



North Carolina Department of Environment and Natural Resources

Division of Water Quality
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Director

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Secretary

August 2, 2012

MEMORANDUM

TO: Pamela Williams, NCDOT Priority Projects Office

FROM: Rob Ridings, NC Division of Water Quality, Transportation Permitting Unit

SUBJECT: Scoping Review of NCDOT's Proposed Bridge Replacement Project in Division 4

The following are comments for the August 2012 Division 4 Bridge Replacement Projects in Nash, Halifax, Wilson and Wayne Counties:

Bridge Number	Stream Name	River Basin & Subbasin	Stream Classifications	Stream Index Number	303(d) Listing?
630091	Tar River	TAR 02	WS-IV; NSW	28-(34.5)	No
630097	Toisnot Swamp	NEU 07	WS-III; NSW	28-86-11-(1)	No
630076	Sandy Creek	TAR 02	C; ORW; NSW	28-78-1-(19)	No
630132	UT Pigbasket Creek	TAR 02	C; NSW	28-68-3-(2)	No
630135	Pigbasket Creek	TAR 02	C; NSW	28-68-3-(2)	No
630136	Pigbasket Creek	TAR 02	C; NSW	28-68-3-(2)	No
630125	Back Swamp	TAR 02	C; NSW	28-68-1-4	No
630028	Big Peachtree Creek	TAR 02	C; NSW	28-68-1	No
630083	Little Peachtree Creek	TAR 02	C; NSW	28-68-1.5	No
410030	Rocky Swamp	TAR 04	WS-IV; NSW	28-79-28-(0.7)	No
970028	Contentnea Creek	NEU 07	WS-V; NSW	27-86-(1)	No
970081	Millstone Creek	NEU 07	C; NSW	27-86-6-1	No
970094	Town Creek	TAR 03	C; NSW	28-83	Yes
970093	Town Creek	TAR 03	C; NSW	28-83	Yes
970055	Toisnot Swamp	NEU 07	C; NSW; Sw	27-86-11-(5)	No
970136	UT Toisnot Swamp	NEU 07	C; NSW; Sw	27-86-11-(5)	No
950014	Bear Creek	NEU 05	C; NSW; Sw	27-75-(0.1)	Yes
950131	Yellow Marsh Branch	NEU 12	WS-IV; B; NSW	27-54-5-3-(1)	No

Project-Specific Comments

- 1. Bridge 630076:** Review of the project reveals the presence of surface waters classified as ORW; Outstanding Resource Waters of the State in the project study area. The water quality classification of ORW is one of the highest classifications in the State. DWQ is extremely concerned with any impacts that may occur to streams with this classification. It is preferred that these resources be avoided if at all possible. If it is not possible to avoid these resources, the impacts shall be minimized to the greatest extent possible. Given the potent for impacts to these resources during the project implementation, the DWQ requests that DOT strictly adhere to North Carolina regulations entitled "Design Standards in Sensitive Watersheds" (15A NCAC 04B .0124) throughout design and construction of the project. Pursuant to 15A NCAC 2H .1006 and 15A NCAC 2B .0224, NC DOT will be required to obtain a State Stormwater Permit prior to construction.
- 2. Bridges 970094, 970093, & 950014:** These streams are listed as 303(d) impaired waters of the State. DWQ is very concerned with sediment and erosion impacts that could result from these projects. DWQ recommends that the most protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to these waters. DWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ Stormwater Best Management Practices.
- 3. All Bridges:** These projects all contain NSW (Nutrient Sensitive) waters of the State. DWQ is very concerned with sediment and erosion impacts that could result from these projects. DWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to these waters. DWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ Stormwater Best Management Practices.
- 4.** These projects are within the Neuse and Tar-Pamlico River Basins. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B.0233 and 15A NCAC 2B.0259.

General Comments Regarding Bridge Replacement Projects

1. DWQ is very concerned with sediment and erosion impacts that could result from this project. NC DOT shall address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.
2. If foundation test borings are necessary; it shall be noted in the document. Geotechnical work is approved under General 401 Certification Number 3687/Nationwide Permit No. 6 for Survey Activities.
3. If a bridge is being replaced with a hydraulic conveyance other than another bridge, DWQ believes the use of a Nationwide Permit may be required. Please contact the US Army Corp of Engineers to determine the required permit(s).
4. If the old bridge is removed, no discharge of bridge material into surface waters is allowed unless otherwise authorized by the US ACOE. Strict adherence to the Corps of Engineers guidelines for bridge demolition will be a condition of the 401 Water Quality Certification.
5. Whenever possible, the DWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the stream banks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allow for human and wildlife passage beneath the structure, do not block fish passage and do not block navigation by canoeists and boaters.
6. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of NC DWQ *Stormwater Best Management Practices*.

7. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
8. Bridge supports (bents) shall not be placed in the stream when possible.
9. If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas shall be seeded or mulched to stabilize the soil and appropriate native woody species shall be planted. When using temporary structures the area shall be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.
10. Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of North Carolina Sediment and Erosion Control Planning and Design Manual and the most recent version of NCS000250.
11. All work in or adjacent to stream waters shall be conducted in a dry work area unless otherwise approved by NC DWQ. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.
12. Heavy equipment shall be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment shall be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.
13. In most cases, the DWQ prefers the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour shall be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure shall be removed and the approach fills removed from the 100-year floodplain. Approach fills shall be removed and restored to the natural ground elevation. The area shall be stabilized with grass and planted with native tree species. Tall fescue shall not be used in riparian areas.
14. Any anticipated bank stabilization associated with culvert installations or extensions should be addressed in the Categorical Exclusion (CE) document. It is understood that final designs are not determined at the time the CE is developed. However, the CE should discuss the potential for bank stabilization necessary due to culvert installation.
15. Any anticipated dewatering or access structures necessary for construction of bridges should be addressed in the CE. It is understood that final designs are not determined at the time the CE is developed. However, the CE should discuss the potential for dewatering and access measures necessary due to bridge construction.

General Comments if Replacing the Bridge with a Culvert

1. Placement of culverts and other structures in waters, streams, and wetlands shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.

2. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel shall be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
3. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures shall be properly designed, sized and installed.

Thank you for requesting our input at this time. The DOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact Rob Ridings at 919-807-6403.

cc: Tom Steffens, US Army Corps of Engineers, Washington Field Office (via email)
Chad Coggins, NCDOT Division 4 Environmental Officer (via email)
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