



North Carolina Department of Environment and Natural Resources

Division of Water Quality
Charles Wakild, P.E.
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

September 5, 2012

MEMORANDUM

To: Pamela Williams, NCDOT Priority Projects Executive

From: Amy Euliss, NC Division of Water Quality, Winston Salem Regional Office

Subject: Scoping comments on proposed replacement of Bridge nos. 101, 60, 36, 43, and 42 in Orange County, Bridge nos. 85, 253, 97, 125, 144, 146, 200, 154, 152, 151, 135, 248, 137, 207, 270, and 267 in Alamance County and Bridge nos. 26 and 106 in Caswell County.

Reference your correspondence dated July 12, 2012 in which you requested comments for the referenced projects. The NCDWQ offers the following comments.

Project Specific Comments:

Bridge No. 101 (SR 1723) over Stoney Creek in Orange County

*Potential impacts to Stoney Creek (C;NSW) and adjacent wetlands.

1. Stoney Creek are Class C; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Stoney Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Neuse River Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0233.

Bridge No. 60 (SR 1002) over Buckwater Creek in Orange County

*Potential impacts to Buckwater Creek (WSIV;NSW).

1. Buckwater Creek are Class WSIV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Buckwater Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Neuse River Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0233.

Bridge No. 136 (SR 1544) over South Fork Little River in Orange County

*Potential impacts to South Fork Little River and an Unnamed Tributary (WSII;HQW; NSW) that runs parallel to the road.

1. Bank scour was noted in the SW corner that will need to be stabilized/
2. South Fork Little River and its unnamed tributary are WSII; HQW; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project.

NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to South Fork Little River. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.

3. Review of the project reveals the presence of surface waters classified as WSII; High Quality Waters of the State in the project study area. This is one of the highest classifications for water quality. Pursuant to 15A NCAC 2H .1006 and 15A NCAC 2B .0224, NCDOT will be required to obtain a State Stormwater Permit prior to construction except in North Carolina's twenty coastal counties.
4. This project is within the Neuse River Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0233.

Bridge No. 43 (SR 1120) over Seven Mile Creek in Orange County

*Potential impacts to Seven Mile Creek (WSII;HQW; NSW) and an unnamed tributary.

1. Seven Mile Creek and its unnamed tributary are WSII; HQW; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Seven Mile Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. Review of the project reveals the presence of surface waters classified as WSII; High Quality Waters of the State in the project study area. This is one of the highest classifications for water quality. Pursuant to 15A NCAC 2H .1006 and 15A NCAC 2B .0224, NCDOT will be required to obtain a State Stormwater Permit prior to construction except in North Carolina's twenty coastal counties.
3. This project is within the Neuse River Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0233.

Bridge No. 42 (SR 1007) over an Unnamed Tributary to Haw Creek in Orange County

*Potential impacts to an Unnamed Tributary to Haw Creek, a jurisdictional pond, and an additional Unnamed Tributary to Haw Creek (SWII; HQW; NSW).

1. Haw Creek and its unnamed tributary are WSII; HQW; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Haw Creek and its unnamed tributaries. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. Review of the project reveals the presence of surface waters classified as WSII; High Quality Waters of the State in the project study area. This is one of the highest classifications for water quality. Pursuant to 15A NCAC 2H .1006 and 15A NCAC 2B .0224, NCDOT will be required to obtain a State Stormwater Permit prior to construction except in North Carolina's twenty coastal counties.
3. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 85 (SR 2158) over Meadow Creek in Alamance County

*Potential impacts to Meadow Creek and an unnamed tributary that runs parallel to the road.

1. Meadow Creek are Class WSV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Meadow Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 253 (SR 2178) over an Unnamed Tributary to Haw River in Alamance County

*Potential impacts to an Unnamed Tributary to Haw River (WSV;NSW) and a small wetland in the NW quadrant.

1. Haw River and its Unnamed Tributaries are Class WSV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Haw River and its Unnamed Tributaries. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 97 (SR 2116) over Chub Creek in Alamance County

*Potential impacts to Chub Creek and an unnamed tributary (WSV; NSW). The unnamed tributary needs to have a jurisdictional determination.

1. Chub Creek and its Unnamed Tributaries are Class WSV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Chub Creek and its Unnamed Tributaries. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 125 (SR 2327) over Varnals Creek in Alamance County

*Potential impacts to Varnals Creek (WSV; NSW;303d-impaired biological integrity-no known source) and wetlands in the NE and SW quadrant of the bridge.

1. Varnals Creek are Class WSV; NSW;303d waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Varnals Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 144 (SR 2361) over Rock Creek in Alamance County

*Potential impacts to Rock Creek (WSV;NSW).

1. Rock Creek are Class WSV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Rock Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 146 (SR 2363) over Rock Creek in Alamance County

*Potential impacts to Rock Creek and an unnamed tributary (WSV; NSW). The buffer status of the unnamed tributary needs to be determined prior to permitting.

1. Rock Creek are Class WSV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Rock Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through

best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.

2. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 200 (SR 1110) over Little Creek Tributary in Alamance County

*Potential impacts to 2 unnamed tributaries to Little Creek (WSV;NSW).

1. Little Creek and its unnamed tributaries are Class WSV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Little Creek and its unnamed tributaries. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 154 (SR 2365) over Cane Creek in Alamance County

*Potential impacts to Cane Creek and an unnamed tributary (WSV; NSW). There are potential parallel impacts to Cane Creek.

1. Cane Creek are Class WSV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Cane Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 152 (SR 2307) over North Prong Rocky River in Alamance County

*Potential impacts to North Prong Rocky River (WSIII).

1. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 151 (SR 2307) over Greenbrier Creek in Alamance County

*Potential impacts to Greenbrier Creek and unnamed tributaries (WSIII). Also, a small wetland is located at the convergence of the two streams (just upstream of the bridge).

1. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No.135 (SR 2356) over Reedy Branch in Alamance County

*Potential impacts to Reedy Branch and an unnamed tributary (WSV; NSW). There's a potential for parallel impacts to the UT running parallel to the road.

1. Reedy Branch and its unnamed tributaries are Class WSV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Reedy Branch and its unnamed tributaries. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 248 (SR 2354) over Reedy Branch in Alamance County

*Potential impacts to Reedy Branch (WSV;NSW).

1. There's an EEP mitigation site immediately upstream of the bridge. The limits shall be clearly defined on the permit drawings and the construction plans. Any impacts to the mitigation site shall be approved by the EEP prior to construction.
2. Reedy Branch and its unnamed tributaries are Class WSV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Reedy Branch and its unnamed tributaries. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
3. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 137 (SR 2351) over Pine Hill Branch in Alamance County

*Potential impacts to Pine Hill Branch (WSV;NSW).

1. Pine Hill Branch are Class WSV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Pine Hill Branch. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 207 (SR 1522) over Service Creek in Alamance County

*Potential impacts to Service Creek (WSV; NSW).

1. Service Creek are Class WSV; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Service Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No 270 (SR 1552) over an Unnamed Tributary to Travis Creek in Alamance County

*Potential impacts to an unnamed tributary to Travis Creek (WSV;NSW;303d-impaired biological integrity). Please note that immediately upstream the property owner has entrenched and attempted to stabilize the banks with concrete.

1. Travis Creek and its unnamed tributaries are Class WSV; NSW; 303d waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Service Creek. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 267 (SR 1571) over Jones Creek in Alamance County

*Potential impacts to Jones Creek (WSII;HQW;NSW). The stream is dammed by beavers, and extensive wetlands are present in all quadrants of the bridge. There is a also a jurisdictional pond immediately upstream.

1. Jones Creek and its unnamed tributary are WSII; HQW; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Jones Creek and its unnamed tributaries. NCDWQ requests that road

design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.

2. Review of the project reveals the presence of surface waters classified as WSII; High Quality Waters of the State in the project study area. This is one of the highest classifications for water quality. Pursuant to 15A NCAC 2H .1006 and 15A NCAC 2B .0224, NCDOT will be required to obtain a State Stormwater Permit prior to construction except in North Carolina's twenty coastal counties.
3. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 26 (SR 1139) over Tributary 2 to Gray's Branch in Caswell County

*Potential impacts to Tributary 2 to Gray's Branch (WSII;HQP;NSW).

1. Tributary 2 to Gray's Branch are WSII; HQW; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Tributary 2 to Gray's Branch. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
2. Review of the project reveals the presence of surface waters classified as WSII; High Quality Waters of the State in the project study area. This is one of the highest classifications for water quality. Pursuant to 15A NCAC 2H .1006 and 15A NCAC 2B .0224, NCDOT will be required to obtain a State Stormwater Permit prior to construction except in North Carolina's twenty coastal counties.
3. This project is within the Jordan Lake Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267.

Bridge No. 106 (SR 1156) over Burkes Creek in Caswell County

*Potential impacts to Burkes Creek. No project specific comments.

General Project Comments:

1. For bridges that are to be replaced with single aluminum box culverts that are wider than the existing stream, measures shall be taken to maintain the stream width at the inlet and outlet of the pipe and maintain aquatic passage within the culvert. Please refer to the DWQs "Aluminum Box Culverts with Bottoms" review dated February 2012.
2. For bridges that are to be replaced with bottomless culverts, channel width must be maintained within the culvert. Keying large rock into the floodplain within the culvert is preferred.
3. For bridges that are to be replaced with multiple barrel culverts, sills and/or floodplain benches shall be utilized at the inlet and outlet of the high flow barrel to isolate low flow to a single barrel.
4. For bridges that are to be replaced using the Low Impact Bridge replacement process, a Nationwide 3 from the US Army Corps of Engineers will be required. NCDWQ would like to respectfully remind NCDOT that WQC 3883, or its most recent equivalent, will also be required. NCDOT shall be in compliance with all of its applicable conditions.
5. DWQ understands that bridges to be replaced through the Low Impact Bridge replacement process will be replaced using an off-site detour. If at any time these plans change, DWQ shall be contacted to determine if these project can remain in the Low-Impact Bridge Replacement process.
6. Environmental assessment alternatives shall consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives shall include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ *Stormwater Best Management Practices*, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.

7. Currently proposed impacts will not exceed 150 linear feet of impacts to any single stream. However, if at any point in the future the impact totals change, then in accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 150 linear feet to any single stream. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.
8. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDOT 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.
9. 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.
10. Whenever possible, NCDWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the streambanks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges shall allow for human and wildlife passage beneath the structure. Fish passage and navigation by canoeists and boaters shall not be blocked. Bridge supports (bents) shall not be placed in the stream when possible.
11. 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 NCDWQ's *Stormwater Best Management Practices*.
12. 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.
13. 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 should 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.
14. If foundation test borings are necessary; it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3624/Nationwide Permit No. 6 for Survey Activities.
15. 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.
16. All work in or adjacent to stream waters shall be conducted in a dry work area unless otherwise approved by NCDWQ. 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 should be used to prevent excavation in flowing water.

17. Sediment and erosion control measures shall not be placed in wetlands and streams.
18. Borrow/waste areas shall avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas could precipitate compensatory mitigation.
19. 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.
20. 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 should be properly designed, sized and installed.

Thank you for requesting our input at this time. NCDOT 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 Amy Euliss at (336) 771-4959.

cc: Andy Williams, US Army Corps of Engineers, Raleigh Field Office, e-copy only
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