

US 321 Improvements Project

From Blackberry Road to US 221
at Blowing Rock
Caldwell and Watauga Counties, North Carolina

State Project No. 6.739001T
TIP No. R-2237C

Record of Decision

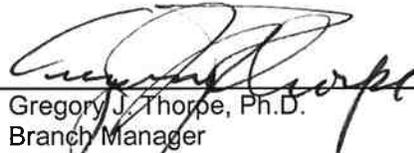
North Carolina Department of Transportation

Submitted Pursuant to the
North Carolina Environmental Policy Act (NCGS 113A-1)

A highway improvements project is planned for US 321 in Caldwell and Watauga counties from Blackberry Road north to US 221 in Blowing Rock. A No-Build Alternative and five Build Alternatives were considered. The Build Alternatives included widening US 321 along its current alignment (selected alternative) and four Bypass Alternatives. Two Bypass Alternatives would pass through the east side of Blowing Rock and two would remain outside Blowing Rock, following the Blue Ridge escarpment to a tunnel under the Blue Ridge Parkway. This report explains the reasons for the decision to implement the Widening Alternative and provides responses to comments on the Final Environmental Impact Statement.

APPROVED:

19 Dec 07
Date



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12-12-07

Date



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for the

North Carolina Department of Transportation

12/17/07

Date

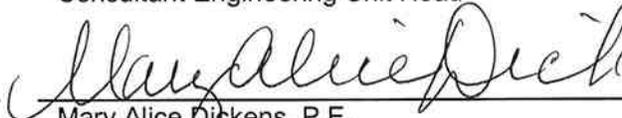


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RECORD OF DECISION

This document records the decision of the North Carolina Department of Transportation (NCDOT) on the alternative to construct for the proposed US 321 Improvements Project from SR 1500 (Blackberry Road) to US 221 at Blowing Rock, NC (Caldwell and Watauga counties). This project is included in the NCDOT's *2007 to 2013 Transportation Improvement Program* (TIP) as Project No. R-2237C. In making this decision, the NCDOT considered the information, analysis, and public comments contained in the Draft and Final Environmental Impact Statements for this project.

This Record of Decision (ROD) was drafted in accordance with the regulations implementing the North Carolina Environmental Policy Act (NCEPA) of 1971 (North Carolina General Statute 113A-1). Specifically, this ROD:

- States what the decision is and the project it is for (Section 1);
- Identifies the alternatives considered and those considered environmentally preferable (Section 2);
- Presents a discussion of why the chosen alternative is most appropriate (Section 3); and
- Provides a certification by the NCDOT of its intent to implement the agreed upon project commitments to reduce the potential for environmental impacts, which are documented in the Final Environmental Impact Statement (FEIS), as well as the Memorandum of Understanding (MOU) between the NCDOT and the Town of Blowing Rock, and the Memorandum of Agreement (MOA) between the NCDOT, the State Historic Preservation Officer (SHPO), and the US Army Corps of Engineers (USACE) (Section 4).

This ROD also presents comments and provides responses to comments received on the FEIS from resource and regulatory agencies, local government, citizens groups and individuals. It includes FEIS errata.

1. Decision on Preferred Alternative

The NCDOT, working closely with the project's Merger Team (cooperative effort between NCDOT and various federal and state agencies to aid in meeting the requirements of both the National Environmental Policy Act (for federally funded projects) or NCEPA (for state funded projects) and Section 404 of the Clean Water Act) and the Town of Blowing Rock, selected the Widening Alternative (listed as the Preferred Alternative in the FEIS) as the US 321 Improvements Project (TIP No. R-2237C) that it will implement (see Figure 1).

The Widening Alternative consists of widening US 321 from two lanes to four lanes from Blackberry Road through the Town of Blowing Rock. Curves would be eased south of Blowing Rock and in the Country Club Drive and Norwood Circle area of Blowing Rock. The project would include a four-lane section with shoulders south of Gideon Ridge and the Blowing Rock town limits, a four-lane section with curb and gutter and some turn lanes in Blowing Rock south of US 321 Business, and four lanes with a landscaped median north of US 321 Business. Several intersections also would be improved. The total cost of the Widening Alternative, including both right-of-way and construction costs, is expected to be \$53 million in 2005 dollars.

2. Other Alternatives Evaluated and Considered Environmentally Preferable

In addition to the Widening Alternative, the FEIS also evaluated four additional alternatives (see Figure 1), as follows:

- Bypass Alternative 1A;
- Bypass Alternative 1B;
- Bypass Alternative 4A; and
- Bypass Alternative 4B.

The Widening Alternative, Bypass Alternative 1, and Bypass Alternative 4 were selected for detailed evaluation in July 1999 following an alternatives study that included both public and environmental resource and regulatory agency comment. The decision to carry forward the Widening Alternative and Bypass Alternative 1 was affirmed at the Concurrence Point 2 Merger Team meeting on January 18, 2001. The Merger Team, however, did not agree that Bypass Alternative 4 should be included in the EIS as a detailed study alternative. Although the alternatives study results indicated that Bypass Alternative 4 would have a high cost and substantial natural resource and visual impacts, it was evaluated in detail because it had strong public support. Bypass Alternative 1 was evaluated in detail because it avoided impacts to historic properties. For the two Bypass Alternatives chosen for full evaluation in the EIS (Alternatives 1 and 4), two preliminary designs were developed for assessment creating the A and B options. The difference between the Bypass Alternative 1 options is that Bypass Alternative 1A includes a major fill section east of Gideon Ridge, whereas Bypass Alternative 1B includes a cut at Gideon Ridge, which would eliminate the only curves that do not meet the project's horizontal curve criteria. The difference between the Bypass Alternative 4 options is that Bypass Alternative 4B utilizes a greater number of bridges to reduce earthwork, roadway elevation changes, natural resource loss, and visual impacts (Bypass Alternative 4A includes five bridges, whereas Bypass Alternative 4B includes 12 bridges).

A Concurrence Point 3 Merger Team meeting was held January 15, 2003. The purpose of this meeting was to reach concurrence from Merger Team members for the selection of a Least Environmentally Damaging Practicable Alternative (LEDPA) for the US 321 Improvements Project. The NCDOT recommended the Widening Alternative to the Merger Team as the LEDPA. With the exception of the representative of the SHPO, the Merger Team concurred with the recommendation. The Widening Alternative is considered the environmentally preferable alternative because it best balances impacts to various resources with the need for transportation infrastructure, was agreed to by the Merger Team as the LEDPA, and takes into account all practicable measures to minimize harm.

3. Reasons for Selection of the Widening Alternative

Three key considerations led to the Merger Team's identification of the Widening Alternative as the LEDPA and NCDOT's selection of it for implementation:

1. The Widening Alternative is the least environmentally damaging practicable alternative primarily because it involves widening an existing road.

Because the Widening Alternative would be along the existing highway corridor, it would not create a new corridor through any Blowing Rock neighborhoods, rural communities, or natural areas. It also would not adversely affect community facilities or resources and would affect less than one tenth of an acre of wetlands. The Widening Alternative also would involve the least wildlife habitat fragmentation of the alternatives considered because of the urbanized nature of its corridor. It would have little effect on development projects under way in Blowing Rock or on development trends.

The Widening Alternative would meet the project's Purpose and Need. The Widening Alternative would improve traffic operations along the entire length of US 321 to LOS D or better through 2025. The project would achieve a desired peak hour LOS C along the roadway at all locations except between US 221 and Shoppes on the Parkway where an acceptable LOS D would occur. The Widening Alternative also would help reduce the potential for crashes and increase safety along existing US 321 through more gentle curves, wider lanes, and other geometric improvements.

2. The magnitude of the impact to the Green Park Inn Historic District by the Widening Alternative would not be enough to outweigh the resulting negative community and environmental impacts of either options associated with Bypass Alternative 1 or Bypass Alternative 4.

Bypass Alternative 1 would displace 24 residences and one business; pass through a developing residential area of Blowing Rock, and add a thoroughfare to an area of local streets and single-family homes, in some cases dividing neighborhoods; and cause greater wildlife habitat fragmentation than the Widening Alternative while using 36 to 39 acres of natural plant communities. Bypass Alternative 4 would substantially affect two rural communities, Blackberry Valley and the Aho Community, by introducing a thoroughfare to an area of mostly isolated homes; make rural land more accessible to development and thus not be compatible with the goals of local land use plans; cause visual changes at the Thunderhill overlook that would have an Adverse Effect on the Blue Ridge Parkway from a historic resources perspective; cross 20 streams, including five to 13 streams crossed by culverts; and cause greater wildlife habitat fragmentation than the Widening Alternative (Bypass Alternative 4A would cause the greatest fragmentation of any of the alternatives) while using 47 to 93 acres of natural plant communities.

3. Mitigation opportunities existed with the Widening Alternative.

Negative impacts of the Widening Alternative include potential loss of business and traffic disruption during construction and change in community character, including an Adverse Effect on the Green Park Historic District and Green Park Inn. Examples of initiatives used to compensate for impacts to the Town of Blowing Rock include coordination (e.g., plan review at 25, 50, and 80 percent complete stages) between the NCDOT, the Town of Blowing Rock, and the SHPO during the design of the project, innovative construction techniques, historic resource documentation, and a post construction landscaping plan. These mitigation opportunities are included in the project commitments that are documented in the FEIS, as well as in the project's MOU and MOA discussed further below. It would be extremely difficult to mitigate the damage to the natural environment, the surrounding hillside, and the local neighborhoods caused by a bypass alternative.

All Merger Team agencies signed the Concurrence Point 3 form selecting the Widening Alternative as the LEDPA with the exception of the SHPO's representative. The SHPO's

representative could not concur because of the impacts of the Widening Alternative upon historic properties; however, the SHPO's representative stated that the agency was willing to proceed with Section 106 mitigation discussions, and the State Historic Preservation Office later signed a Memorandum of Agreement (MOA) as described below.

NCDOT representatives met with the Town Council of Blowing Rock on May 16, 2003, June 12, 2003, July 10, 2003, and October 7, 2003 to reach an agreement on a strategy for mitigating the impact of the Widening Alternative on the Town of Blowing Rock. The resulting Memorandum of Understanding (MOU) was adopted by the North Carolina Board of Transportation on October 7, 2004 and adopted by the Town Board of Blowing Rock on October 12, 2004. The SHPO (October 25, 2004), the NCDOT (November 4, 2004), and the USACE (November 15, 2004) also signed an MOA stipulating measures to mitigate the Adverse Effects the Preferred Alternative will have on the Green Park Historic District. This MOA was developed under the terms of Section 106 of the Historic Preservation Act of 1966 (36 CFR Part 800).

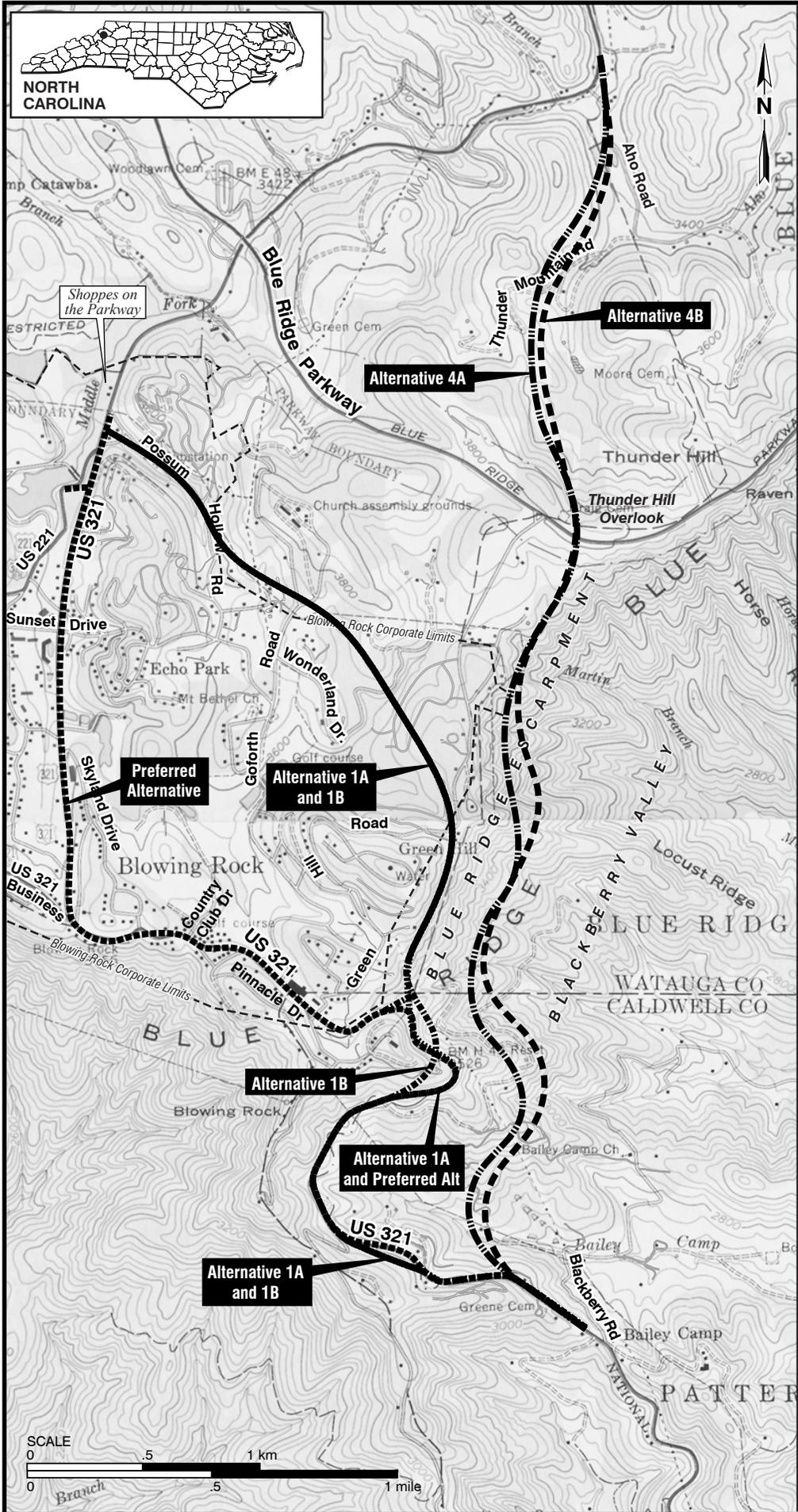
Both the MOU and the MOA identify roadway features, landscape features, design review opportunities, and construction procedures that would be implemented with construction of the Widening Alternative. Notable results of the discussions included: reduction of lane widths in the Green Park Historic District north of Green Hill Road from 12 feet to 11 feet; removal of a proposed median at the Green Park Inn; construction of a sidewalk on the east side of US 321 between Green Hill Road and the US 321/US 321 Business intersection; elimination of the Goforth Road intersection with US 321; the definition of landscape elements; and measures to reduce impacts during the construction period.

A Concurrence Point 4A Merger Team meeting was held on April 20, 2004. All Merger Team agencies concurred on the avoidance and minimization efforts for streams and wetlands to be incorporated into the final design of the Widening Alternative.

4. Certification of Intent to Implement Project Commitments to Reduce Potential for Environmental Impacts

The NCDOT will implement the agreed upon project commitments to reduce the potential for environmental impacts, which are documented in the "Project Commitments" section of the FEIS and are reproduced herein. These special commitments include, but are not limited to, those commitments stipulated in the Section 106 MOA between the NCDOT, the USACE, and the SHPO, as well as those commitments stipulated in the MOU between the NCDOT and the Town of Blowing Rock.

These special commitments are in addition to the following conditions and practices that the NCDOT also will adhere to: Section 404 Conditions; Regional Conditions; State Consistency Conditions; the NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters; General Certification Conditions; and Section 401 Conditions of Certification.



Scale: 1" = 2000'

LEGEND	
	Preferred Alternative
	Bypass Alternative 1A
	Bypass Alternative 1B
	Bypass Alternative 4A
	Bypass Alternative 4B

Figure 1

Build Alternatives



PROJECT COMMITMENTS

**US 321 Improvements Project
From SR 1500 (Blackberry Road) to US 221
Blowing Rock
Caldwell and Watauga Counties
State Project No. 6.739001T
WBS 34402.1.1
TIP Project R-2237C**

Unless otherwise indicated in italics below, NCDOT is on track to fulfill all the commitments that follow. In the event a commitment below has been fulfilled as of the approval of this Record of Decision, this status is so indicated in italics.

In addition to the Section 404 Conditions, Regional Conditions, State Consistency Conditions, the NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments were agreed to by the NCDOT. These include, but are not limited to, those commitments stipulated in the Section 106 Memorandum of Agreement between the NCDOT, US Army Corps of Engineers, and the State Historic Preservation office and the Memorandum of Understanding between the NCDOT and the Town of Blowing Rock:

Roadway Design

Plan Review. NCDOT will provide preliminary roadway design plans at approximately 25 percent (*already provided as of the approval of this Record of Decision*), 50 percent, and 80 percent of completion to the Blowing Rock Town Board and the State Historic Preservation Officer (SHPO) for review and comment. A set at each of these stages of completion also will be placed in the Blowing Rock Town Library for public review and comment

Guardrail. Where guardrail is required, the NCDOT will install approved wooden-faced guardrail where it can be installed and meet safety requirements. If, during final design, locations are identified where wooden-faced guardrail cannot be installed, or where, in order to meet safety requirements, installation would cause an undesirable increase in project right of way to provide necessary roadside clear areas, the NCDOT will coordinate with the Town (and the SHPO within the Green Park Historic District) to find an acceptable guardrail alternative prior to finalizing the plans.

Lane Width. The width of lanes within the limits of the Green Park Historic District will be limited to 11-feet; 12-foot lanes will be constructed elsewhere along the project.

Goforth Road. The NCDOT will terminate Goforth Road just east of US 321 rather than rebuild its intersection with US 321.

Median. The NCDOT will not construct a median within the limits of the Green Park Historic District. The NCDOT will not construct a median between Green Hill Road and US 321 Business in order to narrow the footprint of the proposed improvement.

Sidewalks. The NCDOT will provide a sidewalk, five feet in width, on the east side of US 321 from Green Hill Road to US 321 Business (which includes the part of the project within the historic district) so that the west side berm may be used for more concentrated landscaping. The NCDOT will fund and construct sidewalks on both sides of US 321 from US 321 Business to Possum Hollow Road. Pedestrian crossings (crosswalks and/or pedestrian signals) may be provided at signalized intersections.

Emergency Vehicle Access. The NCDOT will rebuild the emergency vehicle access at The Pines (a residential subdivision), or replace it with something that will serve the same function. The goal is to insure that emergency vehicles can access the subdivision directly from US 321 since the neighborhood streets and turning radii are too narrow for emergency vehicles to navigate.

Fire/EMS Crossover. The NCDOT will provide an emergency crossover (with pavers that will allow grass to grow through them) at the planned Fire/EMS station (parcel no. 1504 on the Corridor Public Hearing Map). This crossover will permit volunteer fire fighters to turn left into the station and fire trucks to turn left out of the station. No signal of any kind will be provided at this location, but it will be signed for emergency use only.

Retaining Wall to Reduce Wetland Impact. A retaining wall will be used to reduce the 0.07-acre impact on wetlands associated with jurisdictional crossing 2. The retaining wall will be included in the area of design stations 679+00 to 681+00. At the other locations where jurisdictional areas will be affected, the design depicted in the EIS minimizes impacts.

Highway Lighting. The NCDOT will not install highway lighting within the limits of the Green Park Historic District. If the Town wants highway lighting outside of the Green Park Historic District, the Town will purchase, install, and maintain the roadway lighting equipment of its choice. The NCDOT will reimburse the Town for the cost of said roadway lights. The NCDOT will coordinate with the Town to ensure American Association of State Highway and Transportation Officials' (AASHTO) lighting requirements are met. The NCDOT's Utility Agent will handle any right of way encroachment associated with Town lighting. If right of way and berm widths are not wide enough to accommodate poles outside the clear zone, breakaway poles will be required. Any breakaway or non-breakaway light poles will be placed behind the sidewalk.

Stone Walls. The NCDOT will replace all existing stone walls within the Town of Blowing Rock's limits (including the Green Park Historic District) removed by the undertaking with new in-kind stone walls. All other retaining walls along the undertaking within the town limits will be formed concrete walls with simulated masonry surface treatment. The surface treatment will be designed to resemble the existing stone walls in the historic district (e.g., the low wall in front of the Green Park Inn). The appearance of the surface treatment will be coordinated with the Town, and a sample of the surface treatment will be fabricated for the Town's and the SHPO's comment and the NCDOT's approval prior to permanent installation on the project.

Blowing Rock Country Club Golf Course. The NCDOT will construct a retaining wall on the east side of US 321 at the Blowing Rock Country Club (Hole No. 4) in order to minimize impacts to the course.

Tree Preservation. The NCDOT will make a special effort to preserve trees of particular value identified by the Town that are outside the clear recovery area. Any trees within 14 feet of the face of curb would need to meet the NCDOT guidelines for plantings before they could be preserved.

Traffic Engineering Branch

Plan Review. NCDOT will provide preliminary traffic control plans, preliminary pavement marking plans, and preliminary signing plans to the Blowing Rock Town Board and the SHPO for review and comment. A set will also be placed in the Blowing Rock Town Library for public review and comment.

Signal Poles. NCDOT will use standard mast-arm signal poles for traffic signals, including the one(s) proposed in the Green Park Historic District. If the Town of Blowing chooses a decorative mast arm pole that exceeds the cost of the NCDOT-standard mast-arm pole, then the Town will pay the incremental cost difference.

Coordinated Signal System. The NCDOT will design and install a coordinated traffic signal system as part of the undertaking.

Fog Safety Study. The NCDOT will evaluate flashing warning lights, pavement markers, rumble strips and/or stripes, delineation, warning signs, and/or lighting that would be appropriate to increase safety and improve driver behavior during fog occurrences. The plans submitted by the NCDOT to the SHPO and the Town for review will show the results of the NCDOT's evaluation and the resulting recommendations.

Signs. The Town will identify locations where proposed signs may create an aesthetic concern. The NCDOT will coordinate with the Town to establish the number, size, and placement of signs to the degree that the *Manual on Uniform Traffic Control Devices* allows.

Restriction of Traffic Detours from US 321 to US 321 Business (Main Street). If a decision is made to restrict traffic detours on this stretch of Main Street, it must be carefully articulated in the contractor documents (bid package). The NCDOT will discuss this matter with the Town of Blowing Rock during final design development to decide on appropriate restrictions to include.

Speed Limit. The speed limit within the Green Park Historic District will be posted 35 mph after construction of the Preferred Alternative.

Roadside Environmental Unit

Plan Review. NCDOT will provide preliminary post-construction landscape design plans and preliminary sedimentation and erosion control plans to the Blowing Rock Town Board and the SHPO for review and comment. A set of each will also be placed in the Blowing Rock Town Library for public review and comment

Post Construction Landscape Plan. The NCDOT will design and implement a post-construction landscape plan that will include the following elements:

- A median on US 321 from US 321 Business to the project terminus at Possum Hollow Road. The median will either be vegetated or decorative concrete (the Town's choice). If the median is vegetated, it will be planted with vegetation of the NCDOT's choosing that is both cold-hardy and salt-hardy where safety conditions allow. If the median is to be decorative concrete, then the aesthetic details will be coordinated with the Town, and a sample will be fabricated for the Town's review and comment and the NCDOT's approval prior to permanent installation on the project.

- Decorative pedestrian lights (i.e., "coach" lights), the style of which is to be agreed to by the Town, the SHPO, and the NCDOT, at selected locations within the Town limits. All decorative pedestrian light locations within the NCDOT right of way (e.g., in areas of more concentrated landscaping) must be approved the Special Design Section of the NCDOT's Roadway Design Unit. The NCDOT will pay for the lighting equipment and installation, and the NCDOT will install the lights as part of the landscape plan implementation. The NCDOT may choose to do a two-phase post-construction landscape implementation. The first phase would be the hardscape elements, which would include pedestrian lights, to be overseen by the Resident Engineer. The second phase would be the landscape design and development, which would be overseen by the Roadside Environmental Unit. The Town will assume ownership of the lights and will pay for utility (electricity) costs.
- Broader areas of more concentrated landscaping where right of way, roadway elements, terrain, and safety conditions allow.
- Plantings planned in accordance with the NCDOT's *Guidelines for Planting within Highway Right-of-Way*.
- Design and construction of a park on Business/Main Street at US 321 (near Shoppes on the Parkway). The park construction will be part of the landscape contract, which will be awarded to a landscape contractor after the roadway construction contract is complete. The NCDOT will convey its interest in this property to the Town, and the Town will assume maintenance for the park.
- The blueberry bushes near Rock Road will be relocated or replaced if they are in the right of way of the Preferred Alternative.

Utilities Coordination Unit

Utilities. The NCDOT will place existing overhead utility lines (electrical, telephone, and cable television) underground between Green Hill Road and Possum Hollow Road.

Division 11

Unanticipated Discovery of Archaeological Resources. In accordance with Title 36 of the *Code of Federal Regulations*, Section 800.11(a), and prior to initiation of construction activities, the NCDOT will ensure preparation of a plan of action should archaeological or architectural resources be inadvertently or accidentally discovered during the construction phase of the project. The plan will provide for an assessment of the significance of the discovery in consultation amongst the NCDOT, the USACE, and the SHPO. Inadvertent or accidental discovery of human remains will be handled in accordance with North Carolina General Statutes 65 and 70.

Blasting. The NCDOT and the contractor will limit blasting to specific times. Those times will be posted on the project website. In addition, blasting activities will be announced to the media as to be outlined in the Public Information Plan.

Dust Minimization. The NCDOT and the contractor will utilize a truck to periodically spray water on dry, exposed soil to control dust to the greatest extent possible.

Reseeding Exposed Dirt. In accordance with the NCDOT’s Best Management Practices for Protection of Surface Waters, the NCDOT and the contractor will seed exposed soil with grass in order to control run-off, erosion, and dust.

Covered Truck Beds. The NCDOT will require all construction trucks traveling at speeds greater than 25 mph to cover their truck beds in order to reduce the amount of dust and debris.

Staging Areas. The NCDOT will not permit staging areas within the Green Park Historic District. The NCDOT may permit overnight parking of equipment and storage of materials, associated with current construction needs, within the construction right-of-way limits along any part of the project corridor.

Waste Sites, Borrow Pits, and Construction Offices. The will not permit waste deposits, borrow pits, or construction offices within the Green Park Historic District.

Pre-Construction Surveys. The NCDOT will conduct pre-construction surveys of all structures adjacent to US 321 within the historic district to record a “before” condition so that any construction-related damage can be accurately identified.

Contact with Resident Engineer. The NCDOT’s construction project manager will be the Resident Engineer. He or she is the only individual with the authority to stop construction. Citizens may directly contact the Resident Engineer (and assistants) with questions or concerns so that the Resident Engineer can immediately address any project concerns.

Construction Unit

(The responsible unit for these four items is now the Intelligent Transportation System Operations Unit.)

“Smart Zone” Techniques. The NCDOT will use “Smart Zone” techniques in the maintenance of traffic during construction. These techniques may include methods such as advance notification of delays, lane closures, real time monitoring, and the use of Digital Message Systems. In addition, the NCDOT will maintain a website that will provide information on anticipated delays based on scheduled construction activities.

Public Information Plan. The NCDOT’s Construction Unit IMPACT Public Information Program will work with the Town of Blowing Rock to develop an appropriate public information plan (PIP).

“Kick-Off” Meeting. As part of the PIP, the NCDOT will hold a pre-construction “kick-off” meeting to introduce the contractor and the construction process to area residents.

Project Website. The NCDOT will develop, maintain, and consistently update a project website to provide current information about the schedule and development of the project, project progress, project contact information, and notification of any anticipated delays based on scheduled construction activities.

Geotechnical Unit

Development of Vibration Monitoring Plan. The NCDOT will develop a vibration monitoring plan for the project, to include on-site research during final design as well as monitoring during

construction. The recommendations of the plan will be provided to the USACE, the SHPO, the Town, and other parties concurring with the MOA for their comments prior to adoption of the plan.

Baseline Studies. On-site research, done prior to construction, will measure existing vibration exposure, determine sensitivity of nearby structures, and assign thresholds accordingly.

Vibration Monitoring. Vibration monitoring will be conducted on key structures within the historic district (to be recommended in the aforementioned vibration monitoring plan). When a reading exceeds an established threshold, an alarm will sound and anyone who hears it, e.g., property owners/staff or contractor personnel, will immediately contact the NCDOT's Resident Engineer.

Project Development and Environmental Analysis Branch

Historic Resources Documentation

Green Park Historic District. Prior to the initiation of construction activities, the NCDOT will record the existing conditions of the Green Park Historic District and its surroundings in accordance with the Historic Structures and Landscape Recordation Plan contained in the Appendix of the Memorandum of Agreement for the Preferred Alternative. This will include a video to document US 321 and the surrounding landscape and structures within the historic district, as well as keying the locations of the filming to an aerial photograph of the historic district adjacent to US 321.

Individual Structures. Prior to the initiation of construction activities, the NCDOT will record the existing conditions of the following structures and their immediate surroundings in accordance with the Historic Structures and Landscape Recordation Plan. The structures are: the Green Park Inn, Cottage No. 21 (as referred to in the 1994 National Register Nomination), and the A.G. Jonas Cottage.

Existing Stone Walls. Prior to the initiation of construction activities, the NCDOT will record the existing stone walls along US 321 within the historic district. The NCDOT will replace all existing stone walls within the town limits removed by the project with new in-kind stone walls.

Blowing Rock Country Club Golf Course Hole Number 4. Prior to the initiation of construction activities, the NCDOT will record the existing conditions of hole number 4 in accordance with the Historic Structures and Landscape Recordation Plan.

Other Mitigation at Individual Properties

Green Park Inn. The NCDOT, in consultation with SHPO and the property owners, will develop measures to reduce the Adverse Effect of the undertaking on the Green Park Inn. These measures may include, but are not limited to the following:

- Replacement of the existing stone walls;
- Replacement of the existing sidewalk;
- Reconfiguration of the existing parking lot;
- Sound abatement/buffering; and/or
- Landscaping.

A.G. Jonas Cottage. The NCDOT, in consultation with SHPO and the property owners, will develop measures to reduce the Adverse Effect of the undertaking on the A.G. Jonas Cottage. These measures may include, but are not limited to the following:

- Construction of a retaining wall;
- Construction of a privacy fence;
- Sound abatement/buffering; and/or
- Landscaping.

Cottage No.21 (as referred to in the 1994 National Register Nomination). In the event that this property is not determined to be a relocation in the final design, the NCDOT, in consultation with the SHPO, and the property owners, will develop measures to reduce the adverse effect of the undertaking on Cottage No.21. These measures may include, but are not limited to the following:

- Providing alternative access to the property;
- Construction of a retaining wall; and/or
- Landscaping.

Bollinger-Hartley House. The NCDOT will construct a retaining wall at the Bollinger-Hartley House to minimize the project's impact on that property. Landscaping on the Bollinger-Hartley House property will be discussed with the SHPO and the property owners and will be included in the post-construction landscape plan.

Issue Resolution

Dispute Resolution Related to the Memorandum of Agreement. Should the North Carolina SHPO object within (30) days to any plans or documentation provided for review pursuant to the Section 106 Memorandum of Agreement, the NCDOT will consult with the SHPO to resolve the objection. If the USACE or the SHPO determines that the objection cannot be resolved, the USACE will forward all documentation relevant to the dispute to the Advisory Council on Historic Preservation (Council). Within thirty (30) days after receipt of all pertinent documentation, the Council will either:

- Provide the USACE with recommendations that the USACE will take into account in reaching a final decision regarding the dispute, or
- Notify the USACE that it will comment pursuant to Title 36 of the *Code of Federal Regulations*, Section 800.7(c) and proceed to comment. Any Council comment provided in response to such a request will be taken into account by the USACE in accordance with Title 36 of the *Code of Federal Regulations*, Section 800.7 (c) (4) with reference to the subject of the dispute.

Issue Resolution Related to the Memorandum of Understanding. The NCDOT and the Town recognize that engineering constraints may arise and engineering standards may change between the date of the MOU and the time of project completion. Should an engineering issue arise that complicates the fulfillment of any of the measures contained in the MOU, the NCDOT will initiate discussions with the Town to resolve the issue.

Stream Construction Moratoriums

During final design, NCDOT will coordinate with the North Carolina Wildlife Resources Commission on moratoriums for in-stream construction activities and land disturbance within 25-feet of trout and bass waters.



A. FEIS CORRESPONDENCE

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George and Quincy Parham	A-39



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960



November, 9, 2006

Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

SUBJECT: US 321 Improvements, Caldwell and Watauga Counties, North Carolina
State of North Carolina Final Environmental Impact Statement
TIP Project No. R-2237C

Dear Dr. Thorpe:

In accordance with Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) is providing comments on the subject State Final Environmental Impact Statement (FEIS). Improvements are proposed for this segment of US 321 in the vicinity of the Town of Blowing Rock covering a distance of approximately 4.3 miles. NCDOT has identified the Widening Alternative as its preferred alternative, for the existing 2-lane US 321 Bypass of Blowing Rock. Planning has been ongoing for well over a decade, and a 4-lane roadway is planned from Blackberry Road northward to near Possum Hollow Road within the City of Blowing Rock.

EPA's comments on the Draft EIS, that was prepared in accordance with the federal National Environmental Policy Act (NEPA), are contained in a letter of September 23, 2002, in which EPA rated the Widening Alternative Environmental Concerns (EC) because of the potential impacts to historic resources (Green Park Historic District) and the disruption to the commercial area, both within Blowing Rock. EPA generally concurs with the selection of the preferred alternative in part because of the detailed plans for extensive mitigation for identified adverse impacts to historic resources and the affected community features along US 321. Unlike the other build alternatives considered in the Draft EIS, the Widening Alternative would have no adverse impact on the natural and scenic resources of the Blue Ridge Parkway, a "national rural parkway" managed by the National Park Service.

Response to Comments

In the comments on the Draft EIS, EPA identified several major impacts. Those impacts to natural resources have been minimized by the selection of the Widening Alternative. Aquatic impacts will be 1,440 linear feet of stream habitat and .07 acres of wetland, but with complete avoidance of impact to the National Park resource. The other major impact involves properties covered by the National Historic Preservation Act. The "Project Commitments" identify a number of structural elements to maintain the aesthetics of the mountain village setting. While there are no noise barriers proposed in part because of the aesthetic requirements, the stipulations in the Memorandum of Agreement (MOA) between the Corps of Engineers, NCDOT and the State historic Preservation Officer include a 35 mph speed limit and sound abatement/buffering for certain historic structures. The vehicle speed control would also be beneficial mitigation for the 28 identified affected noise receptors and historic properties, if rigorously enforced. The MOA and the Memorandum of Understanding (MOU) between NCDOT and the City of Blowing Rock provide reasonable certainty for effecting the mitigation for the visual changes and impacts to historic resources and the community brought about by the widening project.

Invasive Species and Construction Activities

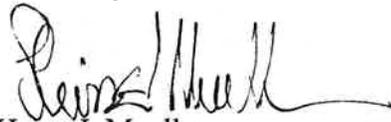
The Draft EIS did not directly address the issue of invasive plant species. The document also does not address this NEPA cross-cutting issue under E.O. 13112. EPA has environmental concerns regarding the potential spread of invasive plant species, including very aggressive exotic (alien, foreign, introduced and non-indigenous) plants such as Japanese knotweed (*Fallopia japonica*) and Kudzu (*Pueraria montana*) along the proposed project. Further recommendations for appropriate use of best management techniques are contained in the enclosure to this letter.

Surface Stream Impacts

The selection of the Widening Alternative involves substantial impacts to stream both from culverting but mostly from placement of roadway fill parallel to the widened roadway causing a lateral shift of the streams. The amount of direct impact to streams is second highest of the 5 build alternatives considered. The Draft EIS indicated ample availability of other sites for offsetting the impact, however, the Final EIS does not address it in any detail. Further, this proximity of fill to the streams presents substantially greater difficulties in managing stormwater runoff during construction. EPA would appreciate having specific mitigation addressed during the Merger Process, and included in the Record of Decision.

In summary, EPA is supportive of this proposed project but suggests that NCDOT take all reasonable steps to manage the construction phase of the project and subsequent maintenance activities because of the project's mountain community setting, the impacts to surface streams and the threat posed by invasive plant species. EPA will remain engaged in the project as it proceeds through completion of the Merger Process. Please contact Mr. Ted Bisterfeld (404/562-9621) or Mr. Chris Militscher (919/856-4206) on my staff if you wish to discuss these comments. Thank you for the opportunity to comment.

Sincerely,



Heinz J. Mueller
Chief, NEPA Program Office
Office of Policy and Management

Enclosure

cc: John Hennessy, NCDWQ, Raleigh
Ken Jolly, USACE, Wilmington
Pete Benjamin, USFWS Raleigh Field Office

ENCLOSURE TO EPA COMMENTS ON FINAL EIS

Invasive Species and Construction Activities

One of the primary reasons for EPA highlighting this environmental concern regarding invasive plants is the NCDOT's efforts to provide very specific (and potentially expensive) landscaping along US 321 for the chosen widening alternative. Some of these detailed environmental commitments will be difficult to meet if invasive species impact NCDOT's viewscape plans within Blowing Rock. EPA will continue to coordinate with NCDOT and provide any technical assistance as needed.

While there are other invasive exotic species that may be a general environmental concern, such as Tree of Heaven (*Ailanthus altissima*), Mimosa or Silktree (*Albizia julibrissin*), Asian bittersweet (*Celastrus orbiculatus*), Russian olive (*Elaeagnus angustifolia*), Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), Chinese wisteria (*Wisteria sinensis*), Lespedezas (*Lespedeza bicolor* and *L. cuneata*), etc., both Japanese knotweed and Kudzu can significantly and very quickly alter viewscapes and out compete and threaten native vegetation. These two species especially can be very expensive to control and even more difficult to completely eradicate once they have become established along a disturbed right-of-way. The North Carolina Native Plant Society and North Carolina Botanical Garden with input from other groups and agencies list all of the aforementioned exotic plants as 'Rank 1-Severe threat', which means that these species have invasive characteristics, spread rapidly into native plant communities and displace native vegetation. More detailed lists and technical information can be found at: <http://www.ncwildflower.org/invasives/invasives.htm>.

EPA, NCDOT, the National Park Service, the U.S. Fish and Wildlife Service and other agencies have found that a number of these species may already be present in the project study area and along the existing US 321 right-of-way. The Blue Ridge Parkway, which crosses US 321 just north of Blowing Rock, is a significant natural and cultural resource that should be seriously considered in developing all relevant avoidance and minimization measures. NPS has recently issued Environmental Assessments on the control of invasive plants along the Blue Ridge Parkway. The spread of invasive species from the proposed project could alter their future control and management plans.

Construction activities from the planned roadway improvements may result in the further spread and expansion of undesirable non-native plants. Table S-1 in the State FEIS indicates that the construction period is estimated to be 3 to 4 construction seasons (years) for the preferred (Widening) alternative. NCDOT should consider the use of Best Management Practices (BMPs) to reduce the spread of these invasive species. Disturbed soils should be provided temporary seeding as soon as possible. Clearing and grubbing and grading should be limited to the greatest extent practicable. Native plants should be planted as soon as possible to reduce the establishment of the invasive exotic species.

In addition to the aforementioned BMPs already used by NCDOT's Roadside Environmental unit, EPA also suggests NCDOT's consideration for additional minimization measures, such as early recognition of invasive plant seedlings and physical removal and/or herbicide treatment should begin as soon as these young plants are identified. Periodic inspection and frequent maintenance activities will also be critical to keeping these damaging and undesirable plants under control. For Japanese knotweed, fill dirt can be a source of rhizomes and future colonization. The State FEIS identifies that approximately 797,000 cubic yards of fill dirt will be required for the project. The source of the fill dirt could be inspected by NCDOT officials and/or their qualified consultants familiar with Japanese knotweed in order to insure that contractors are not introducing the reproductive rhizomes to new areas.

If Japanese knotweed is already present along the existing right-of-way, efforts should be made to limit its spread during construction. There are some recent examples where mowing or cutting Japanese knotweed around Memorial Day and spraying it with a glyphosate-based herbicide around Labor Day can significantly decrease the size and viability of the colony*. Complete eradication may require several years of intensive treatments once Japanese knotweed is allowed to become established. Both mowing/cutting and herbicide spraying activities should be conducted when dry weather is predicted for 2-3 days. Riparian areas should also be protected from cut plant parts and from direct herbicides. Hand-spraying by a State-licensed applicator is also recommended.

All of the aforementioned minimization activities are consistent with the general recommendations from other resource agencies, other State DOT's, and other specialists in weed control. Again, EPA's primary concern is that the cost of providing detailed landscaping (viewscape mitigation) for the selected alternative is not 'undone' or damaged from the introduction and/or spread of invasive exotic plants.

* Source: The Japanese Knotweed Workshop, Boyce Thompson Institute, Cornell University, October 11-12, 2006; Daisley, K., *Natural Biodiversity: Comparison of Control Effectiveness and Financial Efficiency at Demonstration Project Sites Employing Various Integrated Pest Management Tactics to Control Japanese and Giant Knotweed Species*; Grieser, J., NYC DEP Stream Management Program: *Evaluation of Three Japanese Knotweed Treatment Methods*; Allen, D., Cornell University: *Control of Japanese Knotweed Using Herbicide*; et al.



☒ North Carolina Wildlife Resources Commission ☒

Richard B. Hamilton, Executive Director

TO: Melba McGee, Environmental Coordinator
Office of Legislative & Intergovernmental Affairs, DENR

FROM: Marla Chambers, Western NCDOT Permit Coordinator *Marla Chambers*
Habitat Conservation Program, NCWRC

DATE: October 31, 2006

SUBJECT: Review of the Final Environmental Impact Statement regarding the US 321 Improvements Project from Blackberry Road to US 221 at Blowing Rock, Caldwell and Watauga Counties. TIP No. R-2237C. OLIA Project No. 07-0120, due 10/31/2006.

North Carolina Department of Transportation (NCDOT) has submitted a Final Environmental Impact Statement for the subject project. Staff biologists with the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the information provided. These comments are provided in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d) and the National Environmental Policy Act (42 U.S.C. 4332(2)(c)).

NCDOT proposes to make improvements to US 321 in or around the resort community of Blowing Rock, NC. A No-Build and five Build alternatives were evaluated, including one widening of existing US 321 alternative and 4 bypass alternatives. The document was well written and comprehensive. Good descriptions of the project history, existing conditions, alternatives, potential impacts, and the complex issues associated with each alternative were provided. NCWRC is a member of the 404/NEPA Merger Team participating in the development of this project. We are pleased that the alternative we have supported, widening the existing US 321, has been selected as the preferred alternative by NCDOT and the Least Environmentally Damaging Practicable Alternative by the Merger Team.

Approximately 1,440 linear feet of stream and 0.07 acres of wetlands are estimated to be impacted by the preferred alternative. Six streams will be crossed, including three unnamed

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721

Telephone: (919) 707-0220 • **Fax:** (919) 707-0028

North Carolina Department of Transportation

www.ncdot.gov

tributaries (UTs) to the Yadkin River, all Class C Trout waters, and the Middle Fork of the New River and two of its UTs, all Class WS-IV+ waters. In addition, portions of the project may drain to the headwaters of Johns River, Class C Trout, and Left Fork Mulberry Creek, Class C Trout High Quality Waters. Middle Fork of the New River is designated by NCWRC as Hatchery Supported Trout Water below Lake Chetola. While no streams within the project area are designated Wild Trout Waters by NCWRC for fishing regulation purposes, wild trout may occur in these streams. The document states that "Hatchery Supported Waters must be stocked periodically in order to sustain a population." While this is true for some Hatchery Supported Waters, others are stocked on top of existing reproducing wild trout populations to enhance recreational opportunities. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer may be requested from October 15 to April 15, which is our standard trout moratorium dates, as opposed to those listed in section 4.16.6 of the document. Smallmouth bass may also occur in the project area and are sometimes afforded an in-water work moratorium from May 1 to July 15. NCWRC will provide more specific recommendations related to work moratoriums at a later date.

We are pleased to see that Caldwell and Watauga Counties and the Town of Blowing Rock have adopted watershed protection ordinances and comprehensive land use plans. We encourage them to continue taking actions to protect and enhance the natural resources in their jurisdictions and in particular this project area, which forms the headwaters of three major river systems in North Carolina, the Yadkin-Pee Dee River, New River, and Catawba River.

NCWRC will continue to participate and provide input in the Merger Process for this project. Thank you for the opportunity to review and comment on this document. If you have any questions regarding these comments, please contact me at (704) 545-3841.

Cc: Sue Homewood, NCDWQ
Marella Buncick, USFWS
Christopher Militscher, USEPA



RECEIVED
OCT 30 2006

October 25, 2006

MEMORANDUM

To: Melba McGee

DENR - WATER QUALITY
WETLANDS AND STORMWATER BRANCH

From: Sue Homewood, Division of Water Quality, Winston-Salem Regional Office

Subject: Comments on the Final Environmental Impact Statement related to proposed US 321 Improvements from existing Blackberry Road to Existing US 221 at Blowing Rock, Caldwell and Watauga Counties, State Project No. 6.739001T, TIP R-2237C.

This office has reviewed the referenced document dated September 6, 2006. The Division of Water Quality (DWQ) is responsible for the issuance of the Section 401 Water Quality Certification for activities that impact Waters of the U.S., including wetlands. It is our understanding that the project as presented will result in impacts to jurisdictional wetlands, streams, and other surface waters. The DWQ offers the following comments based on review of the aforementioned document:

1. This project is being planned as part of the 404/NEPA Merger Process. As a participating team member, the NCDWQ will continue to work with the team. NCDWQ reaffirms its
2. All of the named streams that this project drains to have a designation of Tr waters of the State. DWQ recommends that the most protective sediment and erosion control BMPs be implemented to reduce the risk of turbidity violations in trout waters. In addition, all disturbances within trout buffers should be conducted in accordance with NC Division of Land Resources and NC Wildlife Resources Commission requirements.

Review of the project reveals the potential for a small section of the project to drain to surface waters classified as C, Tr, High Quality Waters of the State in the project study area. This is one of the highest classifications for water quality. Pursuant to 15A NCAC 2H .1006 and 15A NCAC 2B .0224, NC DOT will be required to obtain a State Stormwater Permit prior to construction.

3. The environmental document should provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping. If mitigation is necessary as required by 15A NCAC 2H.0506(h), it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. Appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.
4. Environmental assessment alternatives should consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives should include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ *Stormwater Best Management Practices*, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.

5. After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.
6. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 150 linear feet to any single perennial stream. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.
7. Future documentation, including the 401 Water Quality Certification Application, should continue to include an itemized listing of the proposed wetland and stream impacts with corresponding mapping.
8. DWQ is very concerned with sediment and erosion impacts that could result from this project. NC DOT should address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.
9. NC DOT is respectfully reminded that all impacts, including but not limited to, bridging, fill, excavation and clearing, to jurisdictional wetlands, streams, and riparian buffers need to be included in the final impact calculations. These impacts, in addition to any construction impacts, temporary or otherwise, also need to be included as part of the 401 Water Quality Certification Application.
10. Where streams must be crossed, the DWQ prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts should be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, DOT should not install the bridge bents in the creek, to the maximum extent practicable.
11. Sediment and erosion control measures should not be placed in wetlands or streams.
12. Borrow/waste areas should avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas will need to be presented in the 401 Water Quality Certification and could precipitate compensatory mitigation.
13. The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater should not be permitted to discharge directly into streams or surface waters.

14. Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require an Individual Permit (IP) application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that a 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require the submittal of a formal application by the NCDOT and written concurrence from the NCDWQ. Please be aware that any approval will be contingent on appropriate avoidance and minimization of wetland and stream impacts to the maximum extent practical, the development of an acceptable stormwater management plan, and the inclusion of appropriate mitigation plans where appropriate.
15. If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
16. If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas should be seeded or mulched to stabilize the soil and appropriate native woody species should be planted. When using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.
17. Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.
18. If multiple pipes or barrels are required, they should be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
19. If foundation test borings are necessary; it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3494/Nationwide Permit No. 6 for Survey Activities.
20. Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of North Carolina Sediment and Erosion Control Planning and Design Manual and the most recent version of NCS000250. .

21. All work in or adjacent to stream waters should be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures should be used to prevent excavation in flowing water.
22. While the use of National Wetland Inventory (NWI) maps, NC Coastal Region Evaluation of Wetland Significance (NC-CREWS) maps and soil survey maps are useful tools, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.
23. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.
24. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.
25. Riparian vegetation (native trees and shrubs) should be preserved to the maximum extent possible. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.

The NCDWQ appreciates the opportunity to provide comments on your project. Should you have any questions or require any additional information, please contact Sue Homewood at (336) 771-4964.

cc: John Thomas, US Army Corps of Engineers, Raleigh Field Office
Chris Militscher, Environmental Protection Agency
Marla Chambers, NC Wildlife Resources
DWQ 401/Wetlands Transportation-Permitting Unit



INTERGOVERNMENTAL REVIEW – PROJECT COMMENTS

After review of this project it has been determined that the ENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

PERMITS		SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/>	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit—whichever is later.	90-120 days (N/A)
<input type="checkbox"/>	Water Use Permit	Pre-application technical conference usually necessary	30 days (N/A)
<input type="checkbox"/>	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
<input type="checkbox"/>	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input checked="" type="checkbox"/>	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100, 2Q.0300, 2H.0600)	N/A	60 days
<input checked="" type="checkbox"/>	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900		60 days
<input checked="" type="checkbox"/>	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 2D.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-733-0820.	N/A	(90 days)
<input type="checkbox"/>	Complex Source Permit required under 15 A NCAC 2D.0800		
<input type="checkbox"/>	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (land Quality Sect.) At least 30 days before beginning activity. A fee of \$30 for the first acre and \$2000 for each additional acre or part must accompany the plan.		20 days (30 days)
<input checked="" type="checkbox"/>	The Sedimentation Pollution control Act of 1973 must be addressed with respect to the referenced Local Ordinance.		(30 days)
<input type="checkbox"/>	Mining Permit	On-site inspection usual. Surety bond filed with ENR. Bond amount varies with type mine and number of acres of affected land. Any acre mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
<input type="checkbox"/>	North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days	1 day (N/A)
<input type="checkbox"/>	Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
<input type="checkbox"/>	Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/>	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, certify construction is according to ENR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage of the total project cost will be required upon completion.	30 days (60 days)

PERMITS		SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with ENR running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to ENR rules and regulations.	10 days N/A
<input type="checkbox"/>	Geophysical Exploration Permit	Application filed with ENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days N/A
<input type="checkbox"/>	State Lakes Construction Permit	Application fees based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15-20 days N/A
<input checked="" type="checkbox"/>	401 Water Quality Certification	N/A	60 days (130 days)
<input type="checkbox"/>	CAMA Permit for MAJOR development	\$250.00 fee must accompany application	55 days (150 days)
<input type="checkbox"/>	CAMA Permit for MINOR development	\$50.00 fee must accompany application	22 days (25 days)
<input type="checkbox"/>	Several geodetic monuments are located in or near the project area. If any monument need to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687 Raleigh, NC 27611		
<input checked="" type="checkbox"/>	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
<input checked="" type="checkbox"/>	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
<input type="checkbox"/>	Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required.		45 days (N/A)
*	Other comments (attach additional pages as necessary, being certain to cite comment authority)		



REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

Asheville Regional Office
59 Woodfin Place
Asheville, NC 28801
(828) 251-6208

Mooresville Regional Office
919 North Main Street
Mooresville, NC 28115
(704) 663-1699

Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405
(910) 395-3900

Fayetteville Regional Office
225 Green Street, Suite 714
Fayetteville, NC 28301
(910) 486-1541

Raleigh Regional Office
3800 Barrett Drive, P.O. Box 27687
Raleigh, NC 27611
(919) 571-4700

Winston-Salem Regional Office
585 Woughtown Street
Winston-Salem, NC 27107
(336) 771-4600

Washington Regional Office
943 Washington Square Mall
Washington, NC 27889
(252) 946-6481

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

STATE NUMBER: 07-E-4220-0120

F02

DATE RECEIVED: 10/05/2006

AGENCY RESPONSE: 10/31/2006

REVIEW CLOSED: 11/05/2006

MS RENEE GLEDHILL-EARLEY
CLEARINGHOUSE COORD
DEPT OF CUL RESOURCES
ARCHIVES-HISTORY BLDG - MSC 4617
RALEIGH NC

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REGION D COG
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PROJECT INFORMATION

APPLICANT: NCDOT

TYPE: National Environmental Policy Act

ERD: Final Environmental Impact Statement

DESC: Improvements to US 321 in Caldwell and Watauga counties from Blackberry Rd north to US 221 in Blowing Rock. TIP No. R-2237C

CROSS-REFERENCE NUMBER: 03-E-4220-0021

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.



TRANSPORTATION OFFICE

Need
Vol. 2

DYE
Ref CH90-0697

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

NO COMMENT

COMMENTS ATTACHED

SIGNED BY:

Renee Gladhill-Earley

DATE:

10.25.06

OCT 05 2006

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

STATE NUMBER: 07-E-4220-0120

F02

DATE RECEIVED: 10/05/2006

AGENCY RESPONSE: 10/31/2006

REVIEW CLOSED: 11/05/2006

CLEARINGHOUSE COORD REGION D
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P.O. BOX 1820
BOONE NC

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PROJECT INFORMATION

APPLICANT: NCDOT

TYPE: National Environmental Policy Act

ERD: Final Environmental Impact Statement

DESC: Improvements to US 321 in Caldwell and Watauga counties from Blackberry Rd north to US 221 in Blowing Rock. TIP No. R-2237C

CROSS-REFERENCE NUMBER: 03-E-4220-0021

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

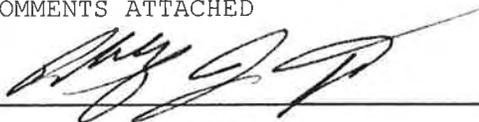
If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

NO COMMENT

COMMENTS ATTACHED

SIGNED BY:



DATE:

11-13-06

OCT. 25. 2006 2:48PM

HIGH COUNTRY COG

NO. 8920 P. 2

REQUEST FOR REVIEW

Please review the attached notification and indicate your response. If your agency requires additional information, contact the applicant directly or call High Country Council of Governments' Clearinghouse. Please submit your response to the address below by the due date indicated.

Phone: (828) 265-5434

SCH Number 07-E-4220-0120 Date 10-25-06 Response Date 10-31-06

Please Sign and Return
This Page Only To:

High Country Council of Governments
Clearinghouse Coordinator
P.O. Box 1820
Boone, NC 28607



Reviewers:

Scott Hildebran, Town Manager, Town of Blowing Rock

Response: This agency has reviewed the notification and offers the following recommendation: (Check appropriate response/more than one can be checked)

No Comment

Favorable. The project is in agreement with the goals and objectives of this agency's programs.

Unfavorable. The project is not in agreement with the goals and objectives of this agency's programs.

Potential Problem (s). Identify:

Comments:

Reviewed by Scott Hildebran

Name: Scott Hildebran Agency: Blowing Rock

Date: 11/09/06

COMMENTS ON THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S
FINAL ENVIRONMENTAL IMPACT STATEMENT,
U.S. 321 IMPROVEMENTS PROJECT, TIP NO. R-2237C

Submitted on behalf of Smart Growth for Blowing Rock and its members

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November 27, 2006

STATUTORY BACKGROUND

THE NATIONAL ENVIRONMENTAL POLICY ACT AND THE NORTH CAROLINA ENVIRONMENTAL POLICY ACT

Section 101 of the National Environmental Policy Act (hereafter “NEPA”), 42 U.S.C. 4331, provides:

The Congress, recognizing the profound impact of man’s activity on the interrelations of all components of the natural environment, particularly the profound growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man declares that it is the continuing policy of the Federal Government * * * to use all practicable means and measures * * * in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

NEPA thus “declares a broad national commitment to protecting and promoting environmental quality.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989). Its goal is “to use all practicable means and measures * * * to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.” 42 U.S.C. 4331(a).

The North Carolina Environmental Policy Act (hereafter “NCEPA”), N.C.G.S. 113A-1 *et seq.*, is similar to NEPA. *Department of Transportation v. Blue*, 147 N.C. App. 596, 603-604, 556 S.E.2d 609, 617 (2001). “The primary purpose of both the state and federal environmental statutes is to ensure that government agencies seriously consider the environmental effects of each of the reasonable and realistic alternatives available to them.” *Orange County v. Dept. of Transportation*, 46 N.C. App. 350, 383, 265 S.E.2d 890, 911 (1980).

Section 113A-3 of NCEPA states:

The General Assembly of North Carolina, recognizing the profound influence of man's activity on the natural environment, and desiring, in its role as trustee for future generations, to assure that an environment of high quality will be maintained for the health and well-being of all, declares that it shall be the continuing policy of the State of North Carolina to conserve and protect its natural resources and to create and maintain conditions under which man and nature can exist in productive harmony. Further, it shall be the policy of the State to seek, for all of its citizens, safe, healthful, productive and aesthetically pleasing surroundings; to attain the widest range of beneficial uses of the environment without degradation, risk to health or safety; and to preserve the important historic and cultural elements of our common inheritance.

Thus, the purpose of NCEPA is (N.C.G.S. 113A-2):

[T]o declare a State policy which will encourage the wise, productive, and beneficial use of the natural resources of the State without damage to the environment, maintain a healthy and pleasant environment, and preserve the natural beauty of the State; to encourage an educational program which will create a public awareness of our environment and its related programs; to require agencies of the State to consider and report upon environmental aspects and consequences of their actions involving the expenditure of public moneys or use of public land; and to provide means to implement these purposes.

Both NEPA and NCEPA have action-forcing procedures, requiring agencies to consider environmental effects. “To ensure that this commitment [to protect and promote environmental quality] is infused into the ongoing programs and actions of the Federal Government, [NEPA] also establishes some important ‘action-forcing’ procedures” (citations omitted). *Robertson v. Methow Valley Citizens Council, supra*, 490 U.S. at 348. NEPA requires “that federal agencies prepare [environmental impact statements] to be included ‘in every recommendation or report on proposals for . . . major Federal actions significantly affecting the quality of the human environment’” (omission in original). *Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 443 (4th Cir. 1996) (citing 42 U.S.C. 4332(2)(C)). “Major Federal action” encompasses “new and continuing activities, including projects and programs entirely or partly

financed, assisted, conducted, regulated, or approved by federal agencies * * *.” 40 C.F.R. 1508.18(a). Similarly, NCEPA forces action by requiring state agencies to “include in every recommendation or report on any action involving expenditure of public moneys or use of public land for projects and programs significantly affecting the quality of the environment of this State, [an environmental impact statement].” N.C.G.S. 113A-4(2).

Both NEPA and NCEPA require the agency to consider reasonable alternatives to the proposed action. An environmental impact statement (hereafter “EIS”) under NEPA must include “a detailed statement by the responsible official on * * * (iii) alternatives to the proposed action.” 42 U.S.C. 4332(2)(C). This statement must “rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss their reasons for having been eliminated.” 40 C.F.R. 1502.14(a). The alternatives analysis “is the heart of the environmental impact statement.” 40 C.F.R. 1502.14.

NCEPA similarly requires that the EIS include a “detailed statement” of “[a]lternatives to the proposed action.” N.C.G.S. 133A-4(2)(d). This section of the EIS must “explore and evaluate all reasonable alternatives, including those not within the jurisdiction of the State Project Agency and the alternative of no action” (01 N.C.A.C. 25.0603(4)(a)) and “discuss the reasons for the elimination of alternatives from detailed study” (01 N.C.A.C. 25.0603(4)(b)). “This section of the document shall be the heart of the EIS, sharply defining the issues and providing a clear basis for choice among options by decision makers and the public.” 01 N.C.A.C. 25.0603(4). Courts reviewing the adequacy of the alternatives analysis “have not required [agencies] to consider every one of the infinite variety of unexplored and undiscussed alternatives inventive minds can suggest.” *Orange County v. Department of Transportation*,

supra, 46 N.C. App. at 383, 265 S.E. 2d at 912. However, agencies still must “give careful and thorough consideration to alternative[s].” *Greene Citizens for Responsible Growth, Inc. v. Greene County Board of Commissioners*, 143 N.C. App. 702, 706, 547 S.E. 2d 480, 483 (2001). For example, in *Greene Citizens for Responsible Growth*, the court of appeals held that the Board of Commissioners was required to consider reasonable alternative sites for the construction of a landfill. *Ibid.* The Board was entitled to a presumption that it had considered alternatives, but the record showed no proof of such consideration, and the case was therefore remanded for further factual consideration of whether the Board had adequately considered alternatives. *Ibid.*

The EIS requirement serves NEPA and NCEPA’s action-forcing purpose in two respects. First, it “ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts * * *.” *Robertson v. Methow Valley Citizens Council, supra*, 490 U.S. at 349. Similarly, the North Carolina Court of Appeals has stated that “[t]he requirement of the impact statement is designed * * * to provide a mechanism by which all affected State agencies raise and consider environmental factors of proposed projects.” *In the Matter of: The Appeal from the Environmental Management Commission Final Order Granting a Certificate of Authority to Orange Water and Sewer Authority Pursuant to G.S. 162A-7*, 53 N.C. App. 135, 141, 280 S.E.2d 520, 525 (1981).

Regulations enacted under NCEPA provide that the “primary purpose of an EIS is to serve as a decision-making tool to ensure that the purposes and policies defined in [NCEPA] are given full consideration in the ongoing programs and actions of state government.” 01 N.C.A.C. 25.0601.

Second, the environmental review statutes “guarantee[] that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking

process and the implementation of that decision.” *Robertson v. Methow Valley Citizens Council*, *supra*, 490 U.S. at 349. Thus, “by focusing the agency’s attention on the environmental consequences of a proposed project, NEPA ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast” (citations omitted). *Ibid.* NEPA also requires information be made available to the public. According to NEPA regulations, the EIS “should provide a full and fair discussion of significant environmental impacts and should inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the environment.” 40 C.F.R. 1500.1. This allows the public to consider both significant environmental impacts of and reasonable alternatives to proposed projects.

In order to implement NEPA’s provisions, Congress created the Council on Environmental Quality (hereafter “CEQ”). 42 U.S.C. 4342. CEQ has promulgated various regulations under NEPA. *See* 40 C.F.R. 1500, *et seq.* “CEQ’s interpretation of NEPA is entitled to substantial deference.” *Andrus v. Sierra Club*, 442 U.S. 347, 358 (1979). CEQ’s regulations are thus “binding on all federal agencies.” *Sugarloaf Citizens Ass’n v. Federal Energy Regulatory Commission*, 959 F.2d 508, 512, n. 3 (4th Cir. 1992).

While NEPA and its regulations “establish[] environmental quality as a substantive goal,” they do not require substantive results. *Hughes River Watershed Conservancy v. Glickman*, *supra*, 81 F.3d at 443. Instead, they set “forth procedures that agencies must follow.” *Ibid.* However, these “are not highly flexible. Indeed, they establish a strict standard of compliance.” *Calvert Cliffs’ Coordinating Committee, Inc. v. United States Atomic Energy Commission*, 449 F.2d 1109, 1112 (D.C. 1971). Writing for the Court of Appeals for the First Circuit, then-Judge

Breyer explained (*Massachusetts v. Watt*, 716 F.2d 946, 952 (1st Cir. 1983)):

NEPA is not designed to prevent all possible harm to the environment; it foresees that decisionmakers may choose to inflict such harm, for perfectly good reasons. Rather, NEPA is designed to influence the decisionmaking process; its aim is to make government officials notice environmental considerations and take them into account. Thus, when a decision to which NEPA obligations attach is made without the informed environmental consideration that NEPA requires, the harm that NEPA intends to prevent has been suffered.

Based on this statutory background, we submit the following comments.

CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

COMMENT: The FEIS Overstates the Need for the Project by Improperly Estimating the Peak Hour Ratio

As Smart Growth for Blowing Rock (hereafter “Smart Growth”) previously noted, in comments submitted under its previous name, Concerned Citizens for Blowing Rock, by the Renaissance Planning Group (hereafter “RPG Comments”), the peak hour ratio of 14%, used in calculating the design hourly volume, does “not properly reflect peaking characteristics along the roadway, especially given the unique peaking characteristics of the area’s seasonal population, nor may it reflect the proper design hour for improvements.” RPG Comments, p. 5. The Final Environmental Impact Statement (hereafter “FEIS”) fails to address these concerns adequately, stating only that the figure is consistent with guidance. FEIS, pp. 1-10, 7-30. However, this guidance does not take into account the particular characteristics of Blowing Rock as a resort town or reflect in-depth analysis using locally-derived data rather than assumptions based on a small sample of data. Without specific data and documentation of the findings, it is impossible to determine if the assumption used is reasonable.

The design hour volume is the “volume the project is being designed to serve.” FEIS, p.

1-8. It is “usually expressed as a percentage of the [Average Daily Traffic].” FEIS, pp. 1-8 to 1-10. The FEIS calculates 2025 design hour volumes based on an assumption that 14% of the Average Daily Traffic (“ADT”) will occur in the peak hour. FEIS, pp. 1-10, 2-73, 2-74. This assumption is without sufficient justification in the FEIS and is likely inflated. According to the FEIS, no study has been made of the volume for US 321. FEIS, pp. 7-29 to 7-30. Rather, the FEIS states that the “selected figure is consistent with the Highway Capacity Manual’s criteria for selecting a design hour volume” (FEIS, p. 1-10 (citation omitted)) and “14 percent of ADT is within the acceptable range” for design hour volumes (FEIS, p. 7-30). However, these statements ignore the FEIS’s next sentence: “As a seasonal tourist area Blowing Rock is not subject to the standard AM and PM peaking characteristics of other areas.” *Ibid.*

As stated in the RPG Comments, the 14% peak hour ratio is at the high end of what typically occurs on roadways, which is a range that generally extends from 8% to 15% and is normally around 9% to 12%. RPG Comments, pp. 4-5. High peak hour ratios normally occur on roads handling high amounts of commuter traffic; with less commuter traffic, lower peak hour ratios can be expected, because there are fewer cars on the road during peak hour relative to other times. *Ibid.* As a resort town, Blowing Rock has less commuter traffic than other areas and is likely to have a peak hour ratio in the lower end of the range, rather than the higher end. Visitor and tourist traffic tends to occur more uniformly through the day, which should influence the peak-to-daily ratio toward a lower number. Therefore, the 14% assumption does not properly reflect peaking characteristics along the roadway and does not give an accurate picture of the proper design hour to be considered in assessing the need for improvements. *Ibid.* By relying on this erroneous figure, the FEIS may overestimate the need for the project by as much as 50%.

COMMENT: The Origin and Destination Study Remains Inadequate

The FEIS notes that an Origin and Destination study was conducted “to determine the amount of traffic going through Blowing Rock without stopping.” FEIS, p. 2-6. To conduct this study, a random sample of drivers were stopped and asked their origin, destination, and the purpose of their trip. *Ibid.* Such a study is necessary because it helps to determine how and when the road in question is being used, and whether alternatives will adequately serve the needs of the project.

However, as Smart Growth, under its previous name of Concerned Citizens for Blowing Rock, in comments submitted on its behalf by Terris, Pravlik & Millian, LLP (hereafter “TPM Comments”) previously noted: “We submit that a one-day study does not provide a sufficient benchmark to determine where most of the traffic is originating and heading.” TPM Comments, p. 9. Despite quoting this sentence in the FEIS, NCDOT failed to conduct a more thorough study.

The FEIS suggests that the month chosen for the study, September, is representative because “NCDOT typically assumes April or September to be representative of an average month, a time of year when school is in session and when the influence of seasonal factors is not great.” FEIS, p. 7-18. However, the influence of seasonal factors is critical in assessing the need for the project, as Smart Growth noted and the FEIS admits. TPM Comments, pp. 9-10; FEIS, p. 7-18. The FEIS states: “Traffic volumes can vary substantially between tourist season and off-season.” FEIS, p. 7-18. Though claiming that it accounts for this variance in creating its Average Annual Daily Traffic volumes (*ibid.*), the FEIS fails to consider that this difference also affects origins and destinations. The Origin and Destination study is therefore inadequate,

because it does not provide a true picture of how local and through-traffic actually use the road, and whether the alternatives would adequately serve the claimed need. The Origin and Destination study therefore does not provide a proper basis for assessing the real need for the project.

COMMENT: The FEIS Improperly Estimates Socioeconomic and Growth Characteristics, Leading to an Improper Estimate of Traffic Growth for 2025

The FEIS sets 2025 as the design year, i.e., the year at which the project must meet the design specifications, such as design hourly volume. FEIS, p. 1-8. Because 2025 is the year against which project capacity is measured, it is critical that traffic growth estimates for 2025 are as accurate as possible.

Although the FEIS provides updated population and growth information from that contained in the Draft Environmental Impact Statement (hereafter “DEIS”), it provides no response to Smart Growth’s concern that the socioeconomic data and growth projections are erroneous and that they lead to overestimated traffic growth rates. RPG Comments, p. 1. As Smart Growth previously showed, “[t]he projected traffic growth rates to 2025 will be far below the 80 percent used in the analysis. Based on the information presented in the DEIS [and in the FEIS], a reasonable rate of traffic growth in the study section is between 20 and 50 percent through 2025, which calls into question whether the widening or some type of bypass will be needed by the horizon year.” *Ibid.*; *see also id.*, pp. 3-4 (demonstrating that the rates of population growth and dwelling unit growth in Watauga County, Caldwell County, and the town of Blowing Rock are low or flat); *id.*, pp. 5-6 (demonstrating that, based on population growth rates, a lower traffic growth rate can be assumed).

COMMENT: The FEIS Overestimates the Need for the Project by Failing to Consider that Blowing Rock Is the “End of the Line” Rather than in the Middle of a Through Route

In its earlier comments, Smart Growth noted, “Given the topography of and the location of development in the region, Blowing Rock and the study section are in many ways at the ‘end of the line.’ * * * Traffic data from the DEIS and NCDOT’s origin-destination survey confirm these travel patterns. * * * This trend is not likely to change.” RPG Comments, p. 7. Because very few trips originating in Blowing Rock are made between the town and points south, growth in traffic in the study section will likely be less than the DEIS, and the FEIS, have estimated. *Ibid.* The FEIS provides no response to this comment and fails to update its traffic analysis to account for less traffic growth. The FEIS thus fails to evaluate properly the need for the project.

COMMENT: The FEIS Overestimates the Need for the Project by Failing to Consider the Effects of Other Highway Projects

In Figure 1-1, the FEIS shows that numerous transportation improvement project (“TIP”) projects, including projects R-2273-B, R-529, R-2506, R-2615, R-2915, FS-0511A, and E-4569, are planned for nearby roads. In particular, Figure 1-1 shows that TIP project R-2506 is planned to improve the connection between Boone and US 221. The construction of project R-2506 may reduce the projected traffic volumes reported in the FEIS for US 321 in 2025 (Table 1-1) and therefore mitigate the need for relying on US 321 as a corridor for regional through-traffic by sharing at least some of the demand that US 321 is expected to handle. By failing to account for these mitigating measures, the FEIS overestimates the need for the project.

COMMENT: The FEIS Fails to Justify Adequately the Goal of Level of Service C in 2025

With so much at stake in this project, it is essential that the FEIS justify the attainment of

Level of Service (“LOS”) C in 2025. FEIS, p. 1-11. LOS, according to the FEIS, is “a qualitative measure that characterizes the operational conditions within a traffic stream and represents the perception of traffic service by motorists and passengers.” FEIS, p. 1-10. LOS is ranked from A to F, with A representing the least congestion and F representing the most. FEIS, pp. 1-10 to 1-11; RPG Comments, p. 8. Though the FEIS states that the LOS goal chosen, and thus the level of congestion, is based on guidance from the American Association of State Highway and Transportation Officials, it fails to explain adequately how it applies this guidance.

Smart Growth previously commented that congestion levels and LOS goals are policy questions and as such should be “open to debate and consensus among stakeholders.” RPG Comments, pp. 8-9. To this, the FEIS responds: “The intent is to obtain the best level of service practical for a given area. Guidance from the [Federal Highway Administration] further reinforces this policy by stating that one should not design for failure. The NCDOT’s interpretation of this has been that less than LOS D is not acceptable.” FEIS, p. 7-31. However, this statement obviously is not justification for choosing a higher level of service, LOS C. It is justification only for an LOS of D, which the FEIS does not use.

Moreover, the statement in the FEIS presupposes the level of congestion that should be determined among all the stakeholders. In resort towns with peak season characteristics, some level of congestion is usually tolerated because mitigating it often detracts from the character of the area. The FEIS, like the DEIS, gives no indication that the stakeholders have been consulted as to levels of service or congestion. It appears that NCDOT has unilaterally made these decisions.

Moreover, the Federal Highway Administration guidance does not necessarily justify a

goal of LOS C. In Blowing Rock, the best practical level of service may be less than LOS C. For example, the FEIS itself analyzed the Transportation Systems Management (“TSM”) Alternative on the basis of the assumption that “LOS D would be acceptable in the design year.” FEIS, p. 2-49. More analysis and explanation is needed before NCDOT can state that “not designing for failure” justifies the requirement of attaining LOS C.

COMMENT: The FEIS Provides Inadequate Information Concerning Accident Rates

Smart Growth previously noted that the DEIS provided insufficient information about accident rates. TPM Comments, p. 5. These comments noted that the DEIS did not identify the “similar urban US routes in North Carolina” upon which the DEIS based its conclusion that there are higher [accident] rates on US 321. *Ibid.* Without such information, it is impossible to determine whether the comparisons were made with roads of similar characteristics. *Ibid.*

The FEIS clarifies that the comparison was made with “all rural (2,644 system miles) and urban (494 system miles) two-lane undivided US routes” in North Carolina. FEIS, pp. 1-14, 7-19 to 7-20. The FEIS also provides data for “all rural and urban two-lane undivided US routes in Division 11.” FEIS, p. 7-20. However, this is not responsive to Smart Growth’s concerns that US 321 accident rates be compared with rates of roads with similar grades and curves. The FEIS itself notes that this information is important, stating that “the primary contributing factors for exceeding critical [accident] rates were grade, horizontal curvature, darkness, and weather.” FEIS, p. 1-1. Without proper comparison information, the claim of high accident rates on US 321 still cannot be verified.

The FEIS also fails to respond to Smart Growth’s comments that more than half the accidents in the period reported in the DEIS occurred in poor weather conditions and more than

one third involved speeding vehicles. RPG Comments, p. 16. If accidents occur because of weather or poor driving, this “bring[s] into question the conclusion that the widening alternative will reduce accidents and increase safety.” RPG Comments, p. 15.

The FEIS provides an inadequate response to Smart Growth’s comment that widening the road may encourage faster driving and thus increase accident rates (RPG Comments, p. 16), stating merely that “[e]nforcement of speed limits is a local responsibility.” FEIS, p. 7-19. The FEIS ignores how these greater speeds may affect accident rates. The FEIS provides no response to Smart Growth’s comment that “[g]iven the climate conditions unique to the high country, there is reason to suspect that the [Transportation Systems Management] alternative would be at least as effective as the widening alternative in reducing accidents and increasing safety. No evidence is presented to the contrary.” RPG Comments, p. 2.

CHAPTER 2: ALTERNATIVES CONSIDERED

COMMENT: The FEIS Fails to Consider a Reasonable Bypass Alternative Proposed by Smart Growth

Smart Growth’s earlier comments stated (TPM Comments, p. 8):

The Concerned Citizens spent a significant amount of time and money in preparing a Bypass Alternative that could satisfy the project’s purpose and need and not harm the town’s quality of life. The organization submitted it to DOT. DEIS, p. 2-5. However, while DOT analyzed four Bypass Alternatives in detail and analyzed several other Bypass Alternatives briefly, DOT refused to analyze the Concerned Citizens’ bypass proposal at all. Instead, DOT analyzed other bypass options to which many residents, including the Concerned Citizens, are opposed.

The FEIS provides only an inadequate response to this comment. It notes, as did the DEIS, that the study team considered “location criteria particularly important to the Concerned Citizens.” FEIS, pp. 2-13, 7-27; DEIS, p. 2-10. The FEIS further states “[t]he alternatives

developed by the study team * * * did not exactly match those proposed by the Concerned Citizens because the study team's alternatives reflect an engineered horizontal and vertical design." FEIS, p. 7-27.

The detailed proposal submitted by Smart Growth would alleviate many of the problems associated with the bypass alternatives selected by NCDOT for further analysis. As previously noted (TPM Comments, pp. 8-9):

The Concerned Citizens' proposal involved the use of a much smaller tunnel under the Blue Ridge Parkway than the one in the proposed Bypass Alternatives 4A and 4B. DEIS, p. 2-5. Concerned Citizens did this to lower the cost, reduce the amount of earthwork, and create an alternative that would not require mechanical ventilation or the 24-hour presence of emergency vehicles. The Concerned Citizens' proposal also involved a different route than the DEIS's Bypass Alternatives in order to reduce the steep (25 percent) grades in Alternatives 4A and 4B to 6 percent or less, thereby improving safety and traffic flow. * * * Since the Concerned Citizens' proposal has substantial benefits over Alternatives 4A and 4B, that proposal should be analyzed as a Bypass Alternative rather than alternatives which are less beneficial and therefore more easily dismissed.

The FEIS's reason for failing to analyze the Smart Growth proposal is inadequate. Far from "not exactly matching" Smart Growth's proposal, the alternatives chosen for analysis in the DEIS and subsequently the FEIS are not even similar to it. Smart Growth's proposal placed the bypass substantially farther east and below Green Hill Road, thus reducing grades, increasing sight distances, and separating north and south-bound lanes. The tunnel would be 800 feet, rather than the 1500 feet in Bypass Alternatives 4A and 4B (FEIS, p. 2-87), thus eliminating the need for mechanical ventilation (*see* FEIS, p. 2-87 (mechanical ventilation is needed only for tunnels of "greater than 800 feet")) and the 24-hour presence of emergency vehicles. Traffic on the local road would be reduced to the small percentage that is actually local, thus decreasing the opportunities for accidents. Fewer homes and no businesses would be destroyed. Thus, by

analyzing Bypass Alternatives 4A and 4B rather than Smart Growth’s proposal, the FEIS analyzes alternatives with fewer benefits and more costs, in terms of additional earthwork, mechanical ventilation, the need for emergency vehicles, reduced safety, and social and economic impacts. These alternatives are thus easier to dismiss than the Smart Growth proposal would have had it been analyzed.

Moreover, merely stating that the bypass alternatives chosen for analysis “reflect an engineered horizontal and vertical design” (FEIS, p. 7-27) is insufficient. If the Smart Growth tunnel bypass proposal is inadequate from an engineering or cost standpoint, the FEIS should describe, at least briefly, the rationale for reaching that conclusion. If the proposal is not inadequate, the FEIS should have included a detailed analysis. The FEIS provides no analysis of the proposed alternative and no sufficient reason for its rejection.

The alternatives analysis must “explore and evaluate all reasonable alternatives, including those not within the jurisdiction of the State Project Agency and the alternative of no action.” 01 N.C.A.C. 25.0603(4)(a). If it chooses to reject an alternative, the FEIS must “discuss the reasons for the elimination of [the] alternative[] from detailed study.” 01 N.C.A.C. 25.0603(4)(b). In failing to consider Smart Growth’s proposal, and in giving no sufficient reason for that failure, the FEIS fails to explore all reasonable alternatives, and the alternatives analysis is therefore inadequate.

COMMENT: The FEIS Fails to Consider Adequately the Alternatives It Does Consider because It Does Not Take into Account the Effect on These Alternatives of Other Highway Projects

As noted above, the FEIS describes numerous TIP projects. FEIS, Figure 1-1. However, it fails to take into account the mitigating effects of these projects, especially project R-2506,

when calculating projected traffic volumes for US 321. Consequently, the FEIS measures alternatives, particularly the no-build alternative, against improper benchmarks, and thus fails to analyze these alternatives adequately.

COMMENT: The FEIS Fails to Analyze Adequately the Transportation Systems Management Alternative

Transportation Systems Management (hereafter “TSM”) is defined by the FEIS as “modest physical and operational improvements to traffic performance, safety, and management” which “typically do not involve large capital outlays.” FEIS, p. 2-49. Smart Growth commented extensively on the analysis of the TSM alternative in the DEIS, stating: “In summary, the existing and future conditions capacity analysis does not provide enough justification to ignore the TSM alternative for the study section. In order to better evaluate the TSM option, more detailed operations analysis is needed.” RPG Comments, p. 2. This comment is still valid, because the FEIS fails to provide detailed analysis.

The FEIS also fails to address other points in Smart Growth’s earlier comments concerning the TSM alternative:

- “If more reasonable growth and peak hour assumptions are used, the TSM alternative achieves an acceptable level of service through the study section.” RPG Comments, p. 2.
- “The method used to generate traffic counts is not well documented and is insufficient to do an accurate traffic operations analysis for the [TSM] alternative. Such an alternative should have been evaluated using traffic counts for each roadway segment and turning movement counts at all signalized and at major unsignalized intersections.” RPG Comments, p. 4.
- “[I]ntersection turning movement counts should have been taken because intersections dictate capacity along arterials. Without detailed traffic information, it is very difficult to determine whether operational improvements are sufficient in the TSM alternative.” RPG Comments, p. 4.

- “Based on the information provided in the DEIS, a reasonable rate of growth for the study section is somewhere between 20 percent (based on permanent population) and 50 percent (based on permanent plus seasonal population). Both growth rates are well below the 80 percent growth assumed for the traffic forecasts and can have an impact on the feasibility of the TSM scenario.” RPG Comments, pp. 6-7.
- Assuming Level of Service D thresholds, “the TSM option of adding shoulders and a center turn lane could acceptably accommodate year 2025 traffic during an average weekday peak hour, and could come close to providing acceptable levels of service by 2025 for all but the highest 100 hours of traffic.” RPG Comments, p. 13.

These comments remain valid, because the FEIS fails to respond to them at all or, insofar as it responds, it responds inadequately.

The FEIS notes Smart Growth’s concern about intersection analysis: “The statement made above--‘intersections determine capacity along arterial roadways’--is a generalization of highway capacity analysis methodology and not reflective of the full US 321 project area corridor. This comment is more suited for downtown streets in an urban area where many intersections are signalized and turning movements represent a substantial percent of total traffic.” FEIS, p. 7-30. It then goes on to describe US 321 in Blowing Rock as “a two-lane rural highway that meanders through a mountainous terrain.” *Ibid.* However, this is an inaccurate description of the highway, which contradicts earlier descriptions in the FEIS itself. For example, the FEIS states that US 321 “can be described best in three sections,” only one of which is rural, and two of which are considered urban. FEIS, pp. 1-7 to 1-8. In the more urban environment of these two sections, the terrain is flat and traffic patterns are affected by traffic signals, particularly along the section between US 321 Bypass and Possum Hollow Road where the TSM option could function most effectively. The failure to conduct a detailed traffic

intersection analysis makes it difficult to evaluate the ability of TSM improvements to meet the projected need.

The FEIS does note: “Since DEIS publication, NCDOT revisited the TSM alternatives and conducted further detailed traffic operational and safety analyses in response to public comments.” FEIS, p. 7-31. However, the FEIS uses this additional information to evaluate, not the original TSM alternatives for which analysis was inadequate, but a new “partial four-lane alternative.” See FEIS, pp. 2-55 to 2-61. At least some of the problems considered in discarding this new alternative would likely not be problems under the original TSM alternatives. For example, the partial four-lane alternative assumes that “a four-lane US 321 would be provided north and south” of the segments for which it proposes two travel lanes and left-turn lanes. FEIS, p. 2-55. This creates a “substantial design challenge” in the transition from the four-lane segments to the two lanes/left-turn lanes segment in the Green Park Historic District. FEIS, p. 2-58. The original TSM alternatives do not have this problem, because they do not include the widening of some segments of US 321. Thus, the FEIS avoids applying detailed intersection analysis to the original TSM alternatives by creating a new alternative, which has built-in problems that allow it to be readily discarded. The FEIS therefore still fails to analyze the TSM alternative adequately, because it fails to apply a detailed traffic intersection analysis to the original alternatives.

The FEIS also provides inadequate analysis for the TSM alternative because it fails to consider the impact of other highway projects as set forth in Figure 1-1 and noted above. The FEIS states that the TSM alternative will increase capacity of US 321, but not sufficiently for LOS D and E in 2025 for the peak volumes. FEIS, pp. 2-49 to 2-51. However, the analysis of

the TSM alternative does not state whether it takes into consideration all the other projects in the TIP that could be completed by the design year of 2025. FEIS, Figure 1-1. Therefore, the analysis of the TSM alternative is inadequate.

Finally, the FEIS fails to address all the TSM options available. The FEIS states that it did not consider TSM options such as eliminating driveways and improving curves because these “would mainly improve safety and make only limited improvements in capacity.” FEIS, p. 2-49. However, one of the project’s purposes is to improve safety. FEIS, p. 1-2. In addition, because as we noted above (pp. 10, 15-16), the FEIS inflates the capacity the TSM alternative must achieve to serve the purpose of the project, the limited improvements in capacity from these options may be sufficient to justify the consideration of a TSM alternative under a more reasonable need estimate. The FEIS fails to provide sufficient analysis to answer this question.

We appreciate the opportunity to submit these comments.

Respectfully submitted,

Bruce J. Terris
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(202) 682-2100
(202) 289-6795 (fax)
btarris@tpmlaw.com

November 27, 2006

RECEIVED

NOV 09 2006

Dear Mr. Dickens,

I live off US 321 through
the town in limits of Blowing Rock.

278 Greenwood Circle

I live on the golf
course and built my home
in 1964. One block from
the entrance of the "County
Club". We need a stop
light to turn into the
club and one short block
later in my street.

I have been so against
DOT 4 laneing 321 - this will
kill our town - not just
because of my home - the
traffic will be unbearable
and there is only one entrance
to my home and the club -

~~I would like~~ I would like so much,
but please read the "letter to
the editor" in the Blowing
Rock newspaper, Oct. 26, Bull Dean can
thank you, ^{my} P.O. Box 90
Blowing Rock,

P O Box 2409
Blowing Rock NC 28605
November 3, 2006

Missy Dickens, PE
Project Development and Environmental Analysis Branch
NCDOT
1548 Mail Service Center
Raleigh NC 27699-1548

RECEIVED
NOV 09 2006

Ms Dickens:

As citizens of Caldwell County and Blowing Rock, North Carolina we are outraged at the two decades and \$ 6 million on PLANNING improvements to US Highway 321. The "Third Phase" of the US 321 plans include a section through historic Blowing Rock. We think the department has far better use for both its time and our money!

If the remainder of US 321 were a true by-pass from Charlotte/Gastonia to Boone with limited access and open highway speed limits, perhaps this "Blowing Rock- Third Phase" project would have some degree of merit. However given the fact that US 321 has multiple stoplights, municipal speed limits, and already runs through Hickory, Granite Falls, and Lenoir the current proposal for the Blowing Rock section is idiocy!

The proposed project will NOT improve the traffic flow or otherwise create a by-pass situation in Blowing Rock anymore than the roadway which currently exists. Since the NCDOT's overall plans for improvement to US 321 did not include COMPLETELY by-passing all municipalities between Charlotte and Boone the department should disband the "Third Phase" and put its efforts and our money elsewhere. Surely there are more pressing road needs than this 4.3 mile section through a quaint and historic area like Blowing Rock.

Yours truly,



George and Quincy Parham

cc: Lt. Governor Beverly Perdue

Robert L. Mattocks, II- former board member of NCDOT

Jerry Burns, Editor-" The Blowing Rocket"



B. RESPONSE TO FEIS COMMENTS

B.1 US Environmental Protection Agency (USEPA)

Comment: “The Draft EIS did not directly address the issue of invasive plant species. The document also does not address this NEPA cross-cutting issue under E. O. 13112. [US]EPA has environmental concerns regarding the potential spread of invasive plant species, including very aggressive exotic (alien, foreign, introduced and non-indigenous) plants such as Japanese knotweed (*Fallopia japonica*) and Kudzu (*Pueraria montana*) along the proposed project. Further recommendations for appropriate use of best management techniques are contained in the enclosure to this letter.” (See Appendix A.)

Response: NCDOT is committed to Best Management Practices for the removal/and or elimination of invasive species. NCDOT has adopted specific project commitments (Project Commitments in the FEIS) to protect the integrity of the natural environment. Because of the unique nature of the project area (Green Park Historic District, resort community, etc.), NCDOT has committed to developing a landscape plan that reflects and protects the existing natural character of the community.

All plantings (landscaping) will be conducted in accordance with NCDOT’s *Guidelines for Planting within Highway Right-of-Way*. The Design and Development Section within the Roadside Environmental Unit maintains a listing of invasive ‘ornamental’ plants. It contains plants that may have been propagated or volunteered along the roadside in the distant past, but they are no longer being actively integrated within landscape plantings because of their invasive nature. Some examples from the list include: Mimosa (*Albizia julibrissin*), Thorny, Russian & Autumn Olive (*Elaeagnus pungens, angustifolia, and umbellata*), Japanese Silvergrass (*Miscanthus sinensis*), Multiflora Rose (*Rosa multiflora*), Chinese and Japanese Privet (*Ligustrum sinense and japonicum*), Crown Vetch (*Coronilla varia*), Chinese and Japanese Wisteria (*Wisteria sinense and floribunda*), and English Ivy (*Hedera helix*).

NCDOT is currently funding two multi-year research projects at a cost of over \$600,000. These projects are investigating control methods for invasive terrestrial or aquatic weed species. Dr. Joe Neal and Dr. Rob Richardson are the principle investigators at North Carolina State University. Dr. Neal’s project (2006-05) is titled “Innovative and Environmentally Responsible Methods for Controlling Invasive Woody Plant Species in NC Rights-of-Way” and was initiated in 2005. The project goals include investigating wet-blade technologies to determine their feasibility to control tree species, including Tree-of-heaven (*Ailanthus altissima*) and Princess tree (*Paulownia tomentosa*). In addition, a new biological control agent (*Chondrostereum purpureum*) (tentative trade name Chontrol) is being evaluated. It is intended to prevent resprouting of woody weeds following cutting. Dr. Richardson’s project (2008-06) is titled “Establishing Native Vegetation and Improved Invasive Species Control on North Carolina Roadsides.” This project is in the initial phase of conducting an extensive literature search. The project goals include developing control methodologies for two aquatic invasive plants: Japanese knotweed (*Polygonum cuspidatum; Fallopia japonica; Reynoutria japonica*) and Alligator weed (*Alternanthera philoxeroides*). In addition, the germination and growth habits of several native grasses and milkweed (*Asclepias tuberosa*) will be evaluated.

The ultimate goal would be to develop a successful seeding methodology to allow incorporation of more native species along the roadsides.

NCDOT coordinates several statewide team meetings throughout the year, including an annual vegetation management conference to discuss integrated weed control measures. Invited speakers include professional researchers from the “green industry,” from both within and outside of North Carolina, to discuss the latest research associated with control of invasive plants.

Comment: “The selection of the Widening Alternative involves substantial impacts to stream both from culverting but mostly from placement of roadway fill parallel to the widened roadway causing a lateral shift of the streams. The amount of direct impact to streams is second highest of the 5 build alternatives considered. The Draft EIS indicated ample availability of other sites for offsetting the impact; however, the Final EIS does not address it in any detail. Further, this proximity of fill to the streams presents substantially greater difficulties in managing stormwater runoff during construction. EPA would appreciate having specific mitigation addressed during the Merger Process, and included in the Record of Decision.”

Response: On April 20, 2004, representatives from the USEPA and other environmental resource and regulatory agencies met with NCDOT as a Merger Team. The team concurred (Concurrence Point 4A) on avoidance and minimization efforts for streams and wetlands related to the design of the Widening (Preferred) Alternative. The preliminary design presented at the project’s Public Hearing was affirmed as appropriate minimization of stream and wetland impacts. These features will be incorporated into the final design.

At Concurrence Points 4B (30 percent hydraulics review) and 4C (permit drawings review) of the Merger process, the Merger Team will discuss and reach consensus on final mitigation plans.

On-site mitigation would be the first option, with off-site mitigation used if sufficient suitable on-site mitigation sites are not available. The NC Department of Environment and Natural Resources-Ecosystem Enhancement Program (NCDENR-EEP) will be used to satisfy NCDOT’s required off-site compensatory mitigation requirements for the federal and state permits, pursuant to the terms of the NCDENR/NCDOT 2004 Memorandum of Agreement Governing EEP Operations.

B.2 North Carolina Wildlife Resources Commission (NCWRC)

Comment: “A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer [of several trout waters in the project area] may be requested from October 15 to April 15, which is our standard trout moratorium dates, as opposed to those listed in section 4.16.6 of the document [FEIS]. Smallmouth bass may also occur in the project area and are sometimes afforded an in-water work moratorium from May 1 to July 15. NCWRC will provide more specific recommendations related to work moratoriums at a later date.”

Response: During final design, NCDOT will coordinate with the NCWRC on moratoriums for in-stream construction activities and land disturbance within 25-feet of trout and bass waters.

B.3 North Carolina Division of Water Quality (NCDWQ)

Comment: “1) The project is being planned as part of the 404/NEPA Merger Process. As a participating team member, the NCDWQ will continue to work with the team.”

Response: No response necessary.

Comment: “2) All of the named streams that this project drains to have a designation of Tr waters of the State. DWQ recommends that the most protective sediment and erosion control BMPs be implemented to reduce the risk of turbidity violations in trout waters. In addition, all disturbances within trout buffers should be conducted in accordance with NC Division of Land Resources and NC Wildlife Resources Commission requirements.

Review of the project reveals the potential for a small section of the project to drain to surface waters classified as C, Tr, High Quality Waters of the State in the project study area. This is one of the highest classifications for water quality. Pursuant to 15A NCAC 2H .1006 and 15A NCAC 2B .0224, NC DOT will be required to obtain a State Stormwater Permit prior to construction.”

Response: Erosion and sediment control were addressed in Sections 4.9.1 and 4.16.6 of the FEIS. The NCDOT will coordinate during final design with the NCWRC regarding trout streams and High Quality Waters as noted in NCWRC comment above. The NCDOT will develop a State Stormwater Management Permit plan for NCDWQ review at Merger Team Concurrence Points 4B (30 percent hydraulics review) and 4C (permit drawings review).

Comment: “3) The environmental document should provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping. If mitigation is necessary as required by 15A NCAC 2H.0506(h), it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. Appropriate mitigation plans will be presented for discussion and agreement at Merger Team Concurrence Point 4C (permit drawings review).”

Response: The FEIS jurisdictional impacts assessment and mitigation discussions (Section 4.9.3 of the FEIS) were developed in accordance with the requirements set forth in the North Carolina Environmental Policy Act (NCEPA). On April 20, 2004, representatives from the USEPA and other environmental resource and regulatory agencies met with NCDOT as a Merger Team. The team concurred (Concurrence Point 4A) on avoidance and minimization efforts for streams and wetlands related to the design of the Widening (Preferred) Alternative. The preliminary design presented at the project’s Public Hearing was affirmed as appropriate minimization of stream and wetland impacts. These features will be incorporated into the final design. Further avoidance, minimization and mitigation discussion will occur at Concurrence Points 4B (30 percent hydraulics review) and 4C (permit drawings review) meetings. Appropriate final mitigation plans will be submitted with the request for a 401 Water Quality Certification. On-site mitigation would be the first option, with off-site mitigation used if sufficient suitable on-site mitigation sites are not available. The NC Department of Environment and Natural Resources-Ecosystem Enhancement Program (NCDENR-EEP) will be used to satisfy NCDOT’s required off-site compensatory mitigation requirements for the federal and state permits, pursuant to the terms of the NCDENR/NCDOT 2004 Memorandum of Agreement Governing EEP Operations.

Comment: “4) Environmental assessment alternatives should consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives should include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ Storm water Best Management Practices, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.”

Response: Appropriate stormwater management plans will be developed during final design for discussion and agreement at Merger Team Concurrence Points 4B (30 percent hydraulic review) and 4C (permit drawings review).

Comment: “5) After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.”

Response: As noted above, the Merger Team reached concurrence (Concurrence Point 4A) on avoidance and minimization efforts for streams and wetlands related to the design of the Widening Alternative. The Widening Alternative will affect less than one tenth of an acre of wetlands. Although it was found that there is no practicable alternative to construction in the wetlands, the Merger Team agreed to include a retaining wall in the final design to reduce impacts (Section 4.9.3 of the FEIS). A final mitigation plan for streams and wetlands will be submitted for discussion and agreement at Merger Team Concurrence Points 4B (30 percent hydraulic review) and Point 4C (permit drawings review).

Comment: “6) In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 150 linear feet to any single perennial stream. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.”

Response: The concern is noted. It is currently anticipated that off-site mitigation would be handled through the Ecosystem Enhancement Program (EEP).

Comment: “7) Future documentation, including the 401 Water Quality Certification Application, should continue to include an itemized listing of the proposed wetland and stream impacts with corresponding mapping.”

Response: Such a listing and associated mapping will be provided.

Comment: “8) DWQ is very concerned with sediment and erosion impacts that could result from this project. NC DOT should address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.”

Response: Erosion and sediment control were addressed in Sections 4.9.1 and 4.16.6 of the FEIS. An erosion and sediment control plan will be prepared and implemented.

Comment: “9) NC DOT is respectfully reminded that all impacts, including but not limited to, bridging, fill, excavation and clearing, to jurisdictional wetlands, streams, and riparian buffers need to be included in the final impact calculations. These impacts, in addition to any construction impacts, temporary or otherwise, also need to be included as part of the 401 Water Quality Certification Application.”

Response: Impacts to jurisdictional areas are addressed in Sections 4.9.1 and 4.16.6 of the FEIS and will be included in the 401 Water Quality Certification application.

Comment: “10) Where streams must be crossed, the DWQ prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts should be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, DOT should not install the bridge bents in the creek, to the maximum extent practicable.”

Response: Culverts would be countersunk. The question of the appropriateness of bridges or culverts was addressed by the Merger Team on April 20, 2004 (Concurrence Point 4A). The Division of Water Quality concurred on this date with the proposed use of bridges versus culverts with the Widening Alternative (Concurrence Point 2A). (See Appendix F and Section 7.10.2 of the FEIS.)

Comment: “11) Sediment and erosion control measures should not be placed in wetlands or streams.”

Response: Sediment and erosion control measures will not be placed in wetlands or streams.

Comment: “12) Borrow/waste areas should avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas will need to be presented in the 401 Water Quality Certification and could precipitate compensatory mitigation.”

Response: Borrow/waste areas will avoid wetlands to the maximum extent practicable. Borrow/waste areas are discussed in Section 4.16.5 in Chapter 4 of the FEIS. This section indicates that the earthwork can be balanced with the Widening Alternative and thus no need for borrow and waste sites is anticipated.

Comment: “13) The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater should not be permitted to discharge directly into streams or surface waters.”

Response: Stormwater will not be permitted to discharge directly into streams or surface waters.

Comment: “14) Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require an Individual Permit (IP) application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that a 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require the submittal of a formal application by the NCDOT and written concurrence from the NCDWQ. Please be aware that any approval will be contingent on appropriate avoidance and

minimization of wetland and stream impacts to the maximum extent practical, the development of an acceptable stormwater management plan, and the inclusion of appropriate mitigation plans where appropriate.”

Response: Appropriate mitigation plans will be developed prior to request for 401 Water Quality Certification. A final mitigation plan for streams and wetlands will be submitted for discussion at Merger Team Concurrence Point 4B (30 percent hydraulics review) and finalized at Merger Team Concurrence Point 4C (permit drawings review).

Comment: “15) If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.”

Response: As noted in Section 4.16.1 of the FEIS, NCDOT will comply with federal, state, and local laws and ordinances related to project construction. A dry work area should be maintained to prevent direct contact between curing concrete and stream water.

Comment: “16) If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas should be seeded or mulched to stabilize the soil and appropriate native woody species should be planted. When using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.”

Response: Where temporary access roads and detours are required, NCDOT will consider regrading to preconstruction contours and elevations on a case by case basis, and NCDOT will do so where reasonable. Disturbed areas will be reseeded following construction. Where temporary structures are required, the area will be cleared but not grubbed.

Comment: “17) Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.”

Response: These recommendations follow NCDOT’s typical design practice.

Comment: “18) If multiple pipes or barrels are required, they should be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.”

Response: At the Merger Concurrence Point 4B Meeting, NCDOT will review with the team the proposed drainage design for purpose of concurrence.

Comment: “19) If foundation test borings are necessary; it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3494/Nationwide Permit No.6 for Survey Activities.”

Response: Geotechnical work approvals will be obtained as needed.

Comment: “20) Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of *North Carolina Sediment and Erosion Control Planning and Design Manual* and the most recent version of NCS000250.”

Response: Sediment and erosion control measures sufficient to protect water resources will be implemented and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual* and the most recent version of NCS000250.

Comment: “21) All work in or adjacent to stream waters should be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures should be used to prevent excavation in flowing water.”

Response: NCDOT will follow the Best Management Practices defined in the most recent NCDOT *Construction and Maintenance Activities Manual*.

Comment: “22) While the use of National Wetland Inventory (NWI) maps, NC Coastal Region Evaluation of Wetland Significance (NC-CREWS) maps and soil survey maps are useful tools, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.”

Response: Delineated wetlands were used in the assessment of impacts in the DEIS and FEIS (Section 4.9.3 of the FEIS).

Comment: “23) Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.”

Response: NCDOT will use Best Management Practices in reducing sedimentation and the likelihood of introducing pollutants into the stream channels. These recommendations follow NCDOT’s typical design practices.

Comment: “24) Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.”

Response: The technique described will be used as applicable, in keeping with NCDOT’s typical design practice.

Comment: “25) Riparian vegetation (native trees and shrubs) should be preserved to the maximum extent possible. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.”

Response: Riparian vegetation will be preserved to the maximum extent possible. Riparian vegetation will be reestablished within the construction limits of the project by the end of the growing season following completion of construction.

B.4 Department of Environment and Natural Resources, Winston-Salem Regional Office

Comment: “After review of this project it has been determined that the ENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law.” (The permits that may need to be obtained are listed in the original letter in Appendix A.)

Response: NCDOT will secure needed permits and certifications in accordance with North Carolina law.

B.5 Department of Cultural Resources

No comment.

B.6 Town of Blowing Rock

Comment: “The project is in agreement with the goals and objectives of the agency’s programs.”

Response: No response needed.

B.7 Smart Growth for Blowing Rock

Note that throughout this comment letter, this commenter references DEIS comments prepared by the Renaissance Planning Group (RPG) and indicates that in some cases, the FEIS provided no response to these comments. These comments were not sent to NCDOT prior to the publication of the FEIS and therefore could not be addressed in the FEIS. NCDOT requested and received a copy of the RPG comments after receiving the November 27, 2006 comment letter on the FEIS. The FEIS does include answers to comments received via e-mail from a RPG representative after the close of the DEIS comment period. These comments and their respective responses are presented as Section 7.8.7 of the FEIS.

Please also note that “Smart Growth for Blowing Rock” was once known as “Concerned Citizens of Blowing Rock” and is sometimes referred to by that name in this section.

B.7.1 Comments Regarding the Chapter 1: Purpose and Need for Action

Comment: “The FEIS overstates the need for the project by improperly estimating the peak hour ratio.”

Response: The FEIS does not improperly estimate the peak hour ratio or factor. A similar comment on the DEIS was received after the DEIS public comment period ended. It was answered on pages 7-29 to 7-30 of the FEIS in Section 7.8.7. As indicated in that response, NCDOT considered that Blowing Rock is a resort town with seasonal peaking characteristics in its selection of 14 percent of Average Daily Traffic as the project's Design Hour Volume (DHV) (the volume the project is being designed to serve). The decision to use 14 percent was based on a combination of both American Association of State Highway and Transportation Officials (AASHTO) standards and Automatic Traffic Recorder (records hourly volumes 365 days a year) traffic counts taken in the project area.

Irrespective of the commenter's concern with the use of 14 percent as the project's design hourly volume, NCDOT did consider the merits of using a lower design traffic standard that reflected the typical weekday peak period. That study is presented on pages 2-49 to 2-54 of the FEIS in association with consideration of two- and three-lane alternatives. That analysis asked the question: Would US 321 traffic operate under uncongested conditions (LOS D or better) in a typical weekday peak period with an improved two-lane or improved three-lane road? As illustrated in Figures 2-11 to 2-13 of the FEIS, the section of US 321 between Green Hill Road and US 321 Business would barely operate at uncongested levels during the typical weekday peak period with three lanes, but the rest of US 321 would operate at an unacceptable LOS. As stated on page 2-51 of the FEIS, the conclusion of this analysis was: "Because an improved two-lane road and a three-lane road performed poorly even on a typical weekday and therefore worse during October and summer weekend travel peaks, TSM improvements would not meet the purpose of providing an adequate level of traffic service through 2025."

Comment: "The origin and destination study remains inadequate."

Response: A similar question was asked during the DEIS comment period and was answered on page 7-18 of the FEIS. That response indicated that "the purpose of the Origin and Destination study was to collect information that could provide general guidance as to the mix of traffic in Blowing Rock. Information gathered from the study on through and local traffic was used to adjust the Travel Demand Model." The remainder of this response provides additional information on the development of the traffic forecasts, how the Origin and Destination study results were used, and how traffic peaking characteristics were determined.

The Travel Demand Model was developed by NCDOT for the purpose of preparing the 1997 Blowing Rock Thoroughfare Plan and also was used in developing the traffic forecasts used in the US 321 DEIS and FEIS. The Travel Demand Model forecast traffic on major and minor thoroughfares within a Blowing Rock "planning area" and forecast traffic coming into and out of that area. The planning area encompassed the Town of Blowing Rock plus an area north of Blowing Rock that included the Blue Ridge Parkway, US 221 as far northwest as the Blue Ridge Parkway, and US 321 as far northeast as a point just south of Aho Road.

The Travel Demand Model forecast Average Daily Traffic (also called Average Annual Daily Traffic or AADT) in the project area. The AADT on any given road segment is the total traffic volume on that segment during a year divided by 365. To ensure the model accurately reflects travel on the road system in the planning area, the model was

calibrated so that model results for existing AADT correlate with AADT derived from existing traffic counts.

The traffic counts that were used to calibrate the Travel Demand Model were 1994 traffic counts taken in May (as stated on page 1-8 of the FEIS). May was chosen for the counts by NCDOT after consultation with local officials. It represents an “average” month in this area, which experiences high degrees of seasonal traffic variations. In an area with substantial seasonal traffic, using traffic counts from an “average” month facilitates the accurate conversion of the counts to the AADT.

For the FEIS, the 1994 results were adjusted to 1998, as indicated on page 1-8 of the FEIS. This was done based on 1998 traffic counts. Since only a short time had passed, it was not considered necessary to create a new Travel Demand Model using new forecasts of 2025 population and employment in the Blowing Rock planning area.

The Origin and Destination study results aided determining how many trips coming into and leaving the Travel Demand Model area were through trips (also called external-external trips with both their origin and destination outside of Blowing Rock) and how many were internal-external trips (trips between the Blowing Rock planning area and points outside of the planning area). The Origin and Destination study was conducted in September (1998), also because it represents an “average” month in this area.

Origin and Destination study results were not used in the consideration of traffic peaking characteristics, including seasonal variations. Automatic Traffic Recorder (records hourly volumes 365 days a year) data were used to convert the May counts to AADT, determine traffic peaking characteristics in Blowing Rock, including seasonal peaks, and select the peak hour ratio. NCDOT maintains Automatic Traffic Recorder stations throughout North Carolina. There are two such stations at or near Blowing Rock, south of Green Hill Road and north of the Blue Ridge Parkway.

This approach of forecasting the AADT and then multiplying the AADT number times a peak hour ratio to determine the appropriate DHV (the volume the project is being designed to serve) is used statewide and is applicable to all settings irrespective of local peaking characteristics.

Comment: “The FEIS improperly estimates socioeconomic and growth characteristics, leading to an improper estimate of traffic growth for 2025.”

Response: The FEIS did not improperly estimate the socioeconomic and growth characteristics. The commenter suggests that a reasonable permanent population growth rate in the project area would be 20 percent (page 7 of their comments), far less than the forecast traffic growth rate presented in the FEIS (73 to 87 percent from 1998 to 2025 as indicated in Table 1-1 of the FEIS). The Travel Demand Model described in the response to the previous comment assumed a Blowing Rock planning area population of 3,217 in 1994 and 4,123 in 2025 for a growth rate of 0.8 percent per year or 28 percent from 1994 to 2025. Employment in the Blowing Rock planning area was assumed to grow from 2,072 in 1994 to 2,635 in 2025 for a growth rate of 27 percent from 1994 to 2025. These estimates were determined in association with Town of Blowing Rock staff.

As noted by the commenter, however, traffic was forecast to grow from 1998 to 2025 by 73 to 87 percent. Population increase and traffic increase are not directly related; traffic

generally grows faster than population. The additional traffic growth (beyond what might be expected because of population and employment growth in the Blowing Rock planning area) is associated with the expected growth in through trips and trips to and from the Blowing Rock area. The growth in these types of trips was based on an analysis of traffic growth trends on roads leading in and out of the Blowing Rock planning area, as well as potential land use changes outside the Blowing Rock planning area.

Comment: “The FEIS overestimates the need for the project by failing to consider that Blowing Rock is the ‘end of the line’ rather than in the middle of a through route.”

Response: The traffic forecasts reflect that fewer total trips (and fewer trips originating or ending in Blowing Rock) are made to points south Blowing Rock than are made to points north. The forecast AADT south of Blowing Rock presented in Table 1-1 of the FEIS is 14,100 in 2025. Approximately 22 percent of those trips (3,080) are to and from Blowing Rock. The rest are through trips. In 2025, 24,700 vehicles per day (AADT) are forecast on US 321 near Aho Road at the northern end of the Blowing Rock planning area used in the Travel Demand Model. Approximately 49 percent (12,160) of those trips are expected to be to and from the Blowing Rock planning area. Again, the rest are through trips. Thus, trips between Blowing Rock and points north on US 321 are forecast to be four times greater than trips between Blowing Rock and points south. Thus, the project is the end of the line for some trips and not for others, as reflected in the forecasts.

Comment: “The FEIS overestimates the need for the project by failing to consider the effects of other highway projects.”

Response: Other Transportation Improvement Program (TIP) highway improvements in the region would have only a marginal effect on travel demand forecasts on US 321 in Blowing Rock.

The project’s traffic forecasts are demand based. They reflect the demand for travel based on population, employment, and through trip growth. The capacity of the road network has a minimal effect on forecast demand. Thus, traffic forecasts can be assumed to be the same whether that traffic is congested or uncongested, with one exception, if two routes serve travelers with the same origin and destination. In this case, travelers will tend to choose the route with the lowest travel time and improvements that reduce congestion on one route can cause some traffic to shift from the unimproved route to the improved route.

The routes improved by the projects referenced in the comment are not alternate routes for travelers on US 321 in Blowing Rock with one short exception associated with TIP Project No. R-2566 (not R-2506, as incorrectly noted in Figure 1-1 of the FEIS), the widening of NC 105 from US 221 to SR 1107 in Boone. Travelers going to and from southern Avery County and points south can use either US 221 or NC 105 when traveling to Boone. If they use US 221, they pass through the project area on US 321 for 500 feet at the project area’s northern end (between US 321’s intersections with US 221 and Possom Hollow Road).

The commenter suggests that widening NC 105 to four lanes as called for in TIP Project No. R-2566 would divert traffic from US 321 in Blowing Rock to NC 105, reducing the need for the US 321 improvements project. Aside from the fact that such a diversion would affect only a small part of US 321 in the project area (500 feet of a total length of

4.1 miles), NC 105 is already preferred over US 221 as a route between US 221 and Boone because NC 105 is shorter. The distance from the intersection of US 221 and NC 105 in Linville (Avery County) to Boone is approximately 18 miles via NC 105 and approximately 26 miles via US 221 and US 321. Also, NC 105 is straighter than and not as steep as US 221.

Therefore, based on these factors, other highway improvements in the project area would at best have a marginal effect on US 321 forecast travel demand in Blowing Rock and the need for the US 321 improvements project.

Comment: “The FEIS fails to justify adequately the goal of level of service C in 2025.”

Response: A similar comment was addressed on page 7-31 of the FEIS. Level of service (LOS) C is the traffic service goal of the project as stated on page 1-11 of the FEIS. This goal is based on “typical” practice in North Carolina and on *A Policy on Geometric Design of Highways and Streets*, prepared by the American Association of State Highway and Transportation Officials (AASHTO, 2000). The state, however, does not mandate an appropriate LOS. The intent is to obtain the best LOS practical for a given area. Guidance from the FHWA further reinforces this policy by stating that one should not design for failure. As noted in Table 2-13 on page 2-74 of the FEIS, the Widening (Preferred) Alternative will achieve LOS C on all but one section of US 321 in the project area (US 221 to Shoppes on the Parkway).

Page 1-11 also notes that LOS D is typically acceptable in urban areas when it is too costly or environmentally damaging to design for a better LOS. A lower LOS also is considered on roads serving only local traffic, when requested by local officials. As noted in the response to comment on page 7-31 of the FEIS, NCDOT’s interpretation of the FHWA guidance of not designing for failure has been that less than LOS D is not acceptable.

US 321 is designated as a principal arterial in the Federal Functional Classification System and carries both local and through traffic. It is a part of North Carolina’s Intrastate Highway System and the National Highway System. Additionally, in 2004 US 321 was selected as a part of the Strategic Highway Corridor System as an element of North Carolina’s Long-Range, Multimodal Statewide Transportation Plan. It is an important transportation link uniting the western Piedmont region of North Carolina from Charlotte to the mountains.

As noted in the response to the first Smart Growth comment above, recognizing the concerns associated with the impact of a four-lane road on Blowing Rock, when examining the potential for an improved two-lane or a three-lane road to meet the project’s purpose and need (pages 2-49 to 2-54 of the DEIS), two conservative assumptions were made:

1. “That LOS D would be acceptable in the design year; and
2. That community, cultural, and natural resource priorities would take precedent over the travel comfort of October and summer weekend travelers so long as LOS D was achieved during weekday peaks.”

As illustrated in Figures 2-11 to 2-13 of the FEIS, the section of US 321 between Green Hill Road and US 321 Business could achieve a borderline LOS D (almost LOS E) with a three-lane US 321, but the rest of US 321 would be congested (at least LOS E) in 2025 with a three-lane road. If the three-lane road had performed better under these conservative criteria, NCDOT would have considered pursuing the alternative further with the Town of Blowing Rock and other regional stakeholders. Instead, it was concluded that improvements to US 321 of less than four lanes “would not meet the purpose of providing an adequate level of traffic service through 2025.” The two- and three-lane alternatives were in the end judged inadequate not on the basis of failing to achieve LOS C at the designated DHV, but rather were judged inadequate because they generally could not meet LOS D even with the lower volumes of the weekday peak period.

Comment: “The FEIS provides inadequate information concerning accident rates.”

Response: The commenter indicates that a comparison of crash rates on US 321 should be made with crash rates for roads with similar characteristics, and that such a comparison could lead to the conclusion that US 321 crash rates are not high. Such an approach is not appropriate for several reasons:

- If one compares a few roads with nearly identical characteristics, one might find that their crash rates are similar, but that would not necessarily mean that those rates are desirable. Rather, it could mean that all those compared have correctable features that increase the risk and the severity of crashes. The FEIS on page 7-21 included a comparison of US 321 crash rates with crash rates on similar roads in NCDOT Division 11, which contains the project. However, US 321 crash rates were still higher despite narrowing the focus of the comparison to only roads in the more mountainous Division 11.
- The statistical comparison provides an indication that a road may include features that increase the risk of a crash. It is when one examines the type of crashes that occur, as well as the features on the road, that one can identify potential actions that could reduce the risk and the severity of crashes. Opportunities were found to reduce the risk of crashes on US 321. Such improvements associated with the Widening (Preferred) Alternative are listed on pages 2-73 and 2-74 of the FEIS. These features are desirable irrespective of the current crash rate.
- Weather conditions and speeding do increase the risk for crashes and this is true on any road. Road improvements, however, can reduce crash risk even in poor weather conditions and for those who choose to exceed the speed limits. For example, wider lanes and an increased number of lanes give a skidding driver more room to recover. Longer sight distances give other drivers a better opportunity to see a skidding driver and take their own actions to avoid a crash. The fact that weather conditions and speeding contribute to the rate of crashes on a road does not mean that road improvements to reduce the crash risk associated with those factors are not desirable.

In general, the design of the road and the setting in which it occurs are the primary factors that determine the speed people choose to drive. For example, even without speed limits people would drive slower on a local street with many driveways and intersections than on a freeway. When reasonably posted for the design of the road and its setting, traffic research has found that 85 percent of drivers will drive the speed limit or less even if they

have the opportunity to speed. The remaining 15 percent are controlled by enforcement. With four lanes, it is not expected that more drivers will desire to exceed the speed limit. However, there are drivers on existing US 321 whose natural tendency to exceed the speed limit is constrained by the more limited opportunities to pass slower drivers associated with a two-lane road. These drivers will have more opportunities to pass on a four-lane road. Thus, it is likely that more people will exceed the speed limit on a four-lane US 321 than on a two-lane US 321 not because more people will desire to speed, but rather because those who desire to speed will have an increased opportunity. However, it is NCDOT's statewide objective to allow people to travel on roads that are both uncongested and safe. This objective is accomplished by an appropriately sized and designed road in order to give people room for error and minimize the severity of crashes when they do occur for whatever reason. The use of congestion as a means to slow drivers is not considered an appropriate means to reduce the risk of crashes. Congestion in its own way can increase the risk of crashes. For example, the lack of gaps between vehicles in a congested traffic flow can cause drivers to turn from unsignalized side streets in a narrower than desirable gap in traffic, which increases the risk of a collision occurring.

The commenter is correct in saying that road improvements to reduce the risk of crashes also could be made to an improved two-lane or a three-lane US 321. However, safety is one of two needs associated with the project. An improved two-lane road or a three-lane road will not meet the need associated with traffic service deficiencies.

B.7.2 Comments Regarding Chapter 2: Alternatives Considered

Comment: "The FEIS fails to consider a reasonable bypass alternative proposed by Smart Growth."

Response: This question was answered on page 2-27 of the FEIS. The bypass alignment provided by the Concerned Citizens of Blowing Rock consisted primarily of a line approximately 120 feet wide drawn on a US Geological Survey (USGS) map. The Concerned Citizen's of Blowing Rock alignment's assumptions about road grades were based on the length of road between the 40-foot contour lines of USGS mapping (i.e., height of the terrain differs by 40 feet from one contour to the next). This assumption fails to take into account that road construction moves earth from high places to low places to make an appropriate road bed.

The study team understands that the Concerned Citizens' alternative was not developed by a licensed Professional Engineer or someone with civil engineering training. The alternative, however, was well considered by its preparer and served as one starting point for the study team's engineers in developing Bypass Alternatives 4A and 4B. No alternative, however, can be defined as reasonable solely on the basis of the sketches provided by the Concerned Citizens. The merits of the Concerned Citizens' alternative in contrast to Bypass Alternatives 4A and 4B, as viewed by the commenter, are:

- An 800-foot-long tunnel that did not require mechanical ventilation and the 24-hour presence of emergency personnel;
- Located further east, thereby reducing grades (grades of 6 percent or less in contrast to "25 percent" grades with Bypass Alternatives 4A and 4B), increasing sight distances, and separating northbound and southbound lanes;

- Fewer homes and businesses would be destroyed with lesser social and economic impact; and
- Reduces traffic on the local road, decreasing the opportunity for accidents; and
- Has less earthwork.

The following paragraphs discuss each of these items in turn.

800-Foot Tunnel. The Blue Ridge Parkway is approximately 800 feet wide at the point crossed by the Concerned Citizens' proposed bypass. Thus, in order to have a tunnel 800 feet long that does not use land from the Parkway, which is a federal park and is eligible for listing in the National Register of Historic Places, the tunnel portals must be at the boundaries of the Parkway and the tunnel must pass under the Parkway at a right angle. This is what was assumed in the Concerned Citizens' alternative. In making this assumption, however, the Concerned Citizens also assumed that deep cuts could be made in the terrain over both tunnel portals (entrances).

Using drawings provided by the Concerned Citizens, the cut assumed would, at the portals, result in a distance from the pavement to the top of the cut of over 100 feet (roughly 170 feet at the north portal and 110 feet at the south portal). Such a vertical feature could not be built for several reasons:

- As indicated in Table 2-8 of the FEIS, the maximum practical retaining wall height is 70 feet.
- As indicated on page 2-62 of the FEIS, cut slopes greater than 20 feet high must have slopes no steeper than 1.5:1 (i.e., horizontal distance of 1.5 feet for every one-foot of vertical distance). The Concerned Citizens assumed that the cut at the portals is a steeper 1:1 cut. If one assumed a 1.5:1 cut slope above the Concerned Citizens' tunnel, the tunnel length would be longer than 800 feet.
- Experience with other tunnels in the southeastern United States indicates that the height of cuts above a tunnel portal should be minimized to reduce the possibility of stability problems both during construction and in service. A stable cut slope above a portal end is particularly important because unlike cut slopes that parallel the highway, any rock that falls off slopes above the portal will fall directly on the highway or a passing vehicle.

Grades. The commenter is mistaken in stating that Bypass Alternatives 4A and 4B include 25 percent grades. A review of the preliminary engineering drawings for the project, which were available at the public hearing, show that the maximum grade on Bypass Alternatives 4A and 4B is 7 percent. The 7 percent grade occurs for 1,200 to 1,500 feet at the alternatives' southern end where the bypass mostly overlaps with the existing road and matches the existing grade. Other than this exception, the grade on Bypass Alternatives 4A and 4B is 6 percent or less. This grade is acceptable for the project's design speed of 50 mph.

Sight Distances. The key design criteria for the project are shown in Table 2-7 of the FEIS, including the criteria for minimum sight distances. Bypass Alternatives 4A and 4B meet these criteria.

Separation of the Northbound and Southbound Lanes. The sketches provided by the Concerned Citizens of their alternative include a line overlaid on a USGS map and a perspective illustration. Neither shows that separate northbound and southbound lanes were included. The study team, however, was aware of the Concerned Citizens' interest in lane separation. Thus, separation of the northbound and southbound lanes (bifurcation) was examined by project engineers as an option for minimizing the visual and vegetative impacts of a bypass in the Bypass Alternative 4 corridor, as described beginning on page 2-89 of the FEIS. It was found that bifurcation would not reduce the extent of earthwork and other changes in the terrain needed in the Bypass Alternative 4 corridor for two reasons:

- Bifurcation only can be used along the side of the Blue Ridge escarpment. The length of bypass in this area is too short to separate the lanes vertically, bring them back together at the tunnel, and still leave a substantial length of separated roadway.
- The escarpment undulates with the ridge lines (peaks) and swales (valleys) emanating from the escarpment. Thus, the bypass is not just following a side hill. It also cuts through ridges and fills or bridges swales. Without a consistent side hill, the escarpment does not lend itself well to bifurcation.

Fewer Homes and Businesses would be Destroyed with Less Social and Economic Impact. Since the Concerned Citizens did not develop a profile (i.e., a vertical alignment), nor determine the extent of cuts and fills and the need for retaining walls by developing cross-sections, it is impossible to determine that their alternative would involve less displacement. Cuts appear on their sketches only at the tunnel portal. The Concerned Citizens also neglected to note that the northern end of their alternative, where Aho Road meets US 321, passes through the middle of a mobile home park containing 20 mobile homes and one house. Bypass Alternatives 4A and 4B avoid the mobile home park. Bypass Alternatives 4A and 4B would only take 6 to 8 homes and one business.

Decreasing Traffic on the Local Road and the Opportunity for Accidents. Any bypass alternative, including Bypass Alternatives 4A and 4B, would reduce the opportunity for accidents on existing US 321 in Blowing Rock by decreasing traffic on that route.

Less Earthwork. The commenter cannot justify the claim that the Concerned Citizens' alternative would have less earthwork than Bypass Alternatives 4A and 4B because their "sketch" did not assess the cuts and fills associated with their horizontal alignment. The study team's engineers sought both to minimize and to balance (i.e., create similar amounts of borrow and waste) earthwork with all of the FEIS alternatives, as described in Section 4.16.5 of the FEIS.

Comment: "The FEIS fails to consider adequately the alternatives it does consider because it does not take into account the effect on these alternatives of other highway projects."

Response: This comment also was made by the same commenter regarding the Statement of Purpose Need (see above). The previous answer applies to this comment as well.

Comment: “The FEIS fails to analyze adequately the Transportation Systems Management Alternative.

Response: Responses to comments related to the reasonableness of peak hour and growth assumptions, LOS assumptions, and the impact of other highway projects in the region are presented above.

The commenter indicates that traffic counts were not taken at every intersection and considered in the capacity analysis, but should have been because intersections dictate the capacity on arterials. Intersection traffic information was prepared for both 1998 and 2025 in association with traffic forecasts for streets that intersect with US 321. Traffic forecasts for intersecting streets are shown in Figure 1-3 of the FEIS. In addition, intersections are not always the sole issue as it relates to the capacity of an arterial. To make such an assumption would be to assume that the lanes between the intersections have the ability to carry unlimited numbers of vehicles. In order for an arterial to function at a desirable LOS: 1) the road has to have sufficient lanes between intersections (links) and 2) the intersections have to have sufficient lanes and well-designed signal timing.

In deciding if a road has sufficient capacity to carry forecast traffic, the first step is to determine if the road between the intersections can serve traffic at an adequate LOS. If the road itself cannot provide an adequate LOS, then in order to correct that deficiency, either demand must be diverted (e.g., a bypass) or the road’s capacity must be increased (e.g., widening the road). Because in the case of US 321 the number of lanes between intersections is controlling, intersection improvements, such as additional turn lanes, cannot solve the problem of insufficient capacity to carry traffic between intersections. If the lanes between the intersections (links) had been found to provide sufficient capacity, then intersection analyses would be required because then intersections would be controlling. The commenter is correct, however, that an intersection with insufficient capacity can make traffic congestion problems between intersections worse, or create other problems between intersections (e.g., long queues at traffic signals).

In the case of US 321:

- Design criteria for the Preferred Alternative would be in accordance with NCDOT and AASHTO standards. These criteria vary in four distinct segments as shown in Table 2-7 of the FEIS. The Preferred Alternative’s design criteria are based on its two functional classifications: 1) rural arterial south of the Blowing Rock town limits and 2) urban principal arterial north of the town limits.
- As indicated in Tables 1-3 and 1-4 of the FEIS, US 321 in Blowing Rock would have an inadequate design-hour LOS both on its links and at its intersections. Thus, the Preferred Alternative includes intersection improvements, as well as the addition of two travel lanes between intersections.
- As described above, when the lower standard of the typical weekday peak period is assumed, US 321 between Green Hill Road and US 321 Business would barely operate at uncongested levels with three lanes. However, elsewhere in the project area, US 321 would be congested during the typical weekday peak period. This conclusion is associated with limits on the intersection capacity, as well as the

capacity of the road between the intersections, so improvements to intersection capacity alone would not change that conclusion for the reasons noted above.

- The partial four-lane alternative was not assessed as a TSM alternative. As stated on page 2-55 of the FEIS, it was considered in response to public hearing comments that asked that a partial four-lane alternative be considered.
- Straightening curves and eliminating driveways would not increase the capacity of a two-lane or three-lane road in Blowing Rock, unless the change would allow an increase in the design speed and speed limit, or in the case of a two-lane road add additional passing opportunities. In the US 321 context, increasing the speed limit is not considered desirable. Although curves could be straightened (and are with the Widening Alternative) in the Norwood Circle and Country Club Drive area, thereby increasing sight distances, it is unlikely that sight distances would increase enough that passing could be allowed in this area on a two-lane US 321. No passing is allowed on a three-lane road with a two-way-center-left-turn lane.

B.8 Mrs. Buell Duncan

Comment: “We need a stop light to turn into the Blowing Rock Country Club.”

Response: The NCDOT Division 11 Traffic Operations and Investigations Section performed a signal warrant analysis of the US 321/Country Club Drive intersection in September 2006. The analysis was performed by using the signal warrant standards of the Manual of Uniform Traffic Control Devices (which defines national standards) and was the second such investigation conducted in response to citizen requests. The analysis indicated that neither existing nor projected traffic volumes warrant intersection signalization.

Comment: “I have been so against DOT 4 laning 321—this will ruin our town—not just because of my home—the traffic will be unbearable and there is only one entrance to my home and the club. Please read the ‘letter to the editor’ in the Blowing Rock newspaper, October 26, 2006.”

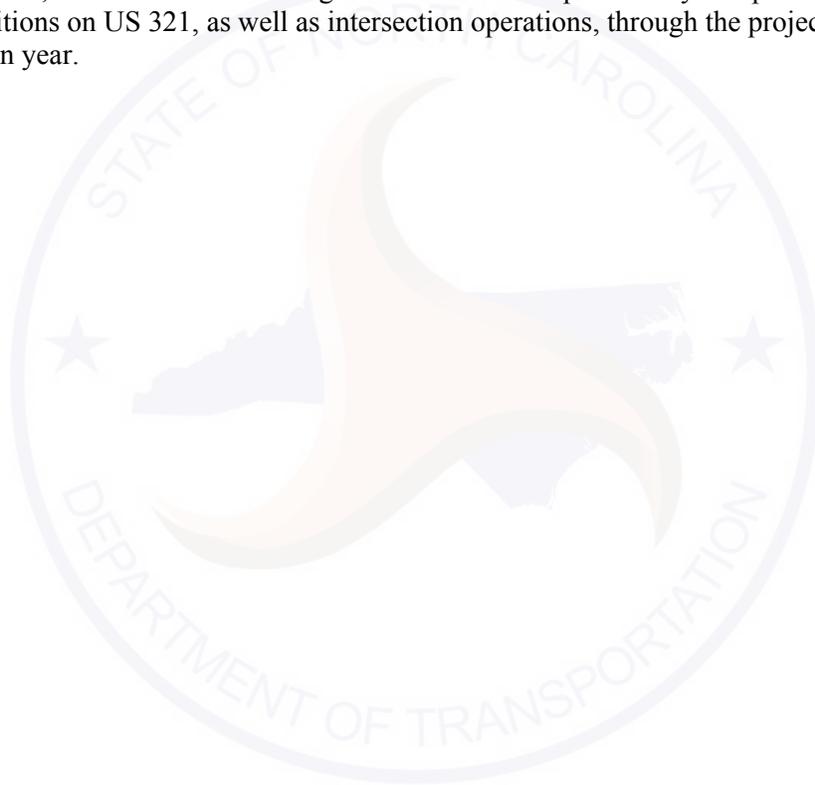
Response: The opposition to the US 321 improvements project is acknowledged. The NCDOT has endeavored to select an alternative for implementation that minimizes impacts to the local environment, while accommodating regional travel needs. Specific concerns raised by the commenter are discussed in the FEIS. The letter to the editor referenced by the commenter was written by Jon Pirtle, who is the President of Smart Growth for Blowing Rock. The concerns with the US 321 improvements project included in the letter have been addressed previously either in the FEIS or in the responses to Smart Growth’s comments presented above.

B.9 George and Quincy Parham

Comment: “As citizens of Caldwell County and Blowing Rock, North Carolina we are outraged at the two decades and \$ 6 million on PLANNING improvements to US Highway 321. The ‘Third Phase’ of the US 321 plans include a section through historic Blowing Rock. We think the department has far better use for both its time and our money! If the remainder of US 321 were a true by-pass from Charlotte/Gastonia to Boone with limited access and open highway speed limits, perhaps this ‘Blowing Rock-Third Phase’ project would have some degree of merit.

However given the fact that US 321 has multiple stoplights, municipal speed limits, and already runs through Hickory, Granite Falls, and Lenoir the current proposal for the Blowing Rock section is idiocy! The proposed project will NOT improve the traffic flow or otherwise create a by-pass situation in Blowing Rock anymore than the roadway which currently exists. Since the NCDOT's overall plans for improvement to US 321 did not include COMPLETELY by-passing all municipalities between Charlotte and Boone the department should disband the 'Third Phase' and put its efforts and our money elsewhere. Surely there are more pressing road needs than this 4.3 mile section through a quaint and historic area like Blowing Rock.”

Response: The opposition to the US 321 improvements project is acknowledged. US 321 is an intrastate highway that passes through numerous settings ranging from rural to urban. Each setting warrants different types of improvements (e.g., roadway cross-sections, traffic lights, etc.). Traffic forecasts, as shown in Tables 2-12, 2-13, and 2-14 of the FEIS, show that the Widening Alternative will improve daily and peak hour traffic conditions on US 321, as well as intersection operations, through the project’s 2025 design year.





C. FEIS ERRATA

- The label “R-2506” on Figure 1-1 of the FEIS is corrected to read “R-2566.”
- The second paragraph of the response to the first comment on page 7-30 of the FEIS is amended from:

The US 321 project area corridor in Blowing Rock is a two-lane rural highway that meanders through a mountainous terrain with high volumes of truck, recreational, and through traffic. It is a NCDOT-designated principal arterial and its primary function is to provide regional mobility. The capacity of this corridor is determined by a complex set of geometric and traffic factors, including the number and width of lanes, posted speed, number of driveways, median type, percent trucks, and terrain.

to read:

The US 321 project area corridor in Blowing Rock is a two-lane highway with two functional classifications: 1) rural arterial south of the Blowing Rock town limits and 2) urban principal arterial north of the town limits. It meanders through a mountainous terrain and has high volumes of truck, recreational, and through traffic. Its primary function is to provide regional mobility. The capacity of this corridor is determined by a complex set of geometric and traffic factors, including the number and width of lanes, posted speed, number of driveways, median type, percent trucks, and terrain.

- The second paragraph of Division 11 project commitments on page vi of the FEIS is amended from:

Blasting. The NCDOT and the contractor will limit blasting to specific times. Those times will be posted on the aforementioned project website. In addition, blasting activities will be announced to the media as to be outlined in the PIP.

to read:

Blasting. The NCDOT and the contractor will limit blasting to specific times. Those times will be posted on the project website. In addition, blasting activities will be announced to the media as to be outlined in the Public Information Plan.

- The following “Project Commitment” is added under Project Development and Environmental Analysis Branch:

Stream Construction Moratoriums

During final design, NCDOT will coordinate with the North Carolina Wildlife Resources Commission on moratoriums for in-stream construction activities and land disturbance within 25-foot of trout and bass waters.

