STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 23, 2006

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTN: Mr. Steve Lund
Cc: David Baker
NCDOT Coordinator

Subject: **Nationwide Permit 6 Application** for replacement of Bridge No. 211 on SR 1519 (Old Crabtree Road) over Richland Creek, Federal Aid No. BRZ-1519(2), State Project No. 8.2942601, WBS Element No. 33493.1.1, Haywood County, Division 14, TIP No. B-4144.

Dear Mr. Lund:

The Geotechnical Unit is planning a foundation investigation for the above-referenced project. The NCDOT is providing written application because a portion of this work (two borings) is to be conducted within Richland Creek [DWQ Index No. 5-16-(16)], Class C, 303d Impaired Water. A private engineering firm (PEF) will be conducting the geotechnical investigation performing a maximum of six (6) borings, with four (4) borings to be located on land in the proposed roadway, and two (2) borings to be located within Richland Creek. The temporary surface water impacts total < 0.01 acre. Although listed as a commitment in the CE, pursuant to comments received from the NC Wildlife Resource Commission (NCWRC) September 1, 2006, no trout moratorium is required. Please see attached CE, Plan Sheet showing location of borings and PCN for reference.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-715-1500
FAX: 919-715-1501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
PARKER LINCOLN BUILDING
2728 CAPITAL BLVD., SUITE 240
RALEIGH NC 27604

The location of each boring is as follows:

Boring Designation	Station	Offset	Location Description
30001	14+05	-21.0	in proposed roadway
30002	14+05	16.0	in proposed roadway
30003	14+85	-16.0	in Richland Creek
30004	14+85	11.0	in Richland Creek
30005	15+65	-21.0	in proposed roadway
30006	15+65	16.0	in proposed roadway

The two (2) borings to be installed in Richland Creek (Boring Designation 30003 and 30004) will be performed from a barge or by an ATV depending on water depth. The barge (if used) will be no larger than 19 feet by 25 feet in size. It will be held in place by steel spuds driven into the river bottom or steel cables attached to trees.

The total area within jurisdictional waters that may be disturbed by performing the two in-water borings is estimated to be < 0.01 acre (8 ft^2 per boring). The in-water borings will consist of turning or driving 3-inch to 6-inch diameter steel casing into the river bottom creating minimal disturbance. The consultant will use casing to advance to borings and rotary-wash techniques. The borings will be backfilled with the cuttings and then sealed with bentonite hole plug. When the boring is completed, the steel casing will be removed from the river bottom. The borings will be drilled within 20 feet of the proposed locations and will be moved only as the design is revised or due to site accessibility.

AVOIDANCE & MINIMIZATION

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Specific measures taken to minimize impacts are as follows:

- Limiting the number of borings within Waters of the United States to two (2).
- Utilizing casing to advance the borings to contain all drilling fluid and cuttings.
- Implementing and strictly enforcing Sedimentation and Erosion Control Guidelines for Sensitive Watersheds (15A NCAC 4B.0024)
- Implementing Best Management Practices (BMPs) for Protection of Surface Waters.

MITIGATION

As the project impacts are temporary, no mitigation is proposed.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), Proposed Threatened (PT), are protected under provisions of Section 7 of the Endangered Species Act of 1973, as amended. As of October 16, 2006, the U.S. Fish and Wildlife Service (FWS) lists ten federally protected species for Haywood County (Table 1). The biological conclusion for nine of the ten listed species remains "No Effect". A survey for Bald eagles was conducted September 14, 2006. No individuals, nests or potential nesting trees were observed within the project study area. It can therefore be determined that this project will have **No Effect** on Bald eagles. The one species with habitat present, Small-whorled pogonia, was last survey in May 2004. Another survey for this species may be required prior to construction of the project.

Table 1. Federally protected species of Haywood County.

Scientific Name	Common Name	Federal Status	Survey Notes	Biological Conclusion
Haliaeetus leucocephalus	Bald eagle	T(PFD)	No Habitat	No Effect
Clemmys muhlenbergii	Bog turtle	T S/A	Not Required	N/A
Glaucomys sabrinus coloratus	Carolina northern flying squirrel	E	No Habitat	No Effect
Puma concolor couguar	Eastern cougar	E	No Habitat	No Effect
Myotis grisescens	Gray bat	E	No Habitat	No Effect
Myotis sodalis	Indiana Bat	E	No Habitat	No Effect
Alasmidonta raveneliana	Appalachian elktoe	E	No Habitat	No Effect
Microhexura montivaga	Spruce-fir moss spider	E	No Habitat	No Effect
Isotria medeoloides	Small-whorled pogonia	T	Habitat	No Effect
Gymnoderma lineare	Rock gnome lichen	E	No Habitat	No Effect

Endangered (E) – is defined as a taxon that is threatened with extinction throughout all or a significant portion of its range.
Threatened (T) – A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."
T(S/A) – "Similarity of Appearance" (a species that is listed as threatened due to similarity of appearance with other rare species).
T(PFD) – A taxon "Proposed for Delisting".

REGULATORY APPROVALS

The NCDOT anticipates that these activities will be authorized by a Nationwide Permit No. 6 and the associated 401 General Certification No. GC3376. A completed PCN form and appropriate drawings are attached for your review. All General Conditions of the Water Quality Certification will be met. Therefore, written concurrence from the North Carolina Department of Environment and Natural Resources, Division of Water Quality (DWQ) is

not required. In accordance with 15A NCAC 2H.0501(a), we are providing two (2) copies of this application to DWQ for their records.

Thank you for your assistance with this project. If you have any questions or need additional information please call Erin Schubert at (919) 715-5529.

Sincerely,

E.R. Fuss

for Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA

Attachments: Pre-construction Notification
Project drawings
Categorical Exclusion (February 2005)

cc:
W/attachment
Mr. John Hennessy, NCDWQ (2 copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Mr. Harold Draper, TVA
Dr. David Chang, P.E., Hydraulics
Mr. Njoroge W. Wainaina, State Engineering Geologist, P.E., Geotechnical Unit
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. J. B. Setzer, P.E., Division Engineer
Mr. Mark Davis, DEO

W/o attachment
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Mr. Joseph Miller, P.E., PDEA Project Planning Engineer

Office Use Only: Form Version March 05

USACE Action ID No. _____ **DWQ No.** _____

(If any particular item is not applicable to this project, please enter "Not Applicable" or "N/A".)

I. Processing

1. Check all of the approval(s) requested for this project:
   - ☒ Section 404 Permit
   - ☐ Section 10 Permit
   - ☐ 401 Water Quality Certification
   - ☐ Riparian or Watershed Buffer Rules
   - ☐ Isolated Wetland Permit from DWQ
   - ☐ Express 401 Water Quality Certification

2. Nationwide, Regional or General Permit Number(s) Requested: NWP 6

3. If this notification is solely a courtesy copy because written approval for the 401 Certification is not required, check here: ☒

4. If payment into the North Carolina Ecosystem Enhancement Program (NCEEP) is proposed for mitigation of impacts, attach the acceptance letter from NCEEP, complete section VIII, and check here: ☐

5. If your project is located in any of North Carolina's twenty coastal counties (listed on page 4), and the project is within a North Carolina Division of Coastal Management Area of Environmental Concern (see the top of page 2 for further details), check here: ☐

II. Applicant Information

1. Owner/Applicant Information
   Name: Gregory J. Thorpe, Ph.D., Environmental Management Director
   Mailing Address: NCDOT – Project Development and Environmental Analysis
   1598 Mail Service Center
   Raleigh, NC 27699-1598

   Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
   E-mail Address: ekschubert@dot.state.nc.us

2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)
   Name: _____
   Company Affiliation: _____
   Mailing Address: _____

   Telephone Number: _____ Fax Number: _____
   E-mail Address: _____

III. Project Information

Attach a **vicinity map** clearly showing the location of the property with respect to local landmarks such as towns, rivers, and roads. Also provide a detailed **site plan** showing property boundaries and development plans in relation to surrounding properties. Both the vicinity map and site plan must include a scale and north arrow. The specific footprints of all buildings, impervious surfaces, or other facilities must be included. If possible, the maps and plans should include the appropriate USGS Topographic Quad Map and NRCS Soil Survey with the property boundaries outlined. Plan drawings, or other maps may be included at the applicant's discretion, so long as the property is clearly defined. For administrative and distribution purposes, the USACE requires information to be submitted on sheets no larger than 11 by 17-inch format; however, DWQ may accept paperwork of any size. DWQ prefers full-size construction drawings rather than a sequential sheet version of the full-size plans. If full-size plans are reduced to a small scale such that the final version is illegible, the applicant will be informed that the project has been placed on hold until decipherable maps are provided.

1. Name of project: Bridge No. 211 over Richland Creek on SR 1519 (Old Crabtree Road)

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4144

3. Property Identification Number (Tax PIN): N/A

4. Location
   County: Haywood Nearest Town: Clyde
   Subdivision name (include phase/lot number): N/A
   Directions to site (include road numbers/names, landmarks, etc.): Please refer to attached maps.

5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
   Decimal Degrees (6 digits minimum): 35°32'50.84" °N 82°56'43.44" °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Pigeon River

8. River Basin: French Broad
   (Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at http://h2o.enr.state.nc.us/admin/maps/.)

9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: The land uses surrounding and within the project study area are mainly agricultural and woodland with scattered residential homes.

10. Describe the overall project in detail, including the type of equipment to be used:
Subsurface geotechnical investigations will be performed. The two in-water borings will be performed by a drilling barge or ATV. The four land borings will be performed with a rubber tired or tracked ATV drill rig.

11. Explain the purpose of the proposed work: To determine foundation potential.

IV. Prior Project History

If jurisdictional determinations and/or permits have been requested and/or obtained for this project (including all prior phases of the same subdivision) in the past, please explain. Include the USACE Action ID Number, DWQ Project Number, application date, and date permits and certifications were issued or withdrawn. Provide photocopies of previously issued permits, certifications or other useful information. Describe previously approved wetland, stream and buffer impacts, along with associated mitigation (where applicable). If this is a NCDOT project, list and describe permits issued for prior segments of the same T.I.P. project, along with construction schedules.
N/A

V. Future Project Plans

Are any future permit requests anticipated for this project? If so, describe the anticipated work, and provide justification for the exclusion of this work from the current application.
A NWP 23/33 and associated approvals from the NCDWQ will be requested for the replacement of Bridge No. 211 over Richland Creek on SR 1519 (Old Crabtree Road).

VI. Proposed Impacts to Waters of the United States/Waters of the State

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) should be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts: No permanent wetland or stream impacts will occur with this action. Please see cover letter for more details.

2. Individually list wetland impacts. Types of impacts include, but are not limited to mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.

Wetland Impact Site Number (indicate on map)	Type of Impact	Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.)	Located within 100-year Floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Area of Impact (acres)
No Wetlands					
Total Wetland Impact (acres)					0

3. List the total acreage (estimated) of all existing wetlands on the property: 0

4. Individually list all intermittent and perennial stream impacts. Be sure to identify temporary impacts. Stream impacts include, but are not limited to placement of fill or culverts, dam construction, flooding, relocation, stabilization activities (e.g., cement walls, rip-rap, crib walls, gabions, etc.), excavation, ditching/straightening, etc. If stream relocation is proposed, plans and profiles showing the linear footprint for both the original and relocated streams must be included. To calculate acreage, multiply length X width, then divide by 43,560.

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
30003	Richland Creek	Temporary	Perennial	45 ft	N/A	< 0.01
30004	Richland Creek	Temporary	Perennial	45 ft	N/A	< 0.01
Total Stream Impact (by length and acreage)						0

5. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.). Open water impacts include, but are not limited to fill, excavation, dredging, flooding, drainage, bulkheads, etc.

Open Water Impact Site Number (indicate on map)	Name of Waterbody (if applicable)	Type of Impact	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)	Area of Impact (acres)
No open water				
Total Open Water Impact (acres)				0

6. List the cumulative impact to all Waters of the U.S. resulting from the project:

Stream Impact (acres):	< 0.01 (Temporary-borings (16ft^2))
Wetland Impact (acres):	0
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	< 0.01 (Temporary-borings (16ft^2))
Total Stream Impact (linear feet):	0

7. Isolated Waters
Do any isolated waters exist on the property? ☐ Yes ☒ No
Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

8. Pond Creation
If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.
Pond to be created in (check all that apply): ☐ uplands ☐ stream ☐ wetlands
Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.):
Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.):
Current land use in the vicinity of the pond:
Size of watershed draining to pond: Expected pond surface area:

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. Only 2 borings will be in Richland Creek. Casings will be used to advance the borings to contain all drilling fluid and cuttings. Sedimentation and Erosion Control Guidelines as well as Best Management Practices will be followed.

VIII. Mitigation

DWQ - In accordance with 15A NCAC 2H .0500, mitigation may be required by the NC Division of Water Quality for projects involving greater than or equal to one acre of impacts to freshwater wetlands or greater than or equal to 150 linear feet of total impacts to perennial streams.

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on January 15, 2002, mitigation will be required when necessary to ensure that adverse effects to the aquatic environment are minimal. Factors including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

If mitigation is required for this project, a copy of the mitigation plan must be attached in order for USACE or DWQ to consider the application complete for processing. Any application lacking a required mitigation plan or NCEEP concurrence shall be placed on hold as incomplete. An applicant may also choose to review the current guidelines for stream restoration in DWQ's Draft Technical Guide for Stream Work in North Carolina, available at http://h2o.enr.state.nc.us/ncwetlands/strmgide.html.

1. Provide a brief description of the proposed mitigation plan. The description should provide as much information as possible, including, but not limited to: site location (attach directions and/or map, if offsite), affected stream and river basin, type and amount (acreage/linear feet) of mitigation proposed (restoration, enhancement, creation, or preservation), a plan view, preservation mechanism (e.g., deed restrictions, conservation easement, etc.), and a description of the current site conditions and proposed method of construction. Please attach a separate sheet if more space is needed.
   No mitigation is proposed.

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant's responsibility to contact the NCEEP at (919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For additional information regarding the application process for the NCEEP, check the NCEEP website at http://h2o.enr.state.nc.us/wrp/index.htm. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:

   Amount of stream mitigation requested (linear feet): 0
   Amount of buffer mitigation requested (square feet): 0
   Amount of Riparian wetland mitigation requested (acres): 0
   Amount of Non-riparian wetland mitigation requested (acres): 0
   Amount of Coastal wetland mitigation requested (acres): 0

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes ☒ No ☐

2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)? Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation. Yes ☒ No ☐

3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes ☒ No ☐

X. Proposed Impacts on Riparian and Watershed Buffers (required by DWQ)

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to required state and local buffers associated with the project. The applicant must also provide justification for these impacts in Section VII above. All proposed impacts must be listed herein, and must be clearly identifiable on the accompanying site plan. All buffers must be shown on a map, whether or not impacts are proposed to the buffers. Correspondence from the DWQ Regional Office may be included as appropriate. Photographs may also be included at the applicant's discretion.

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify_____)? Yes ☐ No ☒

2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1		3 (2 for Catawba)	
2		1.5	
Total			

* Zone 1 extends out 30 feet perpendicular from the top of the near bank of channel; Zone 2 extends an additional 20 feet from the edge of Zone 1.

3. If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Riparian Buffer Restoration / Enhancement, or Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0244, or .0260. _____

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from

the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level.
Impervious surface will not significantly increase as a result of this project.

XII. Sewage Disposal (required by DWQ)

Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility.
N/A

XIII. Violations (required by DWQ)

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?
Yes ☐ No ☒

Is this an after-the-fact permit application? Yes ☐ No ☒

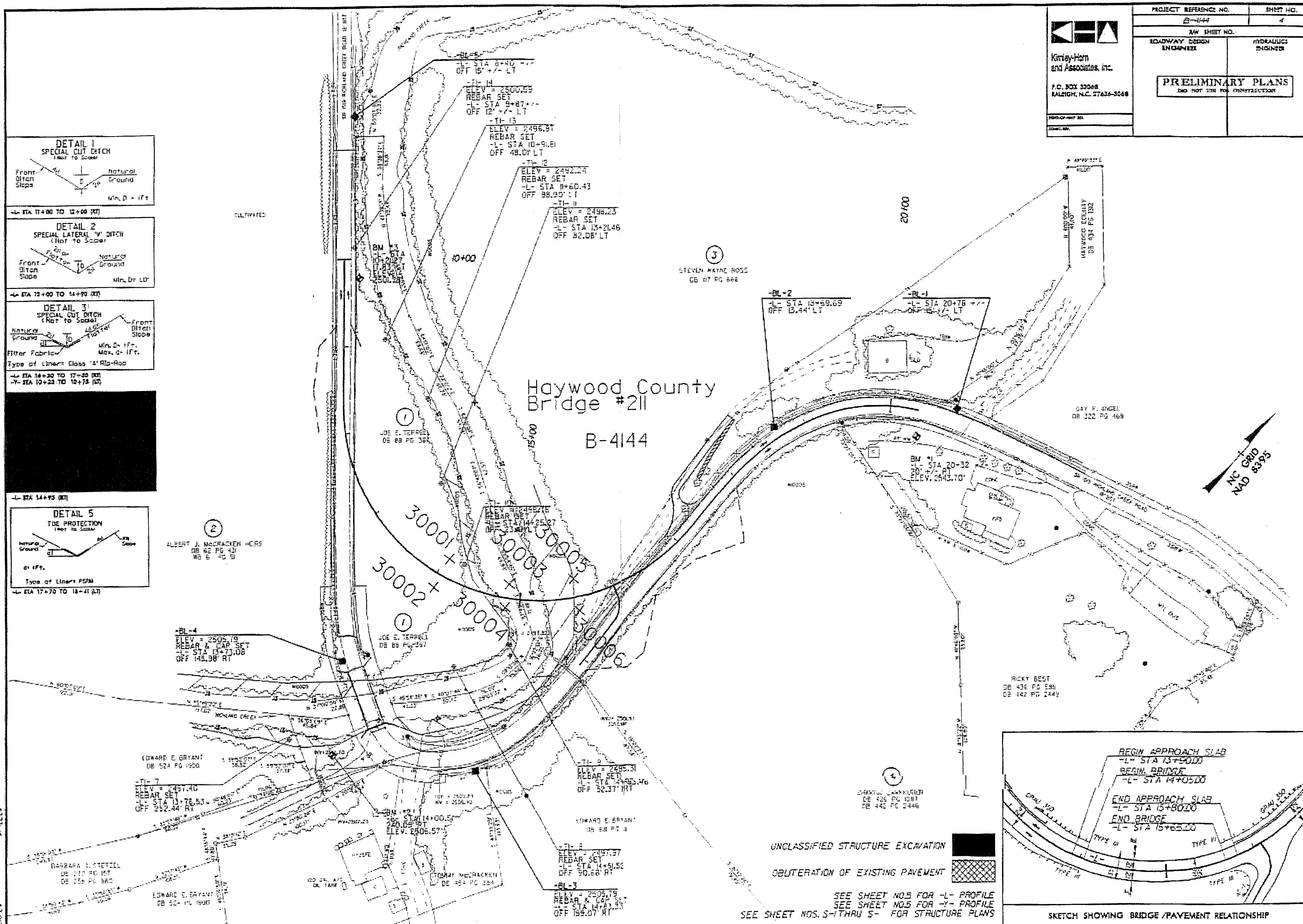
XIV. Cumulative Impacts (required by DWQ)

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes ☐ No ☒
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at http://h2o.enr.state.nc.us/ncwetlands. If no, please provide a short narrative description:

XV. Other Circumstances (Optional):

It is the applicant's responsibility to submit the application sufficiently in advance of desired construction dates to allow processing time for these permits. However, an applicant may choose to list constraints associated with construction or sequencing that may impose limits on work schedules (e.g., draw-down schedules for lakes, dates associated with Endangered and Threatened Species, accessibility problems, or other issues outside of the applicant's control).

Applicant/Agent's Signature **Date**
(Agent's signature is valid only if an authorization letter from the applicant is provided.)


PROJECT REFERENCE NO.
B-4144
SHEET NO.
4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Haywood County
Bridge #211
B-4144
DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)
Front Ditch Slope
Natural Ground
Min. D = 1Ft
-L- STA 11+00 TO 12+00 (RT)
DETAIL 2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Front Ditch Slope
Natural Ground
Min. D= 1.0'
-L- STA 12+00 TO 14+90 (RT)
DETAIL 3
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Filter Fabric
Min. D= 1Ft.
Max. d= 1Ft.
Type of Liner= Class 'A' Rip-Rap
-L- STA 16+30 TO 17+50 (RT)
-Y- STA 10+23 TO 10+78 (LT)
-L- STA 14+95 (RT)
DETAIL 5
TOE PROTECTION
(Not to Scale)
Natural Ground
Fill Slope
d= 1Ft.
Type of Liner= PSRM
-L- STA 17+70 TO 18+41 (LT)
CULTIVATED
-BL-5
-L- STA 8+40 +/-
OFF 15' +/- LT
-TI- 14
ELEV = 2500.59
REBAR SET
-L- STA 9+87+/-
OFF 12' +/- LT
-TI- 13
ELEV = 2496.97
REBAR SET
-L- STA 10+91.81
OFF 48.01' LT
-TI- 12
ELEV = 2492.24
REBAR SET
-L- STA 11+60.43
OFF 88.90' LT
-TI- 11
ELEV = 2498.23
REBAR SET
-L- STA 13+21.46
OFF 82.08' LT
10+00
15+00
20+00
3
STEVEN WAYNE ROSS
DB 87 PG 666
-BL-2
-L- STA 18+69.69
OFF 13.44' LT
-BL-1
-L- STA 20+76 +/-
OFF 15' +/- LT
HAYWOOD COUNTY
DB 434 PG 1312
GAY P. ANGEL
DB 322 PG 469
NC GRID
NAD 83/95
BM #1
-L- STA 20+32
20' +/- RT
ELEV. 2543.70'
1
JOE E. TERRELL
DB 88 PG 367
2
ALBERT J. McCRACKEN HEIRS
DB 62 PG 431
WB 6 PG 51
30001
30002
30003
30004
30005
30006
-BL-4
ELEV = 2505.79
REBAR & CAP SET
-L- STA 13+73.08
OFF 145.38' RT
RICKY BEST
DB 436 PG 585
DB 442 PG 2449
EDWARD E. BRYANT
DB 524 PG 1900
-TI- 7
ELEV = 2497.40
REBAR SET
-L- STA 13+78.53
OFF 252.44' RT
BM #2
-L- STA 14+00.56
240.09' RT
ELEV. 2506.57'
-TI- 9
ELEV = 2495.31
REBAR SET
-L- STA 14+95.46
OFF 52.37' RT
-TI- 8
ELEV = 2497.97
REBAR SET
-L- STA 14+51.52
OFF 90.68' RT
-BL-3
ELEV = 2506.79
REBAR & CAP SET
-L- STA 14+83.33
OFF 199.07' RT
TOMMY McCRACKEN
DB 464 PG 384
BARBARA A. STETZEL
DB 210 PG 1817
DB 258 PG 560
4
UNCLASSIFIED STRUCTURE EXCAVATION
OBLITERATION OF EXISTING PAVEMENT
SEE SHEET NO.5 FOR -L- PROFILE
SEE SHEET NO.5 FOR -Y- PROFILE
SEE SHEET NOS. S-1 THRU S- FOR STRUCTURE PLANS
BEGIN APPROACH SLAB
-L- STA 13+90.00
BEGIN BRIDGE
-L- STA 14+05.00
END APPROACH SLAB
-L- STA 15+80.00
END BRIDGE
-L- STA 15+65.00
TYPE III
SKETCH SHOWING BRIDGE /PAVEMENT RELATIONSHIP

Haywood County

Bridge No. 211 on SR 1519 over Richland Creek

Federal-Aid Project No. BRZ-1519(2)

State Project 8.2942601

WBS # 33493.1.1

TIP Project No. B-4144

Willis

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

02/01/05
DATE

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2/1/05
DATE

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Haywood County

Bridge No. 211 on SR 1519 over Richland Creek

Federal-Aid Project No. BRZ-1519(2)

State Project 8.2942601

WBS # 33493.1.1

TIP Project No. B-4144

CATEGORICAL EXCLUSION

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PROJECT COMMITMENTS

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In addition to the standard Nationwide Permit No. 23 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, 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 have been agreed to by NCDOT:

Project Development and Environmental Analysis Branch:

Approval under Section 26a of the Tennessee Valley Authority (TVA) Act will be required. A copy of the approved Categorical Exclusion (CE) will be provided to the TVA.

A jurisdictional determination for Richland Creek will be required prior to permitting.

Division Construction/Project Services Unit:

There will be an in-stream and 25-foot buffer work moratorium from October 15 to April 15.

The "Guidelines for Construction of Highway Improvements Adjacent to or Crossing Trout Waters in North Carolina" (October 27, 1992) will be adhered to throughout design and construction of this project.

NCDOT will implement Sedimentation and Erosion Control Guidelines for Sensitive Watersheds (15A NCAC 4B .0024) prior to any ground disturbing activities and follow the stormwater rules (15A NCAC 2b.0216 (3) (G)). Richland Creek is listed on the 303(d) list of impaired surface waters in the project area.

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INTRODUCTION: The replacement of Bridge No. 211 is included in the 2004-2010 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) and the Federal-Aid Bridge Replacement Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion."

I. PURPOSE AND NEED STATEMENT

Bridge Maintenance Unit records indicate the bridge has a sufficiency rating of 43.4 out of a possible 100 for a new structure. The bridge is considered functionally obsolete and structurally deficient. The replacement of an inadequate structure will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

Bridge No. 211 is located on SR 1519 (Old Crabtree Road) in Haywood County. SR 1519 is classified as a rural local route in the Statewide Functional Classification System. Land use in the project area is woodland, farmland and residential. A private residence and maintained yard is located in the southeast quadrant. SR 1519 is a two-lane roadway, with 16 feet of total pavement width and four-foot grass shoulders on both sides. The bridge is located in the jurisdiction of the Tennessee Valley Authority (TVA) oversight. Haywood County is designated as a trout county by the North Carolina Wildlife Resources Commission.

There is underground cable and utilities that run along the south side of the bridge. Aerial power lines are also located to the south of the bridge and can be seen in the attached photographs (Figure 4). Utility impacts are expected to be moderate.

Bridge No. 211 was constructed in 1958. The existing structure is 71 feet in length and consists of two spans. The longest span is 35.8 feet in length. The clear roadway width is 19.2 feet, providing two 9.6-foot travel lanes with no effective shoulder width. The existing right of way width is 60 feet. The superstructure of Bridge No. 211 consists of a timber floor on I-beams with an asphalt wearing surface and timber railing. The substructure of the bridge consists of end bents and one interior bent. End bent 1 consists of a timber cap with timber piles and sheeting. Abutment 2 consists of Yount Masonry. The interior bent consists of a timber cap on timber piles with concrete sills. The bed to crown height is 18.4 feet. The normal depth of flow is 2.8 feet. The posted weight limit is 15 tons for single vehicles and 19 tons for truck-tractor semi-trailers.

The roadway from the northeast approaches the existing bridge in a horizontal compound curve of 244 feet in length using radii of 170 feet and 80 feet. The approach roadway from the northeast is also on a horizontal curve with a length of 91 feet using a radius of 250 feet. There are two adjacent driveways within 50 feet of the east end of the bridge approaching from the south and southeast. The speed limit in the vicinity of the existing bridge on SR 1519 is posted at 15 miles per hour (mph) due to the roadway curvature through the project study area. Outside of the project area, the roadway is posted at 45 mph.

The estimated 2004 average daily traffic volume is 1,100 vehicles per day (vpd). The projected traffic volume is expected to increase to 3,300 vpd by the design year 2030. The volumes include 4 percent TTST and 4 percent dual tired vehicles.

This section of SR 1519 in Haywood County is not part of a designated bicycle route and is not listed in the TIP as needing incidental bicycle accommodations. Two school buses cross this bridge twice daily.

There is one single-vehicle accident reported for the three-year period of September 1, 2000 through August 31, 2003. No injuries were reported.

III. ALTERNATIVES

A. Project Description

The drainage area for the bridge is 68.4 square miles and is located in a FEMA Detailed Study area. The channel geometry is such that there is a large floodplain on the West side. The East side has a steep mountain slope with no floodplain. The crossing is 0.2 miles upstream of the confluence with the Pigeon River so there is substantial backwater in Richland Creek. The length and opening size of the proposed structure may increase or decrease as necessary to accommodate peak flows, as determined by a detailed hydraulic analysis to be performed during the final design phase of the project. The proposed right-of way width is 60 feet. The design speed will be 20 mph.

B. Build Alternatives

Two (2) build alternatives studied for replacing the existing bridge are described below. The typical roadway sections are shown in Figure 3.

Alternative 1 (Figure 2A) replaces the bridge in place with no approach roadway improvements. It is anticipated that the bridge length will be approximately 80 feet. The final bridge length will be determined during final design. Alternative 1 was not selected as the preferred alternative because it requires an off-site detour exceeding the detour guidelines. The detour exceeds six miles of travel and includes NC 209, SR 1649, SR 1512 and SR 1513.

Alternative 2 (Preferred - Figure 2B) replaces the existing structure with a bridge on new alignment. It is anticipated that the bridge length will be approximately 130 feet. The final bridge length will be determined during final design. This structure is 280 feet downstream. The proposed bridge will consist of two 12-foot travel lanes with 8-foot shoulders. Wider shoulders are proposed to provide additional sight distance on the bridge and for driveways in the vicinity of the curved bridge. Traffic will be maintained on the existing structure during construction.

C. Alternatives Eliminated from Further Study

The "Do-Nothing" Alternative will eventually necessitate removal of the bridge. This is not desirable due to the traffic service provided by SR 1519.

Investigation of the existing structure by the Bridge Maintenance Unit indicates **rehabilitation** of the old bridge is not feasible due to its age and deteriorated condition.

Alternative 3 replaces the existing structure with a bridge on new alignment. The bridge will be in a curve, shifting the west end approximately 10 feet upstream and shifting the east end approximately 30 feet downstream. It is anticipated that the bridge length will be approximately 110 feet with a severely skewed vertical abutment 12 feet behind the existing abutment on the east side and a sloping abutment on the west side. The proposed bridge will consist of two 12-foot travel lanes with 8-foot shoulders. Traffic will be maintained with an off-site detour. Alternative 3 was eliminated from further study because the bridge hydraulic opening would be decreased and the low steel would be lowered below the FEMA 50-year event water surface elevation.

D. Preferred Alternative

Alternative 2 was selected as the preferred alternative because it provides improved roadway geometry and hydraulic efficiency, and does not require an off-site detour.

The Division Engineer concurs with Alternative 2 as the preferred alternative.

IV. ESTIMATED COSTS

The estimated costs, based on 2004 prices, are as follows:

	Alternative 1	Alternative 2 (Preferred)
Structure Removal (existing)	$14,200.00	$14,200.00
Structure (proposed)	$256,000.00	$341,250.00
Roadway approaches	$58,935.00	$211,200.00
Miscellaneous and Mobilization	$66,745.00	$148,350.00
Engineering and Contingencies	$79,120.00	$110,000.00
ROW/Const. Easements/Utilities	$41,000.00	$62,000.00
Total	$516,000.00	$887,000.00

The estimated cost of the project, as shown in the 2004-2010 Transportation Improvement Program, is $635,000 including $60,000 for right-of-way and $575,000 for construction.

V. NATURAL RESOURCES

A. Methodology

Field investigations were conducted along the project study area during the month of October 2003. Pedestrian surveys were undertaken to determine natural resource conditions and to document natural communities, wildlife, and the presence of protected species or their habitats.

Published information regarding the project study area and region was derived from a number of sources including: USGS 7.5-minute topographical quadrangle map (Clyde, North Carolina), United States Fish and Wildlife Service (USFWS) database reviews, National Wetland Inventory (NWI) map, NCDOT aerial photography (1" = 200'), and Natural Resources Conservation Service (NRCS) soil survey mapping of Haywood County.

Surface waters within the project study area were evaluated in the field to document their physical characteristics and jurisdictional status. Water resources information was obtained from publications of the North Carolina Department of Environment and Natural Resources Division of Water Quality (NCDENR-DWQ).

Approximate boundaries of plant communities were mapped in the field utilizing aerial photography of the project study area. Dominant plant species were identified in each strata for each plant community. Plant community descriptions are based on the classifications utilized by Schafale and Weakly (1990). Plant names follow the nomenclature found in Radford *et al.* (1968).

Wildlife occurrences were determined through visual field observations, evaluation of habitat-types within the project study area, secondary indicators of species (tracks, scat, and burrows), as well as a review of supporting literature (Coe, 1994, Martof, *et al*, 1980, and Webster, 1985). Field observations and literature reviews (Bogan, 2002, Jenkins and Burkhead, 1993, Voshell, Jr., 2002) were utilized to assess aquatic life.

Information concerning the potential occurrence of federal and state protected species within the project study area and project vicinity was obtained from the U.S. Fish and Wildlife Service (USFWS) list of protected species (updated February 24, 2003 – current update as of January 25, 2005) and the North Carolina Natural Heritage Program (NCNHP) database of rare species and unique habitats (updated January 2004 – current update as of January 25, 2005). Field evaluations of the project study area were conducted to identify suitable habitat for protected species. If suitable habitat was identified, field surveys were conducted for Federally listed endangered or threatened species.

Jurisdictional wetlands were identified and delineated based on the methodology outlined in the *1987 Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987). Wetland systems were classified based on the U.S. Fish and Wildlife Service *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, et al., 1979). Wetland boundaries were located in the field using GPS methods with sub-meter accuracy.

B. Physiography and Soils

Haywood County is situated in the southwestern portion of the Mountain physiographic province in North Carolina. The geography of the county consists predominantly of very steep uplands, with gentler slopes in the major river valleys. Bridge No. 211 is located in the central portion of the county. Narrow, nearly level floodplains are along most of the streams in the region; however, steep gorges are not uncommon. Elevations in the project study area range from approximately 2,500 feet above Mean Sea Level (MSL) to 2,530 feet above MSL as depicted on the Clyde, North Carolina, USGS topographic quadrangle map (Figure 1). The land uses surrounding and within the project study area is mainly agricultural and woodland with scattered residential homes.

The geologic features underlying the project study area are associated with the Blue Ridge Belt, specifically, muscovite-biotite gneiss which is sulfidic and interlayered with mica schist, minor amphibolite, and hornblende gneiss rock (North Carolina Division of Land Resources, 1985). The project study area is

depicted as a formation of biotite gneiss which is migmatic and interlayered with biotite-garnet gneiss and amphibolite. Quartz and aluminosilicates are locally abundant throughout this formation. The project vicinity is located within the Oconee Supergroup.

Soil associations are classified as a group of defined and named taxonomic soil units occurring together in an individual and characteristic pattern over a general region. Based on information contained in the soil survey data for Haywood County, the soils within the project study area are composed of two soil series: Rosman fine sandy loam and Fannin loam.

Rosman fine sandy loam, 0 to 2 percent slopes, is occasionally flooded and consists of very deep, well- drained to moderately well drained, moderately rapidly permeable soil on the floodplains in the Southern Appalachian Mountains. Rosman series soils are formed in loamy alluvium. In the Haywood County soil survey, Rosman fine sandy loam located along floodplains within the study area are listed as having hydric inclusions of Nikwasi soils especially along drainage ways (NRCS 1995).

Fannin loam, 30 to 50 percent slopes, is eroded and consists of very deep, well-drained soils on gently sloping to very steep ridges and side slopes of the Blue Ridge region. Fannin series soils are formed in residuum that is affected by soil creep in the upper part and is weathered from high-grade metamorphic rocks that are high in mica content such as mica gneiss and mica schist.

C. Water Resources

1. Waters Impacted

Streams, creeks, and tributaries within the project vicinity are part of Richland Creek watershed within the French Broad River basin. The French Broad River basin covers approximately 2,842 square miles.

Richland Creek accounts for the surface waters in the project area. The project study area is situated just upstream of the confluence of Richland Creek and the Pigeon River. It is located in NCDWQ Subbasin 04-03-05 and USGS Hydrologic Unit 06010106. This section of Richland Creek from the Lake Junaluska Dam to the Pigeon River, which includes the project area, has been identified by the NCDWQ Stream Index # 5-16-(16).

NCDWQ defines a perennial surface water as a clearly defined channel that contains water for the majority of the year. These channels usually have some or all of the following characteristics: distinctive streambed and bank, aquatic life, and groundwater flow or discharge. Richland Creek was identified as a perennial stream in the project study area.

NCDWQ classifies surface waters of the state based on their intended best uses. Richland Creek from the Lake Junaluska Dam to the Pigeon River is classified as "C" waters. Class C denotes waters suitable for all general uses including aquatic life propagation and survival, fishing, wildlife, primary recreation, and agriculture. Richland Creek is not designated as essential fish habitat and does not contain anadromous and warm water fish species.

Several tributaries of Richland Creek upstream of the Lake Junaluska Dam are classified as water supply (WS-I) waters. WS-I waters represent water supplies in natural and undeveloped watersheds, in which no point source discharges are allowed. No other Outstanding Resource Waters (ORW), HQW, or Water Supplies (WS-I or WS-II) occur within Richland Creek watershed in the project vicinity.

North Carolina's 303(d) report is a comprehensive public accounting of all impaired water bodies in the state. Richland Creek is listed on the DWQ 2004 Draft 303(d) list of impaired waters for impaired biological integrity. Special measures for sediment control will be required by NCDWQ during construction.

The Ambient Monitoring System (AMS) determines the "use support" status of waterbodies, meaning how well a waterbody supports its designated uses. The waters in the project study area are currently rated as *Partially Supporting*.

While the upper portions of Richland Creek show water quality impacts from agriculture and urban development, only the section below the Lake Junaluska Dam is currently rated *Partially Supporting* and has shown signs of improving water quality in recent years.

2. Water Resource Characteristics

Richland Creek is a perennial stream that flows northeast to west-northwest. The top of bank width is approximately 45 feet wide with a wetted width of 25 to 35 feet. One to two feet of moderately flowing water was observed within the channel during the site visit. Richland Creek has a bankfull depth of 3 feet throughout the project study area. The 3 to 6 feet tall stream banks appeared stable. The substrate consists of sand and gravel with cobble and boulder riffle sections. The water was clear with moderate sediment deposition. Excellent habitat conditions exist within the channel for numerous aquatic species. The stream received a NCDWQ stream classification of 53.25.

Based on Rosgen classification, Richland Creek is an "F" channel. It is slightly entrenched with a meandering, riffle/pool channel on a low gradient with a high width/depth ratio.

A benthic macroinvertebrate sampling study consisting of sixteen sites within the basin was conducted in 1997 and included a sampling site approximately one mile downstream of the project location on Richland Creek. The 1997 sampling event gave Richland Creek a "fair" rating. No other sampling sites are in the vicinity of the project study area.

Point source dischargers located throughout North Carolina are regulated through the National Pollutant Discharge Elimination System (NPDES) program. There are 20 permitted NPDES dischargers in the subbasin, with three of those being major dischargers (>0.5 MGD). Only one major discharger is located within Richland Creek watershed, the Waynesville Wastewater Treatment Plant, located approximately 0.5 mile (0.8 km) south and upstream of the project study area. There are six minor dischargers within Richland Creek watershed, which are located approximately 2.5 to 10 miles upstream of the project study area.

Nonpoint source discharge refers to runoff that enters surface waters through stormwater, snowmelt or atmospheric deposition. Land use activities such as land development, construction, mining operations, crop production, animal feeding lots, failing septic systems, landfills, roads and parking lots are contributors of non-point source pollutants. The land use surrounding and within the project study area are mainly agriculture with forest and some residential development.

3. Anticipated Impacts to Water Resources

    a) General Impacts

    The proposed project is expected to impact both soils and topography. No adverse long-term impacts to soils and topography are expected from the proposed bridge replacement.

    The primary sources of water-quality degradation in rural areas are agricultural operations and construction. Aquatic organisms are very sensitive to discharges and inputs resulting from construction. Potential impacts associated with construction of the proposed project include: increased sedimentation, scouring of the streambed, soil compaction, and loss of shading due to vegetation removal. Increased sedimentation from lateral flows is also expected. NCDOT's *Best Management Practices for Protection of Surface Waters* and Sedimentation Control

guidelines will be strictly enforced during the construction stages of the project.

4. Impacts Related to Bridge Demolition and Removal

The superstructure of Bridge No. 211 consists of a timber floor on I-beams with an asphalt wearing surface and timber railing. The substructure of the bridge consists of end bents and one interior bent. End bent 1 consists of a timber cap with timber piles and sheeting. Abutment 2 consists of Yount Masonry. The interior bent consists of a timber cap on timber piles with concrete sills. The bridge has 2 equal spans that total 71 feet in length.

It should be possible for the superstructure and substructure elements to be removed without resulting in any temporary fill in "Waters of the United States" during demolition and removal. The superstructure and substructure elements noted above can be cut and removed without any temporary fill falling into Richland Creek during demolition.

D. Biotic Resources

This section describes the existing vegetation and associated wildlife that occur within the project study area. The project study area is composed of three different vegetative communities based on topography, soils, hydrology, and disturbance. Scientific nomenclature and common name (when applicable) are provided for each plant and animal species listed. Subsequent references to the same organism only include the common name.

1. Plant Communities

Three plant communities were observed in the project study area: montane alluvial forest, montane oak-hickory forest, and maintained-disturbed land.

a) Montane Alluvial Forest

Montane alluvial forests are found within stream and river floodplains at moderate to high elevations. Vegetation within this community is dependent upon occasional flooding. This community is found within the project study area as a strip approximately 20 feet wide along Richland Creek.

The canopy is dominated by a diverse mix of black walnut (*Juglans nigra*), yellow buckeye (*Aesculus octandra*), black cherry (*Prunus serotina*), sycamore (*Platanus occidentalis*), shingle oak (*Quercus imbricaria*), red maple (*Acer rubrum*), river birch (*Betula nigra*), yellow birch (*Betula lutea*), and yellow poplar (*Liriodendron tulipifera*). The sub-canopy and

understory species include mulberry (*Morus rubra*), hazelnut (*Corylus americana*), sweet shrub (*Calycanthus floridus* var. *laevigatus*), musclewood (*Carpinus caroliniana*), tag alder (*Alnus serrulata*), flowering dogwood (*Cornus florida*), silky dogwood (*Cornus amomum*), black locust (*Robinia pseudo-acacia*), American ash (*Fraxinus americana*), American holly (*Ilex opaca*), willow (*Salix nigra*), spicebush (*Lindera benzoin*), and hop hornbeam (*Ostrya virginiana*). Groundcover and herbaceous species that are present include doghobble (*Leucothoe axillaris*), greenbriar (*Smilax rotundifolia*), muscadine (*Vitis rotundifolia*), blackberry (*Rubus* spp.), honeysuckle (*Lonicera japonica*), Christmas fern (*Polystichum acrostichoides*), thorn bush (*Rosa rugosa*), Virginia creeper (*Parthenocissus quinquefolia*), and poison ivy (*Toxicodendron radicans*).

b) Montane Oak – Hickory Forest

The montane oak – hickory forest developed along dry-mesic slopes and partly sheltered ridgetops at moderate to fairly high elevations, typically in the southern mountains. A mature montane oak - hickory forest is naturally uneven-aged, with reproduction occurring in canopy gaps. Fires, strong winds, and ice storms cause the majority of the natural tree felling, which result in these canopy gaps.

Within the study area, red maple, black cherry, white oak (*Quercus alba*), and pignut hickory (*Carya glabra*) dominate the canopy. The understory consists predominately of sumac (*Rhus* sp.), elderberry (*Sambucus canadensis*), black locust, and red maple. Vines dominate the groundcover stratum within this community and include muscadine, honeysuckle, and leather-flower (*Clematis* spp.).

c) Maintained-Disturbed Land

The maintained-disturbed areas of the project study area lie on either side of the existing bridge and SR 1519 and will be impacted. These areas include maintained lawns, maintained roadsides, and agricultural land. Agricultural lands represent areas used for the cultivation of row crops and disturbed lands are areas which are maintained to grow very little to no woody vegetation. Agricultural lands are harvested on a particular rotation and provide limited habitat diversity for wildlife. This community is the most prevalent community within the project study area.

Vegetation within the maintained-disturbed area includes various grasses (Poaceae), Fescue (*Fescue* sp.), Johnson grass (*Sorghum halepense*), nightshade (*Solanum* sp.), poison ivy, clover (*Trifolium* spp.), goldenrod (*Solidago* spp.), bamboo (*Phyllostachys aurea*), privet (*Ligustrum sinense*), phlox (*Phlox* spp.), daisy fleabane (*Erigeron* spp.), mimosa (*Albizia julibrissin*), sassafras (*Sassafras albidum*) and blackberry.

2. Terrestrial Wildlife

The alluvial forest community in conjunction with open agricultural lands and other disturbed areas offer high plant diversity and water availability; thus providing high quality wildlife habitat. These communities provide a variety of habitat for amphibians, reptiles, birds, and mammals.

The maintained roadsides, lawns, and agricultural areas provide rich ecotones for foraging, while the Montane Alluvial Forest and Montane Oak-Hickory Forest provide foraging and cover. White-tailed deer (*Odocoileus virginianus*) and raccoon (*Procyon lotor*) tracks were observed along Richland Creek. Beaver (*Castor canadensis*) activity was observed in the alluvial forest. Eastern cottontail (*Sylvilagus floridanus*) scat was also observed along the field edge. Wildlife accustomed to human activity was sighted such as the American crow (*Corvus brachyrhynchos*), northern cardinal (*Cardinalis cardinalis*), and blue jay (*Cyanocitta cristata*).

Common mammals, which could be expected to utilize the project study area habitat, include Virginia opossum (*Didelphis virginiana*), smoky shrew (*Sorex fumeus*), eastern chipmunk (*Tamias striatus*), woodchuck (*Marmota monax*), gray squirrel (*Sciurus carolinensis*), eastern harvest mouse (*Reithrodontomys humulis*), muskrat (*Ondatra zibethicus*), coyote (*Canis latrans*), and mink (*Mustela vison*).

Common birds, which could be expected to utilize the project study area habitat, include hairy woodpecker (*Picoides villosus*), downy woodpecker (*P. pubescens*), eastern wood-pewee (*Contopus virens*), eastern phoebe (*Sayornis phoebe*), barn swallow (*Hirundo rustica*), Carolina chickadee (*Parus carolinensis*), tufted titmouse (*Parus bicolor*), white-breasted nuthatch (*Sitta carolinensis*), American robin (*Turdus migratorius*), yellow warbler (*Dendroica petechia*), and brown-headed cowbird (*Molothrus ater*). Game species such as woodcock (*Scolopax minor*) and wild turkey (*Meleagris gallopavo*) may also be present. Predatory birds such as red-tailed hawk (*Buteo jamaicensis*), and eastern screech owl (*Otus asio*) are also likely to be found in the project vicinity.

Common reptiles and amphibians, which could be expected to utilize the project area habitat, include brown snake (*Storeria dekayi*), timber rattlesnake (*Crotalus horridus*), northern water snake (*Nerodia sipedon*), rat snake (*Elaphe obsoleta*), eastern fence lizard (*Sceloporus undulatus*), five-lined skink (*Eumeces fasciatus*), broadhead skink (*E. laticeps*), snapping turtle (*Chelydra serpentina*) and eastern box turtle (*Terrapene carolina*).

3. Aquatic Habitats and Wildlife

Richland Creek provides aquatic habitat within the project study area. The physical characteristics (size and water quality) of the stream, as well as the adjacent terrestrial community, directly influence faunal composition of this aquatic community. The quality of aquatic habitat within the project study area is expected to be high due in large part to a natural mix of riffles, runs, and pools. Woody debris located throughout the stream provides habitat, shade, and concealment pockets for several aquatic species.

Insects typically found in this type of community include mayflies (Ephemeroptera), stoneflies (Plecoptera), caddisflies (Trichoptera), dragonflies (*Odonta* sp.) and aquatic beetles (Coleoptera). Whirligig beetles (Gyrinidae), Asian clams (*Corbicula fluminea*), planorbid snails (Planorbidae), little stout crawler mayfly (Leptohyphidae), and darner dragonflies (Aeshnidae) were collected in Richland Creek.

Smallmouth bass (*Micropterus dolomieu*), brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*) and brook trout (*Salvelinus fontinalis*) are small gamefish that typically occur in this community. Small non-game fish in the area that inhabit Richland Creek include the following: Redbreast sunfish (*Lepomis auritus*), bluegill (*Lepomis macrochirus*), Hiawassee shiner (*Notropis scabriceps*), logperch (*Percina caprodes*), blacknose dace (*Rhinichthys atratulus*), longnose dace (*R. cataractae*), creek chub (*Semotilus atromaculatus*), white sucker (*Catostomus commersoni*), northern hog sucker (*Hypentelium nigricans*), and mottled sculpin (*Cottus bairdi*).

A freshwater mussel survey was conducted on September 9, 2003 from the confluence of the Pigeon River to 328 feet upstream of the bridge crossing. No freshwater mussels were found except for Asian clams.

Other aquatic species likely to be found in the project vicinity include snapping turtle (*Chelydra serpentina*), Eastern mud turtle (*Kinosternon subrubrum*), sliders (*Chrysemys scripta*), and painted turtles (*Chrysemys picta*).

4. Anticipated Impacts to Biotic Communities

a) Terrestrial Communities

Table 1 describes the acreage of plant communities within the proposed construction limits that would be impacted by each alternative. Impacts to plant communities associated with construction activities include the removal of vegetation, soil compaction, damaging and/or exposing root systems, as well as potential impacts associated with petroleum spills.

TABLE 1
ANTICIPATED IMPACTS TO PLANT COMMUNITIES

Community Type	Alternative 1 Impact Acres	Percentage of Alternative Area	Alternative 2 Impact Acres	Percentage of Alternative Area
Montane Alluvial Forest	0.04	21%	0.12	10%
Montane Oak-Hickory Forest	N/A	N/A	0.02	2%
Maintained-Disturbed Land	0.17	79%	1.01	88%

Due to the minimal disturbance of plant communities anticipated as a result of the bridge replacement, substantial impacts to terrestrial wildlife populations are not expected. The proposed right of way width is 60 feet.

b) Aquatic Communities

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

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

Stream crossing lengths have been determined for the two alternatives (Table 2).

TABLE 2
ANTICIPATED IMPACTS TO JURISDICTIONAL STREAMS
(LINEAR FEET WITHIN CONSTRUCTION LIMITS)

Jurisdictional Stream	Alternative 1	Alternative 2
Richland Creek	41	40

E. Special Topics

1. "Waters of the United States": Jurisdictional Issues

Section 404 of the Clean Water Act requires regulation of discharges into "Waters of the United States." The United States Environmental Protection Agency (USEPA) is the principal administrative agency of the Clean Water Act; however, the United States Army Corps of Engineers (USACE) has the responsibility for implementation, permitting, and enforcement of the provisions of the Act. The USACE regulatory program is defined in 33 CFR 320-330.

Water bodies, including lakes, rivers, and streams, are subject to jurisdictional consideration under the Section 404 program. Wetlands are also identified as "Waters of the United States." Wetlands, defined in 33 CFR 328.3, are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Any action that proposes to place fill into these areas fall under the jurisdiction of the

USACE under Section 404 of the Clean Water Act (33 U.S.C. 1344). No jurisdictional wetlands were identified within the project study area.

2. Permits (*as applicable*)

a) Section 404 of the Clean Water Act

Impacts to "Waters of the United States" come under the jurisdiction of the USACE. Permits will be required for highway encroachment into jurisdictional wetlands and streams. The Nationwide Permit 23 should cover the impacts to jurisdictional wetlands and streams in the project study area. Nationwide Permit 33 may be needed for temporary construction access.

b) Section 401 Water Quality Certification

A Section 401 General Water Quality Certification is also required for any activity which may result in a discharge into "Waters of the United States" or for which an issuance of a federal permit is required. The issuance of a required Section 401 certification is a prerequisite to the issuance of a Section 404 permit.

Final determination of permit applicability lies with USACE. NCDOT will coordinate with the USACE to obtain the necessary permits.

c) TVA

Richland Creek is located in the Tennessee Valley Authority's (TVA) land management district. Approval pursuant to Section 26a of the TVA Act is required for all construction and development involving stream or floodplains in the Tennessee River drainage basin.

3. Mitigation

The USACE has adopted, through the Council on Environmental Quality (CEQ), a mitigation policy which embraces the concepts of "no net loss of wetlands" and project sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of "Waters of the United States," specifically wetlands. Mitigation of wetland impacts has been defined by the CEQ to include: avoidance of impacts (to wetlands), minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20). Each of these

aspects (avoidance, minimization, and compensatory mitigation) must be considered in sequential order.

Avoidance mitigation examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States." It is not feasible for this project to completely avoid Richland Creek and still meet the purpose and need for this project.

Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts to "Waters of the United States."

In accordance with 15A NCAC 2H.0506 (h) and 40 CFR 1508.20, mitigation will be required for impacts to jurisdictional streams requiring mitigation when these impacts are equal to or greater than 150 linear feet per stream. In addition, mitigation may be required for wetland impacts exceeding 0.10 acre. It is anticipated that the bridge replacement over Richland Creek will impact less than 150 linear feet of stream. No wetlands are located within the project study area. Therefore, no stream or wetland mitigation requirement is anticipated. However, final permit/mitigation decisions will be determined by the USACE and NCDWQ.

NCDENR has adopted permanent Nutrient Sensitive Waters Management Strategy rules to protect and maintain 50-foot wide riparian buffers in several watersheds across the state. At this time, surface waters in the French Broad River Basin are not subject to NCDENR's Nutrient Sensitive Waters Management Strategy rules.

Currently, the buffer protection regulations in the French Broad River Basin apply in watersheds classified as Water Supply Watersheds, which would not include Richland Creek. Public projects such as road crossings are allowed to encroach upon the buffers when no practicable alternative exists. A 25-foot trout work buffer has been requested by NCWRC.

F. Rare and Protected Species

Federal law under the provisions of Section 7 of the Endangered Species Act (ESA) of 1973, as amended, requires that any action likely to adversely affect a federally-protected species be subject to review by the USFWS. Other species may warrant protection under separate state laws. Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the ESA. According to the February 24, 2003 updated internet list (current update as of January 25, 2005), the USFWS lists nine federally protected species for Haywood County. A review of the NCNHP database of rare species and unique habitats shows no occurrence of federally protected species within 1.0

mile of the project study area. Table 3 shows that six federally protected species are listed as endangered and three federally protected species are listed as threatened for Haywood County (NCNHP, January 2004 – current update as of January 25, 2005).

TABLE 3
FEDERALLY PROTECTED SPECIES FOR HAYWOOD COUNTY

Common Name	Scientific Name	Federal Status	Conclusion
Appalachian elktoe	*Alasmidonta raveneliana*	Endangered	No Effect
Bog turtle	*Clemmys muhlenbergii*	Threatened (Similarity of Appearance)	N/A*
Carolina northern flying squirrel	*Glaucomys sabrinus coloratus*	Endangered	No Effect
Bald eagle	*Haliaeetus leucocephalus*	Threatened(Proposed for delisting)	No Effect
Gray bat	*Myotis grisescens*	Endangered	No Effect
Eastern cougar	*Puma concolor couguar*	Endangered	No Effect
Spruce-fir moss spider	*Microhexura montivaga*	Endangered	No Effect
Small whorled pogonia	*Isotria medeoloides*	Threatened	No Effect
Rock gnome lichen	*Gymnoderma lineare*	Endangered	No Effect

*Species not biologically endangered or threatened and is not subject to Section 7 consultation. The species does not require a biological conclusion due to similarity of appearance.

Appalachian elktoe (*Alasmidonta ravelneliana*)

The Appalachian elktoe is a kidney-shaped freshwater mussel endemic to the upper Tennessee River system in western North Carolina and eastern Tennessee. The adult shell reaches 3.5 inches (9 cm) in length and is usually dark brown with prominent to obscure greenish rays. This mussel inhabits relatively shallow medium-sized creeks and rivers with moderate to fast flowing water. It is generally found in gravelly substrates mixed with cobbles and boulders or occasionally in silt-free, coarse sandy substrates. Reproduction is similar to that of other freshwater mussels, and the banded sculpin (*Cottus carolinea*) has been identified as a host species for developing glochidia. Historically, this mussel was found in the French Broad River system, including French Broad main stem and the Little River in Transylvania County. Surveys conducted in the French Broad

River system from 1986 through the spring of 1992 failed to locate any specimens of the Appalachian elktoe.

Suitable habitat for the Appalachian elktoe consisting of shallow medium-sized creeks with fast flowing water and clean, silt-free, gravel substrates is readily available in the project study area. Review of NCNHP maps indicated no known populations of this species within one mile of the project. A mussel survey was conducted on September 9, 2003 and no individuals were found. This species will not be impacted as a result of project construction.

Biological Conclusion: ***No Effect***

Bog turtle (*Clemmys muhlenbergii*)

Bog turtles are small (3 to 4.5-inch) reptiles with a weakly keeled carapace (upper shell) that ranges in color from light brown to ebony. This species is easily distinguished from other turtles by a large, conspicuous, bright orange to yellow blotch on each side of its head. Bog turtles are semi-aquatic and inhabit muddy, bog-like habitats. They can be found during the spring mating season from June to July and at other times from April to October when the humidity is high and temperatures are in the 70s. Bog turtle habitat consists of bogs, swamps, marshy meadows, and other wet environments, specifically those which exhibit soft, muddy bottoms.

In the November 1987, the northern population of the bog turtle (from New York south to Maryland) was listed as federally threatened, and the southern population (from Virginia south to Georgia) was listed as federally threatened due to similarity of appearance. The southern populations are not protected under Section 7 of the Endangered Species Act; however, the T(S/A) designation bans the collection and interstate or international commercial trade of bog turtles from the southern population (USFWS 2004).

This site contains no wetlands; therefore, suitable habitat for the bog turtle is not present. No bog turtles were observed in the project vicinity. NCNHP has no records of any known populations of the bog turtle within a one-mile radius of the project area. This species will not be impacted as a result of project construction.

Carolina northern flying squirrel (*Glaucomys sabrinus coloratus*)

The northern flying squirrel is a small nocturnal mammal that inhabits the high elevation ecotone between coniferous and northern hardwood forest. This high elevation habitat usually occurs above 5,500 feet above MSL. These squirrels are 10 to 12 inches long and weigh 3 to 5 ounces. Adults are gray with alight brown to reddish cast on their backs and light gray to white or buff undersides. The broad tails and folds of skin between the wrist and ankles form wing-like surfaces that enable these animals to glide downward from tree to tree or tree to ground. These mammals eat a wide variety of foods such as lichens, mushroom, seeds, nuts, insects, and fruits. These squirrels nest in tree cavities such as woodpecker holes and usually produce one litter in the early spring (USFWS 2004).

Suitable habitat for the Carolina northern flying squirrel, consisting of mixed deciduous/coniferous forests located above 5,500 feet above MSL, does not exist within the project area. Review of NCNHP maps indicated no known populations of this species within one mile of the project area. This species will not be impacted as a result of project construction.

Biological Conclusion: ***No Effect***

Bald eagle (*Haliaeetus leucocephalus*)

The mature bald eagle (usually 4-plus years in age) can be identified by its large white head and short white tail. The body plumage is dark-brown to chocolate-brown in color. Bald eagles can easily be distinguished from other birds by their flat wing soar. They are primarily associated with large bodies of water where food is plentiful. Eagle nests are found in close proximity to water (usually within 0.5 mile) with a clear flight path to the water, in the largest living tree in an area, with an open view of the surrounding land. Human disturbance can cause nest abandonment. The breeding season for the bald eagle begins in December and January. Fish are the major food source, although forage items include coots, herons, wounded ducks, and carrion (USFWS 2004).

As of July 6, 1999, this species is currently under consideration by the USFWS for a proposed de-listing of their threatened status. However, this raptor will still be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, and populations will continue to be monitored for at least another five years under provisions of the Endangered Species Act.

Suitable habitat for the bald eagle consisting of large bodies of water is present within the project area. Subsequently, a survey for the presence of any bald eagle nests was conducted within the study area in July 2001. No bald eagles or their nests were observed within study area; this is likely due to the moderate amount of human activity and disturbance within and around the project area.

Review of NCNHP maps indicated no known populations of this species within one mile of the project area. This species will not be impacted as a result of project construction.

Biological Conclusion: ***No Effect***

Gray bat (*Myotis grisescens*)

The gray bat is the largest of its genus in the eastern United States. It weighs between 0.25 and 0.56 ounces and has a forearm that reaches from 1.6 to 1.8 inches in length. This bat can be distinguished from other eastern bats by its uni-colored dorsal fur and by its wing membrane that connects to the foot at the ankle. Other eastern species of bats have bi- or tri-colored dorsal fur and have a wing membrane that connects to the base of their first toe. The gray bat's fur is dark gray for a short time after it molts in July or August and then turns to a russet color in between molts. It is known to feed on aquatic insects, especially mayflies.

This bat inhabits only caves or cave-like habitats. They are very selective about which caves they will inhabit. The caves are usually located within 0.62 miles of a river or reservoir and have a specific temperature in both the summer and the winter.

Suitable habitat for the gray bat consisting of caves or cave-like structures does not exist within the project study area. A memorandum dated July 2, 2002 serves as a programmatic screening/survey for the project. The results of the habitat evaluation indicated poor roosting habitat and no evidence of bats. Review of NCNHP maps indicated no known populations of this species within one mile (1.6 km) of the project area. This species will not be impacted as a result of project construction.

Biological Conclusion: ***No Effect***

Eastern cougar (*Felis concolor couguar*)

The eastern cougar is described as a large, unspotted, long-tailed cat. Its body and legs are a uniform fulvous or tawny hue, and its belly is pale reddish or reddish white. The inside of this cat's ears are light-colored, with a blackish color behind the ears. Cougars feed primarily on deer, but their diet may also include small mammals, wild turkeys, and occasionally domestic livestock, when available. Cougars begin breeding when two or three years old and breed thereafter once every two to three years. A typical litter size is three, with the newborn kittens weighing 8 to 16 ounces.

The primary habitat appears to be large wilderness areas with an adequate food supply. Cougars avoid human-developed areas and have been considered by some as extirpated for this reason. Male cougars typically occupy a range of 25

or more square miles, and females from 5 to 20 square miles. Sightings have been reported in three North Carolina areas including the Nantahala National Forest, the northern portion of the Uwharrie National Forest, and North Carolina's southeastern counties. The remaining population of this species is extremely small, with exact numbers unknown (USFWS 2004).

Suitable habitat would be available in the project study area because of the close proximity to the Nantahala National Forest's large expanse of relatively undeveloped lands. However, cougars are not likely in the project area due to the frequency of human activity within the study area and localized development near the study area. The NCNHP has no records of any known populations of the eastern cougar within a one-mile radius of the project area. This species will not be impacted as a result of project construction.

Biological Conclusion: ***No Effect***

Spruce-fir moss spider (*Microhexura montivaga*)

It is one of the smallest members of the primitive suborder of spiders that are often popularly referred to as "tarantulas." Adults of this species measure only 0.10 to 0.15 inches with a yellow-brown to a darker reddish brown color. The most reliable field identification characteristics for the spruce-fir moss spider are chelicerae that project forward well beyond the anterior edge of the carapace, a pair of very long posterior spinnerets, and the presence of a second pair of book lungs, which appear as light patches posterior to the genital furrow.

The spruce-fir moss spider is known from only Fraser fir (*Abies fraseri*) and red spruce (*Picea rubens*) forests on the highest mountain peaks, located at and above 5,400 feet above MSL in the southern Appalachian Mountains of North Carolina and Tennessee. The typical habitat of this spider is found in damp, but well-drained, moss mats growing on rock outcrops and boulders in well-shaded situations within these forests. The moss mats cannot be too dry (the species is very sensitive to desiccation) or too wet (large drops of water can also pose a threat to the spider). The spider constructs tube-shaped webs in the interface between the moss mat and rock surface. The abundant springtails in the moss mats provide the most likely source of food for the spider. Populations of the spruce-fir moss spider have declined, due in large part to the declining numbers of stands of Fraser fir and red spruce forests (USFWS 2004).

According to the *Federal Register* on July 6, 2001, critical habitat for the spruce-fir moss spider has been designated in portions of Avery, Caldwell, Mitchell, Swain, and Watauga counties in North Carolina and became effective on August 6, 2001. These designated critical habitats include areas within the Great Smoky Mountains National Park, the Pisgah National Forest, the Cherokee National Forest, and Grandfather Mountain (managed by The Nature Conservancy). None of these locations are within the project vicinity.

Suitable habitat for the spruce-fir moss spider is not present in the project study area due to the lack of spruce-fir forest and the relatively low elevation of the study area. NCNHP has no records of any known populations of the spruce-fir moss spider within a one-mile radius of the project area. This species will not be impacted as a result of project construction.

Biological Conclusion: ***No Effect***

Small whorled pogonia (*Isotria medeoloides*)

The small whorled pogonia is a slender perennial herb approximately 4 to 10 inches tall, with a single, green, hollow stem. At the apex of the stem is a whorl of five or six pale, dusty green leaves with parallel veins. Flowering occurs in May and June. The flowers are yellowish-green in color with long, thin sepals, and rounded petals. The lip of the flower is greenish white, veined with green, and three-lobed.

Populations of this plant are known to have extended periods of dormancy and bloom sporadically. This small, ephemeral orchid is not observable outside of the spring growing season. The small whorled pogonia is typically found as colonies in young or maturing deciduous forests that have open and dry areas along streams. It also grows in rich, mesic woods with acidic soils, typical of white pine and rhododendron stands (USFWS 2004).

Suitable habitat for the small whorled pogonia consisting of open, deciduous woods with acid soils is available in the project area. The NCNHP has no records of any known populations of the small whorled pogonia within a one-mile radius of the project area. A survey of suitable habitat was conducted on May 12, 2004 during the flowering period. A reference population located in South Mountain State Park was used to confirm the flowering state. No plants were observed within the project study area at the time of the survey. This species will not be impacted as a result of project construction.

Biological Conclusion: ***No Effect***

Rock gnome lichen (*Gymnoderma lineare*)

Rock gnome lichen is a squamulose lichen of the reindeer moss family. This species is the only member of its genus occurring in North America. It occurs in small (usually less than one square yard), dense colonies of narrow, strappy, leaf-like pads. These strap-like lobes are usually blue-gray on the upper surface and generally shiny white on the lower surfaces. The fruiting bodies are borne at the tips of the strap-like lobes and are black, in contrast to the red to brown fruiting bodies of other reindeer moss lichens. These lichens fruit from July through September. The rock gnome lichen is endemic to the southern Appalachian Mountains of North Carolina and Tennessee. They primarily inhabit vertical rock faces in areas of high humidity such as river gorges or areas frequently bathed in fog. Most populations occur above an elevation of 5,000 feet (USFWS 2004).

The study area lacks suitable habitat for the rock gnome lichen consisting of high humidity environments such as deep river gorges or other seepy wet rock faces. The highest elevation in the study area is approximately 3,050 feet above MSL, well below the elevations (> 5,000 feet above MSL) preferred by this species. Review of NCNHP maps indicated no known populations of this species within one mile of the project area. This species will not be impacted as a result of project construction.

Biological Conclusion: ***No Effect***

There are 31 federal species of concern listed by the USFWS for Haywood County (Table 4) as noted in the February 24, 2003 list (current update as of January 25, 2005). Federal species of concern (FSC) are not afforded federal protection under the Endangered Species Act and are not subject to any of its provisions, including Section 7. NCNHP records indicated no recorded occurrences of FSC within one mile of the project study area.

TABLE 4
FEDERAL SPECIES OF CONCERN FOR HAYWOOD COUNTY

Scientific Name	Common Name	State Status	Habitat Requirement	Habitat Present
Southern Appalachian saw-whet owl	*Aegolius acadicus*	T	spruce-fir forests or mixed hardwood/spruce forests (for nesting)	No
Cerulean warbler	*Dendroica cerulea*	SR	mature hardwood forests; steep slopes and coves in mountains	No
Olive-sided flycatcher	*Contopus borealis*	SC	montane conifer forests (mainly spruce-fir) with openings or dead trees	No
Hellbender	*Cryptobranchus alleganiensis*	SC	large and clear fast-flowing streams	Yes
Southern Appalachian red crossbill	*Loxia curvirostra*	SC	coniferous forests, preferably spruce-fir	No
Southern rock vole	*Microtus chrotorrhinus carolinensis*	SC	rocky areas at high elevations, forests or fields	No
Southern Appalachian woodrat	*Neotoma floridana haematoreia*	SC	rocky places in deciduous or mixed forests	Yes
Alleghany woodrat	*Neotoma magister*	SC	rocky places and abandoned buildings in deciduous or mixed forests in the northern mountains and adjacent Piedmont	Yes
Southern Appalachian black-capped chickadee	*Poecile atricapillus practicus*	SC	high elevation forests, mainly spruce-fir [breeding season only]	No

Southern water shrew	*Sorex palustris punctulatus*	SC	stream banks in montane forests	Yes
Southern Appalachian yellow-bellied sapsucker	*Sphyrapicus varius appalaciensis*	SC	mature, open hardwoods with scattered dead trees [breeding season only	Yes
Appalachian Bewick's wren	*Thryomanes bewickii altus*	E	Woodland borders or openings, farmlands or brushy fields, at high elevations [breeding season only]	No
Tawny crescent butterfly	*Phyciodes batesii maconensis*	SR	rocky ridges, woodland openings, at higher elevations; host plants -- asters, mainly Aster undulatus	No
Diana fritillary butterfly	*Speyeria diana*	SR	Rich woods and adjacent openings; host plants are *Viola* spp	No
Fraser fir	*Abies fraseri*	SR-L	Spruce-fir forests	No
Piratebush	*Buckleya disticophylla*	E	bluffs, dry slopes, forests on lower slopes	No
Mountain bittercress	*Cardamine clematitis*	SR-T	high elevation seeps, shaded outcrops, and streambanks	No
Tall larkspur	*Delphinium exaltatum*	E-SC	grassy balds, glades, woodlands, mostly over mafic rock	No
Glade spurge	*Euphorbia purpurea*	SR-T	forests, especially over mafic rock	No
Smoky Mountain manna grass	*Glyceria nubigena*	T	high elevation seeps	No
Butternut	*Juglans cinerea*	Not listed	Cove forest and rich wood	No
Fraser's loosestrife	*Lysimachia fraseri*	E	forests, roadsides	Yes
Torrey's mountain-mint	*Pycnanthemum torrei*	SR-T	dry upland forests and woodlands, over mafic rocks	No
Rugel's ragwort	*Rugelia nudicaulis*	T	spruce-fir forests	No
Carolina saxifrage	*Saxifraga caroliniana*	SR-T	high to middle elevation moist cliffs and rock outcrops	No
Mountain catchfly	*Silene ovata*	SR-T	rich slopes, cove forests, montane oak-hickory forests	No
Alabama least trillium	*Trillium pusillum var. 1*	E	rich cove forests	No
A liverwort	*Plagiochila sharpii*	SR-L	damp rockfaces in humid gorges, high elevation rocky summits	No
A liverwort	*Plagiochila sullivantii var. sullivantii*	SR-T	on moist rocks, in spray zones of waterfalls and in spruce-fir forests	No
A liverwort	*Spenolobopsis pearsonii*	E	on bark of Fraser Firs in spruce-fir forests	No

VI. CULTURAL RESOURCES

A. Compliance Guidelines

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 as 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 to afford the Advisory Council a reasonable opportunity to comment on such undertakings.

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) for Bridge No. 211 was conducted on June 7, 2002. All structures within the APE were photographed, and later an NCDOT staff architectural historian reviewed these photos. There were two structures within the APE over fifty years of age, Bridge No. 211 and Property #2 – House, and both were determined to be ineligible for the National register of Historic Places by the NCDOT staff architectural historian. The photographs were shown to the State Historic Preservation Office (HPO) in a meeting on July 8, 2003. At that meeting, HPO staff concurred that neither Bridge No. 211 nor Property #2 was eligible for the National Register and a form was signed that reflects these findings. Therefore, there are no National Register-listed or National Register-eligible properties within the APE for this project. Copies of all aforementioned correspondence are included in the Appendix.

C. Archaeology

An archaeological survey was conducted in the project APE and the findings were transmitted in a letter dated September 17, 2003. No archaeological deposits eligible for listing on the National Register of Historic Places were identified within the boundaries of the proposed APE, and no further archaeological work is recommended unless design plans change prior to construction. In a memorandum dated October 17, 2003, the State Historic Preservation Officer concurs with the recommendation that no further archaeological investigation be conducted in connection with this project. A copy of the memorandum is included in the Appendix. Copies of all aforementioned correspondence are included in the Appendix.

VII. ENVIRONMENTAL EFFECTS

The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

The project is a Federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.

The bridge replacement will not have an adverse effect on the quality of the human or natural environment with the use of current NCDOT standards and specifications.

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

No adverse impact on the community is anticipated. Right-of-way acquisition will be limited. No relocations are expected with the implementation of the proposed alternative.

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

There are no publicly owned recreational facilities, or wildlife and waterfowl refuges of national, state, or local significance in the vicinity of the project.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the Natural Resources Conservation Service (NRCS). Since there are no prime or important farmlands in the immediate vicinity of the proposed bridge the Farmland Protection Policy does not apply.

The project is located in Haywood County, which has been determined to be in compliance with the National Ambient Air Quality Standards with the exception of areas within the Great Smoky Mountains National Park. 40 CFR Parts 51 and 93 are not applicable, because the proposed project is located in an attainment area outside the national park. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

This project is an air quality "neutral" project, so it is not required to be included in the regional emission analysis (if applicable) and a project level CO analysis is not required.

The traffic volumes will not increase or decrease because of this project. The project's impact on noise and air quality will not be substantial.

Noise levels could increase during construction but will be temporary. If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina SIP for air quality in compliance with

15 NCAC 2D.0520. This evaluation completes the assessment requirements for highway traffic noise (23 CFR Part 772) and for air quality (1990 CAAA and NEPA) and no additional reports are required.

A field reconnaissance survey was conducted in the vicinity of the project and based on the survey, there are no anticipated underground storage tank (UST) impacts with this project. Research shows that no regulated or unregulated landfills or dumpsites occur within the project limits, and no superfund sites were identified in the vicinity of the project.

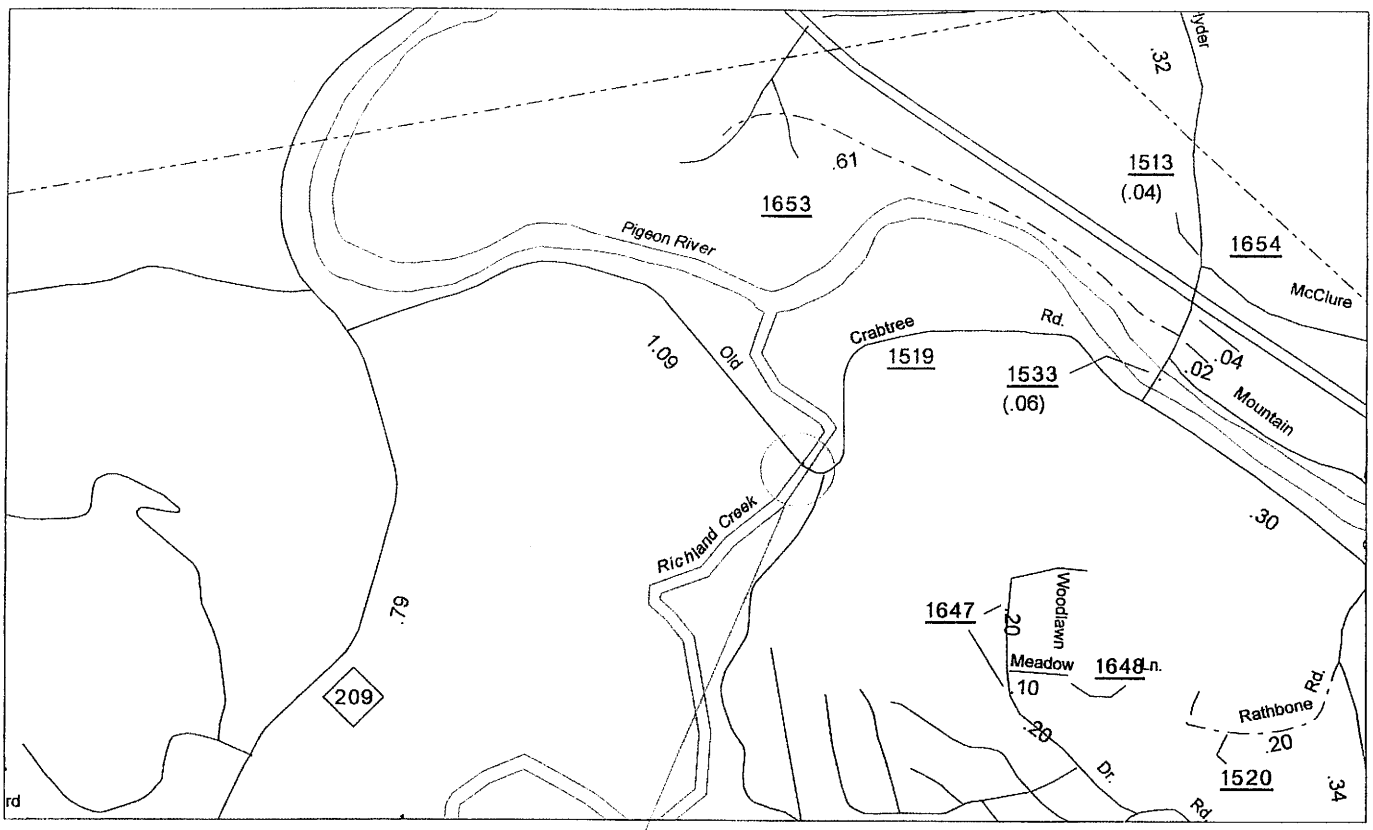
Haywood County is a participant in the National Flood Insurance Program. The project site on Richland Creek is included in a Detailed FEMA Study area. A copy of the Flood Insurance Rate Map is shown in Figure 5. The project is not anticipated to increase the level or extent of the upstream flood hazard and no practical alternatives exist to crossing the flood plain. All reasonable measures will be taken to minimize harm to the flood plain.

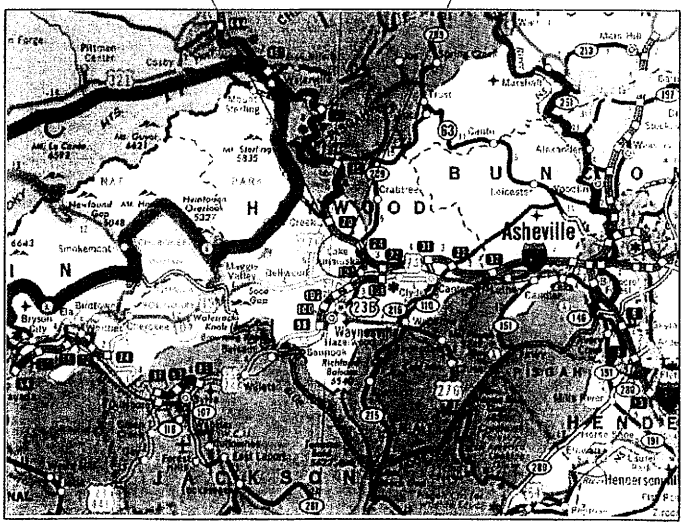
On the basis of the above discussion, it is concluded that no significant adverse environmental effects will result from implementation of the project.

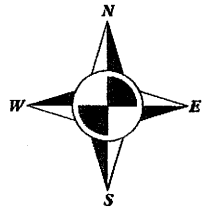
VIII. AGENCY COMMENTS

Efforts were undertaken early in the planning process (January 2003) to contact local officials to involve them in the project development with scoping letters. Please refer to Project Commitments. No additional project specific comments have been identified.

FIGURES







NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

HAYWOOD COUNTY

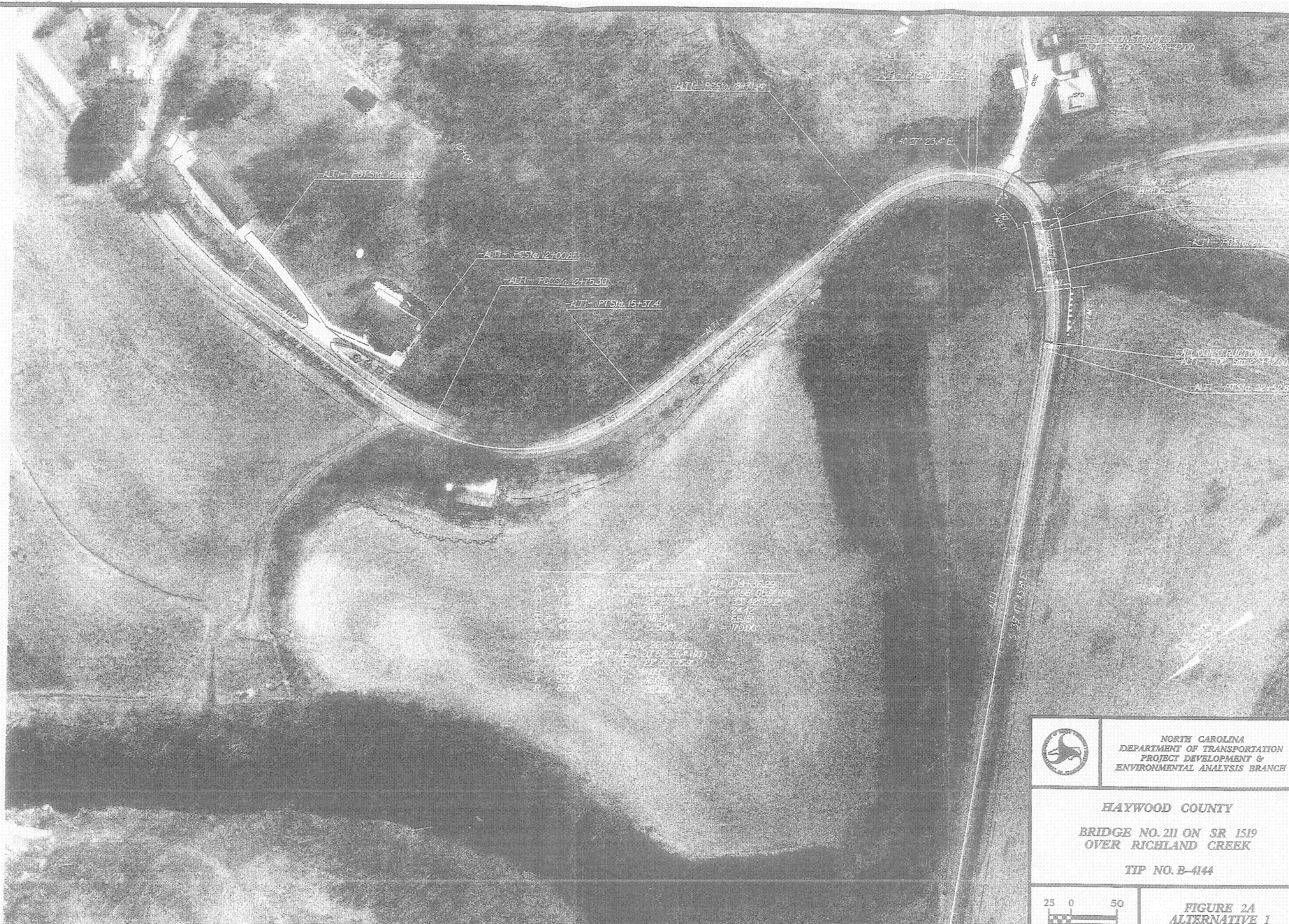
BRIDGE NO. 211 ON SR 1519 OVER RICHLAND CREEK

TIP NO. B-4144

VICINITY MAP
FIGURE 1

h:\PN\0110360068\graphics\211FIG.dgn

10/08/2004



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

HAYWOOD COUNTY

BRIDGE NO. 211 ON SR 1519
OVER RICHLAND CREEK

TIP NO. B-4144

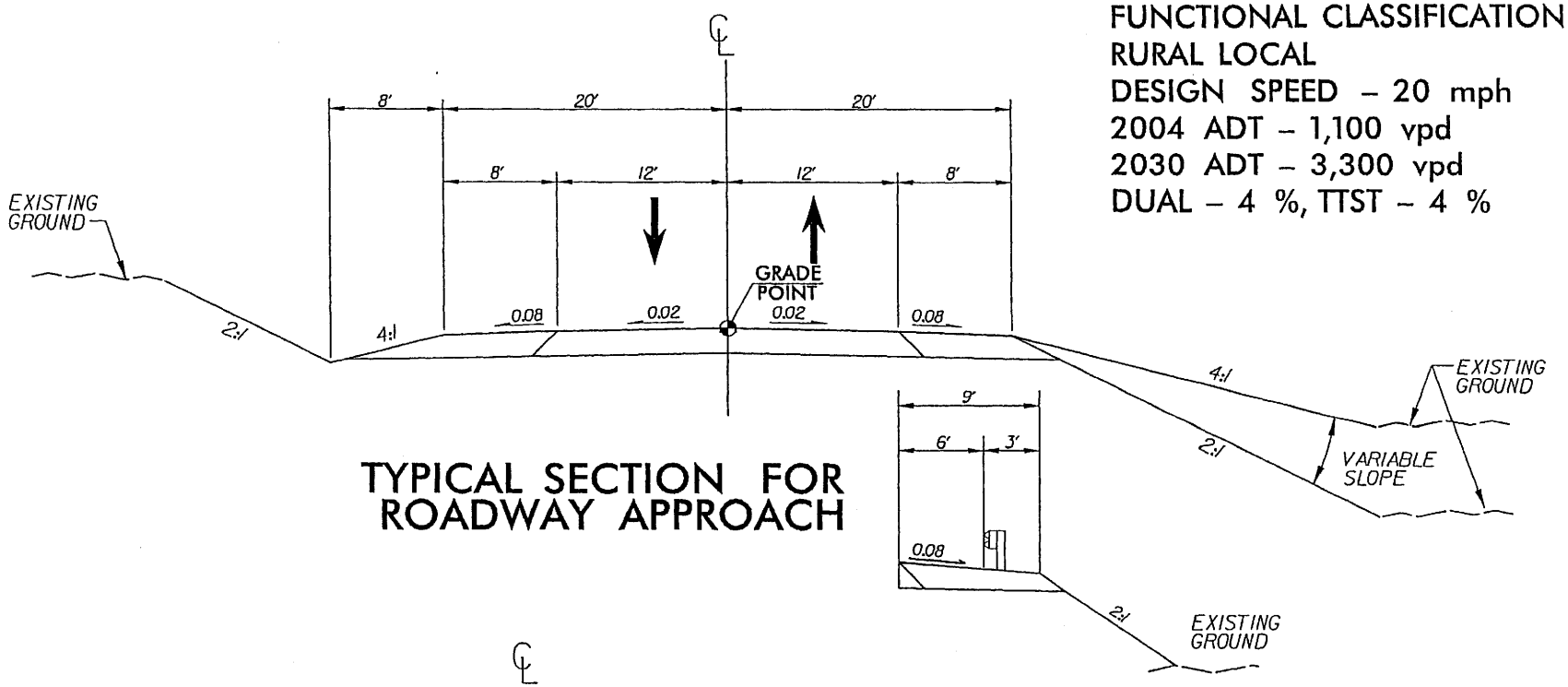
25 0 50

FIGURE 2A
ALTERNATIVE 1

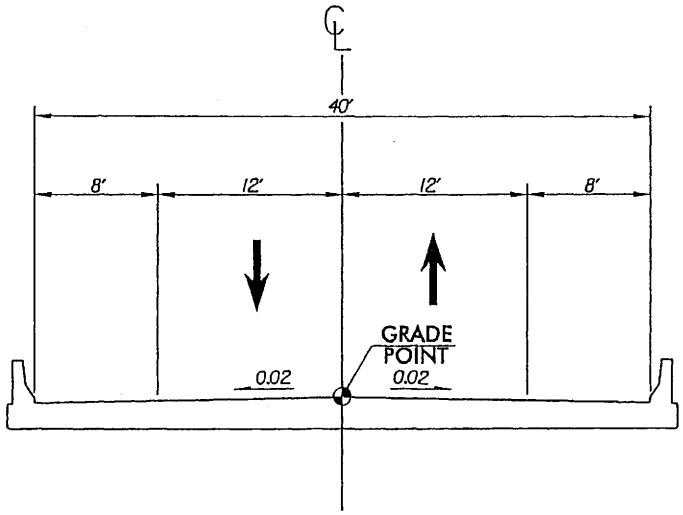

-ALT 2- PC Sta. 13+10.31
-ALT 2- PT Sta. 12+62.11
PC Sta. 10+62.00
BEGIN CONSTRUCTION
END CONSTRUCTION
-ALT 2-
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH
HAYWOOD COUNTY
BRIDGE NO. 211 ON SR 1519
OVER RICHLAND CREEK
TIP NO. B-4144
25 0 50
FIGURE 2B
ALTERNATIVE 2
(PREFERRED)

DESIGN DATA

FUNCTIONAL CLASSIFICATION:
RURAL LOCAL
DESIGN SPEED – 20 mph
2004 ADT – 1,100 vpd
2030 ADT – 3,300 vpd
DUAL – 4 %, TTST – 4 %



TYPICAL SECTION FOR ROADWAY APPROACH



TYPICAL SECTION FOR PROPOSED STRUCTURE

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

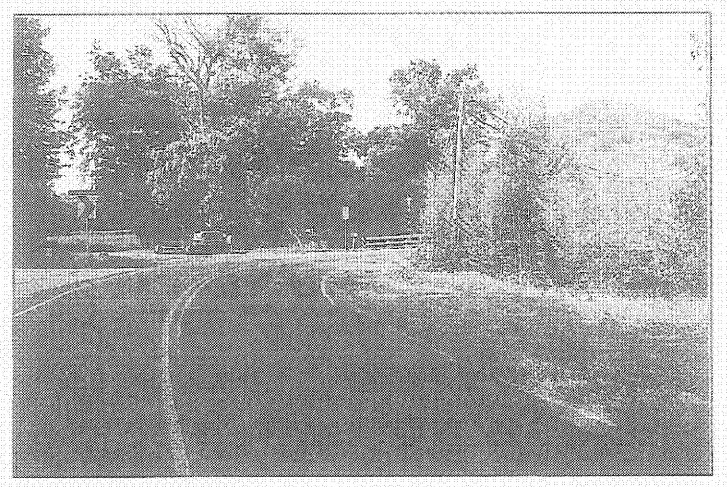
HAYWOOD COUNTY

BRIDGE NO. 211 ON SR 1519
OVER RICHLAND CREEK

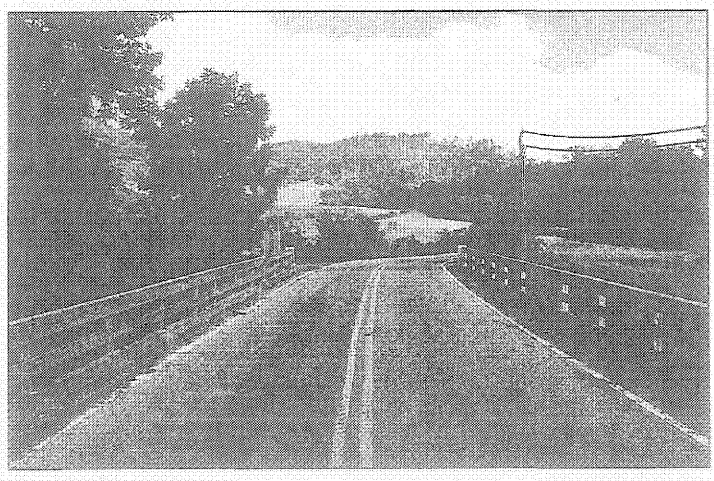
TIP NO. B-4144

FIGURE 3

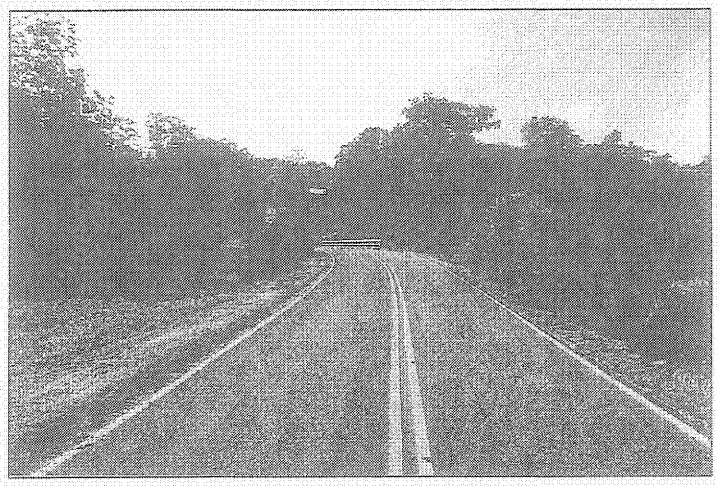
FIGURE 4 – COLOR PHOTOGRAPHS
B-4144 Haywood County
Bridge No. 211 on SR 1519 over
Richland Creek



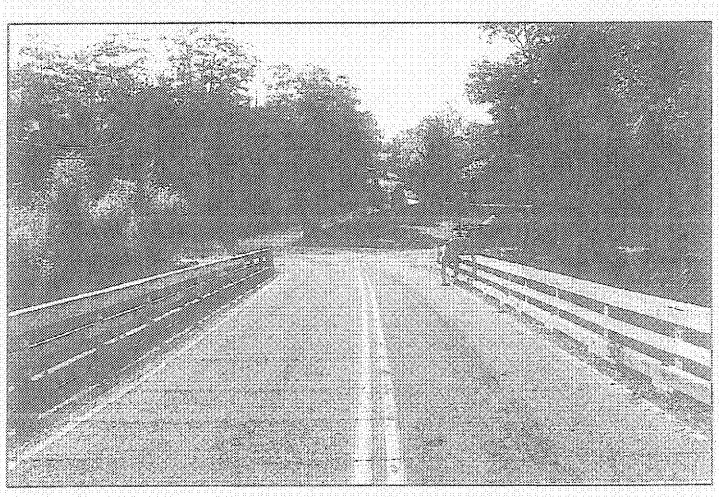
Looking Southwest Along SR 1519
Toward Bridge No. 211



Looking Northwest Along SR 1519 on
Bridge No. 211



Looking Southeast Along SR 1519
Toward Bridge No. 211



Looking Southeast Along SR 1519 on
Bridge No. 211

FIGURE 5
FLOODPLAIN MAP

NATIONAL FLOOD INSURANCE PROGRA

FLOODWAY
FLOOD BOUNDARY AND FLOODWAY MAP

HAYWOOD COUNTY, NORTH CAROLINA
(UNINCORPORATED AREAS)

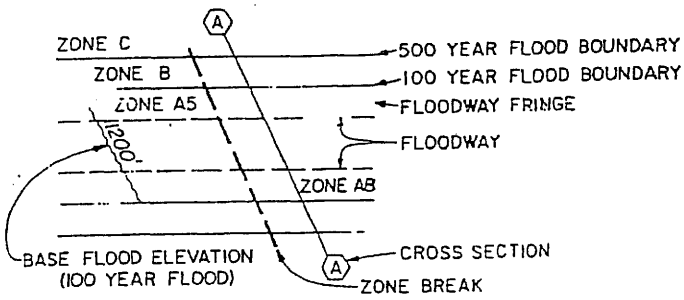
SHEET 13 OF 21

COMMUNITY-SHEET NUMBER
370120 0013

EFFECTIVE DATE
JULY 15, 1984

Federal Emergency Management Agenc

LEGEND



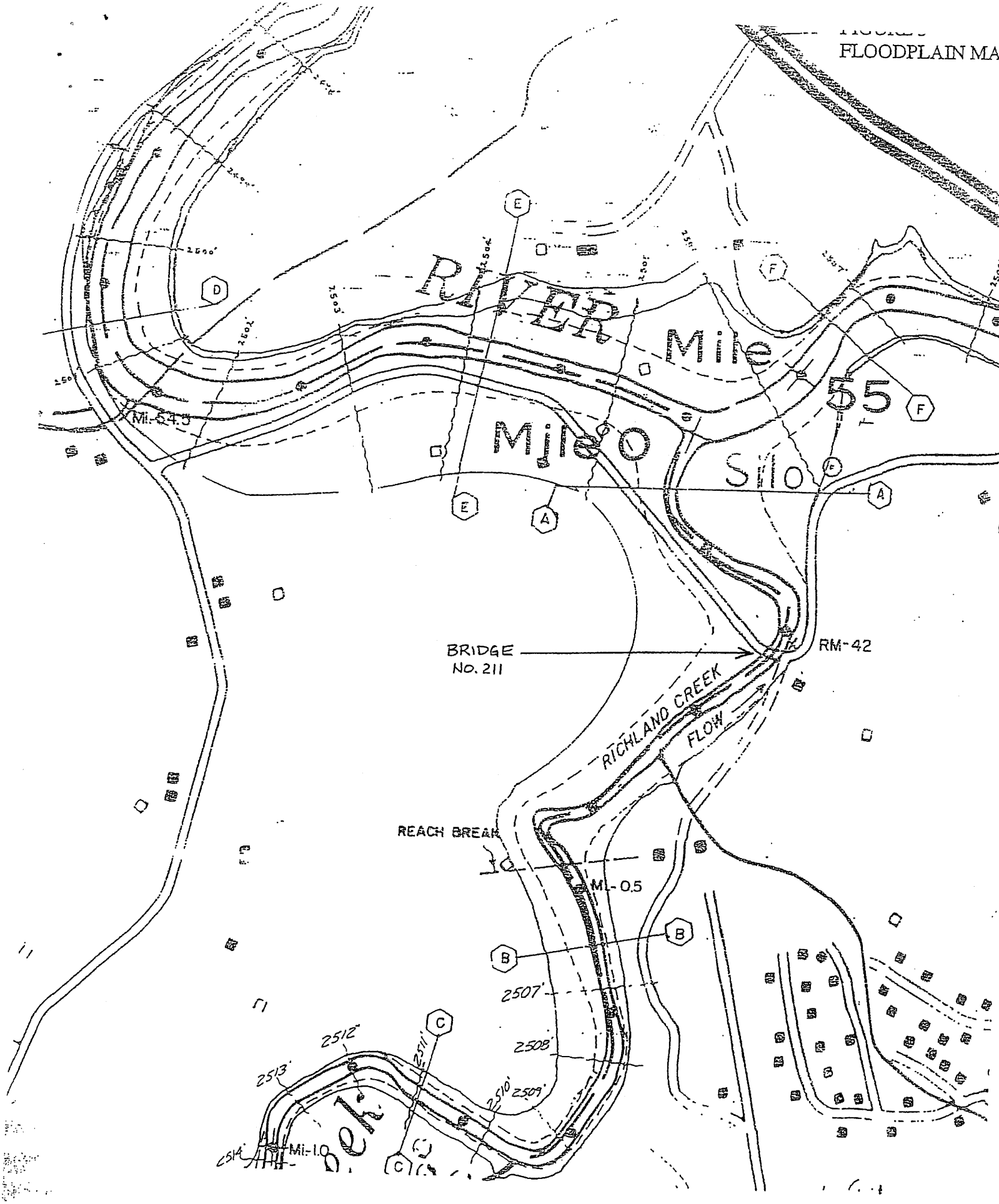
NOTES

A. THIS MAP IS INTENDED FOR USE IN DEFINING FLOODWAY AND FLOOD BOUNDARIES. ZONE AND BASE FLOOD ELEVATION (BFE) DATA MAY NOT BE CORRECTLY SHOWN. REFER TO THE SEPARATELY PRINTED FLOOD INSURANCE RATE MAP FOR CORRECT ZONE AND BFE DATA.

B. REFER TO THE FLOOD INSURANCE RATE MAP FOR DESCRIPTION OF ELEVATION REFERENCE MARKS.

C. THIS MAP MAY NOT SHOW ALL FLOOD BOUNDARIES. REFER TO THE FLOOD INSURANCE RATE MAP FOR ADDITIONAL FLOOD BOUNDARIES.

D. WHERE THE 100 & 500 YEAR FLOODS ARE CLOSE TOGETHER, ONLY THE 100 YEAR FLOOD IS SHOWN.


FLOODPLAIN MA
RIVER
Mile
55
Mile 54.5
BRIDGE
NO. 211
RM-42
RICHLAND CREEK
FLOW
REACH BREAK
MI-0.5
2507'
2508'
2509'
2510'
2511'
2512'
2513'
2514'
Mi-1.0
A
B
C
D
E
F

Appendix

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
151 PATTON AVENUE
ROOM 208
ASHEVILLE, NORTH CAROLINA 28801-5006

REPLY TO
ATTENTION OF:

Regulatory Division
Asheville Regulatory Field Office

May 31, 2002

Mr. William T. Goodwin, Jr., PE
Bridge Replacement Planning Unit
Project Development & Environmental Analysis Branch
1548 Mail Service Center
Raleigh, N.C. 27699-1548

Subject: Review of Natural Systems Technical Reports for bridge replacement projects scheduled for construction in CFY 2005; **Distribution Group 2**

Dear Mr. Goodwin:

Reference your letters February 18, 2002, March 1, 2002, March 18, 2002, and April 24, 2002 regarding our scoping comments on the following proposed bridge replacement projects:

1. TIP Project No. B-2988, Bridge No. 13 on SR 1890 over East Fork Pigeon River, Haywood County.
2. TIP Project No. B-4067, Bridge No. 47 on SR 1325 over Shuler Creek, Cherokee County.
3. TIP Project No. B-4123, Bridge No. 117 on SR 1123 over West Buffalo Creek, Graham County.
4. TIP Project No. B-4144, Bridge No. 211 on SR 1519 over Richland Creek, Haywood County.
5. TIP Project No. B-4161, Bridge No. 211 on SR 1132 over West Fork TuckasegeeRiver, Jackson County.
6. TIP Project No. B- 4179, Bridge No. 65 on SR 1513 over Rabbit Creek, Macon County.
7. TIP Project No. B-4180, Bridge No. 323 on SR 1611over Clear Creek, Macon County.

Although it does not appear that any of these proposed bridge replacement projects will impact jurisdictional wetlands, Department of the Army (DA) permit authorization, pursuant to Section 404 of the Clean Water Act of 1977, as amended, will be required for the discharge of excavated or fill material in waters (and wetlands, if applicable) of the

United States, including disposal of construction debris. Specific permit requirements will depend on design of the projects, extent of fill work within the waters of the United States, construction methods, and other factors.

Although these projects may qualify as a Categorical Exclusion, to qualify for nationwide permit authorization under Nationwide Permit #23, the project planning report should contain sufficient information to document that the proposed activity does not have more than a minimal individual or cumulative impact on the aquatic environment. All activities, including temporary construction, access, and dewatering activities, should be included in the project planning report. Our experience has shown that replacing bridges with culverts often results in sufficient adverse impacts to consider the work as having more than minimal impacts on the aquatic environment. Accordingly, the following items need to be addressed in the project planning report:

a. The report should contain the amount of permanent and temporary impacts to waters and wetlands as well as a description of the type of habitat that will be affected by the proposed project.

b. Off-site detours are generally preferable to on-site (temporary) detours which impact waters or wetlands. If an on-site detour is the recommended action, justification should be provided that demonstrates that alternatives with lesser impacts are not practicable. Please note that an onsite detour constructed on a spanning structure can potentially avoid permanent impacts to waters or wetlands and should be considered whenever an on-site detour is the recommended action. For projects where a spanning structure is not feasible, the NCDOT should investigate the existence of previous onsite detours at the site that were used in previous construction activities. These areas should be utilized for onsite detours whenever possible to minimize impacts.

For proposed projects and associated on-site detours that cause minimal losses of waters or wetlands, an approved restoration and monitoring plan will be required prior to issuance of a DA nationwide or Regional general permit. For proposed projects and associated on-site detours that cause more than minimal losses of waters or wetlands, an individual DA permit and a compensatory mitigation proposal for the unavoidable impacts may be required.

c. Project commitments should include the removal of all temporary fills from waters and wetlands and "time-of-year" restrictions on in-stream work if recommended by the NC Wildlife Resources Commission.

d. All restored areas should be planted with endemic vegetation including trees, if appropriate. For projects proposing a temporary onsite detour, the entire detour area, including any previous detour from past construction activities, should be removed in its

entirety.

e. The report should provide an estimate of the linear feet of new impacts to streams resulting from construction of the project.

d. If a bridge is proposed to be replaced with a culvert, NCDOT must demonstrate that the work will not result in more than minimal impacts to the aquatic environment, specifically addressing the passage of aquatic life including anadromous fish. The work must also not alter the stream hydraulics and create flooding of adjacent properties or result in unstable stream banks.

g. The report should discuss and recommend bridge demolition methods and shall include the impacts of bridge demolition and debris removal in addition to the impacts of constructing the bridge. The report should also incorporate the bridge demolition policy recommendations pursuant to the NCDOT policy entitled "Bridge Demolition and Removal in Waters of the United States" dated September 20, 1999.

h. Lengthening existing bridges can often benefit the ecological and hydrological functions of the associated wetlands and streams. In some cases bridge approaches are connected to earthen causeways that were built over wetlands and streams. Replacing these causeways with longer bridges would allow previously impacted waters, wetlands and floodplains to be restored. In an effort to encourage this type of work, mitigation credit for wetland restoration activities can be provided to offset the added costs of lengthening an existing bridge.

i. Based on the information provided and the recent field investigations of the referenced project sites, the replacement of the subject bridges, most over high quality, mountain trout waters, has the potential for significant adverse impacts to those aquatic resources. Also, the presence/status of at least one federally listed species identified in the natural systems report for each project remains unresolved, and will require further study before an effect determination can be made.

j. You have requested that the referenced projects be given a designation of "Red", "Green" or "Yellow" as explained in your letters. At this time, all the projects listed above would receive a "Yellow" designation by our office for the reasons specified in the preceding paragraph.

Should you have any questions please call Mr. John W. Hendrix in the Asheville Regulatory Field Office at 828-271-7980, ext. 7.

Sincerely,

John W. Hendrix
Project Manager

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
151 PATTON AVENUE
ROOM 208
ASHEVILLE, NORTH CAROLINA 28801-5006

REPLY TO
ATTENTION OF:

Regulatory Division
Asheville Regulatory Field Office

January 27, 2003

Mr. John Wadsworth, PE
Project Development & Environmental Analysis Branch
1548 Mail Service Center
Raleigh, N.C. 27699-1548

Subject: Comments on Bridge Replacement Projects B-2988, B-4144, and B-4291

Dear Mr. Wadsworth:

Reference your letter under signature of Gregory J. Thorpe, dated January 6, 2003, regarding a request for comments on the following proposed bridge replacement projects:

1. TIP Project No. B-2988, Bridge No. 13 over East Fork Pigeon River, Haywood County.
2. TIP Project No. B-4144, Bridge No. 211 over Richland Creek, Haywood County.
3. TIP Project No. B-4291, Bridge No. 193 over Davidson River, Transylvania County.

Department of the Army (DA) permit authorization, pursuant to Section 404 of the Clean Water Act of 1977, as amended, will be required for the discharge of excavated or fill material in waters (and wetlands, if applicable) of the United States, including disposal of construction debris. Specific permit requirements will depend on design of the projects, extent of fill work within the waters of the United States, construction methods, and other factors.

Additional comments were provided on these projects to Mr. William T. Goodwin, of the Bridge Replacement Planning Unit on May 20 and 31, 2002. Copies of those comments are attached and constitute the extent of comments which the Corps can provide based on the information available to date.

Should you have any questions please call Mr. John W. Hendrix in the Asheville Regulatory Field Office at 828-271-7980, ext. 7.

Sincerely,

John W. Hendrix

John W. Hendrix
Project Manager

Attachments

United States Department of the Interior

NATIONAL PARK SERVICE
Blue Ridge Parkway
199 Hemphill Knob Road
Asheville, North Carolina 28803

IN REPLY REFER TO

L7619
PIN 1280

February 11, 2003

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

Subject: Request for comments on Bridge Replacement Projects B-4032, B-4036, B-4037, B-4258, B-4261, B-2988, B-4144, B-4291

Dear Dr. Thorpe:

Thank you for the opportunity to comment on the above referenced projects. Parkway staff reviewed the scoping document and the potential impacts of the proposed project on resource values that may be present on National Park Service (NPS) lands and have the following comments:

The proposed projects should have no impact to park natural resources.

In reference to Bridge Number 262, over south Hominy Creek on SR 3452 connecting to State Route 151: SR 151 is an important connecting road to the Blue Ridge Parkway. Would this bridge construction in any way delay SR 151 traffic or reroute vehicular traffic on the Blue Ridge Parkway from SR 151? If so what would be the delay duration? We would want to review detour sign planning, if applicable. Otherwise, we have no visual impact concerns to the Blue Ridge Parkway, as this bridge is located out of the park viewshed area.

3-2988 *In reference to Bridge Number 13, on SR 1890 and near SR 276, crossing over the East Fork of the Pigeon River: SR 276 is an important connecting road to the Blue Ridge Parkway. Would this bridge construction in any way delay SR 276 traffic or reroute vehicular traffic on the Blue Ridge Parkway from SR 276? If so what would be the delay duration? We would want to review detour sign planning, if applicable. Otherwise, we have no visual impact concerns to the Blue Ridge Parkway, as this bridge is located out of the park viewshed area.*

Again, thank you for the opportunity to review and comment on these important bridge replacement projects. If you have any questions, please contact Suzette Molling, Environmental Protection Specialist, at 828/271-4779 ext. 219.

Sincerely,

Daniel W. Brown
Superintendent

cc: Park Resident Landscape Architect, BLRI
Chief, Branch of Resource Management, BLRI
Highlands District Ranger, BLRI
Highlands District Resource Management Specialist, BLRI

State of North Carolina
Department of Environment
and Natural Resources
Division of Water Quality

Michael Easley, Governor
Bill Ross, Secretary
Alan Klimek, Director

NCDENR
NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

June 3, 2002

Memorandum To: William T. Goodwin, Jr., PE, Unit Head
Bridge Replacement Planning Unit
Project Development and Environmental Analysis Branch

Through: John Dorney
NC Division of Water Quality, 401 Unit

From: Robert Ridings
NC Division of Water Quality, 401 Unit

Subject: Review of Natural Systems Technical Reports for bridge replacement projects scheduled for construction in CFY 2005: "Yellow Light" Projects: B-2988, B-4032, B-4038, B-4039, B-4044, B-4045, B-4180, B-4179, B-4161, B-4144, B-4123, B-4067, B-4047.

In future reports, an Executive Summary Paragraph would be helpful. This should include brief description of the work intended (i.e., replace bridge with another bridge or with a culvert), the amount of impact to wetlands and streams, and types of possible permits needed.

On all projects, use of proper sediment and erosion control will be needed. Sediment and erosion control measures should not be placed in wetlands. Sediment should be removed from any water pumped from behind a cofferdam before the water is returned to the stream. Sedimentation and Erosion Control Guidelines for Sensitive Watersheds (15A NCAC 4B .0024) must be implemented prior to any ground-disturbing activities to minimize impacts to downstream aquatic resources. Temporary or permanent herbaceous vegetation must be planted on all bare soil *within 10 days* of ground-disturbing activities to provide long term erosion control.

This office would prefer bridges to be replaced with new bridges. However if the bridge must be replaced by a culvert and 150 linear feet or more of stream is impacted, a stream mitigation plan will be needed prior to the issuance of a 401 Water Quality Certification. While the NCDWQ realizes that this may not always be practical, it should be noted that for projects requiring mitigation, appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.

Any proposed culverts shall be installed in such a manner that the original stream profile is not altered (i.e. the depth of the channel must not be reduced by a widening of the streambed).

Existing stream dimensions are to be maintained above and below locations of culvert extensions.

For permitting, any project that falls under the Corps of Engineers' Nationwide Permits 23 or 33 do not require written concurrence by the NC Division of Water Quality. Notification and courtesy copies of materials sent to the Corps, including mitigation plans, are required. For projects that fall under the Corps of Engineers Nationwide Permit 14 or Regional General Bridge Permit 31, the formal 401 application process will be required including appropriate fees and mitigation plans.

Do not use any machinery in the stream channels unless absolutely necessary. Additionally, vegetation should not be removed from the stream bank unless it is absolutely necessary. NCDOT should especially avoid removing large trees and undercut banks. If large, undercut trees must be removed, then the trunks should be cut and the stumps and root systems left in place to minimize damage to stream banks.

Use of rip-rap for bank stabilization must be minimized; rather, native vegetation should be planted when practical. If necessary, rip-rap must be limited to the stream bank below the high water mark, and vegetation must be used for stabilization above high water.

Rules regarding stormwater as described in (15A NCAC 2b.0216 (3) (G)) shall be followed for these projects. These activities shall minimize built-upon surface area, divert runoff away from surface waters and maximize utilization of BMPs. Existing vegetated buffers shall not be mowed in order to allow it to be most effectively utilized for storm water sheet flow.

Special Note on project B-4144: these waters are classified as 303(d) waters. Special measures for sediment control will be needed.

Also note that projects B-2988, B-4032, B-4038, B-4180, B-4179, B-4161, B-4144, B-4123, and B-4067 occur in Trout waters. Any trout-specific conditions that would be determined by the North Carolina Wildlife Resources Commission, to protect the egg and fry stages of trout from sedimentation during construction, would be required on any 401 certifications.

Thank you for requesting our input at this time. The DOT 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.

B. Goodwin

North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

MEMORANDUM

TO: William T. Goodwin, P.E., Unit Head
Bridge Replacement Planning Unit
Project Development and Environmental Analysis Branch, NCDOT

FROM: Owen F. Anderson, Mountain Region Coordinator
Habitat Conservation Program

DATE: June 24, 2002

SUBJECT: Scoping and Natural Resources Technical Report, Replace Bridge No. 211 on SR 1519 Over Richland Creek, Haywood County, TIP No. B-4144
Fish and Wildlife Project Status: GREEN to YELLOW

Biologists with the North Carolina Wildlife Resources Commission familiar with the project area have reviewed the technical report for the subject project to assess the potential for adverse impacts to fish and wildlife resources. Our comments are provided in accordance with 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).

The proposed work involves the replacement of bridge number 211 on SR 1519 over Richland Creek. Construction impacts on fish and wildlife resources will depend on the extent of disturbance in the streambed and surrounding floodplain areas. A narrow riparian corridor within the project area is characterized mostly as montane alluvial forest. The surrounding land outside of the riparian corridor is primarily disturbed agricultural land. The forested riparian area should be considered as good quality wildlife habitat that provides a travel corridor for wildlife.

The Division of Water Quality classifies this reach of Richland Creek as C. This reach is not designated as trout water by the NCWRC. This reach is somewhat transitional water and may or may not support some trout. We are of the opinion that this project could result in adverse impacts to trout.

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 733-3633 ext. 281 • Fax: (919) 715-7643

According to the technical report suitable habitat exists for the Appalachian elktoe (*Alasmidonta raveneliana*), a state and federally listed species. The Appalachian elktoe is known to occur in the West Fork Pigeon River and the Pigeon River. An aquatic survey is proposed for the project area. The findings of this survey will need to be considered in the alternatives analysis and design of the project.

A survey will also be done during the flowering season for the small whorled pogonia (*Isotria medeoloides*). The results of this survey also will need to be considered in the alternatives analysis and design of the project.

We prefer bridge designs that do not alter the natural stream morphology or impede fish passage. Efforts should be made during design to place bridge supports outside of the bankfull channel. Bridge designs should also include provisions for the deck drainage to flow through a vegetated upland buffer prior to reaching the subject surface waters. Correction of altered stream morphology at the road crossing should be considered during design.

Streams and riparian zones provide connectivity of the landscape; and thus, are natural movement corridors for terrestrial wildlife species. Bridge designs should consider leaving sufficient corridors under the bridge to encourage movement of wildlife under the bridge rather than across the highway. The movement of animals, especially larger animals (e.g., deer and bear), under the bridge may reduce automobile crashes involving wildlife. Where feasible, increasing the riparian corridor width under the bridge is recommended.

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 native herbaceous species and planted with native tree species. 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.

Listed below are our standard recommendations on this project. Because the Corps of Engineers (COE) recognizes the project county as a "trout water county", the NCWRC will review any nationwide or general 404 permits for the proposed projects and will likely request the following as conditions of the 404 permit.

1. This bridge should be replaced with another spanning structure.

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. Water that has inadvertently come in contact with live concrete should not be discharged to surface waters but should be disposed in an upland area.

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 steam underneath the bridge.

7. 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.

8. 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.

9. 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.

10. 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 surface waters.

11. 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 construetion is completed.

12. 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.

13. Wastewater from drilling operations should not be discharged to surface waters but should be pumped to upland areas.

14. **If surveys indicate usage by trout, instream construction and construction within the 25-foot buffer is prohibited during the trout-spawning period of October 15 to April 15 for brook and brown and/or January 1-April 15 for rainbow to minimize impacts on trout reproduction.**

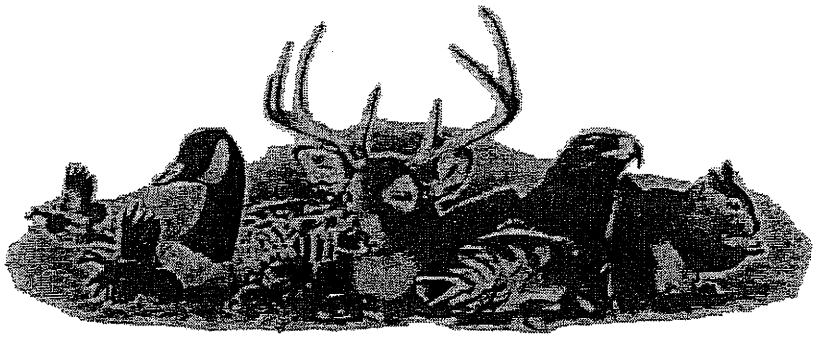
15. Discharge of materials into surface waters from demolition of the old bridge should be avoided as much as practicable. Any materials that inadvertently reach surface waters should be removed.

16. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.

17. Suitable mussel habitat exists at this project site and rare mussels are known from this drainage; therefore the project area should be surveyed for fish and freshwater mussels. NCDOT biologist Mr. Tim Savidge should be notified. If survey results reveal the presence of listed species, 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

Thank you for the opportunity to review and comment during the early stages of these projects. If you have any questions regarding these comments, please contact me at (828) 452-2546.

cc: Mr. John Hendrix, NCDOT Coordinator, COE, Asheville
Ms. Marella Buncick, Biologist, USFWS Asheville
Ms. Cynthia Van Der Wiele, Highway Coordinator, Division of Water Quality



North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

TO: John Wadsworth, Project Planning Engineer
Project Development and Environmental Analysis Branch, NCDOT

FROM: Marla Chambers, Highway Projects Coordinator
Habitat Conservation Program, NCWRC

DATE: March 21, 2003

SUBJECT: Scoping review of NCDOT's proposed bridge replacement projects B-4032, B-4036, B-4037, B-4258, B-4261, B-2988, B-4144, B-4291 in Buncombe, Rutherford, Haywood and Transylvania Counties.

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 project. Staff biologists have reviewed the information provided and have the following preliminary comments. These 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.

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 733-3633 ext. 281 • **Fax:** (919) 715-7643

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 steam 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. Hal Bain 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.

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-4032, Buncombe Co., Bridge No. 130 over the Broad River. The Broad River is classified as C-Tr and rainbow trout are present. An in-stream and 25-foot buffer work moratorium from January 1 to April 15 should apply.

2. B-4036, Buncombe Co., Bridge No. 220 over Reems Creek. Reems Creek is classified as C-Tr and is hatchery supported trout water. An in-stream and 25-foot buffer work moratorium from October 15 to April 15 should apply.

3. B-4037, Buncombe Co., Bridge No. 262 over South Hominy Creek. South Hominy Creek is classified as C-Tr and rainbow and brown trout are present. An in-stream and 25-foot buffer work moratorium from October 15 to April 15 should apply.

4. B-4258, Rutherford Co., Bridge No. 7 over the Broad River. The Broad River flows into Lake Lure just downstream of this bridge and is classified as B-Tr and C-Tr in the project vicinity. The site is downstream of Hatchery Supported Trout Water and an in-stream and 25-foot buffer work moratorium for rainbow trout, from January 1 to April 15, is most appropriate for this project.

5. B-4261, Rutherford Co., Bridge Nos. 39 and 37 over Fork of Cathey's Creek. The Santee chub (*Cyprinella zanema*), a state listed significantly rare fish species, occurs both upstream and downstream of the project. An in-stream work moratorium to protect smallmouth bass and redbreast sunfish, from May 1 to July 15, is most appropriate for this project.

6. B-2988, Haywood Co., Bridge No. 13 over the East Fork of the Pigeon River. The East Fork of the Pigeon River is classified as WS-III Tr in the project area and rainbow and brown trout are present. Appalachian elktoe (*Alasmidonta raveneliana*), a federal and state listed endangered mussel species and the olive darter (*Percina squamata*), a state listed special concern fish species, are present in the Pigeon River downstream of the East Fork Pigeon River confluence. An in-stream and 25-foot buffer work moratorium from October 15 to April 15 should apply. Special precautions should be taken to prevent sedimentation downstream.

7. B-4144, Haywood Co., Bridge No. 211 over Richland Creek. Trout are present in Richland Creek, class B waters, which joins the Pigeon River not far downstream of the project site. Longear sunfish (*Lepomis megalotis*), a state significantly rare fish species, has been observed in Richland Creek upstream of the project. An in-stream and 25-foot buffer work moratorium from October 15 to April 15 should apply.

8. B-4291, Transylvania Co., Bridge No. 193 over the Davidson River. Rainbow and brown trout are present in the project area of Davidson River, class C waters, which joins the French Broad River not far downstream of the project site. The creeper (*Strophitus undulatus*), a state listed threatened mussel species, is present in the French Broad River immediately downstream of the confluence of the Davidson River. Two amphibian species, the common mudpuppy (*necturus maculosus*), state special concern, and the hellbender (*Cryptobranchus alleganiensis*), federal species of concern and state special concern, have been found in the Davidson River upstream of the project site. An in-stream and 25-foot buffer work moratorium from October 15 to April 15 should apply. Special precautions should be taken to prevent sedimentation downstream. In addition, a public access area should be incorporated into the plans for this project.

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) 485-2384. Thank you for the opportunity to review and comment on these projects.

cc: Cynthia Van Der Wiele, DWQ
Marella Buncick, USFWS
Sarah Kopplin, NHP

HISTORIC ARCHITECTURE SECTION
North Carolina Department of Transportation

MEMORANDUM

TO: John Wadsworth, Project Planning Engineer

FROM: Richard Silverman, Office of Human Environment

SUBJECT: B-4144, Haywood County

DATE: August 11, 2003

CC: Project File

Attached is a signed concurrence form which states that NCDOT and SHPO, agree that:

- There are properties over fifty years old within the project's area of potential effects, but based on the historical information available and the photographs of each property, none is considered eligible for the National Register and no further evaluation of them is necessary.
- There are no National Register-listed properties within the project's area of potential effects.
- The bridge itself is not eligible for the National Register.

Since there are no historical properties affected by the proposed project, compliance with Section 106 of the National Historic Preservation Act is complete. Please notify us in writing if the scope of this project changes. A change in scope may necessitate a new survey of the APE.

Federal Aid # BRZ-1519(2) *TIP#* B-4144 *County:* Haywood

CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES

Project Description: Replace Bridge No. 211 on SR 1519, Haywood County

On July 8, 2003 representatives of the

- ☒ North Carolina Department of Transportation (NCDOT)
- ☒ Federal Highway Administration (FHWA)
- ☒ North Carolina State Historic Preservation Office (HPO)
- ☐ Other

Reviewed the subject project at

- ☐ Scoping meeting
- ☒ Historic architectural resources photograph review session/consultation
- ☐ Other

All parties present agreed

- ☐ 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 properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the property/ies identified as # 1 - Bridge No. 211; #2 – House is/are considered not eligible for the National Register and no further evaluation of it/them is/are necessary.
- ☒ 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 at this consultation, and based upon the above concurrence, 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 affected by this project. (*Attach any notes or documents as needed*) **[Richland Mill outside of A.P.E.]**

Signed:

R Shuman — 8 July 2003
Representative, NCDOT — Date

R W Hancock — 7/14/03
FHWA, for the Division Administrator, or other Federal Agency — Date

Jennifer D McGee — July 8, 03
Representative, HPO — Date

David Brook — 7/15/03
State Historic Preservation Officer — Date

If a survey report is prepared, a final copy of this form and the attached list will be included.

North Carolina Department of Cultural Resources
State Historic Preservation Office
David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary
Office of Archives and History

Division of Historical Resources
David J. Olson, Director

January 29, 2002

MEMORANDUM

TO: William D. Gilmore, Manager
NCDOT, Division of Highways

FROM: David Brook for David Brook

SUBJECT: Replace Bridge 211 on SR 1519, Haywood County, ER 02-8513 B-4144

Thank you for your letter of September 25, 2001, regarding the above project. The proposed undertaking is at or in close proximity to previously recorded archaeological sites 31HW65 and 31HW10.

We recommend that a comprehensive survey be conducted by an archaeologist to identify and evaluate the significance of archaeological remains that may be damaged or destroyed by the project. Potential effects on unknown resources must be assessed prior to the initiation of construction activities.

Two copies of the resulting archaeological survey report, as well as one copy of the appropriate site forms, should be forwarded to us for review and comment as soon as they are available and well in advance of any construction activities.

A list of archaeological consultants who have conducted or expressed an interest in contract work in North Carolina is available at www.arch.dcr.state.nc.us/consults. The archaeologists listed, or any other archaeologist, may be contacted to conduct the recommended survey.

We have conducted a search of our maps and files and have located the following structures of historical or architectural importance within the general area of the project:

Richland Mill, north side of SR 1519, just east of NC 209

An architectural historian for the Department of Transportation should inventory and evaluate this property and any others, that are fifty years old or older and located within the area of potential effect.

The above comments are made pursuant to Section 106 of National Historic Preservation Act and Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Mary Pope Furr, NCDOT
Matt Wilkerson, NCDOT

North Carolina Department of Cultural Resources
State Historic Preservation Office
David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Division of Historical Resources
David J. Olson, Director

October 17, 2003

MEMORANDUM

TO: Matt Wilkerson, Archaeology Supervisor
Project Development and Environmental Analysis Branch
Division of Highways
Department of Transportation

FROM: David Brook

SUBJECT: Bridge No. 211 on SR 1519, TIP B-4144, Haywood County, ER 02-8513

Thank you for your letter of September 17, 2003, transmitting the archaeological survey report by Paul Mohler for the above project.

During the course of the survey, one site was located within the project area. Mr. Mohler has recommended that no further archaeological investigation be conducted in connection with this project. We concur with this recommendation since the project will not involve significant archaeological resources.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Paul Mohler, NCDOT

RELOCATION REPORT

MAY 07 2003
North Carolina Department of Transportation
AREA RELOCATION OFFICE
N.C. DEPT. OF TRANSPORTATION

[X] E.I.S. [ ] CORRIDOR [ ] DESIGN

PROJECT:		COUNTY	Haywood	Alternate 1 of 2 Alternate	
I.D. NO.:	B-4144	F.A. PROJECT	8.2942601		
DESCRIPTION OF PROJECT:	Replace Bridge No. 211 on SR 1519 Richland Creek Rd. Over Richland Creek				

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	0	0	0	0
Businesses	0	0	0	0
Farms	0	0	0	0
Non-Profit	0	0	0	0

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	0	0	0	0

VALUE OF DWELLING				DSS DWELLING AVAILABLE			
Owners		Tenants		For Sale		For Rent	
0-20M	0	$ 0-150	0	0-20M	0	$ 0-150	0
20-40M	0	150-250	0	20-40M	0	150-250	0
40-70M	0	250-400	0	40-70M	0	250-400	0
70-100M	0	400-600	0	70-100M	0	400-600	0
100 UP	0	600 UP	0	100 UP	0	600 UP	0
TOTAL							

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.
	x	1. Will special relocation services be necessary?
	x	2. Will schools or churches be affected by displacement?
x		3. Will business services still be available after project?
	X	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	x	5. Will relocation cause a housing shortage?
	na	6. Source for available housing (list).
	na	7. Will additional housing programs be needed?
	na	8. Should Last Resort Housing be considered?
	na	9. Are there large, disabled, elderly, etc. families?
	na	10. Will public housing be needed for project?
	na	11. Is public housing available?
	na	12. Is it felt there will be adequate DSS housing available during relocation period?
	na	13. Will there be a problem of housing within financial means?
	na	14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? **0 Months**

REMARKS (Respond by Number)

This project was inspected and no displacees appear to be involved. Therefore it is considered a negative study.

Relocation Agent	5-1-03 Date	Approved by	5-30-03 / 05-01-03 Date

Form 15.4 Revised 02/95 d

Original & 1 Copy: State Relocation Agent
2 Copy: Area Relocation Office

RELOCATION REPORT

North Carolina Department of Transportation
AREA RELOCATION OFFICE

[X] E.I.S. [ ] CORRIDOR [ ] DESIGN

PROJECT:		COUNTY	Haywood	Alternate 2 of 2 Alternate	
I.D. NO.:	B-4144	F.A. PROJECT	8.2942601		
DESCRIPTION OF PROJECT:	Replace Bridge No. 211 on SR 1519 Richland Creek Rd. Over Richland Creek				

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	0	0	0	0
Businesses	0	0	0	0
Farms	0	0	0	0
Non-Profit	0	0	0	0

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	0	0	0	0

VALUE OF DWELLING				DSS DWELLING AVAILABLE			
Owners		Tenants		For Sale		For Rent	
0-20M	0	$ 0-150	0	0-20M	0	$ 0-150	0
20-40M	0	150-250	0	20-40M	0	150-250	0
40-70M	0	250-400	0	40-70M	0	250-400	0
70-100M	0	400-600	0	70-100M	0	400-600	0
100 UP	0	600 UP	0	100 UP	0	600 UP	0
TOTAL							

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.
	x	1. Will special relocation services be necessary?
	x	2. Will schools or churches be affected by displacement?
x		3. Will business services still be available after project?
	X	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	x	5. Will relocation cause a housing shortage?
	na	6. Source for available housing (list).
	na	7. Will additional housing programs be needed?
	na	8. Should Last Resort Housing be considered?
	na	9. Are there large, disabled, elderly, etc. families?
	na	10. Will public housing be needed for project?
	na	11. Is public housing available?
	na	12. Is it felt there will be adequate DSS housing available during relocation period?
	na	13. Will there be a problem of housing within financial means?
	na	14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? **0 Months**

REMARKS (Respond by Number)

This project was inspected and no displacees appear to be involved. Therefore it is considered a negative study.

Ann Simpson 5-30-03

Relocation Agent	5-1-03 Date	Approved by	5-1-03 Date

Form 15/4 Revised 02/95 d

Original & 1 Copy: State Relocation Agent
2 Copy Area Relocation Office

Haywood County Schools

Rodney Bullock
Transportation Director
Transportation Department
401 Farmview Drive
Waynesville, NC 28786

Telephone 828-456-2421
Fax 828-456-2452

June 18, 2001

Mr. Davis Moore
NC Department of Transportation
Project Development and Environment Analysis
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Moore:

This letter is in reference to the Bridge Replacement Projects in Haywood County. I would like to take this opportunity to explain the impact replacing this bridge would have on our school bus transportation .

1. Bridge 329 on SR 1369 at Fox Run Road over Jonathan Creek (TIP 3854).

   We have 2 school buses that crosses that bridge twice a day.

2. Bridge 211 on SR 1519 over Richland Creek (TIP B-4144).

   We have 2 buses that cross that bridge twice a day.

3. Bridge 13 on SR 1890 over East Fork Pigeon River (TIP B-2988).

   We have 1 bus that crosses that bridge twice a day.

If these bridges are closed to traffic the parents would have to bring their children to a designated bus stop. This would cause a tremendous inconvenience for the parents to be at a bus stop at approximately 7:15 a.m. in the morning and 3:45 p.m. in the afternoon.

Please consider doing this bridge project during the months of June through August when school is out for the summer.

Sincerely,

Rodney Bullock
Transportation Director

To: Davis Moore, Project Development and Environmental Analysis Branch

From: Greg Shuping, Haywood County Emergency Services Director

RE: The proposed project to replace Bridge No. 211 on SR 1519

I have received your letter in reference to the Bridge Project on Richland Creek. In review of the traffic in that area and alternative routes I believe we could easily accommodate the traffic problems that will arise during this project. Thank You for contacting us prior to beginning! If you have any questions, please feel free to contact me at the numbers below.

Sincerely,

Greg Shuping

Office: 828-456-2391
Pager: 828-425-0022
Fax: 828-452-6737

NCDWQ Stream Classification Form

Project Name	B-4144	River Basin	French Broad River	County	Haywood	Evaluator	DNW
DWQ Prj Number		Nearest Stream	Richland Creek	Latitude		Signature	
Date	10/9/2003	USGS QUAD	Clyde, NC	Longitude		Location	Bridge no. 211 on SR 1519

PLEASE NOTE: *If evaluator and landowner agree that the feature is a man-made ditch, then use of this form is not necessary. Also, if in the best professional judgement of the evaluator, the feature is a man-made ditch and not a modified natural stream—this rating system should not be used **

Primary Field Indicators

I. Geomorphology	Absent	Weak	Moderate	Strong	Score
1) Is There A Riffle-Pool Sequence?	0	1	2	3	3
2) Is The USDA Texture In Streambed Different From Surrounding Terrain?	0	1	2	3	3
3) Are Natural Levees Present?	0	1	2	3	3
4) Is The Channel Sinuous?	0	1	2	3	2
5) Is There An Active (Or Relic) Floodplain Present?	0	1	2	3	3
6) Is The Channel Braided?	0	1	2	3	0
7) Are Recent Alluvial Deposits Present?	0	1	2	3	2
8) Is There A Bankfull Bench Present?	0	1	2	3	3
9) Is A Continuous Bed & Bank Present?	0	1	2	3	3
*(*NOTE: If Bed & Bank Caused By Ditching And WITHOUT Sinuosity Then Score=0*)*					
10) Is A 2nd Order Or Greater Channel (As Indicated On Topo Map And/Or In Field) Present?	Yes	3	No	0	3
PRIMARY GEOMORPHOLOGY INDICATOR POINTS:					25

II. Hydrology	Absent	Weak	Moderate	Strong	
1) Is There A Groundwater Flow/Discharge Present?	0	1	2	3	3
PRIMARY HYDROLOGY INDICATOR POINTS:					3

III. Biology	Absent	Weak	Moderate	Strong	
1) Are Fibrous Roots Present In Streambed?	3	2	1	0	2
2) Are Rooted Plants Present In Streambed?	3	2	1	0	3
3) Is Periphyton Present?	0	1	2	3	1
4) Are Bivalves Present?	0	1	2	3	3
PRIMARY BIOLOGY INDICATOR POINTS:					9

Secondary Field Indicators:

I. Geomorphology	Absent	Weak	Moderate	Strong	
1) Is There A Head Cut Present In Channel?	0	0.5	1	1.5	0
2) Is There A Grade Control Point In Channel?	0	0.5	1	1.5	1
3) Does Topography Indicate A Natural Drainage Way?	0	0.5	1	1.5	1.5
SECONDARY GEOMORPHOLOGY INDICATOR POINTS:					2.5

II. Hydrology	Absent	Weak	Moderate	Strong	
1) Is This Year's (Or Last's) Leaflitter Present In Streambed?	1.5	1	0.5	0	1.5
2) Is Sediment On Plants (Or Debris) Present?	0	0.5	1	1.5	1
3) Are Wrack Lines Present?	0	0.5	1	1.5	1
4) Is Water In Channel *And* >48 Hrs. Since Last Known Rain? (*NOTE: If Ditch Indicated In #9 Above Skip This Step And #5 Below*)	0	0.5	1	1.5	1.5
5) Is There Water In Channel During Dry Conditions Or In Growing Season)?	0	0.5	1	1.5	1.5
6) Are Hydric Soils Present In Sides Of Channel (Or In Headcut)?	Yes	1.5	No	0	1.5
SECONDARY HYDROLOGY INDICATOR POINTS:					8

III. Biology		Absent	Weak	Moderate	Strong	
1) Are Fish Present?		0	0.5	1	1.5	1.5
2) Are Amphibians Present?		0	0.5	1	1.5	0
3) Are Aquatic Turtles Present?		0	0.5	1	1.5	0
4) Are Crayfish Present?		0	0.5	1	1.5	0.5
5) Are Macrobenthos Present?		0	0.5	1	1.5	1.5
6) Are Iron Oxidizing Bacteria/Fungus Present?		0	0.5	1	1.5	0
7) Is Filamentous Algae Present?		0	0.5	1	1.5	1.5
8) Are Wetland Plants In Streambed?	SAV	Mostly OBL	Mostly FACW	Mostly FAC	Mostly FACU/UPL	
	2	1	0.75	0.5	0	0.75
*(*NOTE: If Total Absence Of All Plants In Streambed As Noted Above Skip This Step UNLESS SAV Present*)*						
SECONDARY BIOLOGY INDICATOR POINTS:						5.75

TOTAL POINTS (Primary + Secondary)	(If Greater Than Or Equal To 19 Points The Stream Is At Least Intermittent)	53.25

USACE AID#_____ DWQ #_____ Site #____ (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: NCDOT B-4144
2. Evaluator's name: N. Webster
3. Date of evaluation: 10/09/03
4. Time of evaluation: 9:00 am
5. Name of stream: Richland Creek
6. River basin: French Broad River
7. Approximate drainage area: 500 + ac
8. Stream order: 3 +
9. Length of reach evaluated: 300'
10. County: Haywood
11. Site coordinates (if known): prefer in decimal degrees.
12. Subdivision name (if any): N/A

Latitude (ex. 34.872312): 35.5500 Longitude (ex. -77.556611): 82.9333

Method location determined (circle): GPS (Topo Sheet) Ortho (Aerial) Photo/GIS Other GIS Other_____

13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):

Bridge no. 211 on SR1519, S of Interstate 40

14. Proposed channel work (if any): Bridge replacement
15. Recent weather conditions: Overcast, drizzle
16. Site conditions at time of visit: Overcast drizzle
17. Identify any special waterway classifications known: ___Section 10 ___Tidal Waters ___Essential Fisheries Habitat ___Trout Waters ___Outstanding Resource Waters ___Nutrient Sensitive Waters ___Water Supply Watershed ____(I-IV)
18. Is there a pond or lake located upstream of the evaluation point? (YES) NO If yes, estimate the water surface area: Lake Junaluska
19. Does channel appear on USGS quad map? (YES) NO
20. Does channel appear on USDA Soil Survey? (YES) NO
21. Estimated watershed land use: 40 % Residential 5 % Commercial ___% Industrial 30 % Agricultural 25 % Forested ___% Cleared / Logged ___% Other (_____)
22. Bankfull width: 75'
23. Bank height (from bed to top of bank): 6-8'
24. Channel slope down center of stream: X Flat (0 to 2%) ___Gentle (2 to 4%) ___Moderate (4 to 10%) ___Steep (>10%)
25. Channel sinuosity: ___Straight ___Occasional bends X Frequent meander ___Very sinuous ___Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse):_____ **Comments:**_____

Evaluator's Signature_____ **Date**_____

This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 – 5	0 – 4	0 – 5	5
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0 – 5	3
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0 – 4	0 – 5	3
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	2
	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0 – 4	0 – 4	4
	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0 – 4	0 – 4	0 – 2	2
	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0 – 2	2
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0 – 4	0 – 2	0
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0 – 3	3
	10	Sediment input (extensive deposition = 0; little or no sediment = max points)	0 – 5	0 – 4	0 – 4	3
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 – 4	0 – 5	5
STABILITY	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0 – 5	4
	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0 – 5	0 – 5	4
	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0 – 3	0 – 4	0 – 5	5
	15	Impact by agriculture, livestock, or timber production (substantial impact = 0; no evidence = max points)	0 – 5	0 – 4	0 – 5	3
HABITAT	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well developed = max points)	0 – 3	0 – 5	0 – 6	6
	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0 – 6	0 – 6	0 – 6	6
	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0 – 5	0 – 5	4
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0 – 4	0 – 4	3
BIOLOGY	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 5	0 – 5	4
	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	3
	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	4
	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0 – 6	0 – 5	0 – 5	5
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on first page)				79

* These characteristics are not assessed in coastal streams.