

TIP Project No.	<u>B-4943</u>
W.B.S. No.	<u>40110.1.1</u>
Federal Project No.	<u>BRZ-1616(10)</u>

A. Project Description:

The purpose of STIP Project B-4943 is to replace Durham County Bridge No. 20 over Dial Creek on SR 1616 (Bahama Road). See Figure 1 in the Appendix for a project vicinity map. The existing Bridge No. 20 is 27 feet long (and utilizes concrete abutment walls to reduce its length) with a 25.5-foot deck width. The proposed replacement structure will be a bridge approximately 85 feet long providing a minimum 30-foot clear deck width. The additional length of the proposed new bridge is due to design specifications that call for the new bridge to be on a slightly more northern realignment and constructed without the use of abutment walls. Therefore, to decrease the amount of fill in Dial Creek, the new bridge must be of greater length than the existing bridge to span the existing waterway. The bridge width will include two 11-foot lanes and two 4-foot offsets. The roadway grade of the new structure will be approximately the same as the existing structure due to the slope and grade of the realigned roadway.

The new bridge will be constructed on the north side of the existing bridge and, upon completion of the new bridge, the old bridge will be removed. However, the existing concrete abutment walls will be left but cut down to above the normal pool elevation water line of Lake Michie. The alignment approach of the roadway will be shifted slightly north for the new bridge and, upon completion of the new bridge, the existing roadway pavement will be removed and the newly exposed earthen area will be sloped, graded, and stabilized. The realigned roadway will extend approximately 425 feet from the northwest end of the new bridge and 450 feet from the southeast end of the new bridge. The approaches to the new bridge will be widened to include a 22-foot pavement width while providing for grass shoulders of 6-foot width on each side (9-foot width shoulders will be utilized where guardrail is included). See Figure 2 in the Appendix for the proposed design plan. The roadway will be designed as a Rural Minor Collector using Sub Regional Tier guidelines with a 40 mile-per-hour design speed.

Traffic will be maintained on-site on the existing facility during construction of the new bridge.

B. Purpose and Need:

NCDOT Bridge Management Unit records indicate Bridge No. 20 has a sufficiency rating of 4.09 out of a possible 100 for a new structure.

The bridge is considered structurally deficient due to a superstructure condition appraisal of 5 out of 9 and a substructure condition appraisal of 3 out of 9, according to Federal Highway Administration (FHWA) standards. The bridge also meets the criteria for functionally obsolete due to a structural appraisal of 3 out of 9 and a deck geometry appraisal of 2 out of 9.

Bridge No. 20 was constructed in 1956 and has timber elements that are nearly 60 years old. Timber components have 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 elements are damaged or prematurely deteriorated. However, past a certain degree of deterioration, most timber elements become impractical to maintain and, upon eligibility, are programmed for replacement. Additionally, the steel elements of the superstructure have experienced rust scale and section loss with repairs made to some beams. Bridge No. 20, as part of SR 1616, carried 2,500 vehicles per day (vpd) in 2013 and is projected to carry 3,585 vpd in the future (2037).

Both the timber and steel components of Bridge No. 20 are experiencing an increasing degree of deterioration that can no longer be addressed by reasonable maintenance activities. Also, the substandard deck width is becoming increasingly unacceptable as traffic use increases and replacement of the bridge will result in safer traffic operations.

Therefore, the bridge is approaching the end of its useful life and should be replaced.

C. Proposed Improvements:

Circle one or more of the following Type II improvements which apply to the project:

1. Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (e.g., parking, weaving, turning, climbing).
 - a. Restoring, Resurfacing, Rehabilitating, and Reconstructing pavement (3R and 4R improvements)
 - b. Widening roadway and shoulders without adding through lanes
 - c. Modernizing gore treatments
 - d. Constructing lane improvements (merge, auxiliary, and turn lanes)
 - e. Adding shoulder drains
 - f. Replacing and rehabilitating culverts, inlets, and drainage pipes, including safety treatments
 - g. Providing driveway pipes
 - h. Performing minor bridge widening (less than one through lane)
 - i. Slide Stabilization
 - j. Structural BMP's for water quality improvement

2. Highway safety or traffic operations improvement projects including the installation of ramp metering control devices and lighting.
 - a. Installing ramp metering devices
 - b. Installing lights
 - c. Adding or upgrading guardrail
 - d. Installing safety barriers including Jersey type barriers and pier protection

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- e. Installing or replacing impact attenuators
 - f. Upgrading medians including adding or upgrading median barriers
 - g. Improving intersections including relocation and/or realignment
 - h. Making minor roadway realignment
 - i. Channelizing traffic
 - j. Performing clear zone safety improvements including removing hazards and flattening slopes
 - k. Implementing traffic aid systems, signals, and motorist aid
 - l. Installing bridge safety hardware including bridge rail retrofit
3. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings.
 - a. Rehabilitating, reconstructing, or replacing bridge approach slabs
 - b. Rehabilitating or replacing bridge decks
 - c. Rehabilitating bridges including painting (no red lead paint), scour repair, fender systems, and minor structural improvements
 - d. Replacing a bridge (structure and/or fill)
 4. Transportation corridor fringe parking facilities.
 5. Construction of new truck weigh stations or rest areas.
 6. Approvals for disposal of excess right-of-way or for joint or limited use of right-of-way, where the proposed use does not have significant adverse impacts.
 7. Approvals for changes in access control.
 8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near a street with adequate capacity to handle anticipated bus and support vehicle traffic.
 9. Rehabilitation or reconstruction of existing rail and bus buildings and ancillary facilities where only minor amounts of additional land are required and there is not a substantial increase in the number of users.
 10. Construction of bus transfer facilities (an open area consisting of passenger shelters, boarding areas, kiosks and related street improvements) when located in a commercial area or other high activity center in which there is adequate street capacity for projected bus traffic.
 11. Construction of rail storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and where there is no significant noise impact on the surrounding community.
 12. Acquisition of land for hardship or protective purposes, advance land acquisition loans under section 3(b) of the UMT Act. Hardship and protective buying will be permitted only for a particular parcel or a limited number of parcels. These types of land acquisition qualify for a CE only where the acquisition will not limit the evaluation of alternatives,

including shifts in alignment for planned construction projects, which may be required in the NEPA process. No project development on such land may proceed until the NEPA process has been completed.

- 13. Acquisition and construction of wetland, stream and endangered species mitigation sites.
- 14. Remedial activities involving the removal, treatment or monitoring of soil or groundwater contamination pursuant to state or federal remediation guidelines.

D. Special Project Information:

The estimated costs, based on 2016 prices, are as follows:

Structure	\$ 247,000
Roadway	\$ 232,000
Roadway Approaches	\$ 20,000
Structure Removal	\$ 20,000
Misc. & Mob.	\$ 148,000
Eng. & Contingencies	\$ 108,000
Total Construction Cost	\$ 775,000
Right-of-way Costs (STIP)	\$ 40,000
Right-of-way Utility Costs (2015 Estimate)	\$ 67,000
Total Project Cost	\$ 882,000

Estimated Traffic:

Current (2013)-	2,500 vpd
Year 2037 -	3,585 vpd
TTST -	1%
Dual -	5%

Accidents: Traffic Engineering evaluated a 5-year period and found one accident occurring in the vicinity of the project. This accident was not associated with the geometry of the bridge or its approach roadways.

Design Exceptions: There are no anticipated design exceptions for this project.

Pedestrian and Bicycle Accommodations: SR 1616 (Bahama Road) is a planned future City of Durham bike route utilizing paved shoulders. The City of Durham has requested that the bridge include adequate width on both sides of the bridge for future bike lanes. Therefore, the proposed bridge design will incorporate 4-foot offsets to accommodate a future bicycle lane on each side of the bridge as well as the inclusion of 42"-high concrete railing.

Bridge Demolition: Bridge No. 20 is constructed of timber and steel and it should be possible to remove with no resulting debris in the water based on standard demolition practices. However, the existing concrete abutment walls

will be left but cut down to above the normal pool elevation water line of Lake Michie. The NC Division of Water Resources (DWR) expressed concern with sediment and erosion impacts that could result from the project and recommends that highly protective sediment and erosion control Best Management Practices (BMPs) be implemented to reduce the risk of nutrient runoff to Dial Creek. NC DWR requests that road and design plans provide treatment of the stormwater runoff through BMPs as detailed in the most recent version of NC DWR *Stormwater Best Management Practices*. Additionally, NCDOT should maintain strict adherence to the US Army Corps of Engineers (USACE) guidelines for bridge demolition.

Alternatives Discussion:

No-Build – The no-build alternative would result in eventual bridge deterioration to the point of closing the road, which is unacceptable given the volume of traffic served by SR 1616 and lack of efficient alternate routes.

Rehabilitation – The existing bridge was constructed in 1956 and the timber and steel materials that make up the bridge are reaching the end of their useful life. Rehabilitation would require replacing most, if not all, of the timber and steel components which would constitute effectively replacing the bridge.

Offsite Detour – Initial plans for the project indicated to replace the bridge in-place with an off-site detour. The proposed detour option to the north of the bridge is relatively short and would only delay users approximately one minute. However, this detour route would utilize an unpaved road which would need to be upgraded in order to be utilized as part of the detour. The additional cost of this facet of this detour was deemed too costly to proceed. The proposed detour option to the south of the bridge is considerably longer and would have a longer travel delay for users. The Bahama Fire Department expressed concern with the travel delays and increased response times of this longer detour option. This detour would cause a negative impact to the Lake Michie Boat Launch facility as users, with many towing boats, would have to take a much longer and unfamiliar route to access the facility. The boat launch facility is utilized by the Duke University women’s and men’s rowing teams, which also have storage buildings on the boat launch property. Coordination with Duke University indicates that it will be considerably affected by this detour option. NCDOT concurs with the concerns of both proposed detour options and concludes that an offsite detour is not justifiable. Based on meetings with the City of Durham, it was requested by the City to maintain traffic on-site.

On-site Detour – An on-site detour was deemed to not be advantageous due to the decision that the new bridge be constructed on the northern side of the existing bridge.

Staged Construction – Staged construction was not considered a worthwhile option due to the decision that the new bridge be constructed on the northern side of the existing bridge.

New Alignment – Given that the general alignment for SR 1616 is acceptable and the new bridge will be constructed on the northern side of the existing bridge, a major new alignment of SR 1616 was not considered a beneficial alternative.

Based on the above factors and information, it was therefore determined that traffic will be maintained on-site on the existing facility during construction of the new bridge.

A Natural Resources Technical Report (March 2009) was prepared for the project to identify any potential impacts to natural resource features. Jurisdictional area determinations and protected species surveys were initially conducted in the project study area on October 30 and December 8, 2008. A Jurisdictional Determination update was completed in January 2015. A protected species update survey was conducted on May 27, 2015 and a memo prepared (see Appendix). Two jurisdictional wetlands were identified in the study area. Wetland WA measured at <0.01ac within the study area and had a NC DWR Wetland Rating of 64. Wetland WB measured at 0.03ac within the study area and had a NC DWR Wetland Rating of 64. Lake Michie was identified as a jurisdictional water in the study area. As impacts to Waters of the US are anticipated, a Section 404 Permit will likely be applicable. In addition to the Section 404 Permit, other required authorizations include the corresponding Section 401 Water Quality Certification (WQC) from the NC DWR. The US Fish and Wildlife Service lists two federally protected species for Durham County. Protected species update surveys were conducted for Michaux's sumac and smooth coneflower. Additional information on protected species is provided in Section F of this form. Note: The complete NRTR can be viewed at the NCDOT - Project Development & Environmental Analysis Unit, Century Center Building A, 1000 Birch Ridge Drive, Raleigh N.C.

The NCDOT Archaeology Group conducted a review of maps and report files at the Office of State Archaeology. It was determined that no further archaeological investigation or survey is warranted. Documentation of this conclusion is contained in the Appendix.

The NCDOT Historic Architecture Group reviewed the project's Area of Potential Effect and found no resources of historic architectural significance. They concluded that the proposed work is confined to the existing right-of-way and does not impact any above-ground resources of historic architectural significance. Therefore, no further historic architecture investigation or survey is warranted. Documentation of this conclusion is contained in the Appendix.

A *Community Impact Assessment* (October 2009) was prepared for the project to identify and assess the potential for community impacts as a result of the project. The CIA notes that there are several public recreational facilities within the Direct Community Impact Area that may be Section 4(f) resources, as well as the Lake Michie Recreation Area itself being a Section 6(f) resource. However, based on preliminary designs and maintenance of traffic on-site during construction, neither access to nor these recreational facilities will be substantially impacted by the project. The project study area is located in the Durham County Inventory of Important Natural Areas, Plants, and Wildlife, as well as NC Natural Heritage Program Element Occurrence and Natural Areas.

Other Agency Comments:

Coordination activities were initiated with the City of Durham and Durham County. Durham County reviewed the initial project information and indicated that the County did not feel the need to be included in direct discussions concerning the project. A meeting with staff from multiple departments with the City of Durham was conducted. Lake Michie is an important source of drinking water for the City and the City has a special interest in any project that occurs in the area of the lake. Several aspects of the project were coordinated with the City, including detour options, design options, construction safety, and existing bridge removal, to receive consensus on the replacement of the bridge. See the Project Commitments sheet for NCDOT’s and Division 5’s commitment to ongoing coordination with the City of Durham during construction of the project.

The NC Wildlife Resources Commission (WRC) had no direct comments on the project; only the recommendation of replacing the current bridge with a bridge and to provide a copy of the NC WRC standard recommendations for bridge replacement projects.

Stakeholder & Public Involvement:

The Lake Michie boat launch facility is utilized by the Duke University women’s and men’s rowing teams, which also have storage buildings on the boat launch property. Duke University staff was contacted and provided an overview of the project and an individual Stakeholder Meeting was offered. The University expressed concern of a long detour route and inquired if the access drive to the boat launch property would be affected. Based on the information provided to them, the University determined that it would not be negatively impacted and that no individual Stakeholder Meeting was necessary.

E. Threshold Criteria

The following evaluation of threshold criteria must be completed for Type II actions

<u>ECOLOGICAL</u>	<u>YES</u>	<u>NO</u>
(1) Will the project have a substantial impact on any unique or important natural resource?	<input type="checkbox"/>	<u> X </u>
(2) Does the project involve habitat where federally listed endangered or threatened species may occur?	<input checked="" type="checkbox"/>	<u> </u>
(3) Will the project affect anadromous fish?	<input type="checkbox"/>	<u> X </u>
(4) If the project involves wetlands, is the amount of permanent and/or temporary wetland taking less than one-tenth (1/10) of an acre and have all practicable measures to avoid and minimize wetland takings been evaluated?	<u> X </u>	<input type="checkbox"/>
(5) Will the project require the use of U. S. Forest Service lands?	<input type="checkbox"/>	<u> X </u>
(6) Will the quality of adjacent water resources be adversely impacted by proposed construction activities?	<input type="checkbox"/>	<u> X </u>
(7) Does the project involve waters classified as Outstanding Resources Waters (ORW) and/or High Quality Waters (HQW)?	<input type="checkbox"/>	<u> X </u>
(8) Will the project require fill in waters of the United States in any of the designated mountain trout counties?	<input type="checkbox"/>	<u> X </u>
(9) Does the project involve any known underground storage tanks (UST's) or hazardous materials sites?	<input type="checkbox"/>	<u> X </u>
 <u>PERMITS AND COORDINATION</u>		
(10) If the project is located within a CAMA county, will the project significantly affect the coastal zone and/or any "Area of Environmental Concern" (AEC)?	<input type="checkbox"/>	<u> X </u>
(11) Does the project involve Coastal Barrier Resources Act resources?	<input type="checkbox"/>	<u> X </u>
(12) Will a U. S. Coast Guard permit be required?	<input type="checkbox"/>	<u> X </u>
(13) Could the project result in the modification of any existing regulatory floodway?	<input checked="" type="checkbox"/>	<u> </u>

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(14) Will the project require any stream relocations or channel changes? X

SOCIAL, ECONOMIC, AND CULTURAL RESOURCES

YES NO

(15) Will the project induce substantial impacts to planned growth or land use for the area? X

(16) Will the project require the relocation of any family or business? X

(17) Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population? X

(18) If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor? X

(19) Will the project involve any changes in access control? X

(20) Will the project substantially alter the usefulness and/or land use of adjacent property? X

(21) Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness? X

(22) Is the project included in an approved thoroughfare plan and/or Transportation Improvement Program (and is, therefore, in conformance with the Clean Air Act of 1990)? X

(23) Is the project anticipated to cause an increase in traffic volumes? X

(24) Will traffic be maintained during construction using existing roads, staged construction, or on-site detours? X

(25) If the project is a bridge replacement project, will the bridge be replaced at its existing location (along the existing facility) and will all construction proposed in association with the bridge replacement project be contained on the existing facility? X

(26) Is there substantial controversy on social, economic, or environmental grounds concerning the project? X

(27) Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project? X

(28) Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places? X

- | | | | |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------|
| (29) | Will the project affect any archaeological remains which are important to history or pre-history? | <input type="checkbox"/> | <u> X </u> |
| (30) | Will the project require the use of Section 4(f) resources (public parks, recreation lands, wildlife and waterfowl refuges, historic sites, or historic bridges, as defined in Section 4(f) of the U. S. Department of Transportation Act of 1966)? | <input type="checkbox"/> | <u> X </u> |
| (31) | Will the project result in any conversion of assisted public recreation sites or facilities to non-recreation uses, as defined by Section 6(f) of the Land and Water Conservation Act of 1965, as amended? | <input type="checkbox"/> | <u> X </u> |
| (32) | Will the project involve construction in, across, or adjacent to a river designated as a component of or proposed for inclusion in the National System of Wild and Scenic Rivers? | <input type="checkbox"/> | <u> X </u> |

F. Additional Documentation Required for Unfavorable Responses in Part E

Response to Question 2: Suitable habitat for smooth coneflower is present in the project study area in the form of maintained roadsides and utility corridors. A survey for smooth coneflower was conducted on October 30, 2008 and again on May 27, 2015. No coneflower species were observed during either survey. A search of the NCNHP database (dated October 2015) showed no recorded occurrences of smooth coneflower within 1.0 mile of the project study area. It can be concluded that construction of the proposed project will not affect smooth coneflower. The biological conclusion is “No Effect.”

Suitable habitat for Michaux’s sumac is present in the project study area in the form of maintained roadsides and utility corridors. A survey for Michaux’s sumac was conducted on October 30, 2008 and again on May 27, 2015. No individual specimens were observed during either survey. A search of the NCNHP database (dated October 2015) showed no recorded occurrences of Michaux’s sumac within 1.0 mile of the project study area. It can be concluded that construction of the proposed project will not affect smooth coneflower. The biological conclusion is “No Effect.”

Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. There is one large body of water within the project study area - Lake Michie. Surveys were performed within the project study area and within 660 feet of the project study area. There were no bald eagles or large trees suitable for nesting observed within the survey area. Suitable feeding habitat for the bald eagle does exist in the project study area. A search of the NCNHP database (dated October 2015) showed no known occurrences within 1.0 mile of the project study area.

The US Fish and Wildlife Service has developed a programmatic biological opinion (PBO) in conjunction with FHWA, USACE, and NCDOT for Northern Long-Eared Bat (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 Durham County. This level of incidental take is authorized from the effective date of a final listing determination through April 30, 2020.

Response to Question 13: Durham County is a participant in the Federal Flood Insurance Program, administered by the Federal Emergency Management Agency (FEMA). The project is within a Flood Hazard Zone, designated as Zone AE, for which the 100-year base flood elevations and corresponding regulatory floodway have been established. The Hydraulics Unit will coordinate with FEMA to determine if a Conditional Letter of Map Revision (CLOMR) and a subsequent final Letter of Map Revision (LOMR) are required for this project. If required, the Division will submit sealed as-built construction plans to the Hydraulic Unit upon project completion certifying the project was built as shown on the construction plans.

Response to Question 25: The new bridge will be constructed on the north side of the existing bridge and, upon completion of the new bridge, the old bridge will be removed. However, the existing concrete abutment walls will be left but cut down to above the normal pool elevation water line of Lake Michie. The alignment approach of the roadway will be shifted slightly north for the new bridge and, upon completion of the new bridge, the existing roadway pavement will be removed and the newly exposed earthen area will be sloped, graded, and stabilized.

G. CE Approval

TIP Project No.	<u>B-4943</u>
W.B.S. No.	<u>40110.1.1</u>
Federal Project No.	<u>BRZ-1616(10)</u>

Project Description:

The purpose of STIP Project B-4943 is to replace Durham County Bridge No. 20 over Dial Creek on SR 1616 (Bahama Road). See Figure 1 in the Appendix for a project vicinity map. The existing Bridge No. 20 is 27 feet long (and utilizes concrete abutment walls to reduce its length) with a 25.5-foot deck width. The proposed replacement structure will be a bridge approximately 85 feet long providing a minimum 30-foot clear deck width. The additional length of the proposed new bridge is due to design specifications that call for the new bridge to be on a slightly more northern realignment and constructed without the use of abutment walls. Therefore, to decrease the amount of fill in Dial Creek, the new bridge must be of greater length than the existing bridge to span the existing waterway. The bridge width will include two 11-foot lanes and two 4-foot offsets. The roadway grade of the new structure will be approximately the same as the existing structure due to the slope and grade of the realigned roadway.

The new bridge will be constructed on the north side of the existing bridge and, upon completion of the new bridge, the old bridge will be removed. However, the existing concrete abutment walls will be left but cut down to above the normal pool elevation water line of Lake Michie. The alignment approach of the roadway will be shifted slightly north for the new bridge and, upon completion of the new bridge, the existing roadway pavement will be removed and the newly exposed earthen area will be sloped, graded, and stabilized. The realigned roadway will extend approximately 425 feet from the northwest end of the new bridge and 450 feet from the southeast end of the new bridge. The approaches to the new bridge will be widened to include a 22-foot pavement width while providing for grass shoulders of 6-foot width on each side (9-foot width shoulders will be utilized where guardrail is included). See Figure 2 in the Appendix for the proposed design plan. The roadway will be designed as a Rural Minor Collector using Sub Regional Tier guidelines with a 40 mile-per-hour design speed.

Traffic will be maintained on-site on the existing facility during construction of the new bridge.

NCDOT PROGRAMMATIC CATEGORICAL EXCLUSION (PCE) ACTION CLASSIFICATION FORM

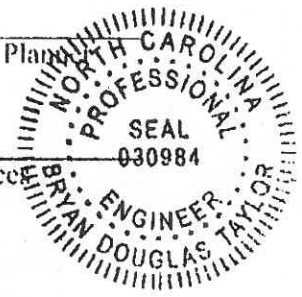
Categorical Exclusion Action Classification:

 TYPE II(A)
 X TYPE II(B)

Prepared:

04/01/2016
Date
Jonathan Williamson
Jonathan Williamson, AICP - Senior Transportation Planning
STEWARD Engineering, Inc.

04/01/2016
Date
Doug Taylor
Doug Taylor, PE - Manager of Transportation Services
STEWARD Engineering, Inc.



Approved:

4/11/16
Date
ABrawand
Project Planning Engineer
Project Development & Environmental Analysis Unit

4/1/16
Date
Patrick Weaker
Project Engineer
Project Development & Environmental Analysis Unit

For Type II(B) projects only:

4/12/16
Date
John F. Sullivan, III
John F. Sullivan, III, PE, Division Administrator
Federal Highway Administration

PROJECT COMMITMENTS

Durham County
Bridge No. 20 over Dial Creek on SR 1616 (Bahama Rd)
Federal Aid Project No. BRZ-1616(10)
W.B.S. No. 40110.1.1
S.T.I.P. No. B-4943

All commitments developed during the project development and design phase have been incorporated into the design. Current status, changes, or additions to the project commitments as shown in the environmental document for the project are listed below.

NCDOT-Division Five

- During construction and/or upon completion of construction, Division Five will be responsible for: the removal of all remnant existing roadway pavement and the newly exposed earthen area will be sloped, graded, and stabilized; and the cutting down of the existing concrete abutment walls to above the normal pool elevation water line of Lake Michie.
- The NCDOT will continue coordination with the City of Durham during the design phase as well as the construction phase to keep the City informed of project decisions as well as construction activities throughout the life of the project.
- This project involves construction activities on or adjacent to a FEMA-regulated stream. Therefore, if determined to be required, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction certifying that the bridge structure and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

NCDOT-Hydraulics Unit

- The Hydraulics Unit will coordinate with FEMA to determine status of project with regard to applicability of NCDOT's Memorandum of Agreement or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

APPENDIX



1151 SE Cary Parkway, Suite 101
Cary, North Carolina 27518
(919) 557-0929

June 9, 2015

MEMORANDUM TO: James Mason – NCDOT ECAP

FROM: David Cooper – Ecological Engineering, LLP

SUBJECT: Protected Species Update for B-4943
Durham County
Bridge No. 20 on SR 1616 (Bahama Road) over Dial Creek (Lake
Michie)

This memo serves to update the status of federally protected species for the above-referenced project.

Species: Michaux's sumac (*Rhus michauxii*), smooth coneflower (*Echinacea laevigata*), and bald eagle (*Haliaeetus leucocephalus*)

Survey Date: 5/27/2015

Survey Information: Surveyed for Michaux's sumac, smooth coneflower, and bald eagle on 5/27/2015. Habitat present within study area, but no specimens of targeted plants observed within study area. No eagle nests observed in study area or within 660 feet of study area. No known occurrences within 1.0 mile per NCNHP records dated April 2015.

Length of Survey: 3 Person Hours

Biological Conclusion: No Effect, but Habitat Present

Principal Investigators:

David Cooper, Environmental Scientist – Ecological Engineering, LLP
Heather Smith, Environmental Scientist/LSSIT – Ecological Engineering, LLP

If you have any questions, please contact David Cooper at dcooper@ecologicaleng.com or (919) 557-0929.

Bridge Construction CFY 2013-2014

SHPO Number	TIP	Project	County	Division	Project Engineer	Archaeological Survey	Architectural Survey
ER 08-2604	B-4943	Bridge 20 on SR 1616 over Sancy Creek	Durham	5	G. Blakeney	ND	ND

A- (NC) 11/7/08
 11/7/08
 11/7/08

S- (NC) 11/7/08
 11/7/08
 CBS

Due 12/31/08

Peter B. Sanderson
 11/22/08

NOV 19 2008