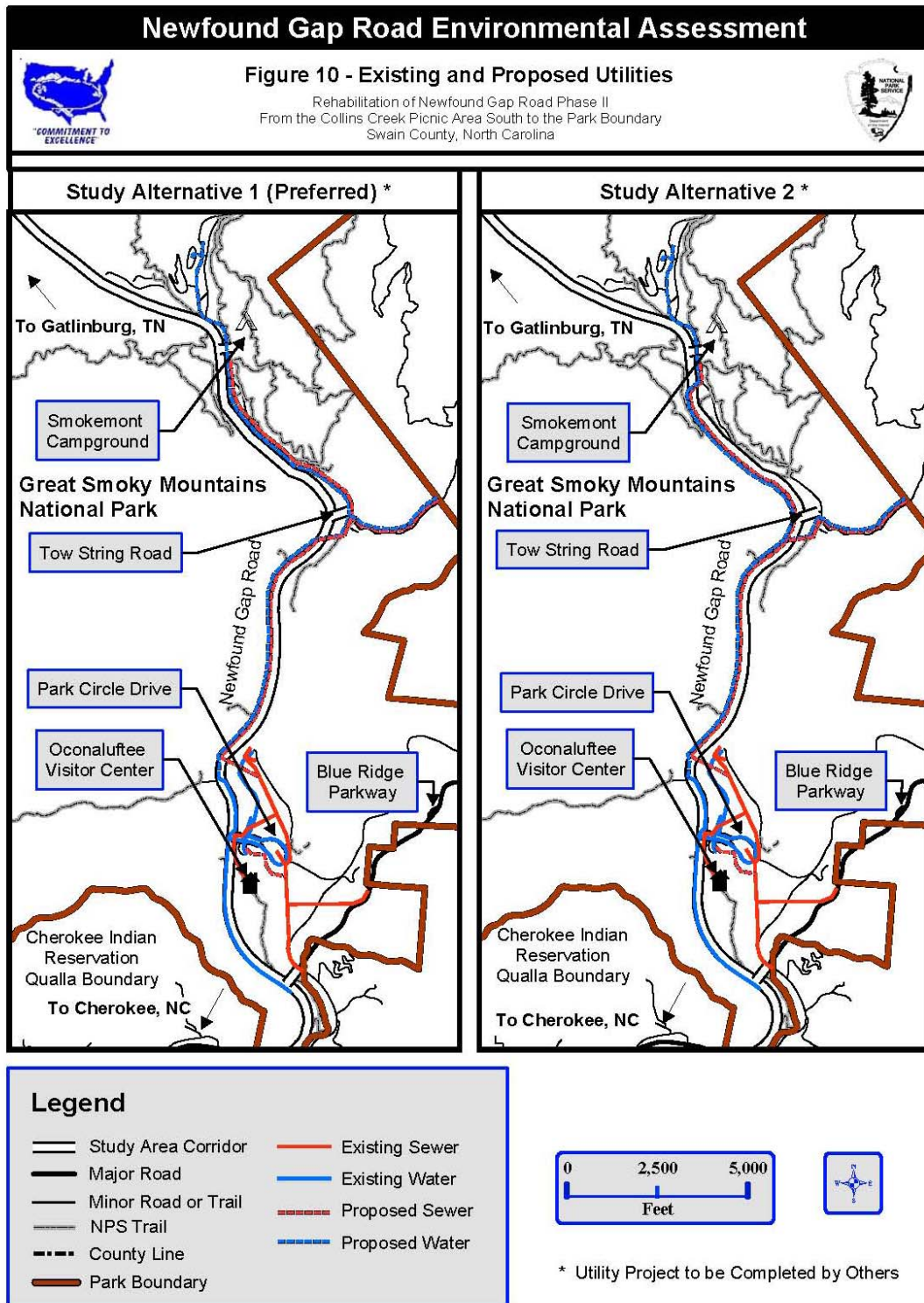
Energy

Energy consumption levels would remain unchanged under the Partial Build Alternative.

Utilities

The Partial Build Alternative would not impact any existing or proposed utilities in the area.

Figure 10: Existing and Proposed Utilities



3.7.2.3 Full Build Alternative

Aesthetics and Viewshed

The visual impacts of the Full Build Alternative would be negligible. Other than at the Oconaluftee Visitor Center, the addition of a turn lane at the proposed locations would not bring Newfound Gap Road within closer sight distance of residents, employees, or visitors. At the Visitor Center, parking lots are located between the Visitor Center and Newfound Gap Road, reducing the visual impact of an additional turn lane.

Air Quality

The addition of intersection turn lanes to Newfound Gap Road are primarily safety improvements that provide minimal additional capacity. None of the intersections being studied is currently signalized, nor would they be signalized as a result of these improvements. The levels of service at each intersection would be improved slightly as a result of adding these turn lanes. As a result, this project is not expected to result in any additional air pollution or interfere with the attainment of the National Ambient Air Quality Standards (NAAQS). In fact, air quality conditions along the Newfound Gap corridor could be expected to improve slightly as a result of fewer vehicles having to idle in queues at each intersection. As such, a technical air quality analysis is not necessary.

Temporary negative air quality impacts would occur as a result of fugitive dust/fine particulate matter during construction operations. However, any associated temporary emissions from construction equipment would be less than the conformity *de minimis* levels established for carbon monoxide and ozone. The contractor would be responsible for controlling dust at the project site and at areas affected by the construction. Dust control measures may include the following activities:

- Minimizing exposed earth surface
- Temporary and permanent seeding and mulching
- Watering working and haul areas during dry periods
- Covering, shielding, or stabilizing material stockpiles
- Using covered haul trucks

Emissions from construction equipment are regulated by federal standards. No burning would be performed at the project site or within Park boundaries.

Noise

Since the Full Build Alternative is not expected to increase the number of vehicles in the study area, the only long-term noise impacts would result from a decrease in the distance between the roadway and receptor areas where people congregate. The only two locations where this distance decreased (i.e., the additional turn lane would widen towards receptors rather than away from them, and the receptors are within 500 feet of the roadway) are at Park Circle Drive and the Oconaluftee Visitor Center. A possible negligible long-term impact is anticipated for this alternative.

The noise analysis compared existing conditions with future conditions, which included increased traffic volumes. Based on this noise analysis, there were no impacts approaching or exceeding Noise Abatement Criteria or substantial increases found at any of the sensitive noise receivers. Therefore, the expected noise impacts along Newfound Gap Road were found to be negligible

and within the acceptable criteria given by FHWA and NCDOT. **Appendix B** includes more detail on the methodology and results of the noise study.

Minor temporary noise impacts to adjacent land uses during construction would occur resulting from movement of workers and materials through the area and associated construction activities. Heavy construction equipment would generate noise and vibration. The duration and level of noise differs with each phase of construction. Typically the first two phases—ground clearing and excavation—generate the highest noise levels. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers, and portable generators, can reach noise levels of 67 dBA to 98 dBA at a distance of 50 feet. The Park may monitor construction noise and require abatement where limits are exceeded. The Park also can limit work that produces objectionable noise during visitor hours.

Energy

At all study intersections, proposed roadway improvements are predicted to result in either a decrease in energy consumption or no change. Therefore, a negligible positive impact to energy is anticipated. Quantitative results are provided in **Appendix B**.

Utilities

The Full Build Alternative would potentially impact 1,207 linear feet of the proposed sewer line for Alternative 2 of the utilities project at Tow String Road, depending on which alternative was selected and which project is completed first. The Full Build Alternative would impact 500 feet of existing water line at Park Circle Drive, and 593 feet of existing water line at the Visitor Center.

Any disruption to utility service during construction would be minimized by phased adjustments to the utility line. All modifications, adjustments, or relocations would be coordinated with the affected utility company, resulting in a minor impact to utilities.

3.7.2.4 Conclusion

Aesthetics and Viewshed

The viewshed along Newfound Gap Road would remain unchanged under the No Action Alternative. However, continued degradation of the roadway would contribute negatively to aesthetics in the area, resulting in a long-term minor impact. The Partial Build and Full Build Alternatives would result in a negligible positive impact and temporary visual impacts during construction. No impairment to the viewshed in the study area would occur under any of the alternatives.

Air Quality

Air quality would remain unchanged under the No Action Alternative. From the Full Build Alternative, long-term air quality conditions along the Newfound Gap corridor could be expected to improve a negligible amount as a result of fewer vehicles having to idle in queues at each intersection. Minor temporary air quality impacts would occur as a result of fugitive dust/fine particulate matter during construction operations for the Partial Build and Full Build Alternatives. The contractor would be responsible for controlling dust at the project site and at areas affected by the construction. No impairment to air quality in the Park would occur under any of the alternatives.

Noise

The No Action Alternative would have a negligible impact on noise due to a deteriorating roadway surface. The Partial Build and Full Build Alternatives would have a negligible positive

impact on noise, based on an improved roadway surface. The Partial Build and Full Build Alternatives would result in minor temporary noise impacts during construction. The Park would monitor construction noise and require abatement where limits are exceeded. The Park would also limit work that produces objectionable noise during visitor hours.

Energy

Energy levels would remain unchanged under the No Action and Partial Build Alternatives. A negligible positive impact to energy is anticipated from the Full Build Alternative.

Utilities

The No Action and Partial Build Alternatives would not impact any existing or proposed utilities in the area. The Full Build Alternative would potentially impact 1,207 linear feet of proposed sewer line and would impact 1,093 linear feet of existing water line. Any disruptions to utility service during construction would be minimized by phased adjustments to the utility line. All modifications, adjustments, or relocations would be coordinated with the affected utility company and service would be maintained during and after construction, resulting in a minor impact.

3.8 Visitor Use and Experience

3.8.1 Affected Environment

3.8.1.1 Visitation and Facilities

There are many activities for visitors within the Park and specifically within the study area. Several recreational activities exist within or adjacent to the study area, described below.

Visitor Facilities and Trails

Facilities for visitors within the study area include the Oconaluftee Visitor Center, the Mountain Farm Museum, and the Mingus Mill. There is a horse camp at Tow String Road, and camping, horse rental facilities, and a ranger station at the Smokemont Campground. There are also access points to four trails between the Collins Creek Picnic Area and the Blue Ridge Parkway, including the Mingus Creek Trail, the Newton Bald Trail, the Smokemont Loop Trail, and the Bradley Fork Trail. Fishing is permitted year-round.

Collins Creek Picnic Area – The Collins Creek Picnic Area is located at the north end of the study area on the west side of Newfound Gap Road. There are two picnicking sections, each with tables, shelters, and restroom facilities. The picnic area is seasonal and is open from May through October.

Smokemont Campground and Tow String Road Facilities – The Smokemont Campground, horse rentals, and ranger facilities are located approximately 1.5 miles south of the Collins Creek Picnic Area on the east side of Newfound Gap Road. There also is a horse camp at Tow String Road which is located between the Smokemont Campground and the Oconaluftee Visitor Center on the east side of the road. The Smokemont Campground is one of ten camping sites in the Park in addition to backcountry camping opportunities. It is open year-round and includes 142 sites with water, fire grills, tables, and restroom facilities.

Mingus Mill – The Mingus Mill is located on the west side of Newfound Gap Road at the Mingus Creek Trail, approximately 0.5 mile north of the Oconaluftee Visitor Center. The mill was built in 1886, and was acquired by the Park in the 1930s. The mill, which replaced the more

traditional waterwheel, uses a water-powered turbine to power all of the machinery in the building. It is located at its original site and is operational May through October.

Oconaluftee Visitor Center – The Oconaluftee Visitor Center is located on the east side of Newfound Gap Road between the Mingus Creek Trail and the Blue Ridge Parkway (approximately 2 miles north of Cherokee). One of only three visitor centers in the Park, it is open year-round, with ranger-led programs available seasonally. This site offers information about the Park, exhibits historic photographs and artifacts, and includes restroom facilities. The Great Smoky Mountains Natural History Association also operates a concessions facility within the building, which offers Park-related merchandise for sale.

Mountain Farm Museum – The Mountain Farm Museum is located on the east side of Newfound Gap Road between Mingus Creek Trail and the Blue Ridge Parkway, adjacent to the Oconaluftee Visitor Center. Most of the historic structures that are part of the Mountain Farm Museum were constructed in the late 19th century, and were moved to their present location in the 1950s. Costume demonstrations, farm animals, and tours through the buildings allow visitors to see how families may have lived a century ago. Key attractions include a log farmhouse, a barn, an apple house, a functional blacksmith shop, and others. Facilities are open from May through October.

Mingus Creek Trail – The Mingus Creek Trail is 5.8 miles long and climbs approximately 3,000 vertical feet. It begins at the Mingus Mill parking area on the west side of Newfound Gap Road, and ends at the junction with Newton Bald Trail at Newton Bald. Some sights along the trail include the Mingus Mill, a cemetery, an old home site, and the Civilian Conservation Corps camp site. The trail follows Mingus Creek, and is part of North Carolina's Mountains-to-Sea Trail.

Newton Bald Trail – The Newton Bald Trail begins at Newfound Gap Road, approximately 1/8 mile north of the Smokemont Campground entrance. It is 5.3 miles long, with a difference in elevation of 2,800 feet, and is used as a horse and hiking trail. The Newton Bald Trail ends at the Thomas Divide Trail.

Smokemont Loop Trail – The Smokemont Loop trail is 3.9 miles from the Bradley Fork Trail to the Smokemont Campground, for a total loop distance of 6.1 miles. It climbs 1,260 feet through a mixed hardwood forest. A highlight along the trail is an access point to the Bradley Cemetery near the Smokemont Campground.

Bradley Fork Trail – The Bradley Fork Trail begins at the Smokemont Campground and ends at Hughes Ridge Trail. It is a 7.3-mile trail, rising 2,800 feet in elevation. The trail is an old road along the Bradley Fork of the Oconaluftee River, and is used as a horse and hiking trail.

Seasonal and Annual Visitation

The number of visitors to the Great Smoky Mountains National Park fluctuates through the year, peaking in the months of June through August and again in October. Average annual visitation to the Park exceeds 9 million visitors per year. Although visitation dropped slightly in 2001, trends show that visitation has been slowly increasing in recent years.

3.8.1.2 Existing Roadways

The roadway network within the study area includes Newfound Gap Road, the Blue Ridge Parkway, and six other roads (the Collins Creek Picnic Area entrance, the Smokemont Campground entrance, Tow String Road, the Mingus Mill entrance, Big Cove Connector Road,

and Park Circle Drive) and the parking facilities for the Oconaluftee Visitor Center. All are included in the analysis except the Mingus Mill entrance, the intersection of which was previously modified to better accommodate traffic flow. **Figure 1** shows the roadway network within and adjacent to the study area.

Newfound Gap Road – Newfound Gap Road (NPS Route 10) is a principal Park roadway within the Great Smoky Mountains National Park, and the only roadway that completely traverses the Park. It stretches 31 miles from the Oconaluftee Visitor Center in Cherokee, North Carolina to the Sugarlands Visitor Center near Gatlinburg, Tennessee. Newfound Gap Road is a two-lane road with additional left-turn lanes at some intersections. There are scenic pullouts and paved parking areas along both sides of the road. The posted speed limit along the entire road varies from 25 miles per hour to 45 miles per hour. The posted speed limit within the project study area is 45 miles per hour. In 2003, approximately 36 percent of the total number of visitors to the Park entered on this road from Gatlinburg, and 24 percent entered the Park on Newfound Gap Road from Cherokee (*National Park Service Visitor Report*). Newfound Gap Road carries traffic volumes beyond its designed capacity and traffic congestion is common during the visitor season.

Blue Ridge Parkway – The Blue Ridge Parkway, a national Parkway and a major scenic drive for the entire region, extends 469 miles to connect Great Smoky Mountains National Park with Shenandoah National Park in Virginia. It provides access to the Park from the northeast. This meandering two-lane road has a maximum posted speed limit of 45 miles per hour. There are scenic and recreational turnouts for sightseeing, camping, picnicking, and hiking.

Intersections – The road to the Collins Creek Picnic Area accesses two picnicking sections. The entrance to the Smokemont Campground crosses the Oconaluftee River just east of its intersection with Newfound Gap Road, and then splits, leading to camping and trails to the north and a waste area to the south. Tow String Road leads to the Tow String community within the Cherokee Indian Reservation. The entrance road to the Mingus Mill leads to the historic Mingus Mill and hiking trails to the west of Newfound Gap Road. Big Cove Connector Road crosses the Oconaluftee River to connect Newfound Gap Road and Big Cove Road. Park Circle Drive accesses Park employee housing, the Job Corps facility, the Park Maintenance and Ranger Station, and Big Cove Road. There are three intersections accessing the Oconaluftee Visitor Center, including an exit-only intersection and two full-access intersections. The Blue Ridge Parkway leads east, accessing Park sites such as the Waterrock Knob Visitor Center and the Park Headquarters Building, as well as public and private points of interest.

3.8.1.3 Traffic Volumes

Traffic in the study area consists of a mix of vehicle types and modes of transportation. Vehicular traffic consists of personal automobiles, recreational vehicles, buses, motorcycles, and bicycles, and includes commuter traffic and visitor traffic traveling along Newfound Gap Road, the Blue Ridge Parkway, and within the Park. Commercial vehicles are not allowed on Newfound Gap Road. In addition to vehicular traffic, a high volume of pedestrian traffic is present in the areas around the trails and other visitor facilities. Historic and current traffic count data, consisting of average annual daily traffic (AADT) counts and turning movement counts, was gathered and analyzed to determine traffic characteristics and historic growth patterns.

Historic Traffic Volumes

To develop a baseline of traffic in the Newfound Gap Road area, historic traffic counts were gathered where available from the North Carolina Department of Transportation (NCDOT) and the National Park Service for Newfound Gap Road. Historic AADT data (1999 through 2003)

was obtained for Swain County from NCDOT and for Sevier County from the Tennessee Department of Transportation (TDOT). Monthly traffic volumes on Newfound Gap Road generally are highest during the summer months and in October. Traffic volumes on Newfound Gap Road north of the Blue Ridge Parkway averaged between 4,000 and 6,000 vehicles per day from 1999 to 2003. Volumes on Newfound Gap Road south of Gatlinburg decreased from 11,000 to 7,500 vehicles per day between 2000 and 2002, and increased to 9,000 vehicles per day in 2003. More detail is located in **Appendix B**.

Current Traffic Volumes

To determine current traffic demand in the Newfound Gap Road area, turning movement counts were conducted by Kimley-Horn and Associates, Inc. at each of the original six study intersections on typical weekdays and weekend days during October 2003, the peak month for traffic and visitation in the Park. Counts were conducted by Kimley-Horn and Associates at the Big Cove Connector Road intersection during August 2004. Details of the traffic counts are included in **Appendix B**.

Hourly counts for the Blue Ridge Parkway for January through December, 2002 were obtained from the National Park Service. In addition, automated vehicle counts were conducted by Kimley-Horn and Associates, Inc. in 2003 at the following locations:

- Newfound Gap Road north of the Collins Creek Picnic Area 10/6–11/3
- Newfound Gap Road south of the Blue Ridge Parkway 10/6–10/8, 10/13–10/26
- The Collins Creek Picnic Area entrance 10/6–10/31
- Park Circle Drive 10/6–11/3

Based on the hourly counts at the above locations, average hourly traffic volumes were calculated for an average October weekday and weekend day. On an average weekday, traffic volumes on Newfound Gap Road, the Blue Ridge Parkway, and the Collins Creek Picnic Area are highest between 10:00 AM and noon, corresponding to typical visitor peaks. Traffic volumes on Park Circle Drive have morning and afternoon peaks, corresponding to the employment and residential facilities on that road. On an average weekend day, traffic volumes on Newfound Gap Road and the Collins Creek Picnic Area peak in the early afternoon, volumes on the Blue Ridge Parkway peak between 10:00 AM and 3:00 PM, and volumes on Park Circle Drive stayed relatively steady from 10:00 AM to 8:00 PM.

Operational Analysis

To analyze the traffic operations characteristics of the Newfound Gap Road intersections, a traffic operations model was developed using the software Synchro 5.0. Traffic volume data and roadway and intersection geometry were obtained in October 2003, one of the annual peak seasons for traffic volumes. The traffic volumes and geometry were input into the Synchro network to perform capacity analyses for existing weekday and weekend peak hour conditions. Intersections within the study area were analyzed for the expected peak volume periods to provide a worst case analysis for each intersection. The *Highway Capacity Manual (TRB Special Report 209, 2000)* control delay methodologies were used in reporting the results. The capacity analyses do not take into account sight distance or safety concerns that may exist at the intersections. Accident data, as summarized in **Section 3.8.1.3**, indicated which intersections may have safety or geometric problems.

Capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a given period. Capacity is combined with Level-of-Service (LOS) to describe the operating characteristics of a road segment or intersection. LOS is a qualitative measure describing operational conditions and motorist perceptions within a traffic stream. The *Highway Capacity Manual* defines six levels of service, LOS A through LOS F, with A representing the shortest average delays and F representing the longest average delays. The study intersections are all two-way stop-controlled intersections. A two-way stop-controlled intersection may operate at a very good LOS (A or B) overall, based on major road traffic experiencing little to no delay, while the minor road approaches could operate at a poor LOS (E or F). Therefore, it is important to report minor-road LOS independently to identify any needed geometric improvements that may not be evident in the overall value.

Capacity analyses were performed for the intersections of Newfound Gap Road with the Collins Creek Picnic Area entrance, the Smokemont Campground entrance, Tow String Road, Park Circle Drive, the Oconaluftee Visitor Center (northern and southern entrances), the Blue Ridge Parkway, and Big Cove Connector Road. The analyses were performed for existing conditions, future conditions (design year 2030) with existing geometry (No Action or Partial Build alternative), and future conditions with the Full Build Alternative. Detailed results of the analyses are provided in **Appendix B**.

All intersections within the study corridor currently operate at acceptable Levels of Service (A through C) during peak season peak hour except the northern entrance at the Oconaluftee Visitor Center, where the minor road approach operates at a LOS F during the weekend peak hour, and Big Cove Connector Road, where the minor road operates at LOS E during the weekend peak hour.

In the design year with the No Action or Partial Build Alternatives, all intersections would operate with very long delays for minor road traffic but acceptable *overall* levels of service with the exception of the Big Cove Connector Road, which would operate at a LOS F during the weekend peak hour. That intersection is expected to serve substantial traffic volumes resulting from the development of the Ravensford Tract. Additional measures may be needed at that location in order to adequately serve future projected traffic.

Accident Information

Traffic accident data for the period from January 1999 through November 2003 has been obtained for intersections in the Newfound Gap Road study area from the National Park Service. This data has been reviewed and analyzed to determine the level of safety at the study intersections.

In the past five years, each location has experienced one accident with an injury except at the Blue Ridge Parkway where two injury accidents occurred. In addition, there was one fatal accident at the Collins Creek Picnic Area intersection in June 2000. Many of these accidents appear to be of the type that might have been prevented by geometric improvements, such as turn lanes or improvements in sight distance. These include rear-end, right-angle, sideswipe, and head-on accidents. Providing exclusive left-turn lanes on Newfound Gap Road may have prevented ten accidents during the five year period: three at the Collins Creek Picnic Area entrance, one at the Smokemont Campground entrance, one at Park Circle Drive, two at the Blue Ridge Parkway, and three at the Big Cove Connector Road. These ten accidents were all rear-end accidents in which a vehicle struck a stopped or slower-moving vehicle. **Appendix B** includes a tabular summary of accidents at each intersection per year.

Accident rates were obtained in terms of number of accidents per million entering vehicles (Acc/MEV) and compared to Florida Department of Transportation (FDOT) rates. (NCDOT does not publish accident rate averages for spot locations.) FDOT average accident rates for the years 1999, 2000, and 2001 at three-leg intersections on rural two- or three-lane two-way undivided highways were 0.155, 0.140, and 0.147 Acc/MEV, respectively.

Accident rates at all study area intersections were much higher than the FDOT rates. The highest accident rates at study area intersections over the five-year period occurred at the Collins Creek Picnic Area (0.78 Acc/MEV) and at the Blue Ridge Parkway (0.74 Acc/MEV). Approximately 25 percent of the total accidents along the study corridor could have been prevented by geometric improvements at the intersections. Three of the seven accidents at Collins Creek Picnic Area and two of the seven accidents at the Blue Ridge Parkway—where accident rates are highest—could have been prevented by left-turn lanes or improved sight distance. Based on these high accident rates, safety measures should be considered at all of the intersections. Additional detail on accident rates is provided in **Appendix B**.

The accident rate for the southern section of the study area was also calculated between Park Circle Drive and the Blue Ridge Parkway. This section experienced a rate of 524.63 accidents per 100 million vehicle miles (Acc/100MVM) for the five-year period from 1999 through 2003 and 340.04 Acc/100MVM for 2000 through 2002. The NCDOT average accident rate for a similar roadway type (Rural US Route) is 131.76 Acc/MVM. Based on this comparison, Newfound Gap Road between Park Circle Drive and the Blue Ridge Parkway experiences a very high accident rate for a rural facility. This information indicates that measures should be undertaken to improve safety on this section of roadway.

3.8.2 Environmental Effects

3.8.2.1 No Action Alternative

Traffic Operations

Traffic operations would remain unchanged under the No Action Alternative.

Vehicle Circulation

Vehicle circulation patterns would remain unchanged under the No Action Alternative.

Parking Operations

Parking operations would remain unchanged under the No Action Alternative.

Management and Visitor Use of Roads

The No Action Alternative would not affect the management and visitor use of roads in the area. However, this alternative would perpetuate unsafe driving conditions, and it would continue to be difficult for visitors to identify the entrance to Tow String Road due to the short sight distances, resulting in a long-term negligible impact.

Safety and Demand

The No Action Alternative would perpetuate poor driving conditions, unsafe traffic operations at intersections, and inadequate sight distances at the intersection of Newfound Gap Road with Tow String Road, resulting in a negligible impact.

3.8.2.2 Partial Build Alternative

Traffic Operations

Long-term traffic operations would remain unchanged under the Partial Build Alternative. Minor temporary impacts are anticipated during construction.

Vehicle Circulation

Vehicle circulation patterns would remain unchanged under the Partial Build Alternative.

Parking Operations

Parking operations would remain unchanged under the Partial Build Alternative.

Management and Visitor Use of Roads

The Partial Build Alternative would not affect the management and visitor use of roads in the area. However, this alternative would perpetuate unsafe driving conditions, and it would continue to be difficult for visitors to identify the entrance to Tow String Road due to the short sight distances, resulting in a long-term negligible impact.

Safety and Demand

The Partial Build Alternative would perpetuate unsafe traffic operations at intersections and inadequate sight distances at the intersection of Newfound Gap Road with Tow String Road. Improving these conditions would potentially improve the safety for drivers and pedestrians.

3.8.2.3 Full Build Alternative

Traffic Operations

The Full Build Alternative is anticipated to have a minor positive impact on traffic operations along Newfound Gap Road within the study area. Overall vehicle delay would decrease slightly with the provision of a separate turn lane for left-turning vehicles, since through vehicles traveling in the same direction would not have to stop or slow. This would also improve the safety of the road by reducing conflict points between left-turning and through vehicles.

Maintenance of traffic and sequencing of construction would be planned and scheduled to minimize traffic delays. Maintenance and protection of traffic in conjunction with construction activities associated with this project would be prepared in accordance with the latest edition of the Manual of Uniform Traffic Control Devices and roadway standards of the NPS and FHWA. Signs would be used as appropriate to provide notice of temporary lane closures and other pertinent information to the traveling public. Advance notice through the local news media would be made to alert the public of traffic restrictions and construction related activities.

Truck traffic in the project area would increase during construction due to the presence of construction vehicles. The traffic plan developed during the final engineering design phase would define designated truck routes and parking areas for construction vehicles. A minor temporary impact on traffic operations is anticipated.

Vehicle Circulation

Vehicle operations would be unchanged except for vehicles entering and exiting the Oconaluftee Visitor Center parking areas. Vehicles would enter the parking area only at the central intersection which would require only one left-turn lane into the Visitor Center. All vehicles would exit at the northern and southern intersections. A minor positive impact is anticipated.

Parking Operations

Other than at the Oconaluftee Visitor Center, there would be no impact to parking operations by implementing the Full Build Alternative. At the Visitor Center, circulation within the parking areas would be converted into a one-way traffic pattern with vehicles entering at the central intersection and exiting at the northern and southern intersections. Vehicle conflicts within the parking areas would be greatly reduced by this change in operations. However, vehicles entering one of the lots would need to exit onto Newfound Gap Road to access the other lot. This modification is anticipated to result in a minor positive impact on parking operations.

Management and Visitor Use of Roads

There would be a minor positive impact by the Full Build Alternative on the management and visitor use of roads in the study area. Visitors would be able to identify entrances and side roads more easily because of the designated turn lanes.

Safety and Demand

There would be a minor positive impact by the Full Build Alternative on safety within the study area. Turn lanes would improve the safety for left-turning and through vehicles for both local and visitor traffic. In addition, the presence of a turn lane would help drivers identify the location of the intersection when approaching, and would enable drivers not turning to bypass slow-moving left-turning vehicles. At Tow String Road, the proposed realignment would improve the sight distance for vehicles turning onto Newfound Gap Road. At the Visitor Center, drivers exiting the south parking lot to the left would be able to use the designated acceleration lane. Improved lane geometry south of the Visitor Center would improve safety for drivers heading north past the Visitor Center or turning right into the parking lots.

3.8.2.4 Conclusion

Traffic Operations

Traffic operations would remain unchanged under the No Action Alternative. The Full Build Alternative is anticipated to have a positive impact on traffic operations along Newfound Gap Road within the study area. Overall vehicle delay would decrease slightly with the provision of a separate turn lane for left-turning vehicles, since through vehicles traveling in the same direction would not have to stop or slow. This would also improve the safety of the road by reducing conflict points between left-turning and through vehicles. Disruptions in traffic operations during construction would be scheduled to minimize traffic delays, resulting in minor temporary impacts under the Partial Build and Full Build Alternatives.

Vehicle Circulation

Vehicle circulation patterns would remain unchanged under the No Action and Partial Build Alternatives. Vehicle operations would be unchanged under the Full Build Alternative except for vehicles entering and exiting the Oconaluftee Visitor Center parking areas, which would become a one-way traffic flow. This is predicted to result in a minor positive impact to vehicle circulation.

Parking Operations

Parking operations would remain unchanged under the No Action and Partial Build Alternatives. Other than at the Oconaluftee Visitor Center, there would be no impact to parking operations by implementing the Full Build Alternative. At the Visitor Center, circulation within the parking areas would be converted into a one-way traffic pattern. Conflicts within the parking areas would be greatly reduced by this change in operations, resulting in a minor positive impact to parking operations by the Full Build Alternative.

Management and Visitor Use of Roads

The No Action and Partial Build Alternatives would not affect the management and visitor use of roads in the area. However, these alternatives would maintain unsafe driving conditions, and it would continue to be difficult for visitors to identify the entrance to Tow String Road due to the short sight distances, resulting in a negligible impact. The Full Build Alternative would result in a minor positive impact due to the improvement at Tow String Road.

Safety and Demand

The No Action and Partial Build Alternatives would perpetuate unsafe traffic operations at intersections and inadequate sight distances at the intersection of Newfound Gap Road with Tow String Road, resulting in negligible impacts for both alternatives. The No Action Alternative would also maintain poor roadway pavement. Improving these conditions would potentially improve the safety for drivers and pedestrians. There would be a minor positive impact by the Full Build Alternative on safety within the study area. Turn lanes would improve the safety for left-turning and through vehicles for both local and visitor traffic. In addition, the presence of a turn lane would help drivers identify the location of the intersection when approaching, and would enable drivers not turning to bypass slow-moving left-turning vehicles. At Tow String Road, the proposed realignment would improve the sight distance for vehicles turning onto Newfound Gap Road. At the Visitor Center, drivers exiting the south parking lot to the left would be able to use the designated acceleration lane. Improved lane geometry south of the Visitor Center would improve safety for drivers heading north past the Visitor Center or turning right into the parking lots.

3.9 Cumulative Impacts

Depending on the availability of funding, a number of additional improvements are under consideration in the vicinity of Newfound Gap Road and the southern portion of the Great Smoky Mountains National Park. These projects are sponsored by either the Eastern Band of Cherokee Indians or the National Park Service:

- Tow String Road and Bridge Improvement Project – Replacement of the bridge along Tow String Road on the North Carolina side to widen the bridge from 12-feet to 30-feet wide. Construction was completed in May 2005.
- Smokemont Water and Sewer Project – Construction of new water and sewer lines along Newfound Gap Road on the North Carolina side from the Smokemont Campground to the Oconaluftee Visitor Center Area. This work will tie the utilities into the Cherokee utility system and would negate the need to maintain and operate the failing sewage treatment facility near the Smokemont Campground. (Dates to be determined at a later time.) Temporary one-lane closures are anticipated during construction.
- Phase I of rehabilitation/resurfacing of Newfound Gap Road on the North Carolina side from the Newfound Gap Overlook Parking Area south to the Collins Creek intersection (Summer 2005 – Summer 2007). Primary construction work will include milling and resurfacing the roadway in its existing configuration, drainage work, pavement markings, shoulder stabilization, traffic control, and turf establishment. Temporary one-lane closures are anticipated during construction.
- Phase I rehabilitation/resurfacing of Newfound Gap Road on the Tennessee side from the Newfound Gap Overlook Parking Area north to the Alum Cave Trailhead Parking Area. Primary construction work would include milling and resurfacing the roadway in its existing configuration, drainage work, pavement markings, shoulder stabilization, traffic control, and turf establishment. This project will also be studied for the possible inclusion of the

construction of a left-turn lane for southbound traffic turning into the Alum Creek Trailhead Parking Area. (Construction programmed to begin in Fiscal Year 2010.) Temporary one-lane closures are anticipated during construction.

- Phase II rehabilitation/resurfacing of Newfound Gap Road on the Tennessee side from the Alum Cave Trailhead Parking Area to the Park boundary with Gatlinburg. Primary construction work would include milling and resurfacing the roadway in its existing configuration, drainage work, pavement markings, shoulder stabilization, traffic control, and turf establishment. (Dates to be determined at a later time.) Temporary one-lane closures are anticipated during construction.
- Straight Fork – Construction of Straight Fork Bridge along Straight Fork Road/Balsam Mountain Road on the North Carolina side of the Park. The purpose of this project is to replace the existing concrete low water crossing with a 14-foot wide steel truss bridge. (Construction programmed to begin in Fiscal Year 2005.) During construction, all two-way traffic on Straight Fork Road will be stopped approximately ¼-mile prior to the proposed work site. The one-way section of traffic approaching the proposed work site from Balsam Mountain Road will be allowed to proceed through the work site.
- Walls Rehabilitation Project – Rehabilitation/reconstruction of stone masonry guardwalls along Newfound Gap Road on the Tennessee side. The work of this project would include the reconstruction of non-crash-rated stone masonry guardwalls with crash-rated masonry guardwalls, traffic control, and turf establishment. (Dates to be determined at a later time.) Temporary one-lane closures are anticipated during construction.

3.9.1 No Action Alternative

The planned projects proposed for construction in the vicinity of Newfound Gap Road and the southern portion of the Great Smoky Mountains National Park are independent maintenance and safety projects needed to meet Park management objectives. The No Action Alternative would have a minor cumulative impact in terms of reducing the visitor experience while driving on the road in poor pavement condition, in addition to the temporary cumulative impact from other construction and lane closures in the Park.

3.9.2 Partial Build Alternative

The planned projects proposed for construction in the vicinity of Newfound Gap Road and the southern portion of the Great Smoky Mountains National Park are independent maintenance and safety projects needed to meet Park management objectives. The Partial Build Alternative would have a cumulative impact in terms of road construction at multiple locations within the park; however, the cumulative impact would be negligible, with phasing of the multiple construction projects on Newfound Gap Road such that they would not occur simultaneously and would not have lane closures during peak visitation hours and seasons.

3.9.3 Full Build Alternative

The planned projects proposed for construction in the vicinity of Newfound Gap Road and the southern portion of the Great Smoky Mountains National Park are independent maintenance and safety projects needed to meet Park management objectives. The Full Build Alternative, like the Partial Build Alternative, would have a cumulative impact with road construction at multiple locations within the park; however, the cumulative impact would be negligible, with phasing of the multiple construction projects on Newfound Gap Road such that they would not occur simultaneously and would not have lane closures during peak visitation hours and seasons.

3.9.4 Conclusion

The No Action Alternative would not impose any additional impacts to the Park. The Partial Build and Full Build Alternatives would cause temporary local increases in traffic delays during the construction process. After construction, the traffic conditions are expected to return to pre-construction levels for the Partial Build Alternative and would improve for the Full Build Alternative due to the turn lanes. Associated with the construction period are additional noise levels due to generators and motors of the heavy construction equipment, and air quality and visual impacts due to the construction. Aside from the temporary traffic, noise, air quality, and visual impacts, no other areas or features of the Park are anticipated to be affected by the Partial Build Alternative. In addition to the above, the Full Build Alternative would result in minor impact to roadside vegetation as a result of road widening to accommodate the proposed turn lanes. Cumulatively, there would be negligible impact to Park vegetation. No impairment to the Park would occur under any of the alternatives.

3.10 Summary of Mitigation

Mitigation measures are described in detail in each of impact areas in Chapter 3 and are summarized in **Section 2.3.7**. A general listing of mitigation includes the following:

Partial Build

The Partial Build Alternative includes mitigation for the impacts of pavement and drainage rehabilitation.

- Use of Best Management Practices to minimize water quality impact.
- Minimization of clearing and use of disturbed surfaces for construction staging areas.
- Limiting road and lane closures to avoid peak travel seasons and times, and providing advance notice of construction activities.
- Control of dust and noise during construction.

Full Build

The Full Build Alternative includes mitigation for the impacts of pavement and drainage rehabilitation and for the construction of turn lanes. In addition to mitigation measures listed above, this alternative would also include:

- Selection of least damaging options within the Full Build Alternative, including pavement removal where feasible.
- Mitigation of cultural resources impacted through a Memorandum of Agreement which is under development in consultation with SHPO and THPO.
- Wetland mitigation at Tow String Road by creating new wetlands.
- Replacement of vegetation in construction areas and in areas of pavement removal.
- Plans for mitigation of pyritic material if should be encountered during construction.
- Scheduling tree removal to not impact the roosting season of the Indiana bat.
- Use of NPS procedures to avoid the spread of invasive species during revegetation.
- Coordination with utilities to minimize interruptions in service.

3.11 Impairment

NPS Director's Order 12 requires an impairment finding for actions that impact NPS resources. According to the following NPS Management Policies:

“The ‘fundamental purpose’ of the national Park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve Park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on Park resources and values. However, the laws do give the Service the management discretion to allow impacts to Park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impact does not constitute impairment of the affected resources and values. The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in professional judgment of the responsible NPS manager, would harm the integrity of Park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts.

“An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- Key to the natural or cultural integrity of the Park or to opportunities for enjoyment of the park; or
- Identified as a goal in the Park's general management plan or other relevant NPS planning documents.

“An impact would be less likely to constitute an impairment to the extent that it is an unavoidable result, which cannot reasonably be further mitigated, of an action necessary to preserve or restore the integrity of Park resources or values.”

This policy does not prohibit impacts to Park resources and values. The NPS has the discretion to allow impacts to Park resources and values when necessary and appropriate to fulfill the purposes of the Park, so long as the impacts do not constitute impairment.

Analysis has shown that turn lanes at intersections along Newfound Gap Road are needed to promote improved safety and traffic operations for motorists, particularly during the peak tourist periods. The improvements proposed for Tow String Road would also improve sight distance, resulting in further safety improvements. These improvements were referenced in the Park's General Management Plan and in the Environmental Impact Statement for the General Management Plan. Non-construction alternatives would not meet the project purpose and need.

Turn lane options were developed and evaluated for each of the proposed improvement locations. In each case, an option was developed that would minimize impacts to the environment while serving the purpose and need of the project. The Full Build Alternative would impact a total of 2.52 acres of land due to the proposed turn lanes, while 0.48 acres of existing paved area would

be converted to grassland, resulting in a net impact of 2.04 acres of land. Stream impact totals 15 feet (culvert extension at Collins Creek Picnic Area), while 0.08 acres of wetland and 0.01 acres of floodplain would be impacted (Tow String Road). Both the streams impact and wetland impact would be mitigated. No protected species impacts are anticipated.

Based on the above, there is no impairment to Park resources and values.

4.0 Summary of Impacts/Alternatives

Table 5 summarizes and compares the likely results of implementing the No Action Alternative, the Partial Build Alternative, and the Full Build Alternative as they relate to the environment. The primary point of interest for the No Action Alternative is that it would not provide for the needed improvements to the road, traffic operations, and sight distances at the Tow String Road intersection. The primary point of interest for the Partial Build Alternative is that it would not provide for the needed improvements to traffic operations or to sight distances at the Tow String Road intersection and would result in temporary traffic restrictions during construction. The primary point of interest for the Full Build Alternative is the area of disturbance combined with the temporary traffic restrictions during construction.

Table 5: Summary of Environmental Consequences

Topic	Alternative		
	No Action	Partial Build (Pavement rehabilitation only)	Full Build (Pavement rehabilitation and turn lanes)
Land Use	No impact	No impact	Minor impact (2.52 acres*)
Socioeconomics and Community	Minor long-term impact	Negligible to minor temporary impact	Negligible to minor temporary impact; minor long-term positive impact
Environmental Justice	Negligible impact	Negligible impact	Minor positive impact
Cultural Resources			
Archaeological Resources	No impact	No impact	Minor impact
Historic Resources	No impact	No impact	Minor impact
Natural Resources			
Jurisdictional Wetlands	No impact	No impact	Minor impact
Floodplains	No impact	No impact	Minor impact
Water Quality	Negligible impact	Negligible temporary impact	Minor temporary impact; negligible long- term impact
Geology and Soils	No impact	No impact	Minor temporary impact; negligible long- term impact
Biological Communities			
Terrestrial Habitat and Animal Species	No impact	No impact	Negligible temporary and long-term impact
Aquatic Habitat	No impact	No impact	Minor temporary impact; negligible long- term impact

Table 5 (Continued)

Topic	Alternative		
	No Action	Partial Build (Pavement rehabilitation only)	Full Build (Pavement rehabilitation and turn lanes)
Threatened and Endangered Species	No impact	No impact	No impact
Exotic Species	No impact	Negligible impact	Negligible impact
Human Environment			
Aesthetics and Viewshed	Minor impact	Negligible positive impact	Negligible positive impact
Air Quality	No impact	Minor temporary impact	Minor temporary impact; negligible long-term positive impact
Noise	Negligible impact	Minor temporary negative impact; negligible long-term positive impact	Minor temporary impact; possible negligible long-term impact
Energy	No impact	No impact	Negligible positive impact
Utilities	No impact	No impact	Minor impact
Visitor Use and Experience			
Traffic Operations	No impact	Minor temporary impact	Minor temporary negative impact; minor long-term positive impact
Vehicle Circulation	No impact	No impact	Minor positive impact
Parking Operations	No impact	No impact	Minor positive impact
Management and Visitor Use of Roads	Negligible impact	Negligible impact	Minor positive impact
Safety and Demand	Negligible impact	Negligible impact	Minor positive impact

* Includes 0.48 acres of existing pavement to be converted to grassland, for a net impact of 2.04 acres

5.0 Commitments and Resources

5.1 Commitments and Resources

5.1.1 Irreversible and Irretrievable Commitment of Resources

The implementation of the Full Build Alternative would result in irreversible and irretrievable commitment of funds by NPS for the planning, design, and construction of the proposed actions. Resources in the form of construction materials and labor, fuels, and other energy sources for vehicles and equipment also would be committed with the implementation of both the Partial Build and Full Build Alternatives.

5.1.2 Unavoidable Adverse Environmental Effects

Natural impacts, including numerous storms and pollution damage occur to Park resources every year. Since resource managers are unable to alter the majority of the natural impacts, every effort must be made to minimize human impacts. Since the majority of the smog and air pollution that affects the Park is generated outside of the Park, there is very little that the Park can do to avoid and minimize their impacts.

A net total of 2.04 acres of existing pervious Parkland would be converted to a paved surface. No substantial unavoidable adverse environmental effects are anticipated; however temporary and long-term impacts would result in forms of minor vegetation loss and possible inconvenience to the visitors and residents who travel the area during construction.

No substantial unavoidable adverse environmental effects are anticipated.

5.1.3 Local Short-Term Uses and Maintenance/Enhancement of Long-Term Productivity

Short-term maintenance costs would decline if the proposed reconstruction and rehabilitation work occurs in the near future. As a result, the Park may allocate more time and personnel to the protection of the Park's more prominent cultural and natural resources.

5.1.4 Natural or Depletable Resources

The use of some natural resources would be required under either the Partial Build or Full Build Alternative in order to complete construction operations; however, no natural resources would be depleted. The quantity of materials in comparison to those readily available would be negligible.

5.1.5 Applicability to Environmental Laws

Neither the No Action, the Partial Build, nor the Full Build Alternatives would violate or contradict any of the following relevant environmental laws.

1. National Environmental Policy Act (NEPA)
Requires Federal agencies to evaluate the environmental impacts of their actions and to integrate such evaluations into their decision making process.
2. Clean Water Act (CWA)
Controls and regulates non-point source pollutants such as pesticide runoff, forestry operations, and parking lots/roads.
- 3.

Clean Air Act (CAA)

Establishes standards for air quality in regard to the pollutants generated by internal combustion engines. These standards, known as the National Ambient Air Quality Standards (NAAQS), define the concentration of these pollutants that are allowable in air to which the general public is exposed (“ambient air”).

4. Endangered Species Act (ESA)
Prohibits the harming of any species listed by the USFWS as being either Threatened or Endangered. Harming such species includes not only directly injuring or killing them, but also disrupting the habitat on which they depend.
5. Archaeological Resources Protection Act (ARPA)
Ensures the protection and preservation of archeological resources on Federal lands.
6. National Historic Preservation Act (NHPA)
Provides protection of cultural resources, and ensures that they are considered during Federal project planning and execution.
7. National Park Service Organic Act of 1916
Established the National Park Service to manage national parks for the purposes of conserving the scenery, natural resources, historic objects, and wildlife within the parks, and providing for the enjoyment of these resources in such manner that will leave them unimpaired for the enjoyment of future generations.
8. Executive Order 12898: Environmental Justice
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, directs all federal agencies to determine whether a proposed action will have an adverse or disproportionate impact on minority and/or low-income populations. It also directs agencies to ensure that representatives of an affected community have every opportunity to provide input regarding the impact of the proposed project.

No residential owners or occupants would be displaced, nor would there be any impact to minority and/or low-income populations from any of the alternatives.

6.0 Public Involvement and Coordination

6.1 Agency Involvement

In accordance with Section 5.5 of the Director's Order #12, coordination and public involvement in the planning and preliminary design of the proposed action was initiated early in the process. As required by NPS policies and planning documents, it is the Park's objective to work with state, federal, and local governments and private organizations to ensure that the Park and its programs are coordinated with theirs, are supportive of their objectives, and that their programs are similarly supportive of Park programs.

An agency scoping letter was mailed in November 2003 to agencies listed below. Agency response letters are included in **Appendix C**. (Agencies marked with an asterisk provided a response):

- NC Department of Administration (State Clearinghouse)
- NC Wildlife Resources Commission*
- NC Division of Archives and History (State Historic Preservation Officer, or SHPO)
- NC Department of Transportation
- Eastern Band of Cherokee Indians
- US Fish and Wildlife Service
- Tennessee Valley Authority*
- US Army Corps of Engineers
- Blue Ridge Parkway

An interagency kickoff meeting was held on January 22, 2004 in Cherokee, North Carolina. At the meeting, the project was described and agency concerns were identified. The following agencies were represented at the meeting:

- NC Wildlife Resources Commission
- NC Department of Transportation
- US Fish and Wildlife Service
- Tennessee Valley Authority
- US Army Corps of Engineers

6.2 Public Involvement

Public meetings were held early in the study process to explain the project to the public and to obtain public input on the project. Because the project would affect residents of both North Carolina and Tennessee, public meetings were held in both Cherokee, North Carolina, and in Gatlinburg, Tennessee. The public meetings were advertised on local media and also were publicized in newsletters mailed to interested citizens (see next section on newsletters).

The first public meeting was held on January 26, 2004 at the Holiday Inn in Cherokee, North Carolina. The meeting was conducted by representatives of the Federal Highway Administration, the National Park Service, and Kimley-Horn and Associates. Information included displays

showing the project study area, the project's purpose and need, topics to be addressed in the EA, traffic information, and the study process and schedule.

Nine citizens attended and one comment form was returned during the meeting. The attendees included representatives of the Eastern Band of Cherokee Indians (EBCI), including the chief, and a representative of the Sierra Club, as well as individual citizens. Some of the comments that were made verbally included the following:

- If possible, coordinate the Smokemont Campground sewer line project with the road project to minimize the number of times the corridor is disturbed.
- The bridge on Tow String Road is being replaced; consider that in this (the EA) process.
- Turn lanes are needed for safety. The turn lane at Mingus Mill has made a positive difference.
- It is important that Newfound Gap Road be open to traffic during construction.
- Improvements to Newfound Gap Road are needed.
- One citizen suggested installing call boxes along the road.
- Several citizens were interested in the timing of construction.

The second public meeting was held on January 27, 2004 at the Glenstone Lodge in Gatlinburg, Tennessee. The meeting was conducted by representatives of the Federal Highway Administration, the National Park Service, and Kimley-Horn and Associates. The same information was displayed as at the previous meeting. Four citizens attended and no comment forms were returned during the meeting. Some of the comments that were made included the following:

- The Park's General Management Plan requires that traffic demand management be considered prior to construction of road improvements.
- Sight distance should be indicated on display maps.
- Reduction in speed and enforcement should be considered as measures to improve safety.
- Impact on animals (road kill) may be an impact, and wildlife crossings should be considered.

Two newsletters were sent to the public. The first newsletter, dated January 2004, included general information on the purpose of the project, the study area, and the study process and announced the upcoming public meeting. A second newsletter, dated August 2004, provided background information on the study, described the build alternatives, and gave results of the January public meetings. **Appendix C** includes a copy of the first two newsletters. A third newsletter will be distributed following publication of this document.

A project website was established at <http://www.nps.gov/grsm/gsmsite/nfg-ea.html>. The website describes the project in general and provides a link to the project newsletter. This document will be accessible on the website.

6.3 Interested Agencies and Other Parties

As required by National Park Service policies, it is the Park's objective to work with state, federal, and local governmental organizations to ensure that the Park and its programs are coordinated with others. Consultation and coordination have occurred with numerous agencies for the preparation of the EA. The following organizations and agencies have jurisdictional approval

authority relative to the recommendations developed as part of this study or are anticipated to have a vested interest in the study results:

- U.S. Department of Transportation, Federal Highway Administration, Eastern Federal Lands Highway Division
- U.S. Department of Transportation, Federal Highway Administration, North Carolina Division
- U.S. Department of the Interior, National Park Service, Great Smoky Mountain National Park Unit
- U.S. Department of the Interior, National Park Service, Blue Ridge Parkway
- Honorable Charles H. Taylor, U.S. House of Representatives
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- North Carolina Wildlife Resource Commission
- North Carolina Department of Cultural Resources, State Historic Preservation Office
- North Carolina Department of Environment and Natural Resources
- Tennessee Valley Authority
- Eastern Band of Cherokee Indians

The individuals and organizations listed below are anticipated to have either an interest in the study area and/or safety improvement recommendations developed:

- Honorable Elizabeth Dole, U.S. Senate
- Honorable Richard Burr, U.S. Senate
- Honorable Mike Easley, Governor of North Carolina
- Senator Lamar Alexander, U.S. Senate
- Honorable Jerry Hayes, Mayor of Gatlinburg
- Ms. Cindy Cameron Ogle, City Manager, Gatlinburg, Tennessee
- Mr. Larry Waters, Sevier County Executive, Sevierville, Tennessee
- Mr. Glenn Jones, Chairman, Swain County Commission
- Mr. Scott Buffkin, City Manager, Town of Maggie Valley
- Mr. Lee Galloway, City Manager, Town of Waynesville
- Mr. Larry Callicutt, City Manager, Town of Bryson City
- Honorable Bruce Medford, Mayor of Bryson City
- Honorable Ralph Wallace, Mayor of Maggie Valley
- Mr. Kevin King, County Manager, Swain County
- Honorable Henry Foy, Mayor of Waynesville
- Mr. Jack Horton, Haywood County Manager
- Swain County Chamber of Commerce
- Maggie Valley Chamber of Commerce
- Haywood County Chamber of Commerce
- Gatlinburg Chamber of Commerce
- Coker County Chamber of Commerce
- Gatlinburg Department of Tourism
- Smoky Mountain Convention & Visitor's Bureau
- Pigeon Forge Department of Tourism
- Cherokee Tribal Travel and Promotion
- NC Park Parkway and Development Council
- Tennessee Park Commission
- Friends of the Smokies
- Audubon Society

- A Walk in the Woods
- Blue Ridge Trail Riders
- Cherokee Forest Voices
- Carolina Mountain Club
- Citizens for the Economic Future of Swain County
- Foundation for Global Sustainability
- Great Smoky Mountains Conservation Association
- Izaak Walton League
- League of Women Voters
- Foothills Land Conservancy
- Gatlinburg Gateway Foundation
- Ijams Nature Center
- National Parks Conservation Association
- Sierra Club
- Smoky Mountains Hiking Club
- Southern Alliance for Clean Energy
- Southern Appalachian Forest Coalition
- Southern Environmental Law Center
- Southwings
- Tennessee Citizens for Wilderness Planning
- Tennessee Clean Water Network
- Tennessee Environmental Council
- Western North Carolina Alliance
- World Wildlife Fund
- Southern Appalachian Biodiversity Project
- Tennessee Eastman Hiking and Canoeing Club
- The Wilderness Society
- Trout Unlimited
- WildLaw

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