

**Ashe County
Bridge No. 327 on SR 1509 (Claybank Road)
over Little Buffalo Creek
Federal Aid Project BRZ-1509(8)
WBS No. 42308.1.1
TIP Project B-5147**

CATEGORICAL EXCLUSION

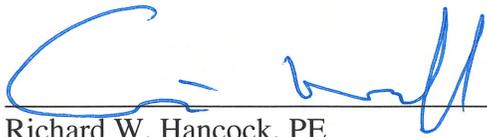
UNITED STATES DEPARTMENT OF TRANSPORTATION

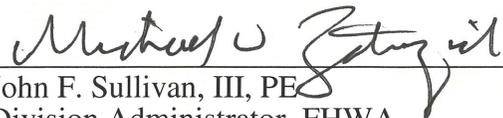
FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

7/29/15
Date *FOR* 
Richard W. Hancock, PE
Manager, Project Development & Environmental Analysis Unit

7-30-15
Date *for* 
John F. Sullivan, III, PE
Division Administrator, FHWA

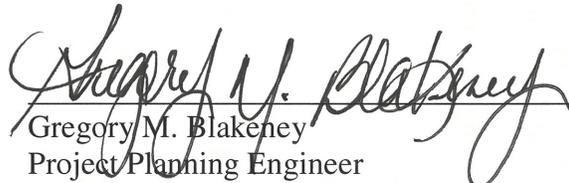
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July 2015

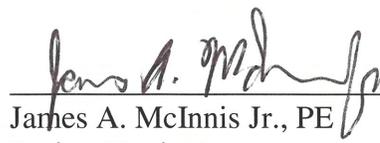
Documentation Prepared For The:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Project Development and Environmental Analysis Unit

7/27/15
Date



Gregory M. Blakeney
Project Planning Engineer
Project Development & Environmental Analysis Unit

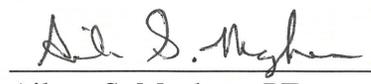
7/29/15
Date



James A. McInnis Jr., PE
Project Engineer
Project Development & Environmental Analysis Unit

Documentation Prepared By:
HATCH MOTT MACDONALD
Fuquay-Varina, North Carolina

7-27-15
Date



Aileen S. Mayhew, PE
Consultant Project Manager
Hatch Mott MacDonald



PROJECT COMMITMENTS

**Ashe County
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Hydraulic Unit - FEMA Coordination

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP) to determine status of project with regard to applicability of NCDOT'S Memorandum of Agreement or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

Division Construction - FEMA

This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

All Design Groups/ Division Resident Construction Engineer - Trout Issues

NCWRC has identified Little Buffalo Creek as supporting a trout population. Therefore, a moratorium on all in-stream work and land disturbance within the 25-foot trout buffer will be in place from October 15 to April 15 of any given year.

NCDOT will implement Guidelines for Construction of Highway Improvements Adjacent to or Crossing Trout Waters in North Carolina in the design and construction of this project.

NCWRC has designated this stream as trout and therefore Design Standards in Sensitive Watersheds will be incorporated.

Division Construction/ Natural Environment Section/ Roadside Environmental Unit

Little Buffalo Creek are class C; Tr, + waters of the State. NCDWR 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 shall be conducted in accordance with NC Division of Land Resources and NC Wildlife Resources Commission requirements.

Project Development & Environmental Analysis Unit - Natural Environment Section

A US Fish and Wildlife Service proposal for listing the Northern Long-eared Bat (NLEB) (*Myotis septentrionalis*) as an Endangered species was published in the Federal Register

in October 2013. Furthermore, this species is included in USFWS's current list of protected species for Ashe County. NCDOT is working closely with the USFWS to understand how this proposed listing may impact NCDOT projects. NCDOT will continue to coordinate appropriately with USFWS to determine if this project will incur potential effects to the Northern long-eared bat, and how to address these potential effects, if necessary.

Construction authorization will not be requested until Endangered Species Act (ESA) compliance is satisfied for the NLEB.

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I. DESCRIPTION OF PROPOSED ACTION

A. Project Purpose

The purpose of the proposed project is to replace a deficient bridge.

B. General Description

The subject project involves the replacement of Bridge No. 327 carrying SR 1509 (Claybank Road) over Little Buffalo Creek in Ashe County. The project is included in the federally-approved 2012-2023 North Carolina State Transportation Improvement Program (STIP). The project is scheduled for right of way and construction in fiscal years 2016 and 2017, respectively, in the state-approved 2016-2025 STIP. The bridge location is shown in Figure 1.

C. Cost Estimates

The cost estimate included in the 2016-2025 STIP for the project is \$410,000. Of this total, \$25,000 is estimated for right of way acquisition and \$385,000 is estimated for construction. Current cost estimates for the project are included in Table 1.

**TABLE 1
 SUMMARY OF ESTIMATED COST**

	Alternative 2 Preferred
Structure	\$ 129,000
Roadway Approaches	156,000
Detour Structure and Approaches	- 0 -
Structure Removal	19,000
Misc. & Mob.	54,000
Eng. & Contingencies	67,000
Total Construction Cost	\$ 425,000
Right-of-way Costs	22,000
Utility Costs	118,000
Total Project Cost	\$ 565,000

II. NEED FOR PROJECT

When this bridge replacement project was initially programmed in 2008, Bridge No. 327 had a sufficiency rating of 12 out of a possible 100 for a new structure. The bridge was considered structurally deficient due to a superstructure condition appraisal of 4 out of 9 and a structural evaluation appraisal of 2 out of 9 according to FHWA standards. Since 2008, temporary repairs have been made to the bridge, including the installation of crutch bents and the replacement of deck timbers and the wooden handrails. These repairs have increased the sufficiency rating for the structure to 79.57 out of a possible 100.

Although the sufficiency rating of Bridge No. 327 is now above 50, the bridge is expected to require additional work within the next few years to remain serviceable. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement. Bridge No. 327 is approaching the end of its useful life as the substandard timber floor and timber caps on timber piles are becoming increasingly unacceptable.

III. EXISTING CONDITIONS

The project is located in central Ashe County approximately two miles north of West Jefferson along SR 1509, a dead end road between the small community of Smethport and NC 88-194 (Figure 1). The bridge is situated about 50 feet east of the SR 1509 and NC 88-194 intersection. Development in the area is residential and commercial in nature, including churches.

SR 1509 is classified as local in the Statewide Functional Classification System and is not a part of the National Highway System.

In the vicinity of the bridge, SR 1509 has a 22-foot pavement width with six to eight-foot grass shoulders. The existing bridge is on a tangent.

Bridge No. 327 is a single span structure, 26 feet long and consists of a timber floor on continuous steel I-beams with an asphalt-wearing surface. The end bents consist of timber caps on timber piles with timber bulkheads. There is an interior crutch bent which consists of a timber cap on timber piles. The existing bridge was constructed in 1962. The clear roadway width is 25.08 feet. The lane width on the existing bridge consists of two 10-foot lanes. There is no posted weight limit on this bridge.

There are no utilities attached to the existing structure, but overhead power lines, telephone cable, and fiber optic cable are located throughout the vicinity. The bridge has corrugated metal pipe in the southeast wing wall.

The current traffic volume of 1,200 vehicles per day (VPD) is expected to increase to 1,400 VPD by the year 2035. The projected volume includes one percent truck-tractor semi-trailer and thirty-eight percent dual-tired vehicles. The posted speed limit is 35 miles per hour in the

project area. Two school buses cross the bridge daily on their morning and afternoon routes. The bridge has heavy tandem truck traffic due to the Cardinal Stone Smethport Quarry.

There were ten crashes reported in the vicinity of Bridge No. 327 during a ten-year period (1999-2009). There were seven lane departure type crashes (fixed object and run-off-road crashes), including three in which vehicles struck the bridge railing. The close proximity of the NC 88-194 and SR 1510 (Smethport Drive) intersection combined with the narrow width of the structure may present difficulties for vehicles turning onto SR 1509. There were twenty-nine crashes reported along NC 88-194 in the vicinity of Bridge No. 327 during the same ten-year period.

This section of SR 1509 is not part of a designated bicycle route. Sidewalks do not exist on the existing bridge and there is no indication of pedestrian usage on or near the bridge. The Division of Bicycle and Pedestrian Transportation does not recommend special considerations for bicyclists or pedestrians at this time.

IV. ALTERNATIVES

A. Alternatives Studied

Three alternatives for replacing Bridge No. 327, in addition to the no-build alternative, were studied and are described below.

Alternative 1

Alternative 1 involves replacement of the structure along the existing roadway alignment. During development of this alternative, it was determined there is not a sufficient offsite detour available. Staged construction is not feasible for this bridge because the 26-foot deck width and beam configuration will not support removal of a portion of the bridge and maintenance of traffic on the remaining portion. Therefore, this alternative was eliminated from consideration.

Alternative 2 (Preferred)

Alternative 2 involves replacement of the existing structure approximately 50 feet north of its existing location. This alternative would require a new crossing of Little Buffalo Creek downstream of the existing crossing. Under this alternative, the existing bridge would serve as an on-site detour. This alternative would be designed using 3R guidelines with a design speed of 40 miles per hour. No design exceptions are required for this alternative.

Alternative 3

Alternative 3 consists of the extension of SR 1510 to a new intersection with NC 88-194, approximately 275 feet north of the existing SR 1509 intersection. In addition to creating a new crossing of Little Buffalo Creek, NC 88-194 would need to be widened to three lanes in order to accommodate the large trucks turning at this intersection. Widening NC 88-194 would require a cut into the mountain and skewed driveway on the west side of NC 88-194. Under this alternative, the existing bridge would serve as an on-site detour. This alternative will be designed using 3R guidelines with a design speed of 40 miles per hour. No design exceptions are required for this alternative.

No-Build Alternative

The no-build alternative will eventually necessitate closure of the bridge. This is not acceptable due to the traffic service provided by SR 1509.

B. Preferred Alternative

Bridge No. 327 will be replaced approximately 50 feet north of its existing location as shown on Figure 2. With this alternative, the existing bridge would serve as an on-site detour. NC 88-194 is currently three lanes where Alternative 2 would tie in which will facilitate a left turn lane at this intersection and no additional widening on NC 88-194 would be required. The location of Alternative 2 and the creek crossing provide more separation between the creek and NC 88-194, facilitating construction. The environmental impacts of Alternative 2 are anticipated to be lower and this alternative does not involve any additional roadway work on NC 88-194.

The recommended replacement structure will be a 48.5 feet long two-barrel 9 foot wide x 8 foot high reinforced concrete box culvert.

The approach roadway will extend approximately 150 feet from the north end of the proposed culvert and 50 feet from the south end of the proposed culvert. The approaches will include a 22-foot pavement width providing two lanes. Three-foot grass shoulders will be provided on each side (7-foot shoulders where guardrail is required). The roadway will be designed as a Rural Local Route using Sub-Regional Tier Guidelines with a 40 mile per hour design speed.

NCDOT Division 11 concurs with the selection of Alternative 2 as the preferred alternative.

V. PROBABLE ENVIRONMENTAL EFFECTS OF PROPOSED ACTION

A. Summary of Environmental Effects

Table 2 presents a summary of the environmental effects of the project alternatives.

**TABLE 2
SUMMARY OF ENVIRONMENTAL EFFECTS**

	Alternative 1	Alternative 2 (Preferred)	Alternative 3
Residential and Business Relocations	None	None	None
Minority/Low Income Populations - Disproportionate Impacts	No	No	No
Historic Properties (Adverse Effect)	None	None	None
Community Facilities Impacted	None	None	None
Section 4(f) Impacts	None	None	None
Forested Acres	0	0	0
Wetlands (acres)	0	0	0
Streams (linear feet)	50	50	50
Federally Protected Species	Unresolved	Unresolved	Unresolved

B. Natural Resources

Physical Characteristics

Water Resources

Water resources in the study area are part of the New River Basin (U.S. Geological Survey [USGS] Hydrologic Unit 03040101). One stream was identified in the study area (Table 3). The location of the water resource is shown in Figure 3. One non-jurisdictional ephemeral channel was located within the northeast portion of the study area.

**TABLE 3
WATER RESOURCES IN THE STUDY AREA**

Stream Name	Map ID	NCDWQ Index Number	Best Usage Classification
Little Buffalo Creek	Little Buffalo Creek	10-2-20-1	C; Tr +*

* The “+” symbol identifies waters subject to a special management strategy in order to protect downstream waters that are designated Outstanding Resource Waters (ORW).

There are no designated High Quality Waters (HQW), Outstanding Resource Waters (ORW), or water supply watersheds (WS-I or WS-II) within one mile downstream of the study area. The North Carolina 2014 Final 303(d) list of impaired waters identifies Little Buffalo Creek within the study area as an impaired water due to exceeding criteria with a listing parameter of “Benthos Fair (Nar, AL, FW)” based on narrative criteria to protect aquatic life in fresh water. Little Buffalo Creek is not located within any of the NC Division of Water Resources (formerly NCDWQ) buffered river systems.

Biotic Resources

Two terrestrial communities are found in the project area: Maintained/Disturbed and Mixed Hardwood Forest. The locations of these biotic communities are shown on Figure 3.

Invasive Species

Two species from the NCDOT Invasive Exotic Plant List for North Carolina were found to occur in the study area. The species identified were Japanese honeysuckle (Moderate Threat) and multiflora rose (Threat). NCDOT will manage invasive plant species within the Department’s right of way as appropriate.

Jurisdictional Topics

Surface Waters

Little Buffalo Creek is the only jurisdictional stream identified in the study area. The proposed culvert will result in approximately 50 feet of impacts to this stream. Little Buffalo Creek has been designated as a cool water stream for the purposes of stream mitigation.

No jurisdictional wetlands were identified within the study area.

Little Buffalo Creek is not considered Navigable Waters under Section 10 of the Rivers and Harbors Act.

Permits

The proposed project has been designated as a Categorical Exclusion for the purposes of National Environmental Policy Act documentation. As a result, a Nationwide Permit (NWP) 23 will likely be applicable. Other permits that may apply include a NWP No. 33 for temporary construction activities such as stream dewatering, work bridges, or temporary causeways that are often used during bridge construction or rehabilitation. The USACE holds the final discretion as to what permit will be required to authorize project construction.

In addition to the 404 permit, other required authorizations include the corresponding Section 401 Water Quality Certification (WQC) from the NCDWR. A NCDWR Section 401 Water Quality General Certification (WQC) for a Categorical Exclusion may be required prior to the issuance of a Section 404 Permit. Other required 401 certifications may include a GC 3688 for temporary construction access and dewatering.

The Federal Highway Administration has determined a U.S. Coast Guard Permit is not required for this project.

Trout Moratorium

Little Buffalo Creek in the study area is classified as trout waters. Due to the designation as trout waters, a moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer will be observed from October 15 to April 15 for Little Buffalo Creek. Therefore, Design Standards for Sensitive Watersheds will be implemented during project construction.

Federally Protected Species

As of April 2, 2015 the US Fish and Wildlife Service (USFWS) lists ten federally protected species for Ashe County (Table 4).

**TABLE 4
FEDERALLY PROTECTED SPECIES LISTED FOR ASHE COUNTY**

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Clemmys muhlenbergii</i>	Bog turtle	T(S/A)	No	Not Required
<i>Glaucomys sabrinus coloratus</i>	Carolina northern flying squirrel	E	No	No Effect
<i>Myotis septentrionalis</i>	Northern long-eared bat	T	Unresolved	Unresolved
<i>Solidago spithamea</i>	Blue Ridge goldenrod	T	No	No Effect
<i>Liatrix helleri</i>	Heller’s blazing star	T	No	No Effect
<i>Hedyotis purpurea var. montana</i>	Roan mountain bluet	E	No	No Effect
<i>Geum radiatum</i>	Spreading avens	E	No	No Effect
<i>Helonias bullata</i>	Swamp pink	T	No	No Effect
<i>Spiraea virginiana</i>	Virginia spiraea	T	Yes	No Effect
<i>Gymnoderma lineare</i>	Rock gnome lichen	E	No	No Effect

T(S/A) - Threatened due to similarity of appearance
T - Threatened
E - Endangered

Habitat for Virginia spiraea exists in the project area. The majority of the project study area is regularly maintained and mowed, leaving only a small riparian margin of habitat along Little Buffalo Creek. A walking visual survey of all vegetated areas along the creek was conducted on June 5, 2013. No Virginia spiraea plants were found during this survey. A check of the Natural Heritage Program (NHP) database on June 26, 2015 showed no known occurrences of Virginia spiraea within one mile of the project study area.

Bald Eagle and Golden Eagle Protection Act

Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large, dominant trees are utilized for nesting sites, typically within one mile of open water. There are no large bodies of open water within one mile of the project study area. Suitable habitat for bald eagle does not exist within the project study area.

C. Cultural Resources

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation’s Regulations for Compliance with Section 106, codified at Title 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their

undertakings (federally funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and afford the Advisory Council a reasonable opportunity to comment on such undertakings.

Historic Architecture

The NCDOT - Human Environment Section, under the provisions of a Programmatic Agreement with FHWA, NCDOT, HPO, OSA and the Advisory Council on Historic Preservation (effective July 1, 2009), reviewed the proposed project and determined that no surveys are required. The form dated July 8, 2010 is included in Appendix B.

Archaeology

In a Programmatic form dated January 27, 2009, the N.C. State Historic Preservation Office (HPO) cleared the project indicating no survey for archaeology is required. The form is attached in Appendix B.

D. Community Impacts

No adverse impact on families or communities is anticipated. Right-of-way acquisition will be limited. A temporary construction easement is anticipated for utility coordination. No relocatees are expected with implementation of the proposed alternative. However, a storage yard located north of SR 1509 (Claybank Road) could be impacted.

No adverse effect on public facilities or services is expected. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

The project is not in conflict with any plan, existing land use, or zoning regulation. No change in land use is expected to result from the construction of the project.

E. Farmland

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. The construction will take place just north of the existing alignment. There are soils classified as prime, unique, or having state or local importance in the vicinity of the project. Although prime farmland soils surround the bridge, these surrounding areas have been subdivided into small tracts that have been developed for residential or commercial uses. Therefore, the project will not involve the direct conversion of farmland acreage within these classifications.

The project will not have a disproportionately high and adverse human health and environmental effect on any minority or low-income population.

F. Traffic Noise and Air Quality

The project is located in Ashe County, which has been determined to comply with the National Air Quality Standards. The proposed project is located in an attainment area;

therefore, 40 CFR Parts 51 and 93 are not applicable. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

This project will not result in any meaningful changes in traffic volume, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. As such FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special mobile source air toxics (MSAT) concerns. Consequently this project is exempt from analysis for MSAT's.

Noise levels may increase during project construction; however, these impacts are not expected to be substantial considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours. The transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive construction noise.

G. Section 4(f)/6(f) Resources

Section 4(f) of the U.S. Department of Transportation Act of 1966 specifies that publicly owned land from a public park, recreation area, wildlife and waterfowl refuge, and all historic sites of national, state, and local significance may be used for federal projects only if: a) there is no feasible and prudent alternative to the use of the land; and b) the project includes all possible planning to minimize harm to 4(f) lands resulting from such use.

The proposed project will not require right-of-way acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966.

Section 6(f) of the Land and Water Conservation Fund Act of 1965 stipulates that property acquired or developed with the assistance of the Fund may not be converted to a use other than public recreation unless suitable replacement property is provided. No properties acquired or developed with the assistance of the Land and Water Conservation Fund will be affected by the project.

H. Hazardous Materials

An examination of local, state, and federal regulatory records revealed two sites that may contain petroleum underground storage tanks within the project limits (Table 5). Additionally, two other geoenvironmental concerns were identified within the project limits.

**TABLE 5
KNOWN AND POTENTIAL HAZARDOUS MATERIAL SITES**

Facility ID	Property Name *	Property Address
---	Yates Produce	120 Claybank Road
---	Ashe Body Shop	170 Claybank Road
None Listed	Independence Oil & LP Gas	171 Smethport Drive
0-035171	Citgo	1750 Hwy 88 West

Note: * denotes sites are anticipated to present low geoenvironmental impacts to the project.

I. Floodplains

Ashe County is a participant in the National Flood Insurance Program, administered by the Federal Emergency Management Agency (FEMA). The currently effective FEMA floodplain mapping indicates that the subject crossing is located within Zone AE, with 100-year base flood elevations established in a “Detailed Flood Study.” Restudy is in progress for Ashe County, and according to preliminary study information available from the NC Floodplain Mapping Program, there will be no change to the flood zone designation. According to the preliminary study, the existing bridge and approaches are overtopped by the 50-year storm.

VI. PROJECT COORDINATION AND PUBLIC INVOLVEMENT

NCDOT has sought input from the following agencies as a part of the project development: U.S. Army Corps of Engineers, N.C. Department of Environment & Natural Resources, U.S. Fish & Wildlife Service, N.C. Wildlife Resources Commission, and N.C. Division of Parks & Recreation.

A letter was sent to all property owners directly affected by the project. Property owners were invited to comment if they had questions about the project. Two email comments were received. No other comments have been received. Based upon responses from the property owner letter, a Public Meeting was determined unnecessary.

A newsletter has been sent to all those located along SR 1509, SR 1510, and NC 88-194 in the study area. No comments have been received to date.

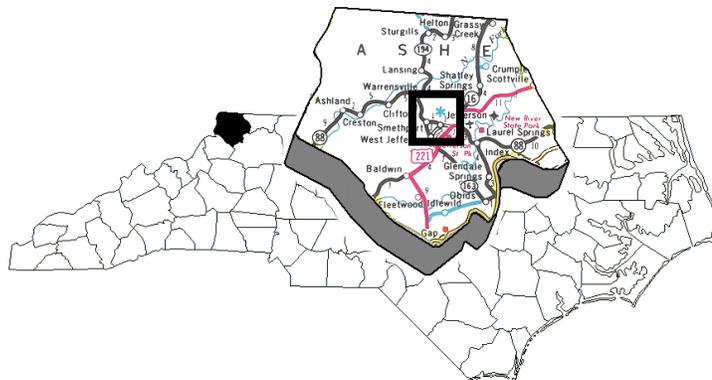
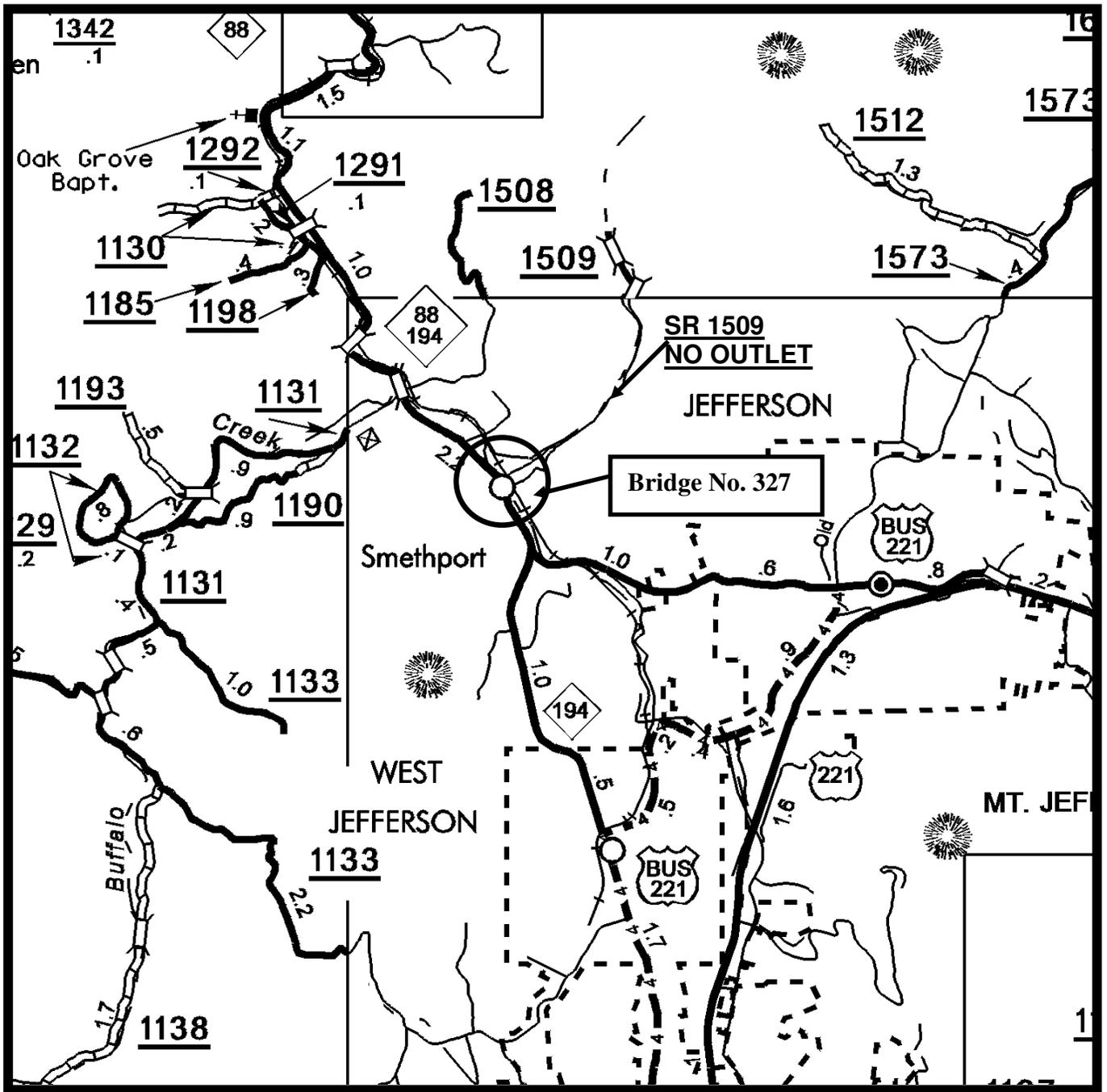
There is not substantial controversy on social, economic, or environmental grounds concerning the project.

VII. CONCLUSION

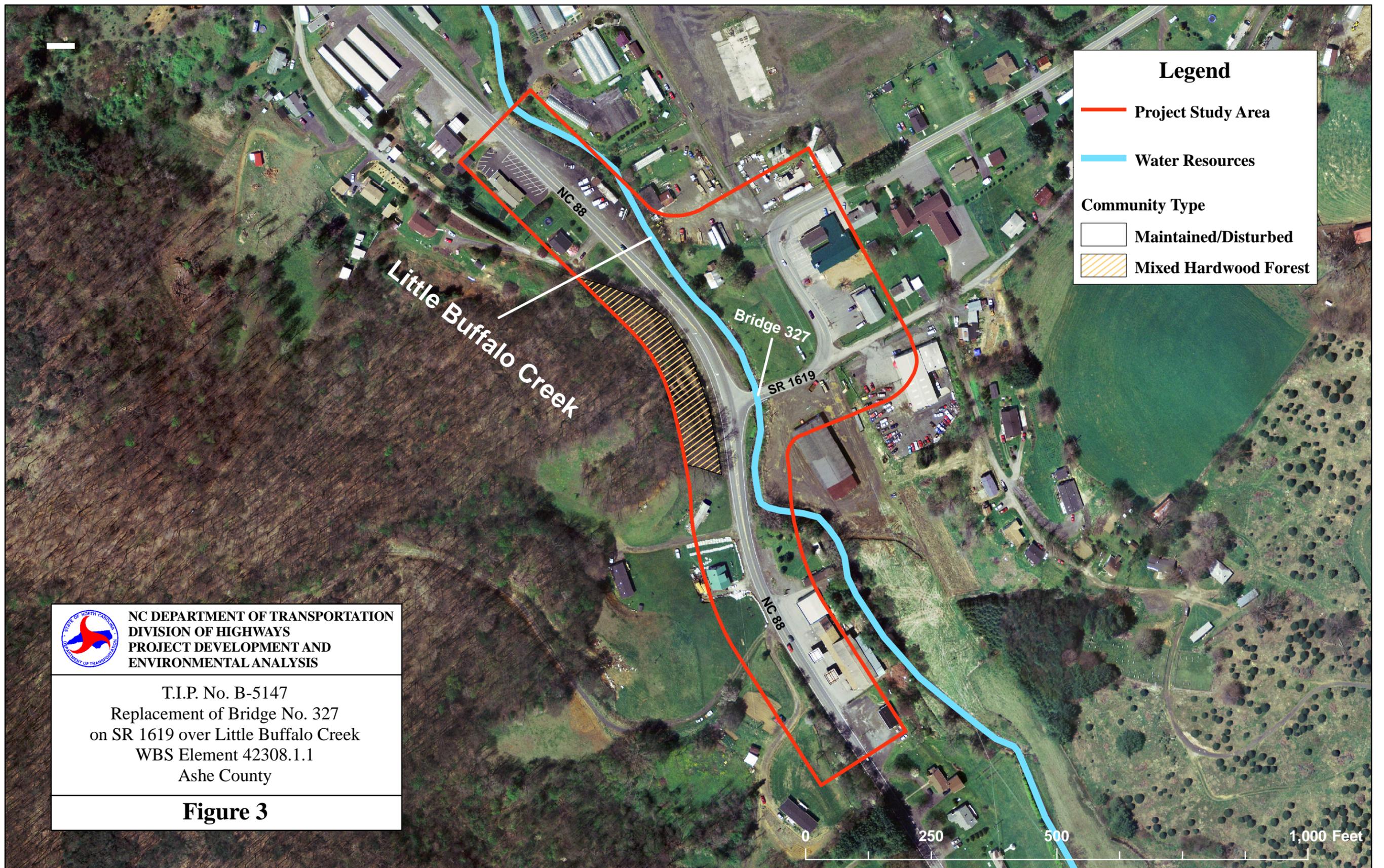
On the basis of the above discussion, it is concluded that no substantial adverse environmental impacts will result from implementation of the project. The project is therefore considered to be a federal “Categorical Exclusion” due to its limited scope and lack of substantial environmental consequences.

APPENDIX A

Figures



	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH</p>
<p style="text-align: center;">ASHE COUNTY REPLACE BRIDGE NO. 327 ON SR 1509 OVER LITTLE BUFFALO CREEK B-5147</p>	
<p style="text-align: right;">Figure 1</p>	



Water Resources and Communities Map

APPENDIX B

Reference Letters

09-08-0009

NO HISTORIC PROPERTIES PRESENT/AFFECTED FORM**PROJECT INFORMATION**

Project No: B-5147 County: Ashe
 WBS No: 42308 Document:
 F.A. No: BRZ-1509(8) Funding: State Federal

Federal (USACE) Permit Required? Yes No Permit Type:

Project Description:

Replace Bridge No. 327 over Little Buffalo Creek on SR 1509.

SUMMARY OF FINDINGS

The North Carolina Department of Transportation (NCDOT) reviewed the subject project and determined:

- There are no properties over fifty years old within the project's area of potential effects.
- There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- All properties greater than 50 years of age located in the APE have been considered and all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no historic properties present or affected by this project. (*Attach any notes or documents as needed*)

SUMMARY OF CULTURAL RESOURCES REVIEW

Brief description of review activities, results of review, and conclusions:

Review of HPO quad maps, historic designations roster, and indexes was undertaken on May 5, 2010. Based on this review, there were no existing NR, SL, LD, or DE properties in the Area of Potential Effects. The Jim Weaver House (AH 392) is located within the APE. The house is a common early 20th century, one-and-a-half story bungalow in a neglected condition. The Jim Weaver House does not possess a level of integrity to meet the criteria for eligibility for individual National Register Listing. The bridge replacement project will remain will construct the bridge on a new location at a distance of 100-300 feet north of the current bridge. The construction of the new bridge will not have any impact on this property; therefore no historic properties will be affected.

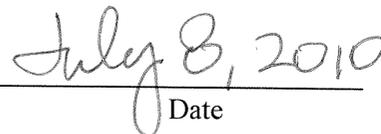
SUPPORT DOCUMENTATION

See attached: APE Map; Photographs; Alternatives

Signed:



Cultural Resources Specialist, NCDOT



Date

Bridge Construction CFY 2013-2014

SHPO Number	TIP	Project	County	Division	Project Engineer	Archaeological Survey	Architectural Survey
ER 08-2644	B-4705	Bridge 69 on SR 1376 over Shippey's Branch	Ashe	11	P. Williams	Yes - New alignment	Yes
ER 08-2653	B-5147	Bridge 327 on SR 1509 over Creek	Ashe	11	P. Williams	NE	Yes

B-4705 = survey if new alignment,

A- B-5147 = Cleared; No comment.

LGH/BJS 12-4-08

S - Request survey for BOTH

11/2/08
CJS

Dec 12/31/08

Peter B Sandbrook

11/28/11

NOV 12 2008



☒ North Carolina Wildlife Resources Commission ☒

TO: Carla Dagnino, Project Management, Western Region
Project Development and Environmental Analysis Branch, NCDOT

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

DATE: April 15, 2009

SUBJECT: Scoping review of NCDOT's proposed bridge replacement projects, consisting of 25 projects in Alleghany, Ashe, Avery, Burke, Caldwell, Haywood, Henderson, Jackson, Macon, McDowell, Polk, Rutherford, Surry, Watauga, Wilkes, and Yancey Counties. TIP Nos. B-4701, B-5147, B-4705, B-4707, B-5135, B-4717, B-4447, B-5138, B-4721, B-4762, B-3656, B-4765, B-5149, B-4554, B-5125, B-4985, B-4792, B-4811, B-4821, B-4836, B-5118, B-4847, B-5146, B-4846, B-4853.

North Carolina Department of Transportation (NCDOT) has requested comments from the North Carolina Wildlife Resources Commission (NCWRC) regarding impacts to fish and wildlife resources resulting from the subject projects. Staff biologists have reviewed the information provided. The following preliminary comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

Our standard recommendations for bridge replacement projects of this scope are as follows:

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.
2. Bridge deck drains should not discharge directly into the stream.

3. Live concrete should not be allowed to contact the water in or entering into the stream.
4. If possible, bridge supports (bents) should not be placed in the stream.
5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, 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 revegetate naturally and minimizes disturbed soil.
6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the stream underneath the bridge.
7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.
8. In streams that contain threatened or endangered species, Mr. Logan Williams with the NCDOT - ONE should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.
9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.
10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.
11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.
12. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.
13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.
14. 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.

15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.
16. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.
17. If culvert installation is being considered, conduct subsurface investigations prior to structure design to determine design options and constraints and to ensure that wildlife passage issues are addressed.

If corrugated metal pipe arches, reinforced concrete pipes, or concrete box culverts are used:

1. The culvert must be designed to allow for aquatic life and fish passage. Generally, the culvert or pipe invert should be buried at least 1 foot below the natural streambed (measured from the natural thalweg depth). If multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design). These should be reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream end to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. Sufficient water depth should be provided in the base flow barrel during low flows to accommodate fish movement. If culverts are longer than 40-50 linear feet, alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, the base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.
2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.
3. Culverts or pipes should be situated along the existing channel alignment whenever possible to avoid channel realignment. Widening the stream channel must 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.
4. 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 professionally designed, sized, and installed.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. Tall fescue should not be used in riparian areas. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-4701, Alleghany Co., Bridge No. 15 over Elk Creek on SR 1341. Elk Creek is classified C+ waters due to Outstanding Resource Waters not far downstream in the New River. The Kanawha Minnow (*Phenacobius teretulus*), Federal Species of Concern (FSC) and state Special Concern (SC); Kanawha Darter (*Etheostoma Kanawha*), state Significant Rare (SR); and Kanawha Rosyface Shiner (*Notropis sp. 1*), SR, are in the vicinity. In addition, two crayfish on the state's Watch List, *Orconectes cristavarius* and *Cambarus chasmodactylus* are found in Elk Creek. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
2. B-5147, Ashe Co., Bridge No. 327 over Little Buffalo Creek on SR 1509 (Claybank Road). Little Buffalo Creek, Class C Trout + waters, supports brown and rainbow trout in the vicinity. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
3. B-4705, Ashe Co., Bridge No. 69 over Shippy Branch on SR 1376 (Joe Thomas Road). Shippy Branch (or possibly Little Helton Creek), is Class C Trout + waters and supports brown and rainbow trout. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
4. B-4707, Avery Co., Bridge No. 29 over Curtis Creek on SR 1324 (Alton Palmer Rd.). Curtis Creek, Class C Trout waters, supports brown and rainbow trout in the project area. It flows into Elk River a short ways downstream, which is inhabited by a state Threatened (T) fish, the banded sculpin (*Cottus carolinae*). A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
5. B-5135, Burke Co., Bridge No. 1 over Hunting Creek on SR 1512 (Amherst Rd.). Hunting Creek is WS-IV waters and appears to be on the state's 303(d) list of impaired waters.

Enhanced sediment and erosion control measures, such as design standards for sensitive watersheds, are recommended to minimize further degradation of the waterway.

6. B-4717, Burke Co., Bridge No. 58 over Rose Creek on SR 1258 (Rose Creek Rd.). Rose Creek appears to be WS-III Trout waters. No special concerns are indicated at this time. Standard recommendations should apply.
7. B-4447, Burke Co., Rehabilitate Bridge No. 160 over SR 1758 (Berea Church Road) on I-40. A tributary to Drowning Creek, WS-IV waters, may be in the project vicinity. No special concerns are indicated at this time. Standard recommendations should apply.
8. B-5138, Caldwell Co., Bridge No. 6 over Little Gunpowder Creek on US 321A. Little Gunpowder Creek is WS-IV waters downstream of the bridge. No special concerns are indicated at this time. Standard recommendations should apply.
9. B-4721, Caldwell Co., Bridge No. 57 over Middle Little River on SR 1732 (Mill Pond Rd.). Middle Little River is Class C waters. No special concerns are indicated at this time. Standard recommendations should apply.
10. B-4762, Haywood Co., Bridge No. 72 over Jonathan Creek on SR 1350. Jonathan Creek, Class C Trout waters, is Hatchery Supported Designated Public Mountain Trout Water and supports reproducing brown and rainbow trout. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
11. B-3656, Haywood Co., Bridge No. 419 over Pigeon River on US 19-23-74. The Pigeon River, Class C waters, is inhabited by the Appalachian elktoe (*Alasmidonta raveneliana*), federal and state Endangered (E); the wavyrayed lampmussel (*Lampsilis fasciola*), state SC; blotched chub (*Erimystax insignis*), FSC and state SR; olive darter (*Percina squamata*), state SC; and hellbender (*Cryptobranchus alleganiensis*), FSC and state SC. The project is within an area designated by the Natural Heritage Program as a Significant Natural Heritage Area. At a minimum, sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
12. B-4765, Henderson Co., Bridge No. 113 over Tazewell Creek on SR 1574 (Fruitland Rd). Tazewell Creek (or possibly Kyles Creek), Class C Tr waters, flows to Clear Creek, Class C and on the 303(d) list of impaired waters, a short ways downstream. The blotched chub, FSC and state SR; and a crayfish on the state's Watch List, *Cambarus reburus*, are in found in Clear Creek. Enhanced sediment and erosion control measures, such as design standards for sensitive watersheds, are recommended to minimize further degradation of the waterway and protect rare species.
13. B-5149, Henderson Co., Bridge No. 38 over Clear Creek on SR 1574 (Fruitland Road). Clear Creek, Class C waters and on the 303(d) list of impaired waters, is inhabited by the blotched chub, FSC and state SR; and a crayfish on the state's Watch List, *Cambarus*

reburus. Enhanced sediment and erosion control measures, such as design standards for sensitive watersheds, are recommended to minimize further degradation of the waterway and protect rare species.

14. B-4554, Jackson Co., Rehabilitate Bridge No. 145 over SR 1705 (Dark Ridge Rd.), Southern RR, and Scott Creek on US 23-74. Scott Creek, Class C Trout waters and Hatchery Supported Designated Public Mountain Trout Water, supports rainbow trout reproduction in the project vicinity. A number of rare species, including the federal and state Endangered Appalachian elktoe, are found downstream in the Tuckasegee River near the mouth of Scott Creek. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from January 1-April 15 to protect the egg and fry stages of rainbow trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
15. B-5125, Macon Co., Bridge No. 22 over Little Tennessee River on US 441 Business. The Little Tennessee River is Class C waters in the project area. The project site is just upstream of Lake Emory and within an area designated by the Natural Heritage Program as a Significant Natural Heritage Area. The hellbender, FSC and state SC, has been observed in the vicinity. We believe a CWMTF conservation easement is near the site and should not be negatively impacted. Standard recommendations should apply.
16. B-4985, McDowell Co., Bridge No. 177 over Little Toe River on SR 1240 (Parker Padgett Rd.). Little Toe River is Class C waters. No special concerns are indicated at this time. Standard recommendations should apply.
17. B-4792, Polk Co., Bridge No. 4 over Pacolet River on SR 1102 (Pearson Falls Rd.). Pacolet River, Class C Trout water, is Hatchery Supported Designated Public Mountain Trout Water and supports reproducing rainbow trout. In vicinity and downstream of the project, the Santee chub (*Cyprinella zanema*), state SR, and crayfish state listed as SC and on the state's Watch List, *Cambarus spicatus* and *Cambarus sp. A* (respectively) are found. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from January 1-April 15 to protect the egg and fry stages of rainbow trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
18. B-4811, Rutherford Co., Bridge No. 87 over Broad River on US 64. The Broad River is Class C waters. A crayfish, *Cambarus lenati*, state SC, is found in vicinity. Public access to this waterway is lacking in the project vicinity. We recommend that NCDOT incorporate an angler access area into their plans for this project for safe public access, in accordance with the MOA between our agencies. Standard recommendations should apply.
19. B-4821, Surry Co., Bridge No. 88 over Paul's Creek on SR 1621 (Sparger Rd.). Paul's Creek joins Stewart's Creek, both WS-IV waters, at the project site. No special concerns are indicated at this time. Standard recommendations should apply.

20. B-4836, Watauga Co., Bridge No. 59 over South Fork New River on SR 1331 (Roby Green Rd.). South Fork New River, Class C + waters, supports wild brown trout and the following listed species in the project vicinity: Kanawha minnow, FSC and state SC; Kanawha darter, state SR; tonguetied minnow (*Exoglossum laurae*), state SR; and crayfish on the state's Watch List, *Orconectes cristavarius* and *Cambarus chasmodactylus*. Just downstream, the green floater (*Lasmigona subviridus*), FSC and state E; hellbender, FSC and state SC; and spike (*Elliptio dilatata*), state SC, are found. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds. Anglers currently use the bridge site to access the river. At a minimum, the parking and access should remain when the bridge is replaced; however, we recommend that NCDOT incorporate a formal canoe access area into their plans for this project for safe public access, in accordance with the MOA between our agencies.
21. B-5118, Watauga Co., Bridge No. 55 over a creek on SR 1557 (Shulls Mill Rd.). This waterbody appears to be an unnamed tributary to Lance Creek, which flows to Lance Creek, Class C Trout water, just downstream of the bridge and then to the Watauga River, Class B Trout HQW waters and a Significant Natural Heritage Area, not far from the project. Wild brown and rainbow trout are in the vicinity and the green floater, FSC and state E, and hellbender, FSC and state SC, inhabits the Watauga River. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
22. B-4847, Wilkes Co., Bridge No. 42 over Moravian Creek on SR 2486 (W. Meadows Rd.). Moravian Creek is Class C waters. No special concerns are indicated at this time. Standard recommendations should apply.
23. B-5146, Wilkes Co., Bridge No. 302 over North Fork Reddies River on SR 1562. North Fork Reddies River, Class WS-II Trout HQW waters and Hatchery Supported Designated Public Mountain Trout Water, supports wild brown trout in the project area. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
24. B-4846, Wilkes Co., Bridge No. 5 over Little Hunting Creek on SR 2418 (Mitchell Mill Rd.). Little Hunting Creek is Class WS-III waters. No special concerns are indicated at this time. Standard recommendations should apply.
25. B-4853, Yancey Co., Bridge No. 116 over Bald Mountain Creek on SR 1395. Bald Mountain Creek, Class C Trout waters and Hatchery Supported Designated Public Mountain Trout Water, flows to the Cane River not far downstream. A number of rare species, including the federal and state Endangered Appalachian elktoe, occur in the Cane River.

Enhanced sediment and erosion control measures, such as design standards for sensitive watersheds, are recommended to protect rare species downstream.

We request that NCDOT routinely minimize adverse impacts to fish and wildlife resources in the vicinity of bridge replacements. The NCDOT should install and maintain sedimentation control measures throughout the life of the project and prevent wet concrete from contacting water in or entering into these streams. Replacement of bridges with spanning structures of some type, as opposed to pipe or box culverts, is recommended in most cases. Spanning structures allow wildlife passage along streambanks, reducing habitat fragmentation and vehicle related mortality at highway crossings.

If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (704) 485-8291. Thank you for the opportunity to review and comment on this project.

cc: Brian Wrenn, NCDWQ
Mike Parker, NCDWQ
Troy Wilson, USFWS
Sarah McRae, NCNHP



North Carolina Department of Environment and Natural Resources

Division of Water Quality
Coleen H. Sullins
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

June 1, 2009

MEMORANDUM

TO: Pamela R. Williams, NCDOT, Bridge Project Planning Engineer, PDEA-Bridge Unit-NCDOT, 1551 Mail Service Center, Raleigh NC 27699-1548

FROM: Amy Euliss, NCDWQ, Winston Salem Regional Office

SUBJECT: Scoping Review of NCDOT's Proposed Bridge Replacement Projects: B-4701 (Alleghany), B-4705 (Ashe), B-4707 (Avery), B4721 (Caldwell), B-4821 (Surry), B-4836 (Watauga), B-4846 (Wilkes), B4947 (Wilkes), B-5118 (Watauga), B-5146 (Wilkes), and B-5147 (Ashe).

In reply to your correspondence dated May 7, 2009 (received May 20, 2009) in which you requested comments for the above referenced projects, the NCDWQ offers the following comments:

Project-Specific Comments

B-4701, Bridge No. 15 Over Elk Creek, Alleghany County

1. Review of the project reveals the presence of surface waters classified as C; + in the project study area. The + classification symbolizes that these waters drain to Outstanding Resource Waters (ORW) of the State. The ORW to which Elk Creek drains are the New River (C;ORW) are located within 1 mile of the project study area. The water quality classification of C; ORW is one of the highest classifications in the State. NCDWQ is extremely concerned with any impacts that may occur to streams with this classification. It is preferred that these resources be avoided if at all possible. If it is not possible to avoid these resources, the impacts shall be minimized to the greatest extent possible. Given the potential for impacts to these resources during the project implementation, the NCDWQ requests that NCDOT strictly adhere to North Carolina regulations entitled "Design Standards in Sensitive Watersheds" (15A NCAC 04B .0124) throughout design and construction of the project. Pursuant to 15A NCAC 2H .1006 and 15A NCAC 2B .0224, NCDOT will be required to obtain a State Stormwater Permit prior to construction except in North Carolina's twenty coastal counties.

B-4705, Bridge No. 69 Over Little Helton Creek, Ashe County

1. Review of the project reveals the presence of surface waters classified as C; Tr: + in the project study area. The + classification symbolizes that these waters drain to Outstanding Resource Waters of the State. The water quality classification of C; Tr: + is one of the highest classifications in the State. NCDWQ is extremely concerned with any impacts that may occur to streams with this classification. It is preferred that these resources be avoided if at all possible. If it is not possible to avoid these resources, the impacts shall be minimized to the greatest extent possible. Given the potential for impacts to these resources during the project implementation, the NCDWQ requests that NCDOT strictly adhere to North Carolina regulations entitled "Design Standards in Sensitive Watersheds" (15A NCAC 04B .0124) throughout design and construction of the project. Pursuant to 15A NCAC 2H .1006 and 15A NCAC 2B .0224, NCDOT will be required to obtain a State Stormwater Permit prior to construction except in North Carolina's twenty coastal counties.
2. Little Helton Creek are class C; Tr: + waters of the State. NCDWQ 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 shall be conducted in

accordance with NC Division of Land Resources and NC Wildlife Resources Commission requirements.

B-4707, Bridge No. 29 Over Curtis Creek, Avery County

1. Curtis Creek are class C; Tr waters of the State. NCDWQ 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 shall be conducted in accordance with NC Division of Land Resources and NC Wildlife Resources Commission requirements.

B-4721, Bridge No. 57 Over Middle Little River, Caldwell County

*Class C: No specific comments.

B-4821, Bridge No. 88 Over Paul's Creek, Surry County

1. Paul's Creek are WS IV waters of the State, and drain to Water Supply Critical Area within 1 mile of the project study area. Given the potential for impacts to these resources during the project implementation, the NCDWQ requests that NCDOT strictly adhere to North Carolina regulations entitled "Design Standards in Sensitive Watersheds" (15A NCAC 04B .0124) throughout design and construction of the project. This would apply for any area that drains to streams having WS CA(Water Supply Critical Area) classifications.

B-4836, Bridge No. 59 Over South Fork New River, Watauga County

*Class C, +: No project specific conditions.

B-4846, Bridge No. 5 Over Little Hunting Creek, Wilkes County

*WS III: No project specific conditions.

B-4847, Bridge No. 42 Over Moravian Creek, Wilkes County

*Class C: No project specific conditions.

B-5118, Bridge No. 55 Over Lance Creek, Watauga County

1. Lance Creek are class C; Tr waters of the State. NCDWQ 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 shall be conducted in accordance with NC Division of Land Resources and NC Wildlife Resources Commission requirements.

B-5146, Bridge 302 Over Middle Fork Reddies River, Wilkes County

1. Middle Fork Reddies River Creek are class WS II; Trout, High Quality Water waters of the State. NCDWQ 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 shall be conducted in accordance with NC Division of Land Resources and NC Wildlife Resources Commission requirements.
2. Review of the project reveals the presence of surface waters classified as WSII; 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, NCDOT will be required to obtain a State Stormwater Permit prior to construction except in North Carolina's twenty coastal counties.

B-5147, Bridge 327 Over Little Buffalo Creek, Ashe County

1. Little Buffalo Creek are class C;Tr, + waters of the State. NCDWQ 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 shall be conducted in accordance with NC Division of Land Resources and NC Wildlife Resources Commission requirements.

General Comments Regarding All of the Above Bridge Replacement Projects

1. Any anticipated dewatering or access structures necessary for construction of bridges should be addressed in the CE. It is understood that final designs are not determined at the time the CE is developed. However, the CE should discuss the potential for dewatering and access measures necessary due to bridge construction.
2. Any anticipated bank stabilization associated with culvert installations or extensions should be addressed in the Categorical Exclusion (CE) document. It is understood that final designs are not determined at the time the CE is developed. However, the CE should discuss the potential for bank stabilization necessary due to culvert installation.
3. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDOT shall address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.
4. If foundation test borings are necessary; it shall be noted in the document. Geotechnical work is approved under General 401 Certification Number 3687/Nationwide Permit No. 6 for Survey Activities.
5. If a bridge is being replaced with a hydraulic conveyance other than another bridge, NCDWQ believes the use of a Nationwide Permit may be required. Please contact the US Army Corp of Engineers to determine the required permit(s).
6. If the old bridge is removed, no discharge of bridge material into surface waters is allowed unless otherwise authorized by the US ACOE. Strict adherence to the Corps of Engineers guidelines for bridge demolition will be a condition of the 401 Water Quality Certification.
7. Whenever possible, NCDWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the streambanks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges shall allow for human and wildlife passage beneath the structure. Fish passage and navigation by canoeists and boaters shall not be blocked. Bridge supports (bents) should not be placed in the stream when possible.
8. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of NCDWQ's *Stormwater Best Management Practices*.
9. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
10. If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas shall be seeded or mulched to stabilize the soil and appropriate native woody species shall be planted. When using temporary structures the area shall 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.
11. 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.
12. All work in or adjacent to stream waters shall be conducted in a dry work area unless otherwise approved by NCDWQ. 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 shall be used to prevent excavation in flowing water.
13. Heavy equipment shall 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 shall be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.
14. In most cases, the NCDWQ prefers the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour shall be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks.

If the structure will be on a new alignment, the old structure shall be removed and the approach fills removed from the 100-year floodplain. Approach fills shall be removed and restored to the natural ground elevation. The area shall be stabilized with grass and planted with native tree species. Tall fescue shall not be used in riparian areas.

General Comments if Replacing the Bridge with a Culvert

15. Placement of culverts and other structures in waters, streams, and wetlands shall be 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 disequilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.
16. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation, floodplain benches and/or sills may be required where appropriate. Widening the stream channel shall 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.
17. Riprap shall 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 shall be properly designed, sized and installed.

Thank you for requesting our input at this time. NCDOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact Amy Euliss at (336) 771-4959.

cc: Monte Matthews, US Army Corps of Engineers, Raleigh Field Office
Federal Highway Administration
Kathy Matthews, Environmental Protection Agency, e-copy
Marla Chambers, NC Wildlife Resources Commission, e-copy
Troy Wilson, USFWS, Asheville Field Office
Wetlands/401, Transportation Permitting Unit
File Copy