

**Guilford County
Bridge No. 456 on SR 2136 (Fleming Road)
over Brush Creek
Federal Aid Project No. BRSTP-2136(5)
W.B.S. No. 46059.1.1
T.I.P. No. B-5345**

CATEGORICAL EXCLUSION

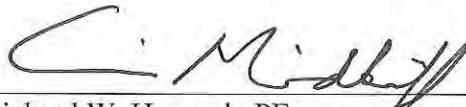
UNITED STATES DEPARTMENT OF TRANSPORTATION

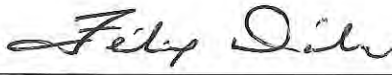
FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

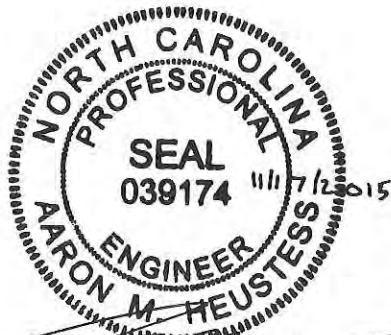
11/19/15
DATE *for* 
Richard W. Hancock, PE
Manager, Project Development & Environmental Analysis Unit

11/19/15
DATE *for* 
John F. Sullivan, III, Division Administrator
Federal Highway Administration

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November 2015



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11/17/2015
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11/18/15
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PROJECT COMMITMENTS

Guilford County
Bridge No. 456 on SR 2136 (Fleming Road) over Brush Creek
Federal Aid Project No. BRSTP-2136(5)
WBS No. 46059.1.1
TIP Project No. B-5345

All standard procedures and measures, including NCDOT's Best Management Practices for Protection of Surface Waters, Guidelines for Best Management Practices for Bridge Demolition and Removal, will be implemented, as applicable, to avoid or minimize environmental impacts. The following special commitments have been agreed to by NCDOT:

Commitments Developed through Project Development and Design

Hydraulic Unit – FEMA Coordination

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

NCDOT Division 7 Construction – FEMA

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

NCDOT Division 7 Construction – Onsite Detour

- This project involves construction of a temporary onsite detour. Once the onsite detour is no longer required, the Division shall remove the temporary bridge and approach roadway used for the onsite detour. The area occupied by the temporary onsite detour shall be restored.

Hydraulic Unit, Natural Environment Section – Buffer Rules

- This project is in the Jordan Lake Watershed and will adhere to the associated Buffer Rules.

Project Development and Environmental Analysis Unit – Natural Environment Section

- The US Fish and Wildlife Service (USFWS) has developed a programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACE), and NCDOT for the northern long-eared bat (NLEB) (*Myotis septentrionalis*) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for

PROJECT COMMITMENTS

NLEB for the NCDOT program is **May Affect, Likely to Adversely Affect**. The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Guilford County, where B-5345 is located. This level of incidental take is authorized from the effective date of a final listing determination through April 30, 2020.

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INTRODUCTION: Bridge No. 456 is included in the current North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP). 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

NCDOT Bridge Management Unit 2015 records indicate Bridge No. 456 has a sufficiency rating of 53.94 out of a possible 100 for a new structure. The bridge is considered functionally obsolete according to Federal Highway Administration (FHWA) standards. The 2013 records reported a sufficiency rating of 22 out of 100, which FHWA defines as a structurally deficient and functionally obsolete bridge. The increase in the sufficiency rating has been investigated and determined to be correct. The increased rating is due to a change in the definition of temporary shoring, which removes the temporary status of the crutch bents. According to the NCDOT Bridge Management Unit, the crutch bents cause narrowing of the waterway and likely present drift issues during times of higher water flow. Therefore, they believe it is appropriate to keep the bridge on the replacement list despite the increased sufficiency rating.

Bridge No. 456 has a fifty-three year old timber substructure which has a typical life expectancy between 40 to 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement. Bridge No. 456 is approaching the end of its useful life.

II. EXISTING CONDITIONS

The project is located on SR 2136 (Fleming Road) just northwest of the City of Greensboro, approximately four miles south of the Town of Summerfield (see Figure 1). Land uses surrounding the project are large tracts of forest to the north and east and medium-density residential neighborhoods to the south and west (see Figure 2).

SR 2136 (Fleming Road) is classified as a rural local route in the Statewide Functional Classification System. It is not a National Highway System route.

In the vicinity of the bridge, SR 2136 (Fleming Road) has a 24-foot pavement width with 2-foot grass shoulders. The roadway grade is in a sag vertical curve through the project area. The

existing bridge is on a tangent. The roadway is situated approximately 15 feet above the creek bed.

Bridge No. 456 is a three-span structure that consists of an asphalt overlay on a corrugated steel deck on steel I-beams. It is supported by end bents made of steel cap and pile and interior bents made of timber cap and pile that are reinforced with crutch bents. The existing bridge was constructed in 1962. The overall length of the structure is 76 feet. The clear roadway width is 24.0 feet. The posted weight limit on this bridge is 22 tons for single vehicles and 30 tons for truck tractor semi-trailers (TTSTs).

There are no utilities attached to the existing structure. The United States Geological Survey (USGS) has a stream gauging station located at the north end of the existing structure. Overhead high tension transmission power lines cross SR 2136 (Fleming Road) approximately 350' south of the existing bridge. Sanitary sewer (City of Greensboro) crosses SR 2136 (Fleming Road) south of the existing bridge. There is an existing water line (City of Greensboro) located along the western shoulder of SR 2136 (Fleming Road). Bellsouth fiber optic markers and Piedmont Natural Gas lines are located along the eastern shoulder of SR 2136 (Fleming Road).

The current traffic volume of 5,700 vehicles per day (VPD) is expected to increase to 9,900 VPD by the year 2040. The projected volume includes one percent truck-tractor semi-trailer (TTST) and two percent dual-tired (DT) vehicles. The posted speed limit is 45 miles per hour in the project area. Eighteen school buses cross the bridge on their morning and afternoon routes daily.

There were two crashes reported in the vicinity of Bridge No. 456 during a recent three-year period (December 1, 2008 to November 30, 2011). Neither of the two accidents were associated with the alignment or geometry of the bridge or its approach roadway.

This section of SR 2136 (Fleming Road) is designated as a bicycle/pedestrian facility by the City of Greensboro in accordance with the *Greensboro Urban Area Bicycle, Pedestrian, and Greenway Master Plan* (October 2006) and the *Greensboro Urban Area 2035 Long Range Transportation Plan* (2003). The existing bridge does not have any bicycle or pedestrian accommodations. However, permanent bicycle/pedestrian facilities will be included with this project.

III. ALTERNATIVES

A. Preferred Alternative

Bridge No. 456 will be replaced on the existing alignment while traffic is maintained on a temporary two lane onsite detour alignment to the east side (see Figures 3-5).

The permanent replacement structure will be a bridge approximately 85 feet long providing a minimum 33'-6" clear deck width with a concrete overlay. The bridge will include two 12-foot lanes and 4'-9" shoulders. The bridge length is based on preliminary design information

and is set by hydraulic requirements. The roadway grade of the new structure will be approximately the same as the existing structure.

The approach roadway will extend approximately 330 feet from the south end of the new bridge and 325 feet from the north end of the new bridge. The approaches will include a 24-foot pavement width providing two 12-foot lanes. Six-foot shoulders (four-foot paved and two-foot grass) will be provided on each side. Where guardrail is included 9-foot shoulders will be provided. The roadway will be designed as a Rural Local using Sub-Regional Tier Guidelines with a 50 mile per hour design speed. A design exception for sag vertical curve and associated nighttime stop sight distance will be required.

The total length of the onsite detour alignment is 754 feet. The detour alignment will utilize a temporary 65 foot long 28' foot wide bridge carrying two 12-foot wide lanes of traffic. Although the environmental impacts are higher for the replace in-place with an onsite detour alternative compared with an offsite detour alternative, the almost 5 mile offsite detour would significantly impact the school buses and vehicular traffic utilizing SR 2136 (Fleming Road). Given the use of SR 2136 (Fleming Road) by school buses and emergency vehicles, the delay created by the detour is undesirable. NCDOT Division 7 concurs that the preferred alternative is a replace in-place with an onsite detour.

B. Alternatives Eliminated from Further Consideration

The “do-nothing” alternative would eventually necessitate closure of the bridge. This is not acceptable due to the traffic service provided by SR 2136 (Fleming Road).

“Rehabilitation” of the existing bridge is not practical due to its age and deteriorated condition. Bridge No. 456 has a sufficiency rating of 53.94 out of a possible 100 for a new structure, and the bridge is considered functionally obsolete. Bridge No. 456 is approaching the end of its useful life.

Staged Construction is not possible with replacement of this bridge because the structure of the existing two-lane bridge does not provide opportunity to replace in-place only one lane at a time.

Alternative 1 was eliminated due to the length of its offsite detour and the associated impacts on school bus and vehicular traffic. Alternative 3 was eliminated due to the cost to upgrade SR 3227 (Brass Eagle Loop Road) to a suitable detour route.

IV. ESTIMATED COSTS

The estimated functional design costs, based on 2014 prices, are listed in Table 1:

Table 1. Project Cost Estimates

	Alternative 1 Offsite Detour	Alternative 2 Onsite Detour (Preferred)	Alternative 3 Detour on SR 3227
Structure	\$ 345,000	\$ 345,000	\$ 345,000
Roadway Approaches	156,830	364,690	457,122
Detour Structure and Approaches	- 0 -	142,150	232,800
Structure Removal	27,000	27,000	27,000
Misc. & Mob.	141,170	266,160	317,078
Eng. & Contingencies	105,000	180,000	221,000
Total Construction Cost	\$775,000	\$ 1,325,000	\$ 1,600,000
Right-of-way Costs	-	\$20,000	-
Right-of-way Utility Costs	-	\$172,192	-
Total Project Cost	\$775,000	\$1,517,192	\$1,600,000

V. NATURAL ENVIRONMENT

Natural resources in the project study area were reviewed in the field in March 2012 and documented in a Natural Resources Technical Report (NRTR) (June 2012), incorporated by reference. This section includes a summary of the existing conditions, as well as the potential environmental impacts of the alternatives. A full version of the NRTR can be viewed at the Project Development & Environmental Analysis Unit located at Century Center Bldg. A, 1000 Birch Ridge Drive, Raleigh, NC.

Physical Characteristics

Water Resources

Water resources in the study area are part of the Cape Fear River Basin [United States Geological Survey (USGS) Hydrologic Unit 03030002]. Two streams were identified in the study area – Brush Creek [NC Division of Water Resources (NCDWR) Index Number 16-11-4-(1) and an unnamed tributary (UT) to Brush Creek. Brush Creek (Assessment Unit No. 16-11-4-[1]a3 is listed in the 2014 303(d) List of Impaired Waters for North Carolina. It is listed for Fair Benthos and Fish Communities and Fish Tissue Mercury.

Table 2. Water Resources

Stream Name	Map ID	Best Usage Class.	Bank Height (ft)	Bankfull Width (ft)	Water Depth (in)	Channel Substrate	Flow	Clarity
Brush Creek	SA	WS-III; NSW	3-4	25	6-15	Sand	Slow	Clear
UT to Brush Creek	SB	WS-III; NSW	1	3	4-12	Silt, Sand	Slow	Turbid

Biotic Resources

Terrestrial communities in the study area can be classified as Maintained/Disturbed, Piedmont/Low Mountain Alluvial Forest, or Mesic Mixed Hardwood Forest. Detailed descriptions of these community types and species observed in the study area can be found in the NRTR.

Table 3. Terrestrial Communities

Community	Coverage (acres)
Maintained/Disturbed	4.6
Piedmont/Low Mountain Alluvial Forest	1.1
Mesic Mixed Hardwood Forest	1.1
Total	6.8

Jurisdictional Topics

Surface Waters and Wetlands

Two jurisdictional streams were identified within the project study area. NCDWR and US Army Corps of Engineers (USACE) stream identification forms are contained in the NRTR. The physical characteristics and water quality designation of these streams are detailed above. These streams have been designated as warm water streams for the purposes of stream mitigation.

Table 4. Stream Summary

Map ID	Length (ft)	Classification	Compensatory Mitigation Required	River Basin Buffer
SA	240	Perennial	Yes	Subject
SB	34	Intermittent	No	Subject
Total	274			

Four jurisdictional wetlands were identified within the study area. Wetland classification and quality rating data are presented in the following table. All wetlands in the study area are within the Cape Fear River basin. USACE wetland delineation forms and NCDWR wetland rating forms for each site are contained in the NRTR. All wetland sites are located within the Piedmont/Low Mountain Alluvial Forest community.

Table 5. Wetland Summary

Map ID	NCWAM Classification	Hydrologic Classification	NCDWR Wetland Rating	Area (acres)
WA	Bottomland Hardwood Forest	Riparian	35	0.18
WB	Bottomland Hardwood Forest	Riparian	35	0.13
WC	Bottomland Hardwood Forest	Riparian	38	0.02
WD	Bottomland Hardwood Forest	Riparian	26	0.08
			Total	0.41

Permits

The proposed project has been designated as a Categorical Exclusion (CE) for the purposes of the National Environmental Policy Act (NEPA) documentation. As a result of limited environmental impacts, a Nationwide Permit (NWP) 23 will likely be applicable. A NWP No. 33 may also apply for temporary construction activities such as stream dewatering, work bridges, or temporary causeways that are often used during bridge construction or rehabilitation. The USACE holds the final discretion as to what permit will be required to authorize project construction. If a Section 404 permit is required, then a Section 401 Water Quality Certification (WQC) from the NCDWR will be needed.

Federally Protected Species

As of March 25, 2015, the US Fish and Wildlife Service (USFWS) lists one federally protected species for Guilford County. A brief description of this species' habitat requirements follows, along with the Biological Conclusion rendered based on survey results in the study area. Habitat requirements for each species are based on the current best available information as per referenced literature and/or USFWS.

Table 6. Federally Protected Species

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Isotria medeoloides</i>	Small whorled pogonia	T	No	No Effect

T=Threatened

Small Whorled Pogonia

Habitat Requirements: The small whorled pogonia occurs in young as well as maturing (second to third successional growth) mixed-deciduous or mixed-deciduous/coniferous forests. It does not appear to exhibit strong affinities for a particular aspect, soil type, or underlying geologic substrate. In North Carolina, the perennial orchid is typically found in open, dry deciduous woods and is often associated with white pine and rhododendron. The species may also be found on dry, rocky, wooded slopes; moist slopes; ravines lacking stream channels; or slope bases near braided channels of vernal streams. The orchid, often limited by shade, requires small light gaps or canopy breaks, and typically grows under canopies that are relatively open or near features like logging roads or streams that create long-persisting breaks in the forest canopy.

Biological Conclusion: **No Effect**. Suitable habitat for small whorled pogonia is not present in the study area. The Mesic Mixed Hardwood Forest does not appear to include suitable persistent breaks. A review of North Carolina Natural Heritage Program (NCNHP) records on September 14, 2015 indicated no known occurrences within 1.0 miles of the study area.

Northern long-eared bat

The USFWS designated the northern long-eared bat (NLEB) (*Myotis septentrionalis*) as a threatened species effective May 4, 2015.

The USFWS has developed a programmatic biological opinion (PBO) in conjunction with the FHWA, the USACE, and NCDOT for the NLEB in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB for the NCDOT program is **May Affect, Likely to Adversely Affect**. The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Guilford County, where B-5345 is located.

Bald Eagle and Golden Eagle Protection Act

Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large dominant trees are utilized for nesting sites, typically within 1.0 mile of open water.

A desktop-GIS assessment of the project study area, as well as the area within a 1.13-mile radius (1.0 mile plus 660 feet) of the project limits, was performed on April 3, 2012 using 2010 color aerials. Lake Higgins (a water body large enough and sufficiently open to be considered a potential feeding source) was identified within this search radius. A survey of the project study area and the area within 660 feet of the project limits was conducted on April 10, 2012. No bald eagle nests were observed within this search polygon. A review of the NCNHP database on September 14, 2015 revealed no known occurrences of this species within 1.0 mile of the project study area. Due to the lack of observed nests or known occurrences and minimal impact anticipated for this project, it has been determined that this project will not affect this species.

VI. HUMAN ENVIRONMENT

Section 106 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 at Title 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and afford the Advisory Council a reasonable opportunity to comment on such undertakings.

Historic Architecture

NCDOT – Human Environment Section, under the provisions of a Programmatic Agreement with FHWA, NCDOT, Historic Preservation Office (HPO), Office of State Archaeology (OSA) and the Advisory Council on Historic Preservation (effective July 1, 2009), reviewed the proposed project and determined that no historic properties are located within the project's area of potential effect and that no surveys are required (see form dated January 4, 2012 in the Appendix).

Archaeology

NCDOT – Human Environment Section, under the provisions of a Programmatic Agreement with FHWA, NCDOT, HPO, OSA and the Advisory Council on Historic Preservation (effective July 1, 2009), reviewed the proposed project and determined that no prehistoric or historic properties are located within the project's area of potential effects and that no surveys are required (see form dated January 10, 2012 in the Appendix).

Community Impacts

No adverse impact on families or communities is anticipated. Right-of-way acquisition will be limited. No relocations will result from implementation of the proposed alternative.

There are no public facilities in the project area, and therefore no effect on public facilities or services is expected. The project is not expected to affect social, economic, or religious opportunities in the area.

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

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. Because there are soils classified as prime, unique, or having state or local importance in the vicinity of the project, the project will affect farmland acreage within these classifications. A preliminary screening with the AD 1006 form resulted in a score of 16 points out of 160. A preliminary score of less than 60 cannot result in a notable impact on protected farmland soils.

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

Noise & Air Quality

This project is an air quality neutral project in accordance with 40 CFR 93.126. It is not required to be included in the regional emissions analysis (if applicable) and project level CO or PM2.5 analyses are not required. This project will not result in any meaningful changes in

traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. Therefore, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special mobile source air toxics (MSAT) concerns. Consequently, this effort is exempt from analysis for MSATs. Any burning of vegetation shall be performed in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality compliance with 15 NCAC 2D.0520.

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

This project has been determined to be a Type III Noise Project and therefore, no traffic noise analysis is required to meet the requirements of 23 CFR 772.

VII. GENERAL ENVIRONMENTAL EFFECTS

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

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

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

The Health and Environmental Risk Assessment provided that the closest groundwater contamination incident was at Cardinal Country Club at 5700 Cardinal Way. The incident is approximately 1,830 feet upgradient from the proposed bridge replacement and should not affect, nor be affected by, the proposed bridge replacement. The incident was remediated and closed on June 24, 2002.

An examination of local, state, and federal regulatory records by the GeoEnvironmental Section revealed no sites with a Recognized Environmental Concern (REC) within the project limits. RECs are most commonly underground storage tanks, dry cleaning solvents, landfills and hazardous waste disposal areas.

Guilford County is a participant in the National Flood Insurance Program. There are no practical alternatives to crossing the floodplain area. Any shift in alignment will result in an impact area of about the same magnitude. The proposed project is not anticipated to increase the level or extent of upstream flood potential.

VIII. COORDINATION & AGENCY COMMENTS

NCDOT has sought input from the following agencies as a part of the project development: Federal Highway Administration, U.S. Army Corps of Engineers, U.S. Fish & Wildlife Service (USFWS), U.S. Environmental Protection Agency (EPA), N.C Wildlife Resource Commission, N.C. Division of Parks and Recreation, Piedmont Triad Council of Governments, County of Guilford, and the City of Greensboro.

The only project specific comment received was from Guildford County Schools. They expressed concern about the offsite detour alternatives due to increased bus route times and the safety of buses traveling on narrow detour routes.

Response: The onsite detour alternative is being proposed.

General responses from the EPA and USFWS are included in the Appendix.

IX. PUBLIC INVOLVEMENT

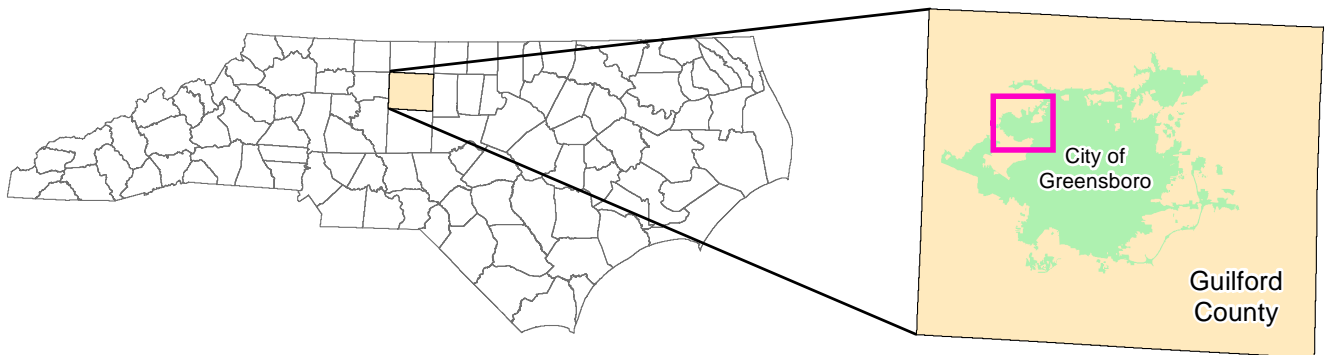
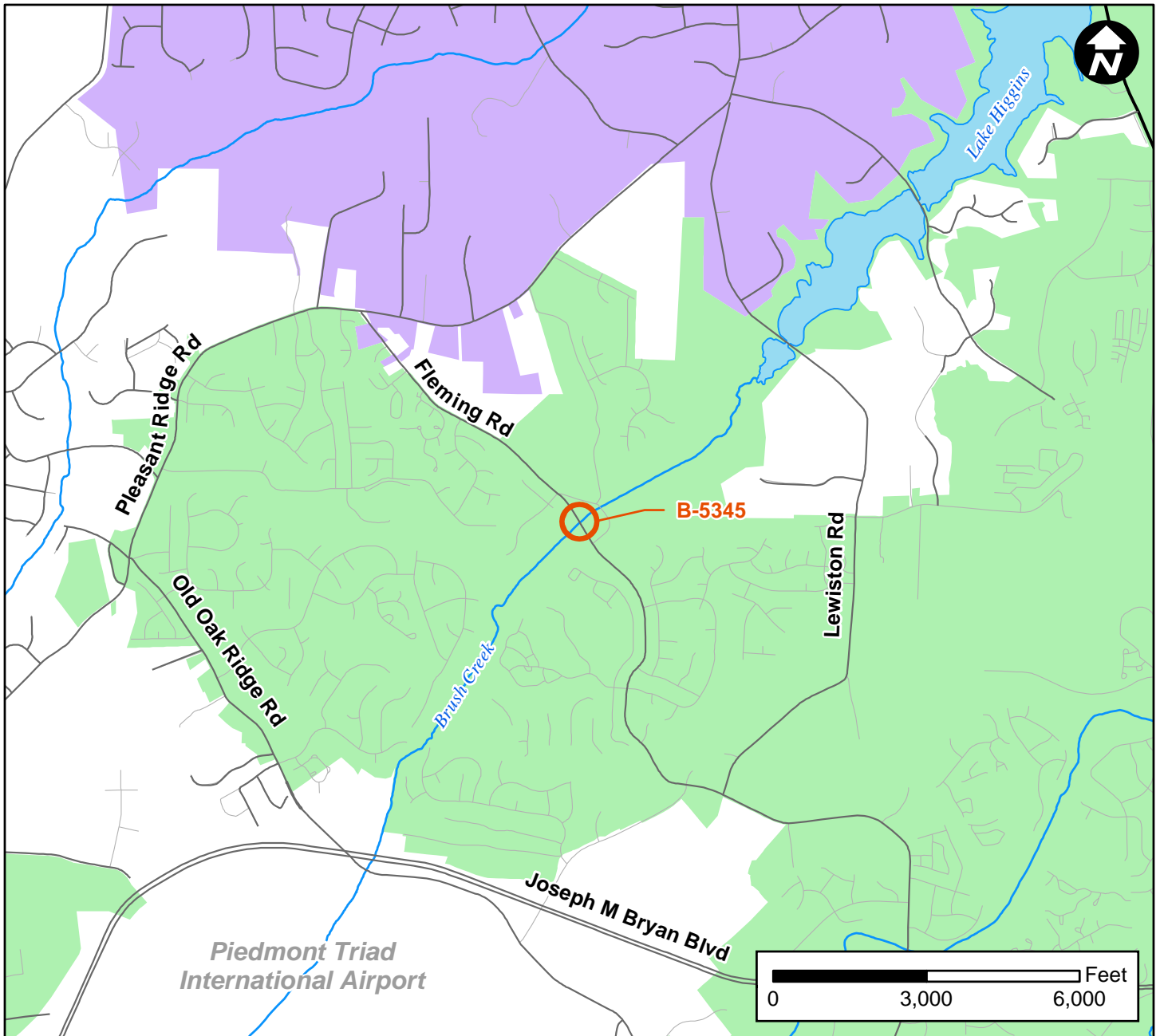
A letter was sent by the Project Development and Environmental Analysis Unit to all property owners affected directly by this project on February 23, 2012. Property owners were invited to comment. No comments have been received to date.

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

X. CONCLUSION

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

Figures







	 Project B-5345	<p>Figure 1 Project Location Bridge No. 456 on SR 2136 (Fleming Rd) over Brush Creek Federal Aid Project No. BRSTP-2136(5) W.B.S. No. 46059.1.1 NCDOT Project B-5345</p>
	 City of Greensboro	
 Town of Summerfield		



Figure 2
Study Area

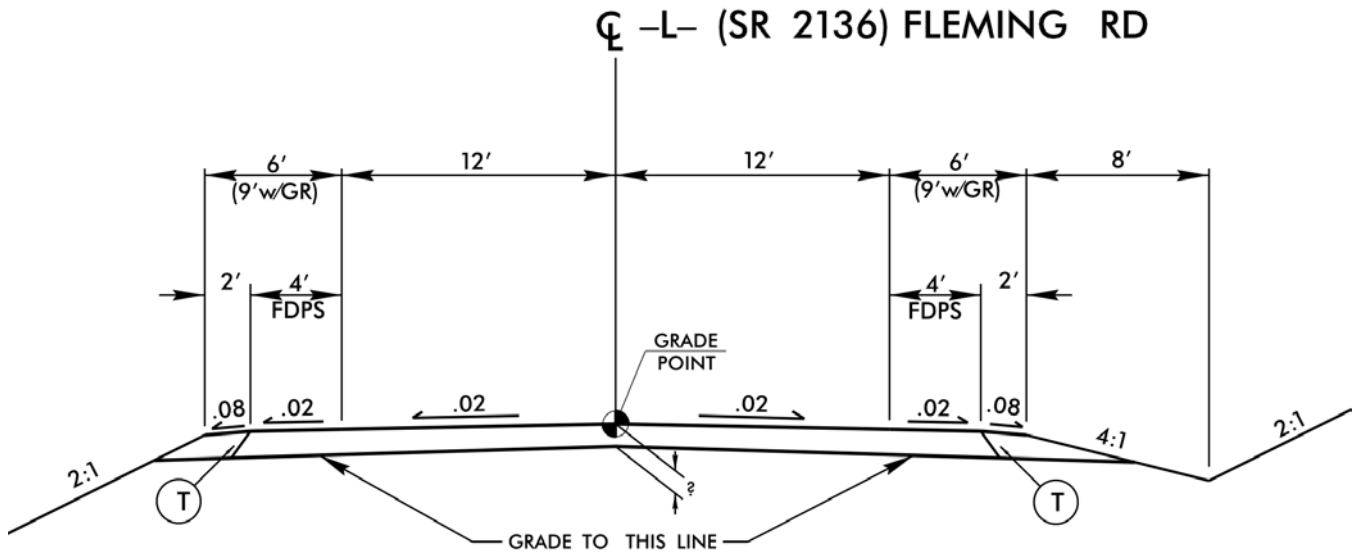
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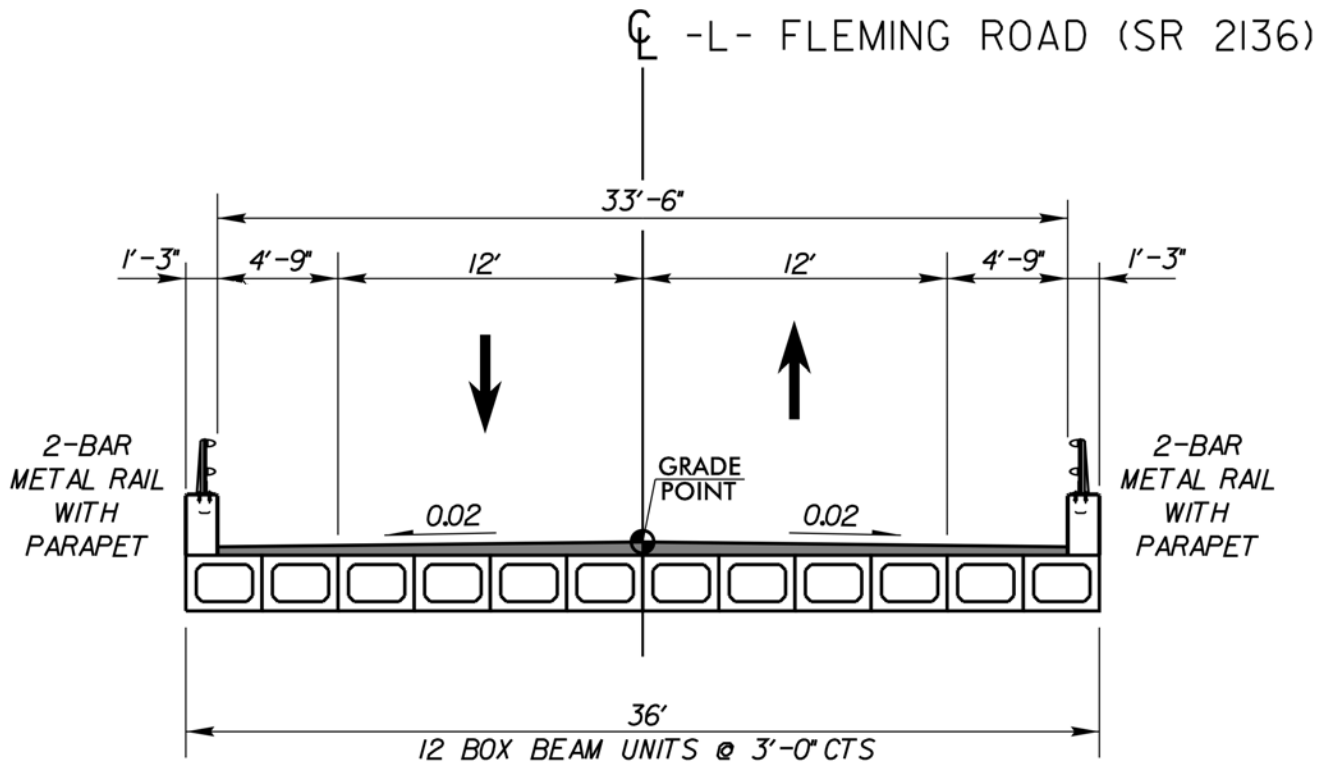


- Proposed Approach Slab
- Proposed Edge of Travel
- Proposed Paved Shoulder
- Proposed Roadway Bridge

Figure 3
Roadway Design
 Bridge No. 456 on SR 2136 (Fleming Road) over Brush Creek
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Roadway Typical Section



Bridge Typical Section



Figure 4
Typical Sections

Bridge No. 456 on SR 2136 (Fleming Road) over Brush Creek
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SR 2136 (Fleming Road) Approach Roadway
Looking North



SR 2136 (Fleming Road) Approach Roadway
Looking South



SR 2136 (Fleming Road) Bridge Approach
Looking North



SR 2136 (Fleming Road) Bridge Approach
Looking South



SR 2136 (Fleming Road) Bridge Substructure
Looking North



SR 2136 (Fleming Road) Bridge
Looking North



**Figure 5
Photos**

Bridge No. 456 on SR 2136 (Fleming Road) over Brush Creek
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Appendix

11-12-0026

NO SURVEY REQUIRED FORM**PROJECT INFORMATION**

Project No: B-5345 *County:* Guilford
WBS No: 46059.1.1 *Document:* PCE or CE
F.A. No: BRSTP-2136(5) *Funding:* State Federal

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

Project Description: Replacement of Bridge No. 456 on SR 2136 (Fleming Road) over Brush Creek, presumably in kind with off-site detours although a detour route is unknown at this time. Minor ditch-line impacts may be expected. Area of Potential Effects (APE) has been drawn as a 200 ft. corridor, measuring approximately 1,500 ft. long. Permit information is unknown at this time. The bridge was built in 1953 and is considered to be structurally deficient.

SUMMARY OF CULTURAL RESOURCES REVIEW

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

A map review and site file search was conducted at the Office of State Archaeology (OSA) on Friday, January 6, 2012. A comprehensive archaeological survey at this particular bridge location has never been conducted, and no archaeological sites have been recorded within one-half (1/2) mile of the proposed project. Digital copies of HPO's maps (Summerfield Quadrangle) as well as the HPOWEB GIS Service (<http://gis.ncdcr.gov/hpweb/>) were reviewed on Tuesday, January 10, 2012. There are no known historic architectural resources located within the project area that may have intact archaeological deposits within the footprint of the proposed project. In addition, topographic maps, historic maps (NCMaps website), USDA soil survey maps, and aerial photographs were utilized and inspected to gauge environmental factors that may have contributed to historic or prehistoric settlement within the project limits, and to assess the level of modern, slope, agricultural, hydrological, and other erosive-type disturbances within and surrounding the archaeological APE.

Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:

This is a Federally-funded project; the need for a Federal permit and/or easements is unknown at this time. The dimensions of the APE suggest that project activities could fall outside the existing ROW (i.e. 60 ft.). The APE primarily consists of sloped, eroded soils (e.g. Madison clay loam [McE2], 15-25 percent slopes, eroded; Madison clay loam [McC2], 6-10 percent slopes, eroded; Madison clay loam [McB2], 2 to 6 percent slopes, eroded) adjacent to the floodplain of Brush Creek, which consists of Chewcla sandy loam [Ch]. Although not listed as a frequently flooded soil type, it has been mapped as a flood hazard. The 2-ft contours on the attached map suggest that a portion of the current roadbed was constructed on an elevated, man-made landform thereby shortening the overall length of the current bridge spanning Brush Creek. During the environmental permit review process, the Office of State Archaeology (OSA) deemed a similar section of Brush Creek just south of the current project as a low probability area for containing intact archaeological sites (ER 92-8456). In addition, all housing developments surrounding the project area were cleared by OSA back in the late 1980s (ER 89-7987, ER 89-8541, ER 88-8288, and ER 88-7732). Based on the eroded soil conditions and flood hazard mapping, the APE for the proposed project is considered to have low potential for containing intact

archaeological materials. Therefore, an archaeological survey is not recommended. However, if design plans change, or are made available, prior to construction then additional consultation may be required. As currently proposed, this bridge replacement project is unlikely to affect any significant NRHP-eligible archaeological resources. No further archaeological work is recommended.

SUPPORT DOCUMENTATION

See attached: Map(s) Previous Survey Info Photos Correspondence
 Photocopy of County Survey Notes

FINDING BY NCDOT CULTURAL RESOURCES PROFESSIONAL - NO SURVEY REQUIRED

Archaeology

Historic Architecture

(Circle One)

Paul J. Mohler

January 10, 2012

NCDOT Cultural Resources Specialist

Date



Figure 1: Summerfield, NC (USGS 1969 [Rev1994]).

11-12-0026

NO SURVEY REQUIRED FORM**PROJECT INFORMATION**

Project No: B-5345 County: Guilford
 WBS No: 46059.1.1 Document: PCE
 F.A. No: BRSTP-2136(5) Funding: State Federal

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

Project Description:

Replace Bridge No. 456 on SR 2136 over Brush Creek.

SUMMARY OF CULTURAL RESOURCES REVIEW*Brief description of review activities, results of review, and conclusions:*

Review of HPO quad maps, relevant background reports, historic designations roster, and indexes was undertaken on January 4, 2012. Based on this review, there were no existing NR, SL, LD, DE, or SS properties in the Area of Potential Effects. Guilford County GIS mapping including aerial photography and tax information revealed no structures within the APE greater than 50 years old. No properties in the APE of this project are eligible for National Register listing.

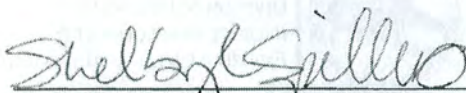
Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:

Guilford County GIS tax data show no parcels with structures in the APE of this project greater than fifty years old. No structures eligible for listing in the National Register were identified near the APE of this project. HPOWEB GIS Service, USGS topographic mapping, and Google Streetview provide reliable information regarding the structures in the APE. These combined utilities are considered valid for the purposes of determining the likelihood of historic resources being present.

SUPPORT DOCUMENTATION

See attached: Maps

FINDING BY NCDOT CULTURAL RESOURCES PROFESSIONAL**NO SURVEY REQUIRED**


 NCDOT Cultural Resources Specialist


 Date

Walter, Tracy A

From: Chris Militscher <Militscher.Chris@epamail.epa.gov>
Sent: Tuesday, April 03, 2012 7:57 AM
To: Walter, Tracy A
Subject: B-5345 & B-5352

Tracy: EPA has reviewed the start of study information for B-5345, Bridge No. 456 in Guilford County & B-5352, Bridge No. 131 in Rockingham County replacement projects and we have no identified environmental concerns. Thank you for the opportunity to comment.

Christopher A. Militscher, REM, CHMM
USEPA Merger Team Representative
919-856-4206 (Raleigh office)
404-562-9512 (Atlanta)



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

March 23, 2012

Tracy A. Walter
North Carolina Department of Transportation
Bridge Project Development Section
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Walter:

This letter is in response to your request for comments from the U.S. Fish and Wildlife Service (Service) on the potential environmental effects of the proposed replacement of Bridge No. 456 on SR 2136 over Brush Creek, Guilford County, North Carolina (TIP No. B-5345). These comments provide information in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543).

For bridge replacement projects, the Service recommends the following general conservation measures to avoid or minimize impacts to fish and wildlife resources:

1. Wetland, forest and designated riparian buffer impacts should be avoided and minimized to the maximum extent practical;
2. If unavoidable wetland or stream impacts are proposed, a plan for compensatory mitigation to offset unavoidable impacts should be provided early in the planning process;
3. Off-site detours should be used rather than construction of temporary, on-site bridges. For projects requiring an on-site detour in wetlands or open water, such detours should be aligned along the side of the existing structure which has the least and/or least quality of fish and wildlife habitat. At the completion of construction, the detour area should be entirely removed and the impacted areas be replanted with appropriate tree species;
4. In streams utilized by anadromous fish, the NCDOT policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage" should be implemented;
5. New bridges should be long enough to allow for sufficient wildlife passage along stream corridors;
6. On each side of the stream bank underneath bridges, at least 10 feet of the bank should remain clear of riprap;

7. "Best Management Practices (BMP) for Construction and Maintenance Activities" should be implemented;
8. Bridge designs should include provisions for roadbed and deck drainage to flow through a vegetated buffer prior to reaching the affected stream. This buffer should be large enough to alleviate any potential effects from run-off of storm water and pollutants;
9. Bridge designs should not alter the natural stream and stream-bank morphology or impede fish passage. To the extent possible, piers and bents should be placed outside the bank-full width of the stream; and
10. Bridges and approaches should be designed to avoid any fill that will result in damming or constriction of the channel or flood plain. If spanning the flood plain is not feasible, culverts should be installed in the flood plain portion of the approach to restore some of the hydrological functions of the flood plain and reduce high velocities of flood waters within the affected area.

Section 7(a)(2) of the Endangered Species Act requires that all federal action agencies (or their designated non-federal representatives), in consultation with the Service, insure that any action federally authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any federally threatened or endangered species. To assist you, a county-by-county list of federally protected species known to occur in North Carolina and information on their life histories and habitats can be found on our web page at <http://www.fws.gov/nc-es/es/countyfr.html> .

Although the North Carolina Natural Heritage Program (NCNHP) database does not indicate any known occurrences of listed species near the project vicinity, use of the NCNHP data should not be substituted for actual field surveys if suitable habitat occurs near the project site. The NCNHP database only indicates the presence of known occurrences of listed species and does not necessarily mean that such species are not present. It may simply mean that the area has not been surveyed. If suitable habitat occurs within the project vicinity for any listed species, surveys should be conducted to determine presence or absence of the species.

If you determine that the proposed action may affect (i.e. likely to adversely affect or not likely to adversely affect) a listed species, you should notify this office with your determination, the results of your surveys, survey methodologies and an analysis of the effects of the action on listed species, including consideration of direct, indirect and cumulative effects, before conducting any activities that might affect the species. If you determine that the proposed action will have no effect (i.e. no beneficial or adverse, direct or indirect effect) on listed species, then you are not required to contact our office for concurrence.

The Service appreciates the opportunity to comment on this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520, ext. 32.

Sincerely,


for Pete Benjamin
Field Supervisor



Guilford County Schools

May 2, 2012

Tracy A. Walter
Bridge Project Planning Engineer
NC Department Of Transportation
Project Development and Environmental
Analysis Unit
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Tracy Walter:

Subject: STIP Project No. B-5345-Replacement of Bridge No. 456 on SR 2136
Over Brush Creek in Guilford County

The closing of Bridge No. 456 (Fleming Rd) would affect not only our buses that have stops in this area, but buses that use this road to get from Bryan Blvd to Pleasant Ridge Rd and vice versa.

Buses would have to detour as much as 4.75 miles one way if this bridge and the section of road is closed. We have 18 buses using the bridge at least twice a day and there are also bus stops in the neighborhood past Crystal Lake where we would have to make detour routes to pick up students. The detour time for all buses affected could add 10 minutes to each bus run.

We could possibly use Brass Eagle Rd as a detour which would take the bus less than .3 of a mile off the bus route with a detour time of just a minute or two. The main concerns with traveling on this road are that it is not very wide and it is a dirt road. We would have to determine if buses could safely pass by each other on this road without going on the shoulder.

We appreciate you contacting us about our transportation concerns and I am positive that with adequate planning and preparation time we could reroute buses to accommodate your needs. If you need any additional information regarding the effects of this bridge closing on our buses, please feel free to contact me at (336) 370-8085 or by email at mcsweeb@gcsnc.com.

Sincerely,

Beatrice McSweeney
TIMS Coordinator
Guilford County Schools

STRIVING. ACHIEVING. EXCELLING.