



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY

LYNDO TIPPETT

GOVERNOR

SECRETARY

May 11, 2004

Mr. Eric Alsmeyer  
U.S. Army Corps of Engineers  
Regulatory Field Office  
6508 Falls of the Neuse Road, Suite 120  
Raleigh, North Carolina 27615

Dear Mr. Alsmeyer:

**SUBJECT: Application for Section 404 Individual Permit and Section 401 Major Water Quality Certification for the Proposed Replacement of Bridge Nos. 74 and 76 and Interchange Improvements Over SR 1242 and Michael Branch.**  
Davidson County; Federal Aid No. BRSTP-29(10); State Project No. 8.1601401;  
TIP No. B-3157; \$475.00 Debit work order 8.1601401, WBS Element 32899.1.1

This application addresses project B-3157 and consists of the cover letter, ENG Form 4345, permit drawings, half-size plan sheets, utility permit drawings and plan sheets, Revised Categorical Exclusion, draft minutes from the interagency permit drawing review meeting and stream relocation/restoration design information.

**Project Description:**

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge Nos. 74 and 76 in their existing locations and improve the interchange at US 29-64-70 and I-85 Bus. in Lexington, Davidson County, North Carolina. Proposed improvements include the following:

- a two-barrel reinforced box culvert to replace two 78-inch corrugated metal pipes to carry Michael Branch under SR 1242 (West Center Street Extension) and US 29-64-70/I-85 Bus.
- the relocation/ restoration of Michael Branch
- an addition of 12 feet of paved surface to US 29-64-70/I-85 Bus. to allow for an auxiliary lane
- widening of SR 1242 to a three-lane, curb-and-gutter section from south of SR 1292 to north of SR 1401

**MAILING ADDRESS:**  
NC DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS  
1548 MAIL SERVICE CENTER  
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141  
FAX: 919-733-9794

WEBSITE: [WWW.DOH.DOT.STATE.NC.US](http://WWW.DOH.DOT.STATE.NC.US)

**LOCATION:**  
TRANSPORTATION BUILDING  
1 SOUTH WILMINGTON STREET  
RALEIGH NC

- the relocation of the intersection of Swing Dairy Road and SR 1242 to opposite SR 1401
- an acceleration lane for the existing southwest ramp onto US 29-64-70/I-85 Bus. Northbound
- a deceleration lane for US 29-64-70/I-85 Bus. southbound to SR 1401.

The proposed improvements will cause the relocation/construction of water and sewer lines within the project study area.

**Purpose and Need:**

Bridge Maintenance Unit records indicate Bridge No. 74 and Bridge No. 76 have sufficiency ratings of 40.1 and 42.1, respectfully, out of a possible 100 for a new structure. The bridges are considered to be structurally deficient. The replacement of these inadequate structures and improvements to the interchange will result in safer traffic operations by providing acceleration and deceleration lanes and by addressing the operational aspects of the current traffic pattern.

**Summary of Impacts:**

WATERS OF THE UNITED STATES

B-3157 will permanently impact 876 linear feet (0.19 acres) of jurisdictional stream through the construction of the proposed bridge. The stream impact will be to two perennial streams, Michael Branch and Erlanger Branch. Utility relocations will temporarily impact 19 feet of jurisdictional stream. Impacts to Michael Branch due to the onsite stream mitigation are 484 ft. There are no wetlands or ponds within the project area.

BRIDGE DEMOLITION AND REMOVAL

In order to protect the water quality and aquatic life in the area affected by this project, the NCDOT will follow the *Best Management Practices for Bridge Demolition and Removal*. Best Management Practices (BMPs) followed for bridge demolition and removal are in addition to those implemented in accord with NCDOT *Best Management Practices for Protection of Surface Waters*.

Dropping any portion of the structures into waters of the United States should be avoided unless there is no other practical method of removal. In the event that no other practical method is feasible, a worst-case scenario is assumed for calculations of fill entering waters of the United States. The existing bridges both have concrete decks with steel beams and concrete bent caps on steel piles. There is potential for components of the superstructures of the bridges to be dropped into waters of the United States. The maximum resulting temporary fill calculated is seven cubic yards for Bridge No. 74 and six cubic yards for Bridge No. 76.

The stream substrate in the project area is sandy with some clay and cobbles. Due to the potential sedimentation concerns resulting from demolition of the bridges, a turbidity curtain is recommended to contain and minimize sedimentation in the stream where it is possible to do so.

Under the guidelines presented in *Best Management Practices for Bridge Demolition and Removal*, work done in the water for this project would fall under Case 3, which states that there

are no special restrictions other than those outlined in NCDOT *Best Management Practices for Protection of Surface Waters*. This conclusion is based upon the classification of the waters within the project area and vicinity, as well as comments received during the reporting process from the North Carolina Wildlife Resources Commission (NCWRC).

**Summary of Mitigation:**

Throughout the National Environmental Policy Act (NEPA) and design processes, the project has been designed to avoid and minimize impacts to jurisdictional areas. Detailed descriptions of these actions are presented in the Mitigation Options section of this application.

Compensatory mitigation for the remaining 876 ft of stream impacts consists of 950 linear feet of on-site stream relocation using natural channel design techniques at Michael Branch. The 484 ft of stream impacts due to the onsite mitigation do not require further mitigation.

**Project Schedule:**

Replacement of Bridge Nos. 74 and 76 and improvements to the US 29-64-70/I-85 Bus interchange will be let to construction on September 21, 2004, with an availability date of October 26, 2004.

**NEPA Document Status:**

The first Categorical Exclusion (CE) was approved on July 25, 2000. However, due to proposed impacts to a city park, which required a programmatic Section 4(f) evaluation and the addition of another alternative, a revised CE was written. The programmatic Section 4(f) evaluation was needed because approximately 0.2 acres of Childers Park, a City of Lexington property, would be impacted by this project. The Revised CE and Programmatic Section 4(f) Evaluation were approved on November 22, 2002.

**Indirect and Cumulative Impacts:**

This project consists of replacing a deficient structure. Capacity, traffic patterns, and access improvements are not a part of the project's scope of work. Thus, changes in the patterns of development and/or land uses in the vicinity of the bridge project would not be anticipated to stem from the bridges' replacement. This type of project is not anticipated to alter the existing land uses or increase accessibility to adjacent parcels. Thus, an indirect and cumulative impacts study is not needed.

**Independent Utility:**

This project is in compliance with 23 CFR 771.111(f), which lists the Federal Highway Administration (FHWA) characteristics of independent utility of a project:

- (1) The project connects logical termini and is of sufficient length to address environmental matters on a broad scope;
- (2) The project is usable and a reasonable expenditure even if no additional transportation improvements are made in the area; and
- (3) The project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

**Resource Status:**

DELINEATIONS

Delineations of jurisdictional surface waters were completed by Ramey Kemp and Associates, Inc. on September 2, 1998. Additional field investigations were performed by Ramey Kemp and Associates, Inc. on March 28, 2000, and June 11, 2002, due to an expanded study area. Streams being impacted by this project are perennial, therefore no verifications were needed. There are no wetlands within the project area.

WATERS OF THE UNITED STATES

Michael Branch (DWQ index # 12-113-3) and Erlanger Branch fall within the Yadkin River Basin, Subbasin 03-07-07 and USGS Subbasin 03040103. They are designated class "C" waters by the North Carolina Department of Environment and Natural Resources. A class "C" designation indicates the waters' suitability for aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. Neither stream is classified as a Wild and Scenic River. There are no streams within 1.0 mile from the project on the 303(d) list of impaired waterways for North Carolina.

Table 1 lists the jurisdictional stream impacts of B-3157. The project will permanently impact 876 linear feet (0.19 acres) of jurisdictional stream channels. The impacts consist of an extension of a 10-foot by 10-foot culvert on Michael Branch under US 64/SR 1243 (Site No. 1, Station 20 + 81.5 at Y6), a two-barrel reinforced concrete box culvert, 12 feet by 9 feet, for Michael Branch under SR 1242 and US 29-64-70/I-85 Bus. (Site No. 1, Station 17 + 48 at Y1), and the extension of Erlanger Branch to intersect with Michael Branch (Site No. 2, Station 12 + 05 at Y2). Mitigation is required for these impacts.

**Table 1: Impacts to Jurisdictional Streams from B-3157**

Site	Station	Stream	structure	Feet of Impact (ft)	Area of Impact (ac)
1	20+81.5-Y6	Michael Branch	1@ 10 ft X 10 ft RCBC, & 72 in smooth steel	114 ft	0.02 ac
1	17+48-Y1	Michael Branch	2@ 12 ft X9 ft RCBC	743	0.17 ac
2	12+05-Y2	Erlanger Branch	60 in RCP	19 ft	<0.01 ac
<b>TOTAL</b>				<b>876 feet</b>	<b>0.19 acres</b>

Impacts to Michael Branch from the onsite stream relocation are 484 ft. No mitigation is required for these impacts.

**Protected Species:**

Plants and animals with Federal classifications of endangered (E) or threatened (T) are protected under provisions of Section 7 of the Endangered Species Act of 1973, as amended. Collection and interstate and international commercial trade of plants and animals with federal classification of threatened due to similarity of appearance [T(S/A)] is banned. As of January 29, 2003, the United States Fish and Wildlife Service (USFWS) has listed three federally protected species for Davidson County. Table 2 outlines these species.

**Table 2. Federally Protected Species Listed in Davidson County**

Common Name	Scientific Name	Status	Biological Conclusion
Bald eagle	<i>Haliaeetus leucocephalus</i>	T (proposed for delisting)	No Effect
Bog turtle	<i>Clemmys muhlenbergii</i>	T (S/A)	N/A
Schweinitz's sunflower	<i>Helianthus schweinitzii</i>	E	No Effect

Endangered (E) is defined as a taxon in danger of extinction throughout all or a significant portion of its range.

Threatened (T) denotes a taxon likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Threatened due to Similarity of Appearance [T(S/A)]

The potential effects of B-3157 on federally protected species listed in Table 2 have been investigated. The bog turtle is a species that is threatened due to similarity of appearance with another rare species and is listed for its protection; however, the bog turtle is not biologically endangered or threatened and is not subject to Section 7 consultation. The Revised CE provides a biological conclusion of No Effect for the bald eagle and Schweinitz's sunflower. No habitat was deemed available for the bald eagle in the project study area. Habitat was located for Schweinitz's sunflower in project study area; however, surveys by RK & K biologists on September 2, 1998, and March 28, 2000, found no specimens of this species. Additional surveys were conducted by NCDOT biologists on May 3, 2004. Areas in the right-of-ways showed evidence of mowing and regular maintenance, only marginal habitat is present within the project area. This species is not flowering at the time of the May 3 survey, but no species of *Helianthus* were found within the project area, therefore we believe this project will have "No Effect" on Schweinitz's sunflower.

A review of the North Carolina Natural Heritage Program (NCNHP) records on March 22, 2004, revealed that there were no known populations of federally protected species or federal species of concern (FSC) within 1.0 mile of the proposed project area.

### **Cultural Resources:**

#### ARCHITECTURAL RESOURCES

A field survey of the Area of Potential Effects (APE) was conducted on August 6, 1998. All structures within the APE were photographed and later reviewed by the North Carolina State Historic Preservation Office (SHPO). In a concurrence form dated December 30, 1998, and a memorandum dated November 20, 1998, SHPO concurred that there are no historic architectural resources within the APE either listed on or eligible for the National Register of Historic Places. A copy of the concurrence form and the memorandum are found in the CE document.

## ARCHAEOLOGICAL RESOURCES

SHPO in a memorandum dated November 20, 1998, recommended that "no archaeological investigation be conducted in connection with this project." During the project development, the study area expanded, but SHPO, in a memorandum dated October 8, 2002, had no comment on the undertaking proposed. A copy of the SHPO memorandums are found in CE document.

### **Utility Impacts:**

The construction of the proposed project will cause the relocation of utility lines. The following paragraphs describe these impacts:

- 1) Plan sheet UC-2: The proposed construction of Sewer Line 1 will cross Michael Branch to the right of Y1, at approximate station 22 + 73. This will result in approximately 5 feet of temporary channel impact.
- 2) Plan sheet UC-3: The proposed construction of Sewer Line 2 will cross Michael Branch to the left of Y2, at approximate station 14 + 45. This will result in approximately 4 feet of temporary channel impacts.
- 3) Plan sheet UC-3: The proposed construction of Sewer Line 4 and a water line will cross Erlanger Branch to the right of Y2, at approximate station 12 + 05. This will result in approximately 6 feet of temporary channel impacts.
- 4) Plan sheet UC-3: The proposed construction of a water line will cross Michael Branch to the left of Y1, at approximate station 17 + 77. This will result in approximately 4 feet of temporary channel impacts.

### **FEMA Compliance:**

The project site on Michael Branch and Erlanger Branch was included in a detailed Federal Emergency Management Agency (FEMA) Flood Study. However, the project site does not have an established floodway. The proposed replacement will not adversely affect the existing flood plain or modify flow characteristics.

### **Mitigation Options:**

The US Army Corps of Engineers (USACE) has adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy that embraces the concept of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of the waters of the United States. CEQ has defined mitigation of wetland and surface-water impacts to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20). For this project, mitigation is only required for impacts associated with jurisdictional streams. No jurisdictional wetlands will be impacted by this project.

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts and to providing full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and NEPA compliance stages; minimization measures were incorporated as part of the project design.

AVOIDANCE:

Impacts to Michael Branch and Erlanger Branch cannot be avoided, except by choosing a no-build alternative.

MINIMIZATION:

The following project-specific measures were or will be employed by NCDOT to minimize impacts to waters of the United States during construction of this project:

- Best Management Practices will strictly be enforced for sediment and erosion control for the protection of surface waters and wetlands.
- Best Management Practices will strictly be enforced for bridge demolition and removal.

The following site-specific measures were employed by NCDOT to minimize impacts to waters of the United States during the design of this project:

- Extending the culvert on Michael Branch: other options would have filled in the stream.
- Under the -L- line (Station -L-28+75), the culvert will be buried 1 foot in one barrel and 2 feet in the other to accommodate low flow and allow for aquatic movement.
- Relocating Michael Branch using natural channel design.
- Along Ramp C, one energy dissipator and three preformed scour holes will be installed to minimize the impacts on water quality.
- Along -L-(near Station 28+00), a preformed scour hole will be installed to minimize the impacts on water quality.

COMPENSATION:

The primary emphasis of the compensatory mitigation is to reestablish a condition that would have existed if the project were not built. As previously stated, mitigation is limited to reasonable expenditures and practicable considerations related to highway operation.

Compensatory actions often include restoration, creation, and enhancement of waters of the United States.

**FHWA Step Down Compliance:**

All compensatory mitigation must be in compliance with 23 CFR 777.9, "Mitigation of Impacts," which describes the actions that should be followed to qualify for Federal-aid highway funding. This process is known as the FHWA "Step Down" procedures:

1. Consideration must be given to mitigation within the right-of-way and should include the enhancement of existing wetlands and the creation of new wetlands in the highway median, borrow pit areas, interchange areas, and along the roadside.
2. Where mitigation within the right-of-way does not fully offset wetland losses, compensatory mitigation may be conducted outside the right-of-way, including enhancement, creation, and preservation.

**Compensation:**

B-3157 will permanently impact 876 linear feet of jurisdictional streams (Michael Branch and Erlanger Branch) that comprise waters of the United States. On-site stream relocation using natural channel design techniques will be utilized on 950 linear feet of Michael Branch in order to mitigate for the permanent impacts. A field review meeting for the Stream Relocation/Restoration Design was held on August 13, 2003. Michael Branch has been degraded due to heavy urbanization surrounding the stream. The existing stream channel is incised, displays excessive bank erosion, and has extremely undercut banks caused by the channel widening itself to develop pattern. In order to stabilize the stream channel, the flood-prone width will be increased, grade-control structures will be installed, and vegetation will be planted. Since we are improving the existing stream, NCDOT proposes 1:1 mitigation credit for all stream-restoration efforts. A copy of the Natural Channel Design Summary for Michael's Branch and Reforestation Sheet is attached to this application.

**Environmental Agency Review**

An environmental agency review was conducted for the permit drawings for B-3157 on October 23, 2003. The draft minutes from the review meeting are attached to this application.

**Regulatory Approvals**

Application is hereby made for a USACE Individual Section 404 Permit as required for the above-described activities. We are also hereby requesting a 401 Water Quality Certification from the North Carolina Division of Water Quality (NCDWQ). In compliance with Section 143-215.3D(e) of the NCAC we will provide \$475.00 to act as payment for processing the Section 401 permit application previously noted in this application (see Subject line). We are providing seven copies of this application to the NCDWQ for their review.

If you have any questions, or need additional information, please contact Ms. Rachelle Beaugard at (919) 715-1383.

Sincerely,

  
Gregory J. Thorpe, Ph.D, Manager  
Project Development and Environmental Analysis Branch

cc:

Mr. John Hennessy, NCDWQ (7 copies)  
Ms. Marla Chambers, NCWRC  
Ms. Becky Fox, USEPA – Whittier, NC  
Mr. Ronald Mikulak, USEPA – Atlanta, GA  
Ms. Marella Buncick, USFWS  
Mr. John F. Sullivan, III, P.E., FHWA  
Mr. Jay Bennett, P.E., Roadway Design  
Mr. Omar Sultan, Programming and TIP  
Mr. Art McMillan, P.E., Highway Design  
Mr. David Chang, P.E., Hydraulics  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Mark Staley, Roadside Environmental  
Ms. Stacy Baldwin, PDEA Project Planning Engineer  
Mr. S. P. Ivey, P.E., Division 9 Engineer  
Ms. Diane Hampton, P.E., Division 9 DEO  
Mr. David Franklin, USACE, Wilmington (Cover Letter Only)

The Public burden for this collection of information is estimated to average 10 hours per response, although the majority of applications should require 5 hours or less. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research and Sanctuaries Act, 33 USC 1413, Section 103. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED
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(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME North Carolina Department of Transportation	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
6. APPLICANT'S ADDRESS Parker Lincoln Building 2728-168 Capital Blvd. Raleigh, NC 27604	9. AGENT'S ADDRESS
7. APPLICANT'S PHONE NOS. W/AREA CODE a. Residence N/A b. Business 919-715-1383	10. AGENT'S PHONE NOS. W/AREA CODE a. Residence b. Business

11. STATEMENT OF AUTHORIZATION

I hereby authorize, \_\_\_\_\_ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE

DATE

NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) US 29-64-70 and I-85 Business Replace Bridge Nos. 74 and 76 and Interchange Improvements	
13. NAME OF WATERBODY, IF KNOWN (if applicable) Michael Branch and Erlanger Branch	14. PROJECT STREET ADDRESS (if applicable)
15. LOCATION OF PROJECT Davidson County      North Carolina COUNTY                      STATE	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN, (see instructions)	

17. DIRECTIONS TO THE SITE

From Raleigh, take I-40 West to I-85 South to US 64 West. The site is located where US 64 West diverges from US 29-70 and I-85 Business.

18. Nature of Activity (Description of project, include all features)

See attached sheet.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

See attached sheet.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

See attached sheet.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards

Discharged material will consist of fill dirt and riprap, as described in the attached permit application.

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

See attached sheet.

23. Is Any Portion of the Work Already Complete? Yes  No  IF YES, DESCRIBE THE COMPLETED WORK

24. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

See attached sheet.

25. List of Other Certifications or Approvals/Denials Received from other Federal, State or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

\*Would include but is not restricted to zoning, building and flood plain permits

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

[Signature]  
SIGNATURE OF APPLICANT

4/27/04  
DATE

\_\_\_\_\_  
SIGNATURE OF AGENT

\_\_\_\_\_  
DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.