



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

July 17, 2003

MEMORANDUM TO: Mr. S. P. Ivey, P.E.
Division 9 Engineer

FROM: *PH* Philip S. Harris, III, P.E., Manager *Bourmon*
Office of Natural Environment
Project Development and
Environmental Analysis Branch

SUBJECT: Stokes County, Replace Bridge Number 17 over the Dan River
on NC 89; Work Order Number 8.1640901; TIP Number B3045

Attached are the U. S. Army Corps of Engineers Nationwide Permit Numbers 23 and 33 (Approved Categorical Exclusion and Temporary Construction, Access, and Dewatering) and the general conditions for the NCDWQ 401 Water Quality Certification for the above referenced project. All environmental permits have been received for the construction of this project.

PSH/eah

Attachment

cc: Ms. Debbie Barbour, P.E.
Mr. Jay Bennett, P.E.
Mr. David Chang, P.E.
Mr. Randy Garris, P.E.
Mr. Greg Perfetti, P.E.
Mr. Mark Staley
Mr. John F. Sullivan, III, FHWA
Mr. Omar Sultan
Ms. Diane Hampton, P.E., Division 9 DEO

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-715-1500
FAX: 919-715-1501

WEBSITE: www.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

PROJECT COMMITMENTS

NC 89
Stokes County
Bridge No. 17 Over the Dan River
Federal-Aid Project No. BRSTP-89(5)
State Project No. 8.1640901
T.I.P. No. B-3045

In addition to the standard Nationwide Permit #23 and #33 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters, Design Standards for Sensitive Watersheds, NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

Division

No construction activities that increase sedimentation will occur from May 1 to June 30. If concrete will be used during construction, work will be accomplished so that wet concrete does not contact stream water.

Only one phase of work bridges will be in the water at one time.

All guidelines for bridge demolition and removal will be followed in addition to High Quality Best Management Practices for the Protection of Surface Waters.

An in-water work moratorium will be required during the spawning period of smallmouth bass and redbreast sunfish and for the James spineymussel from May 1 to July 31.

Bridge demolition will only occur during August and September.

Geotechnical Unit

A Preliminary Site Assessment shall be conducted on the parcel containing the Underground Storage Tanks prior to right-of-way acquisition if applicable.: ***Action Completed***

Project Development & Environmental Analysis Branch

Bridge Demolition will be addressed at the time of the permit application.: ***Action Completed***

Roadway Design Unit, Project Development & Environmental Analysis Branch

The NCDOT will forward final plans to the State Historic Preservation Officer prior to right of way acquisition.: ***Action Completed***

Project Development & Environmental Analysis Branch/Division/Highway Design

NCDOT will implement the Conservation Measures and Reasonable and Prudent Measures outlined in the Biological Opinion.

NCDOT will provide protective fencing of archaeological site 31SK212 prior to the beginning of construction. In addition, the NCDOT will have a staff archeologist to monitor installation of the fencing and instruct the contractor about the importance of avoiding the remaining site area.

***Project Development & Environmental Analysis Branch/Division/Highway Design
Continued***

The following conservation measures required in the Biological Opinion will be implemented by NCDOT:

- **Conservation measures associated with bridge design**

1. Deck drains will be placed at the ends of the replacement bridges so no drainage will occur over the Dan River channel. Currently, drainage from the decks of both of the existing structures flows directly into the river. The amount of discharge from the roadway entering the river will be reduced with the new structures. This commitment has been incorporated in the Structure Design Plans for each project.
2. The proposed project will reduce the number of bents in the main channel from two to one. The bent that is placed in the channel will be oriented in the direction of flow to help reduce the buildup of debris during high water.

- **Conservation measures associated with bridge construction**

1. NCDOT will remove James spiny mussels from the impact site and relocate them to suitable locations upstream of the impacted areas according to the procedures in the approved relocation plan.
2. Erosion control measures for environmentally sensitive areas will be implemented and include:
 - Identify areas adjacent to the Dan River as “Environmentally Sensitive Areas” on the Erosion Control plans for this project;
 - Provide a 50-Foot Buffer Zone (both sides of stream) allowing clearing but not grubbing until immediately before grading operations;
 - Limit grubbing operations to within 10 days of grading;
 - Require “Seeding and Mulching” to be performed immediately following grade establishment;
 - Require “Staged Seeding” – 20 foot fill sections or 2 acres, whichever is less;
 - Clean erosion and sediment control measures when ½ full;
 - Increase sediment storage capacity by 50% above standard BMP guidelines;
 - Establish a moratorium on clearing and grubbing – no work between November 15 and April 1.
3. Work bridges rather than stone causeways will be constructed according to plans. The work bridges will provide necessary in-stream work areas without significantly impeding flow.
4. Rock work pads will be used throughout the project areas on uplands and flood plains to accommodate heavy equipment.
5. In addition to relocating all mussels found in the footprint of the impact area, NCDOT will conduct final surveys in the project footprint just prior to construction and move any additional mussels found to appropriate upstream habitat.

***Project Development & Environmental Analysis Branch/Division/Highway Design
Continued***

- **Conservation measures associated with bridge demolition**

The Contractor will be required to submit for approval a proposed demolition plan. This plan will be sealed by a Professional Engineer who is registered in NC demolition techniques that do not allow debris to enter the river. The plan shall incorporate the following:

Prior to bridge demolition, remove all asphalt-wearing surface from the concrete deck. This will be accomplished in a manner that does not allow asphalt to enter the river. Examples of approved techniques include milling or "scrapping" with a backhoe bucket. Depending on the technique used, containment headers may be required. Typically, this consists of vertical boards attached to the bottom of concrete barrier rail to prevent material from spilling into the river during removal.

Remove all concrete deck, rail, diaphragms, and girders by saw cutting or non-shattering methods. Due to the severely deteriorated condition of the bridge decks, a containment system must be installed prior to deck removal. This system may be supported from the existing girders or substructure or could be independent of the existing bridge such as floating devices that catch any debris that may fall during deck removal. The containment system will only be used to catch debris that inadvertently falls due to the condition of the deck. Cranes on the work bridge will remove sections of deck, rail, diaphragms, and girders that can be removed in large pieces. Due to the deteriorated condition of the existing bridges, it is not safe to accomplish this from the bridge deck (top down removal).

The proposed work bridge fingers will be used as access for bent removal. Equipment will need to be staged adjacent to the bent to facilitate sawing the bent into manageable sections above water elevation. Cranes on the main work bridge will lift sections out. When the bents have been removed to water elevation, the remaining mass of concrete will be removed to stream bed elevation by underwater sawing or use of hoe ram to break the bent at the stream bed interface and lifted out as a unit. During this process, turbidity curtains will be used and disturbance of the stream bottom limited to an area 3 feet around the perimeter of the bent. The existing footing below streambed will be left in place to avoid additional streambed disturbance.

Use of explosives will not be allowed.

Saw slurry must be contained by approved vacuum methods.

All attempts will be made to keep existing bridge debris from entering the Dan River. If debris does enter the river, the contractor will be required to submit a proposed removal method for review and approval prior to conducting this work. The use of a clam bucket or raking of the streambed will not be allowed. Debris will be lifted out with a crane where possible and may require manual installation of lifting devices to avoid further streambed disturbance.

***Project Development & Environmental Analysis Branch/Division/Highway Design
Continued***

- The USFWS believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the James River spiny mussel. These non-discretionary measures include, but are not limited to, the terms and conditions outlined in the Biological Opinion.
 1. Construction and demolition activities shall be implemented consistent with measures developed to protect the James River spiny mussel including those designed to maintain, improve or enhance its habitat.
 2. NCDOT will remove James spiny mussel from the impact site and relocate them to suitable locations upstream of the impacted areas according to the procedures in the approved relocation plan.
 3. NCDOT shall monitor the river channel and banks at sites upstream, at the construction sites, and downstream to determine changes in habitat resulting from activities at these sites.
 4. NCDOT will protect riparian buffers along the Dan River or major tributaries through acquisition or perpetual conservation easements.
- NCDOT will comply with the following terms and conditions, which implement the reasonable and prudent measures described previously and outline required reporting/monitoring requirements in order to be exempt from the prohibitions of Section 9 of the Act. These terms and conditions are non-discretionary and apply to the Dan River.
 1. A USFWS Biologist will be present at the pre-construction meeting to cover permit conditions and discuss any questions the contractor has regarding implementation of these projects.
 2. NCDOT will ensure a qualified aquatic biologist will be present at critical times to monitor certain phases of construction including but not limited to, initial clearing for construction, at the time temporary work bridges are installed, when drilled shaft work begins, when demolition begins, when temporary work bridges are removed.
 3. No instream construction, i.e. installing work bridges, removing work bridges, etc. will be allowed from May 15th to July 31st without prior approval of the USFWS.
 4. Construction will be accomplished so wet concrete does not contact water entering or flowing in the river.
 5. Upon completion of the projects, the existing approach fill will be removed to natural grade and the area will be planted with native grasses and/or tree species as appropriate.
 6. Activities in the flood plain will be limited to those absolutely needed to construct the proposed bridge and remove the existing bridge. Areas used for borrow or construction by-products will not be located in wetlands or the 100 year floodplain.
 7. All construction equipment should be refueled outside the 100 year floodplain or at least 200 feet from all waterbodies (whichever is greater) and be protected with secondary containment. Storage of hazardous materials, fuel, lubricating oils, or other chemicals also will be stored outside the 100 year floodplain or at least 200 feet from all waterbodies (whichever is greater), preferably at an upland site.

***Project Development & Environmental Analysis Branch/Division/Highway Design
Continued***

8. Riparian vegetation will be retained to the maximum extent possible, especially large trees.

9. If riparian areas are disturbed, they will be revegetated with native species as soon as possible.

10. Bridge demolition will occur during low flow.

11. USFWS Biologist will review and approve the plans for the restoration of the unnamed tributary at B-3045.

12. NCDOT will implement the "Relocation Plan For the James River spiny mussel (*Pleurobema collina*) Projects on the Dan River (B-2639 and B-3045)". The plan details appropriate collection methods, tagging and recapture, handling and transportation of individuals, and monitoring protocols.

13. NCDOT has initiated a watershed search for potential riparian properties within the Dan River Subbasin above Danbury. The goal is to secure 200-foot buffers through conservation easements with landowners. The search area includes the mainstem of the Dan River and its tributaries from the NC/VA line in Stokes County, downstream to Danbury. The reach between the two bridge projects will be the primary focus of the search.

14. A plan for monitoring physical characteristics of the river will be reviewed and agreed to by the USFWS and NCDOT prior to the beginning of construction with enough lead time to record a baseline for the target parameters. The intent of the monitoring is to characterize any changes to mussel habitat from construction. Additionally, a decision to move the relocated mussels back to their original location will be based, in part, on the suitability of the habitat post construction. This monitoring will provide critical information for making that decision.

4RB

U.S. ARMY CORPS OF ENGINEERS
Wilmington District

Action ID: 199820822 & 200320949; TIP B-3045 County: Stokes

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Property

Owner Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development and Environmental Analysis
North Carolina Department of Transportation
Division of Highways

Address 1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Telephone Number 919-715-1421 (Alice Gordon)

Location of Project (waterbody, Highway name/number, town): Bridge No. 17, crossing the Dan River on NC 89, north of Moores Spring, North Carolina.

Description of Activity: Discharge in stream associated with construction of the replacement of Bridge No. 17 (TIP B-3045), including temporary work bridges for construction access, in accordance with the attached special conditions and drawings. This verification does not authorize impacts in waters of the United States from bridge demolition, stream de-watering, borrow sites, or spoil disposal.

Applicable Law: X Section 404 (Clean Water Act, 33 USC 1344) only.
Section 10 (River and Harbor Act of 1899) only.

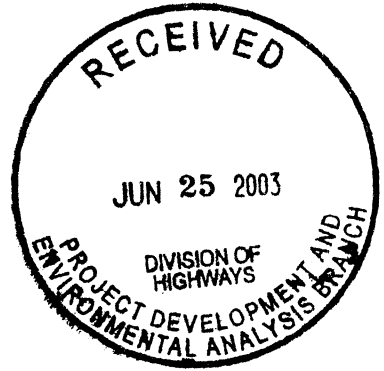
Authorization: Regional General Permit Number
23, 33 Nationwide Permit Number

Any violation of the conditions of the Regional General or Nationwide Permit referenced above may subject the permittee to a stop work order, a restoration order, and/or appropriate legal action. This Department of the Army Regional General Permit or Nationwide Permit verification does not relieve the permittee of the responsibility to obtain any other required Federal, State, or local approvals/permits. The permittee may need to contact appropriate State and local agencies before beginning work. If you have any questions regarding the Corps of Engineers regulatory program, please contact Eric Alsmeyer at telephone number (919) 876 - 8441 extension 23.

Regulatory Project Manager Signature Eric Alsmeyer

Authorization Date June 20, 2003 Expiration Date June 20, 2005

CF (By Fax): Rachelle Beauregarde, NCDOT, ONE



SPECIAL CONDITION (AID 199820822 & 200320949; NCDOT; TIP B-3045)

This Corps permit does not authorize you to take an endangered species, in particular *Pleurobema collina* (James spiny mussel). In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., a Biological Opinion (BO) under the ESA, Section 7, with “incidental take” provisions with which you must comply). The attached U.S. Fish and Wildlife Service (USFWS) BO contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with “incidental take” that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all the mandatory terms and conditions associated with incidental take of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA.

Permit Number: **199820822 & 200320949**

Name of Permittee: **NCDOT / TIP B-3045; NC 89; BR 17; Stokes County.**

Issuance Date: **June 20, 2003**

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

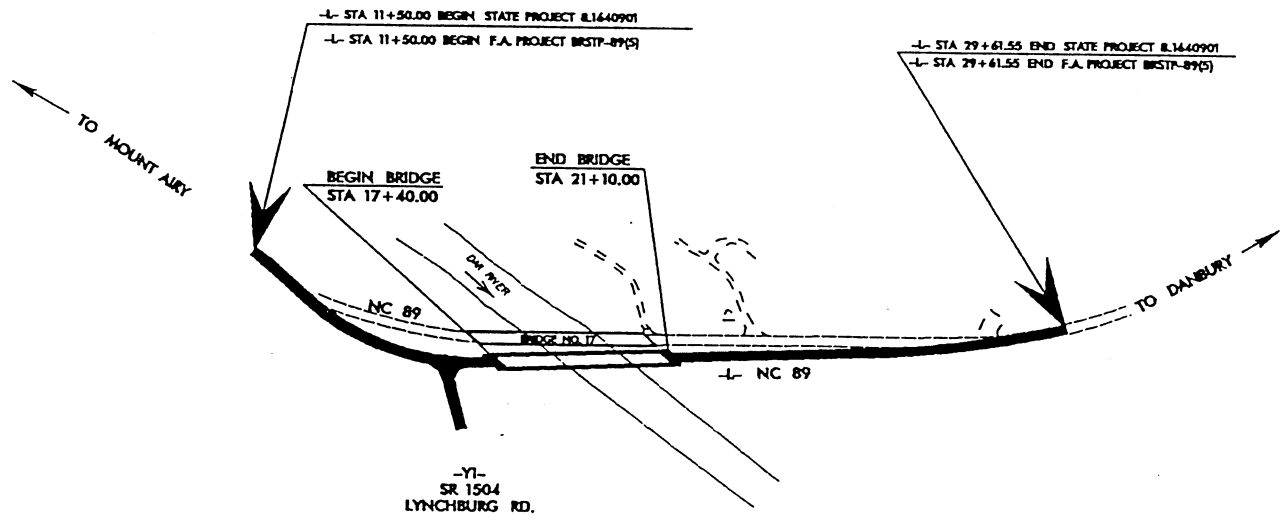
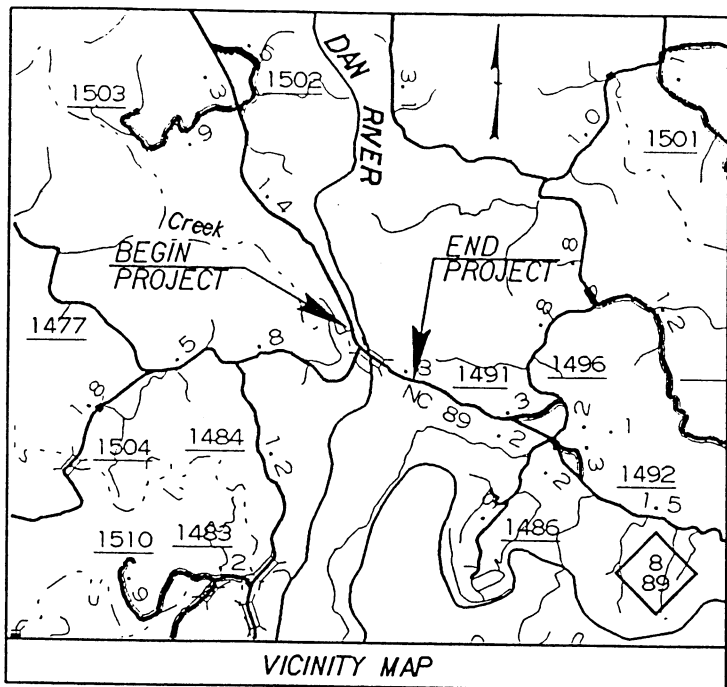
**US ARMY CORPS OF ENGINEERS
RALEIGH REGULATORY FIELD OFFICE
ATTN: Eric Alsmeyer
6508 FALLS OF NEUSE ROAD, SUITE 120
RALEIGH, NORTH CAROLINA 27615-6814**

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

VICINITY MAP



STOKES COUNTY:

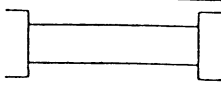
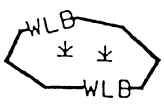
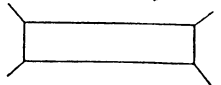
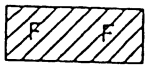
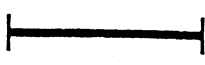
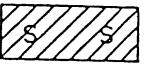

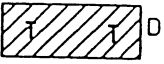
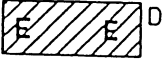



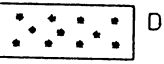

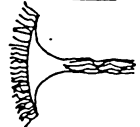



**Replace Bridge #17 Dan River
and Approaches on NC 89**

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 STOKES COUNTY

 PROJECT: 8.1640901 (B-3045)
 BRIDGE REPLACEMENT
 ON NC 89 OVER DAN RIVER

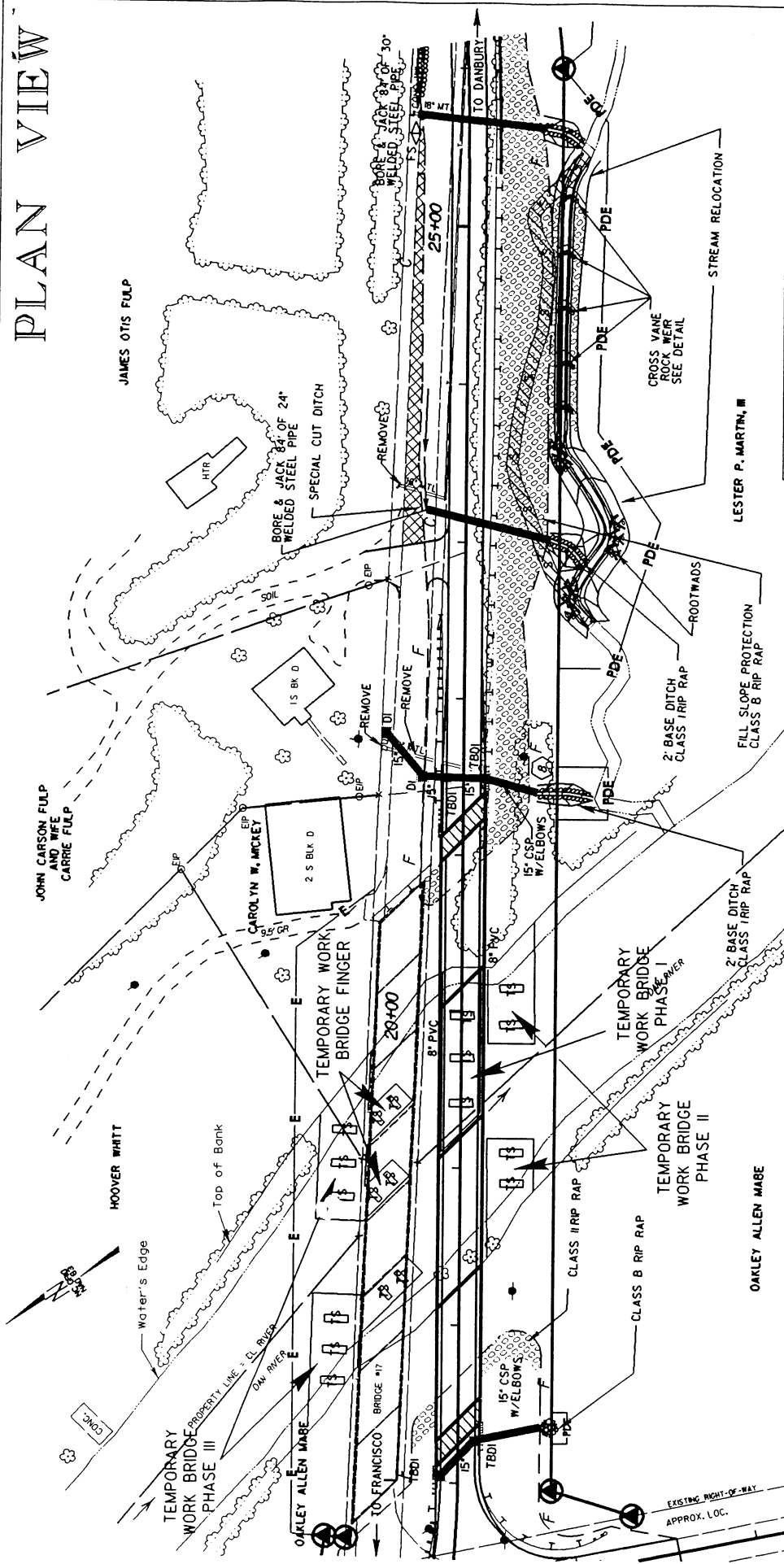
 SHEET 1 OF 11

LEGEND

	LINE WT		LINE WT
— WLB — WETLAND BOUNDARY	4-6		6
 WETLAND	4-6		6
 DENOTES FILL IN WETLAND	2		15
 DENOTES FILL IN SURFACE WATER	2	(DASHED LINES DENOTE EXISTING STRUCTURES)	6
 DENOTES FILL IN SURFACE WATER (POND)	2	12"-48" PIPES	2
 DENOTES TEMPORARY FILL IN WETLAND	2	54" PIPES & ABOVE	2
 DENOTES EXCAVATION IN WETLAND	2	 SINGLE TREE	2
 DENOTES TEMPORARY FILL IN SURFACE WATER	2	 WOODS LINE	2
 DENOTES MECHANIZED CLEARING	2	 DRAINAGE INLET	2
← ← FLOW DIRECTION	2	 ROOTWAD	2
— TB — TOP OF BANK	2-4	 RIP RAP	2
--- WE --- EDGE OF WATER	2	 ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE	2
--- C --- PROP. LIMIT OF CUT	2	5	2
--- F --- PROP. LIMIT OF FILL	2	— ZONE 1 — BUFFER ZONE 1 BOUNDARY	2
▲ PROP. RIGHT OF WAY	2	— ZONE 2 — BUFFER ZONE 2 BOUNDARY	2
--- NG --- NATURAL GROUND	2		
--- PL --- PROPERTY LINE	2		
— TDE — TEMP. DRAINAGE EASEMENT	2		
— PDE — PERMANENT DRAINAGE EASEMENT	2		
— EAB — EXIST. ENDANGERED ANIMAL BOUNDARY	2		
— EPB — EXIST. ENDANGERED PLANT BOUNDARY	2		
--- ∇ --- WATER SURFACE	2		
X X X LIVE STAKES	2		
 BOULDER	6		
--- CORE FIBER ROLLS			

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 STOKES COUNTY
 PROJECT: 8.1640901 (B-3045)
 BRIDGE REPLACEMENT
 ON NC 89 OVER DAN RIVER

PLAN VIEW



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 STOKES COUNTY
 PROJECT: 8.164(0901 (B-3045)
 REPLACE BRIDGE #17
 ON NC 89 OVER DAN RIVER

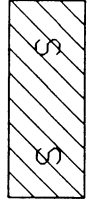
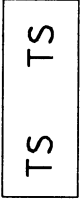
SHEET 3 OF 11

SITE I

SCALE 1" = 100'

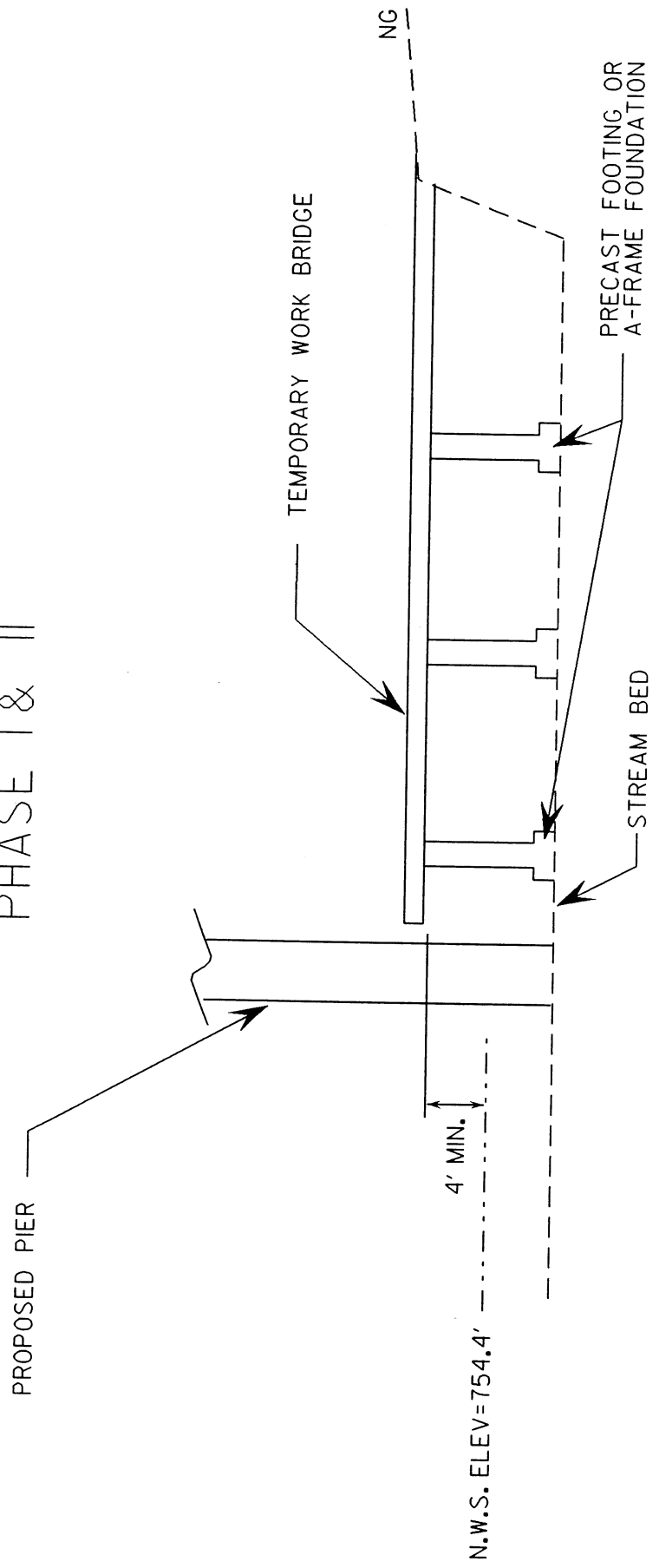
TS TS DENOTES TEMPORARY
 FILL IN SURFACE
 WATER

S S DENOTES FILL IN
 SURFACE WATER



TYPICAL TEMPORARY WORK BRIDGE DETAIL FOR CONSTRUCTION OF PROPOSED BRIDGE

PHASE I & II



N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
STOKES COUNTY
PROJECT: 8.1640901 (B-3045)
BRIDGE REPLACEMENT
ON NC 89 OVER DAN RIVER

Phase I:

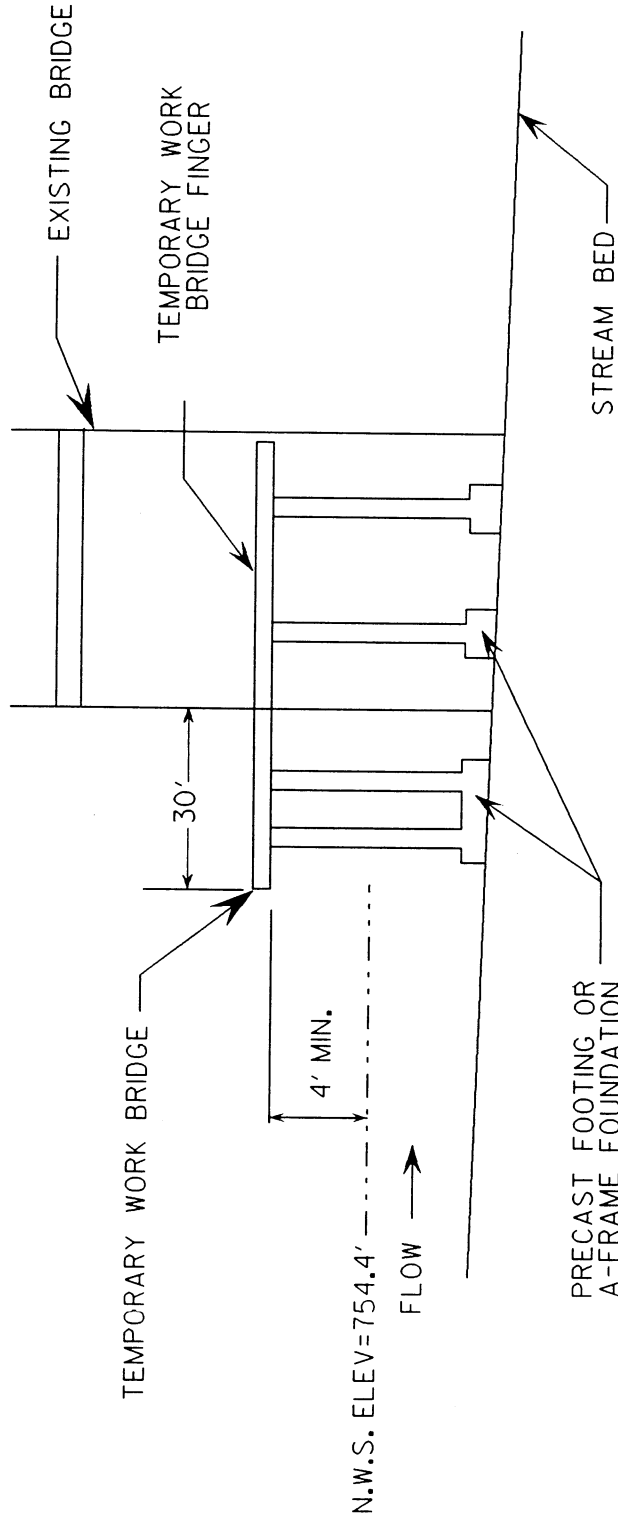
AREA OF TEMPORARY IMPACT DUE TO TEMPORARY FOOTINGS/FOUNDATIONS = 525 SQ. FT. (0.012 acres)

(NOT TO SCALE)

SHEET 4 OF 11

TEMPORARY WORK BRIDGE DETAIL FOR REMOVAL OF EXISTING BRIDGE

PHASE III



Phase I:

AREA OF TEMPORARY IMPACT DUE TO
TEMPORARY FOOTINGS/FOUNDATIONS = 690 SQ. FT. (0.016 acres)

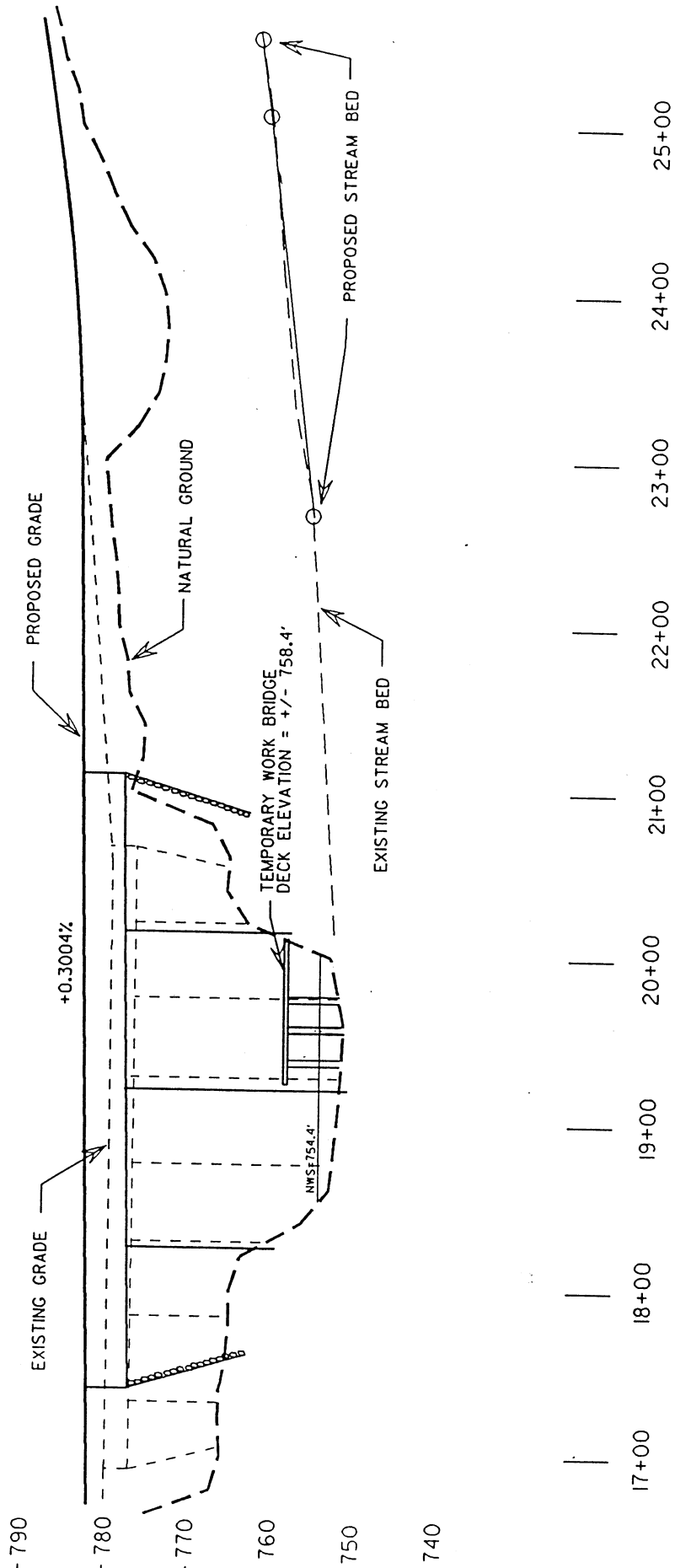
N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
STOKES COUNTY
PROJECT: 8.1640901 (B-3045)
BRIDGE REPLACEMENT
ON NC 89 OVER DAN RIVER

SHEET 5 OF 11

(NOT TO SCALE)

PROFILE

10' 85'; 3 @ 95' 54' border
 Total Length = 370'



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

STOKES COUNTY

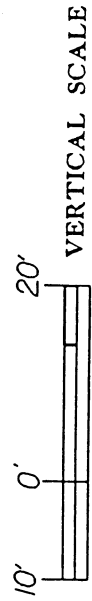
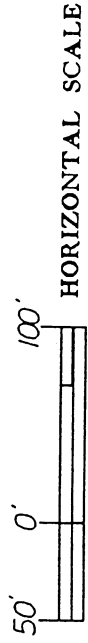
PROJECT: 8.1640901 (B-3045)

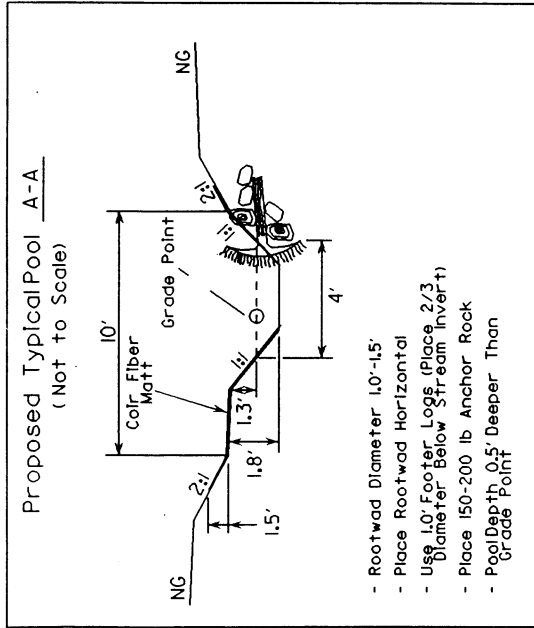
BRIDGE REPLACEMENT

ON NC 89 OVER DAN RIVER

SHEET 6 OF 11

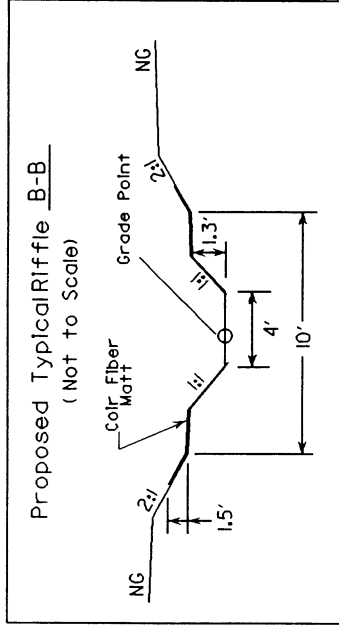
3/03



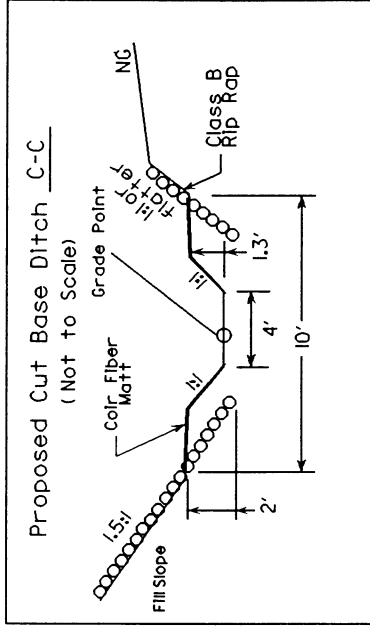


- Rootwad Diameter 1.0'-1.5'
- Place Rootwad Horizontal
- Use 10' Footer Logs (Place 2/3 Diameter Below Stream Invert)
- Place 150-200 lb Anchor Rock
- Pool Depth 0.5' Deeper Than Grade Point

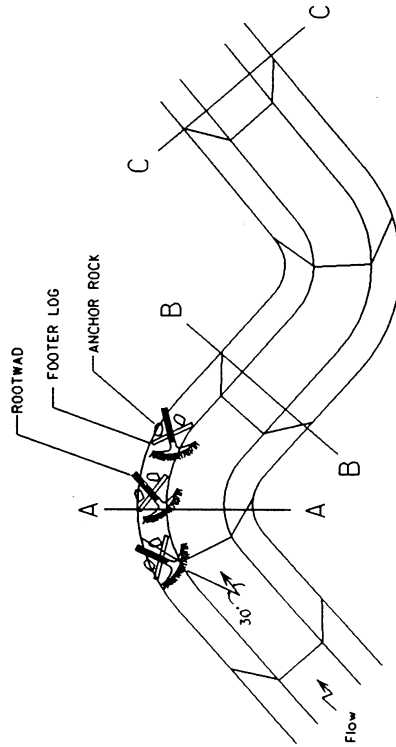
From Sta 22+58 to Sta 22+72 -L- Rt
 From Sta 23+00 to Sta 23+15 -L- Rt
 From Sta 23+54 to Sta 23+74 -L- Rt



From Sta 22+72 to Sta 23+00 -L- Rt
 From Sta 23+15 to Sta 23+54 -L- Rt



From Sta 23+74 to Sta 25+20 -L- Rt



STREAM RELOCATION DETAILS

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

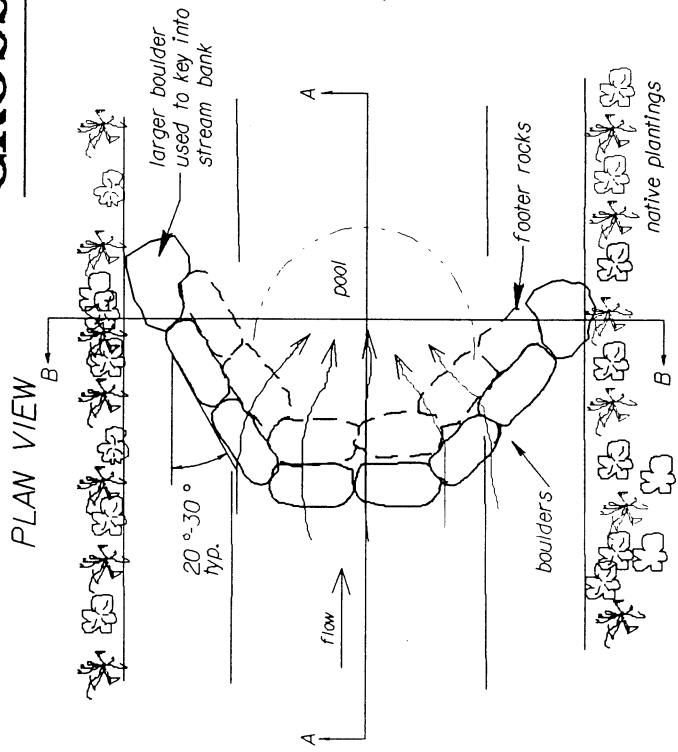
STOKES COUNTY

PROJECT: 8.16.40901 (B-3045)

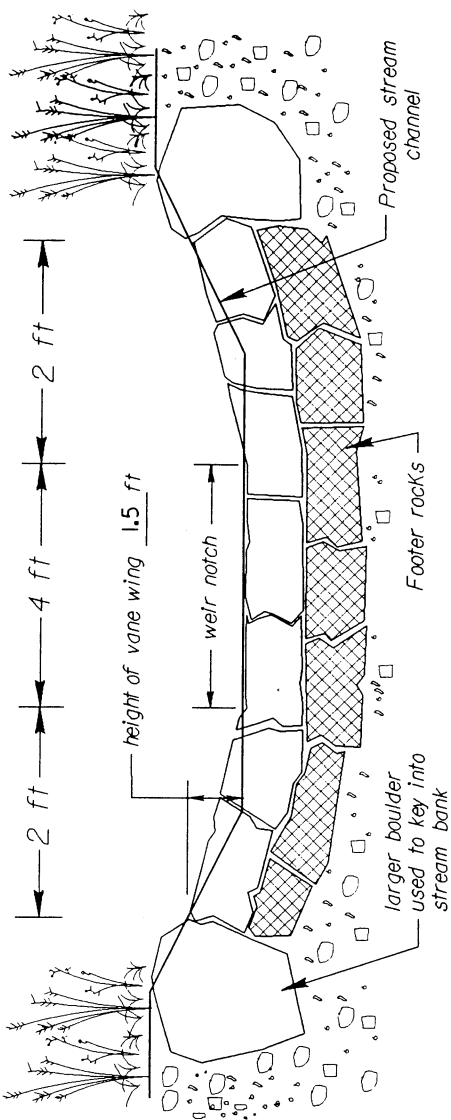
REPLACE BRIDGE #17

ON NC 89 OVER DAN RIVER

CROSS VANE ROCK WEIR DETAIL

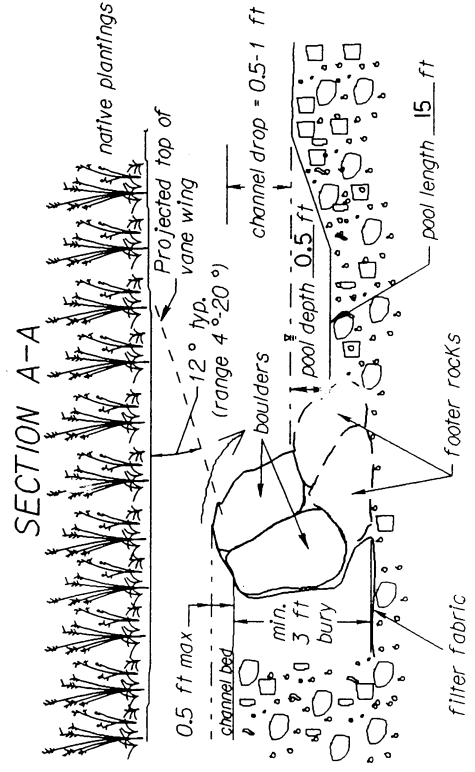


SECTION B-B



NOTE: Boulders should be native quarried rock or locally shot rock, angular and oblong with approximate dimensions of 2 ft x 1.5 ft x 1.5 ft and weighing approximately 500 - 700 lbs

Note: Rocks should fit tightly with no spaces between



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 STOKES COUNTY
 PROJECT: 8.1640901 (B-3045)
 BRIDGE REPLACEMENT
 ON NC 89 OVER DAN RIVER

STA 23+85	-L-	(RT)
STA 24+15	-L-	(RT)
STA 24+50	-L-	(RT)
STA 24+85	-L-	(RT)
STA 25+20	-L-	(RT)

Appendix B

Morphological Measurement Table

Variables	Existing Channel	Proposed Reach	USGS Station	Reference Reach
1. Stream type	G5	E4	N/A	E4
2. Drainage area	200 Ac	200 Ac		197 Ac
3. Bankfull width	9'	6.6'		6.0'
4. Bankfull mean depth	0.7'	1.0'		1.0'
5. Width/depth ratio	11.3	6.6		6
6. Bankfull cross-sectional area	6.3 ft ²	6.9 ft ²		6.2 ft ²
7. Bankfull mean velocity	6.0 ft/s	5.5 ft/s		6.1 ft/s
8. Bankfull discharge, cfs	38 cfs	38 cfs		38 cfs
9. Bankfull max depth	0.8'	1.3'		1.4'
10. Width of floodprone area	10'	15.2'		13'
11. Entrenchment ratio	1.1	2.3		2.2
12. Meander length	90'	90'		90'
13. Ratio of meander length to bankfull width	10.0	13.6		15.0
14. Radius of curvature	20'	30'		30'
15. Ratio of radius of curvature to bankfull width	2.2	4.6		5.0
16. Belt width	35'	35'		30'
17. Meander width ratio	3.9	5.3		5.0
18. Sinuosity (stream length/valley length)	1.12	1.16		1.10
19. Valley slope	2.00%	2.00%		2.90%
20. Average slope	1.50%	1.75%		1.50%
21. Pool slope	0.00%	0.00%		0.00%
22. Ratio of pool slope to average slope	0.00	0.00		0.00
23. Maximum pool depth	1.8'	1.8'		2.1'
24. Ratio of pool depth to average bankfull depth	2.6	1.8		1.5
25. Pool width	9.0'	6.6'		7.0'
26. Ratio of pool width to bankfull width	1.00	1.00		1.17
27. Pool to pool spacing	60'	60'		50'
28. Ratio of pool to pool spacing to bankfull width	6.7	9.1		8.3

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS						
			Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Temp. Fill In SW (ac)	Existing Channel Impacted (ft)	Natural Stream Design (ft)			
1	17+60 Lt to 20+00 -L-	Temporary Work Bridge Foundations									0.028			
2	22+58 to 25+39 Ft -L-	Stream Relocation					0.060					330	315	
3	19+20 to 20+15 -L-	* Proposed Bridge Piers					0.002							
TOTALS:			0	0	0	0	0.062	0	0.028	330	315			

* Total of 4 Piers @ 4' diameter proposed in river
 Proposed Bridge is 1 @ 85'; 3 @ 95' - 54" Prestressed Conc Girder
 Total Bridge Length = 370'

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 STOKES COUNTY
 PROJECT 8.1640901 B-3045
 SHEET 10 OF 11
 May-03

PROPERTY OWNERS

SITE	NAME	ADDRESS
I	LESTER P. MARTIN	456 OCEAN DRIVE UNIT 816 MIAMI BEACH, FL.
I	OAKLEY A. MABE	3717 HWY. NC 89 WEST WESTFIELD, N.C. 27053
I	CAROLYN W. MICKEY	3650 HWY. NC 89 WEST DANBURY, N.C. 27016
I	HOOVER WHIT	1065 OLD FULP RD. DANBURY, N.C. 27016

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

STOKES COUNTY

PROJECT: 8.1640901 (B-3045)

BRIDGE REPLACEMENT
ON NC 89 OVER DAN RIVER

SHEET 11 OF 11

3/03



COPY

20 0020790,791
E

199820822

United States Department of the Interior

RECEIVED

FISH AND WILDLIFE SERVICE

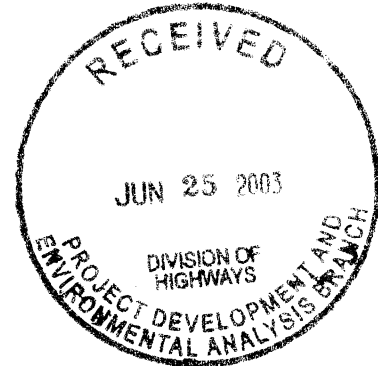
Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

MAY 16 2003

May 13, 2003

RALEIGH REGULATORY FIELD OFFICE

Mr. Donald J. Voelker
Acting Division Administrator
Attention: Mr. Felix Davila, Area Engineer
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601



Dear Mr. Voelker:

Subject: Biological Assessment on the Effects of Bridge Replacements over the Dan River (Projects B-2639 and B-3045) in Stokes County, North Carolina, and Their Effects on the Federally Endangered James Spinemussel (*Pleurobema collina*)

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion (Opinion) based on our review of the subject biological assessment on the effects of the two bridge replacements on the James spinemussel in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). In addition, we have reviewed the information and survey results for the federally endangered small-anthered bittercress (*Cardamine microanthera*) and Schweinitz's sunflower (*Helianthus schweinitzii*). Based on the information provided, we concur with your conclusion of "not likely to adversely affect" for these plants in the project area. In view of this, we believe the requirements under section 7(c) of the Act are fulfilled for these species. However, obligations under section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner that was not considered in this review, or (3) a new species is listed or critical habitat is determined that may be affected by the identified action.

This Opinion is based on information provided in the September 30, 2002, biological assessment, supplemental information to the biological assessment (requested on December 12, 2002, received May 1, 2003), other available literature, personal communications with experts on the federally endangered James spinemussel

(*Pleurobema collina*), and other sources of information. A complete administrative record of this consultation is on file at this office.

CONSULTATION HISTORY

Prior to October 2000, the James spiny mussel was not known to occur in the Dan River. These two bridge replacement projects--B-3045, Bridge No. 17 on NC 89, and B-2639, Bridge 133 on State Road (SR) 1668 over the Dan River in Stokes County, North Carolina--were proposed and analyzed by the North Carolina Department of Transportation (NCDOT) in 1995 and 1999, respectively. Listed species surveys were conducted in the Dan River in Stokes County at the time environmental documents were prepared and conclusions of "no effect" were reached for both projects. At our request, surveys for freshwater mussels were conducted, and a spined mussel was discovered at the location of Project B-3045 and at other locations in the river.

October 2000 - NCDOT biologists discovered a spined mussel in the Dan River in Stokes County.

November 7, 2000 - Service and North Carolina Wildlife Resources Commission biologists and NCDOT engineers and biologists met at both proposed bridge replacement sites to discuss plans and bridge construction methods.

March 2001 - The NCDOT submitted a report regarding the results of surveys at the Project B-2639 site and requested concurrence with a "not likely to adversely affect" determination for the James spiny mussel at this crossing.

May 2001 - The Service concurred with a "not likely to adversely affect" determination for the James spiny mussel for Project B-2639.

June 2001 - Further surveys at the location of Project B-2639 revealed James spiny mussels within the area of direct impacts from bridge construction.

June 2001 - NCDOT and Service biologists met to discuss both bridges and the need for further refinement of bridge designs, construction techniques, and demolition techniques.

June 2001 - Prepared a follow-up e-mail message outlining considerations for construction techniques in order to minimize impacts and incidental take.

October 2001 - Met to discuss bridge design changes for minimize impacts (Projects B-2639 and B-3045).

March 2002 - Met to discuss conservation measures for minimizing take resulting from direct impacts of the projects.

October 2002 - The Federal Highway Works Administration (FHWA) submitted biological assessment and requested initiation of formal consultation.

October 2002-November 2002 - The Service and NCDOT discussed need for further information regarding several aspects of the projects.

December 2002 - The Service officially requested more information from FHWA.

February 2003 - The Service and NCDOT met in the field to clarify bridge demolition procedures.

March 2003 - The FHWA submitted an amended biological assessment to the Service.

March 2003 - The NCDOT changed construction plans and associated impacts.

May 2003 - The FHWA submitted an amended biological assessment to the Service.

BIOLOGICAL OPINION

I. DESCRIPTION OF THE PROPOSED ACTION

As defined in the Service's section 7 regulations (50 CFR 402.02), "action" means "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies in the United States or upon the high seas." The action area is defined as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." The direct and indirect effects of the actions and activities must be considered in conjunction with the effects of other past and present federal, state, or private activities, as well as the cumulative effects of reasonably certain future state or private activities within the action area. This Opinion addresses only those actions from which the Service believes adverse effects may result. In their biological assessment, the NCDOT outlined those activities involved in the construction and demolition of two bridges (Projects B-2633 and B-3045) that would affect the James spinymussel. This Opinion addresses whether replacing these existing bridges is likely to jeopardize the continued existence of the James spinymussel.

The proposed action, as defined in the biological assessment, is to replace Bridge Nos. 133 and 17 over the Dan River and demolish the existing bridges as follows:

Project B-2639 - The existing Bridge No. 133 over the Dan River on SR 1668 (Seven Island Road) will be replaced with a three-span (one at 80 feet, one at 145 feet, and one at 95 feet) plate girder bridge 320 feet long. The bridge will be replaced in the existing location, and no bents will be required in the river.

Project B-3045 - The existing Bridge No. 17 over the Dan River on NC 89 will be replaced on new alignment just south of the existing bridge. The new bridge will be a four-span prestressed concrete girder structure requiring one bent (56.5 square feet) in the river channel and part of another bent (28.5 square feet) in the water near the bank. Traffic will be maintained on the existing bridge during construction. Additionally, at

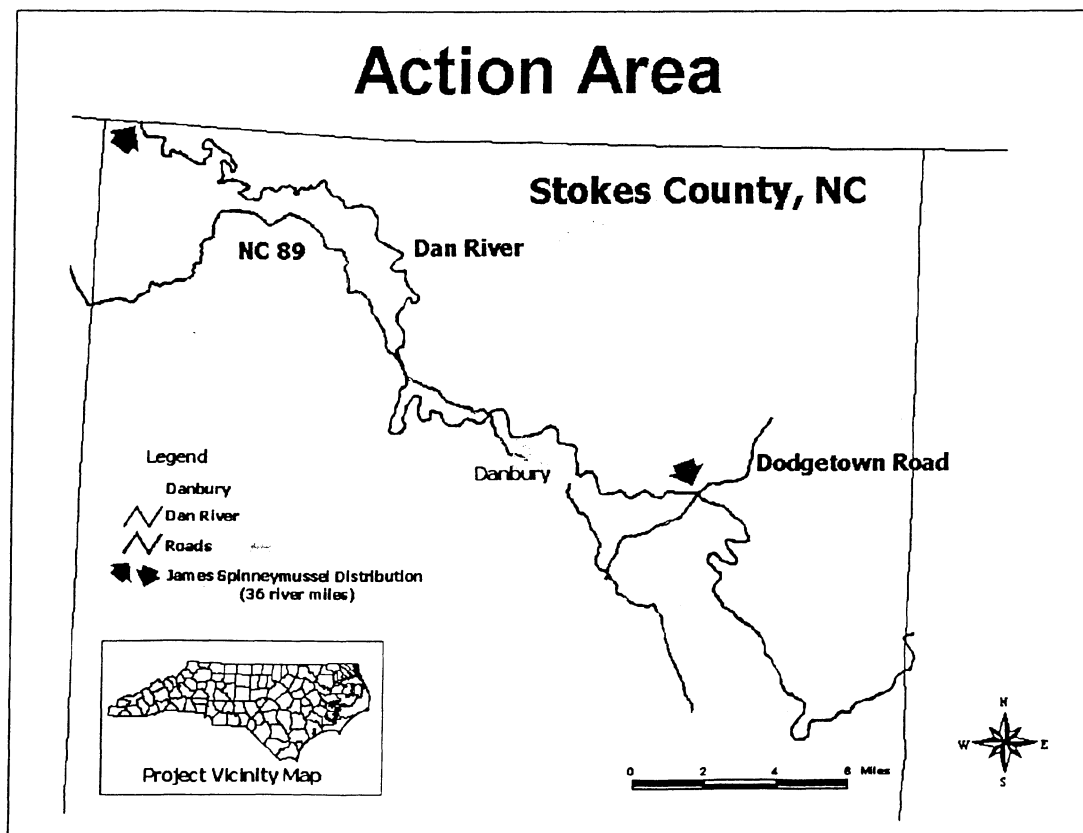
this site, a portion of an unnamed tributary to the Dan River will be reconstructed in a new location.

These projects will require temporary structures in the river for construction and demolition. Temporary work bridges will be needed at both locations and will consist of either precast concrete footings or steel A-frame foundations. The foundations will be lifted into place using a crane and will rest on the riverbed rather than being anchored in the substrate. Girders and decking will be added to the foundations, and equipment will be driven out onto the bridges to advance construction. The demolition of the existing bridges will be accomplished from the existing structures, the riverbanks, or from temporary work bridges. All materials from the bridges will be removed from the sites.

A. Action Area

The action area for this Opinion is the Dan River in Stokes County, North Carolina (see Figure 1). The Dan River subbasin occurs within the Roanoke River basin. The Roanoke River flows into Albemarle Sound and the Atlantic Ocean along North Carolina's northeast coastline. The North Carolina portion of the Roanoke River basin is composed of two major parts--(1) the Dan River and its tributaries in the western section, upstream of Kerr Lake, and (2) the Roanoke River as it enters North Carolina in the eastern section. The main stem of the Roanoke River enters North Carolina and flows

Figure 1



into Kerr and Gaston Lakes and then flows into Roanoke Rapids Lake before regaining its riverine form and flowing to Albemarle Sound. The North Carolina portion of the basin contains 12 monitored man-made reservoirs. The watershed area consists of approximately 9,666 square miles, with about 3,000 square miles in North Carolina. Flow in the Roanoke River in North Carolina is highly regulated by Kerr Reservoir and Lake Gaston (North Carolina Department of Environment and Natural Resources [NCDENR], Division of Water Quality [DWQ] 2001).

The two bridge projects lie in the subbasin 03-02-01 of the Roanoke River basin. (Subbasin classifications are assigned by the NCDENR's DWQ. The estimated subbasin population, based on the 1990 census, is 45,777. Stokes County is projected to receive the largest population increase of the 16 counties in the Roanoke River basin (North Carolina portion). From 1998 to 2018, estimated population growth for Stokes County is 25 to 30 percent (NCDENR, DWQ 2001).

Dan River Physical Characteristics - The Dan River arises in the Uplands of the Blue Ridge Province in Patrick County, Virginia, and flows south through the Blue Ridge escarpment before crossing into North Carolina in northwestern Stokes County, North Carolina, at approximately river mile (RM) 162, river kilometer (RKM) 260. It then flows southeast across most of Stokes County before turning sharply to the northeast near Walnut Cove, flowing through most of Rockingham County, North Carolina. The river flows into southern Pittsylvania County, Virginia, back into Rockingham County, North Carolina, east into Caswell County, North Carolina, then north back into Pittsylvania County, Virginia. The River then flows east through the City of Danville, turns to the south and reenters North Carolina in north-central Caswell County, and flows east before turning back to the north, reentering Virginia, and flowing generally to the northeast before entering Kerr Reservoir. A dam on the Roanoke River created this reservoir. From its origin to the confluence with the Roanoke River at Kerr Reservoir, the Dan River is 199 RM (320 RKM) long and drains 4,101 square miles (6,600 square kilometers) (Rohde et al. 2001).

Most of the land in this portion of the basin is forested (73 percent), but a significant portion is cultivated cropland and pasture (25 percent). A large number of tributaries and major sections of the Dan River are deeply entrenched, suggesting the effects of long-term erosion. Soil erosion rates as great as 21 tons/acre/year have been documented for cultivated cropland in the Upper Dan River (according to the biological assessment). This compares to 7.3 tons/acre/year from cultivated cropland for the nearby Upper Tar River basin. The upper Dan River is classified as trout waters, and part of the area is also designated a state Water Trail by the NCDENR's Division of Parks and Recreation. Characteristics of this subbasin are transitory between the mountain and piedmont ecoregions. As a result of fairly steep to moderate topography, the headwater reaches of most tributaries are forested, while many downstream sections are intensively farmed.

The primary soil types, which run the length of the Dan River in Stokes County, are (1) Riverview and Toccoa soils (RtA), 0 to 4 percent slopes, occasionally flooded, and (2) Rion, Pacolet, and Wateree (RpE), 25 to 60 percent slopes. Both are deep and well

drained or moderately well drained. Neither is generally recommended for building sites--RtA due to its high erodability and RpE due to its propensity for seasonal flooding. These soils are rated good for sustaining a variety of flora and fauna, but both rank poor and very poor for supporting wetland plants and wetland wildlife (Natural Resources Conservation Service [NRCS] 1995).

Historically, the economy of the Dan River subbasin depended on natural resources. The farming of tobacco, corn, wheat, rye, and other crops was the main source of income for the area. Forest products were also important, especially in the late 1700s (NRCS 1995). Land use in the area has seen decreases (57 percent in Stokes County and 60 percent in Rockingham County) in farm and forested farm acreage in the last century (U.S. Department of Agriculture Agricultural Statistics). Currently, there are 62,520 acres of privately owned woodland in Rockingham County and 45,641 acres in Stokes County.

Tobacco was once the predominant crop in both counties. At its peak in the 1950s, 166,262 acres in Rockingham County and 137,034 acres in Stokes County were in tobacco production. Currently, less than 10,000 acres in each county are being farmed for tobacco.

Ecological Significance - The Dan River subbasin is known to support a number of rare fish and freshwater mussel species, including the federally protected James spiny mussel (Table 1). The federally endangered Roanoke logperch (*Percina rex*) has been found in a few isolated areas in the Dan River drainage in Virginia.

The North Carolina Natural Heritage Program (NCNHP) maintains a database of rare plant and animal species, as well as significant natural areas, for the State of North Carolina. Natural areas (sites) are inventoried and evaluated on the basis of rare plant and animal species, rare or high-quality natural communities, and geological features occurring in the particular site. These sites are rated with regard to national, state, and regional significance. This list contains those areas that should be given priority for protection; however, it does not imply that all of the areas currently receive protection (NCDENR 1995). The Dan River aquatic habitat in Stokes County is considered to be of "National Significance." The significance of this site was assigned to the Dan River prior to finding out that rare freshwater mussel species occurred there, including the James spiny mussel.

Best Usage Classification and Water Quality Assessment - The NCDENR assigns a best usage classification to all the waters of North Carolina. These classifications provide for a level of water quality protection to ensure that the designated usage of that water body is maintained. The portion of the Dan River that is occupied by the James spiny mussel has two best usage classifications. From the Virginia/North Carolina border to Big Creek (DWQ Index No. 22-(1) 09/01/57), it is classified C;Tr. Project B-3045 occurs just upstream of the confluence with Big Creek. Class C refers to waters protected for secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, and agricultural and other uses. Secondary recreation includes wading, boating, and other

Table 1. Rare Aquatic Species in the Dan River.

Scientific Name	Common Name	North Carolina Status	Federal Status
Mussels:			
<i>Alasmidonta undulata</i> *	Triangle floater	T	~
<i>Alasmidonta varicosa</i> *	Brook floater	E	FSC
<i>Fusconaia masoni</i> *	Atlantic pigtoe	E	FSC
<i>Lasmigona subviridis</i>	Green floater	T	~
<i>Pleurobema collina</i>	James spiny mussel	E	E
<i>Strophitus undulatus</i> *	Squawfoot	T	~
<i>Villosa constricta</i>	Notched rainbow	SC	~
Fish:			
<i>Ambloplites cavifrons</i>	Roanoke bass	SR	~
<i>Etheostoma podostemone</i>	Riverweed darter	SC	~
<i>Exoglossum maxillingua</i>	Cutlips minnow	E	~
<i>Hypentelium roanokense</i>	Roanoke hogsucker	SC	~
<i>Noturus gilberti</i>	Orange fin madtom	E	FSC
<i>Noturus insignis ssp 1</i>	Spotted margined madtom	SR	FSC
<i>Percina rex</i> [^]	Roanoke logperch	~	E
<i>Scartomyzon ariommus</i>	Bigeye jumprock	SC (PT)	~
<i>Thoburnia hamiltoni</i>	Rustyside sucker	E	FSC

* Known only from tributaries in the Dan River basin.

[^] Known from the subbasin in Virginia.

E, T, SC, SR, and FSC denote Endangered, Threatened, Special Concern (North Carolina), Significantly Rare (North Carolina), and Federal Species of Concern.

uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner. There are no restrictions on watershed development activities. The supplemental classification Tr is used to designate trout waters. These are freshwaters protected for natural trout propagation and the survival of stocked trout. The Dan River from Big Creek to a point 0.2 mile downstream of Town Fork Creek is classified WS-V (DWQ Index No. 22-(8) 08/01/98). Project B-2639 occurs in this reach. WS-V is an abbreviation for water supply five. These are waters that are protected as water supplies, which are generally upstream and draining to Class WS-IV waters, or waters used by industry to supply their employees with drinking water or as waters formerly used as water supply. WS-V has no categorical restrictions on watershed development or wastewater discharges like other WS classifications, and local governments are not required to adopt watershed protection ordinances. (NCDENR Surface Freshwater Classification used in North Carolina 08/99). Monitoring data, including biological and chemical measurements, indicate that, overall, the Dan River in North Carolina has good to excellent water quality.

Point Source Pollution - Point-source discharge is defined as discharges that enter surface waters through a pipe, ditch, or other well-defined point of discharge. These include municipal (city and county) and industrial wastewater treatment facilities, small domestic discharging treatment systems (i.e., schools, commercial offices, subdivisions, and individual residences), and storm-water systems from large urban areas and industrial sites. The primary substances and compounds associated with point-source discharge include nutrients, oxygen demanding wastes, and toxic substances (such as chlorine, ammonia, and metals).

Under Section 301 of the Clean Water Act of 1977 (CWA), the discharge of pollutants into surface waters is regulated by the Environmental Protection Agency (EPA). Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) permitting program, which delegates permitting authority to qualifying states. In North Carolina, the NCDENR's DWQ is responsible for permitting and enforcement of the NPDES program. There are 23 NPDES permitted dischargers in the subbasin 03-02-01 most of which are small wastewater treatment plants serving schools or subdivisions. There were no indications of toxicity problems in 1999, and substantial improvements in effluent toxicity were observed relative to earlier data. Five dischargers are required to monitor their effluent toxicity. There were no indications of toxicity problems in 1999. There have been substantial improvements in the level of effluent toxicity relative to earlier self-monitoring data.

Nonpoint-source Pollution - Nonpoint-source pollution refers to runoff that enters surface waters through storm water or snowmelt. There are many types of land-use activities that are sources of nonpoint-source pollution, including land development, construction activity, animal waste disposal, mining, and agriculture and forestry operations, as well as impervious surfaces, such as roadways and parking lots. Various nonpoint-source management programs have been developed by a number of agencies to control specific types of nonpoint-source pollution (e.g., forestry, pesticide, urban, and construction-related pollution). Each of these management programs develops Best Management Practices (BMPs) to control the specific type of nonpoint-source pollution.

The Sedimentation and Erosion Control Program (SECP) applies to construction activities, such as roadway construction, and is established and authorized under the Sedimentation Pollution Control Act of 1973. This act delegates the responsibility of administration and enforcement to the NCDENR's Division of Land Resources (DLR) (Land Quality Section). The SECP requires, prior to construction, the submission and approval of erosion-control plans on all projects disturbing one or more acres. On-site inspections by DLR are conducted to determine compliance with the plan and to evaluate the effectiveness of the BMPs that are being used. The NCDOT, in cooperation with the DWQ, has developed a sedimentation-control program for highway projects, which adopts formal BMPs for the protection of surface waters. Additional erosion-control measures as outlined in Design Standards in Sensitive Watersheds (NCAC T15A: 04B.0024) are implemented by the NCDOT for projects within WS-I or WS-II water supply watersheds, critical areas, waters designated for shell fishing, or any waters designated by the DWQ as High Quality Waters. When crossing an aquatic resource

containing a federally listed species, the NCDOT has committed to implement erosion-control guidelines that go beyond both the standard BMPs, as well as the Design Standards in Sensitive Watersheds, regardless of the DWQ classification. These areas are designated as “Environmentally Sensitive Areas” on the erosion-control plans.

B. Conservation Measures

Conservation measures represent actions, pledged in the project description, that the action agency will implement to minimize the effects of the proposed action and further the recovery of the species under review. Such measures should be closely related to the action and should be achievable within the authority of the action agency. The beneficial effects of conservation measures are taken into consideration in the Service’s conclusion of a jeopardy versus a nonjeopardy opinion and in the analysis of incidental take. However, such measures must minimize impacts to listed species within the action area in order to be factored into the Service’s analyses.

Conservation measures associated with bridge design

1. Deck drains will be placed at the ends of the replacement bridges so no drainage will occur over the Dan River channel. Currently, drainage from the decks of both of the existing structures flows directly into the river. The amount of discharge from the roadway entering the river will be reduced with the new structures. This commitment has been incorporated in the structure design plans for each project.
2. Project B-2639 has been designed to completely span the river, and Project B-3045 will reduce the number of bents in the main channel from two to one. The bent that is placed in the channel will be oriented in the direction of flow to help reduce the buildup of debris during high water.

Conservation measures associated with bridge construction

1. The NCDOT will remove James spiny mussels from the impact site and relocate them to suitable locations upstream of the impacted areas according to the procedures in the approved relocation plan.
2. Erosion-control measures for environmentally sensitive areas will be implemented and will:
 - Identify areas adjacent to the Dan River as “Environmentally Sensitive Areas” on the erosion-control plans for this project;
 - Provide a 50-foot buffer zone (both sides of stream), allowing clearing but not grubbing until immediately before grading operations;
 - Limit grubbing operations to within 10 days of grading;
 - Require “seeding and mulching” to be performed immediately following grade establishment;
 - Require “staged seeding”--20-foot fill sections or 2 acres, whichever is less;

- Clean erosion and sediment control measures when half full;
 - Increase sediment storage capacity by 50 percent above standard BMP guidelines;
 - Establish a moratorium on clearing and grubbing; no work between November 15 and April 1.
3. Work bridges rather than stone causeways will be constructed according to plans. The work bridges will provide necessary in-stream work areas without significantly impeding flow.
 4. Rock work pads will be used throughout the project areas on uplands and floodplains to accommodate heavy equipment.
 5. In addition to relocating all mussels found in the footprint of the impact area, the NCDOT will conduct final surveys in the project footprint just prior to construction and will move any additional mussels found to appropriate upstream habitat.

Conservation measures associated with bridge demolition

The contractor will be required to submit for approval a proposed demolition plan. This plan will be sealed by a professional engineer who is registered in North Carolina, using demolition techniques that do not allow debris to enter the river. The plan shall incorporate the following:

- Prior to bridge demolition, remove all asphalt-wearing surface from the concrete deck. This will be accomplished in a manner that does not allow asphalt to enter the river. Examples of approved techniques include milling or “scrapping” with a backhoe bucket. Depending on the technique used, containment headers may be required. Typically, this consists of vertical boards attached to the bottom of a concrete barrier rail in order to prevent material from spilling into the river during removal.
- Remove all concrete deck, rail, diaphragms, and girders by saw-cutting or nonshattering methods. Due to the severely deteriorated condition of the bridge decks, a containment system must be installed prior to deck removal. This system may be supported from the existing girders or substructure or could be independent of the existing bridge, such as floating devices that catch any debris that may fall during deck removal. The containment system will only be used to catch debris that inadvertently falls due to the condition of the deck. Cranes on the work bridge will remove sections of deck, rail, diaphragms, and girders that can be removed in large pieces. Due to the deteriorated condition of the existing bridges, it is not safe to accomplish this from the bridge deck (top-down removal).
- The proposed work bridge fingers will be used as access for bent removal. Equipment will need to be staged adjacent to the bent in order to facilitate sawing the bent into manageable sections above water elevation. Cranes on the main work bridge will lift sections out. When the bents have been removed to water elevation,

the remaining mass of concrete will be removed to streambed elevation by underwater sawing or the use of a hoe ram to break the bent at the streambed interface and lift it out as a unit. During this process, turbidity curtains will be used, and disturbance of the stream bottom will be limited to an area 3 feet around the perimeter of the bent. The existing footing below the streambed will be left in place to avoid additional streambed disturbance.

- The use of explosives will not be allowed.
- Saw slurry must be contained by approved vacuum methods.
- All attempts will be made to keep existing bridge debris from entering the Dan River. If debris does enter the river, the contractor will be required to submit a proposed removal method for review and approval prior to conducting this work. The use of a clam bucket or raking of the streambed will not be allowed. Debris will be lifted out with a crane where possible and may require the manual installation of lifting devices to avoid further streambed disturbance.

II. STATUS OF THE SPECIES

A. Species Description

The James spiny mussel (*Pleurobema collina*) was listed as an endangered species on July 22, 1988 (53 FR 27693). Critical habitat is not designated for this species. This mussel was formerly believed to be endemic to the James River basin in Virginia. In October 2000, NCDOT biologists discovered the James spiny mussel in the Dan River in Stokes County, North Carolina, and in August 2001, in the Mayo River in Rockingham County, North Carolina. Prior to its decline in Virginia, the species apparently lived throughout the James River above Richmond, in the Rivanna River, and in ecologically suitable areas in all of the major upstream tributaries. There are historic records of collections from several locations on the main stem of the James River and nine sites on tributaries. Much of the species' decline has occurred since the mid-1960s, and the James spiny mussel appears to be extirpated from 90 percent of its historic range in the James River basin.

The Service completed a recovery plan for the James spiny mussel in 1990 (Service 1990). The primary recovery actions identified in the plan are to:

1. Collect basic data needed for the protection of *P. collina* populations, including population and habitat surveys and identification of threats to the species' survival;
2. Preserve *P. collina* populations and occupied habitats;
3. Conduct life history studies and identify ecological requirements of the species;

4. Determine the feasibility of reestablishing populations within the species' historic range and, if feasible, introduce the species into such areas in the James River drainage;
5. Periodically monitor existing populations and all introduced populations; and
6. Evaluate the success of recovery activities and make revisions as necessary.

Studies have been conducted to address several of these recovery actions. An extensive survey to monitor known locations and search for new occurrences of the James spiny mussel was conducted from 1998 through 2001. Additional work also has been conducted to identify the ecological requirements of the species.

B. Life History

The James spiny mussel was discovered in the Calfpasture River (in the James River basin) by T. A. Conrad and was originally described as *Unio collinus* (Conrad 1837). Various workers have subsequently placed this species in a number of different genera (see Service 1990 for synonyms). Turgeon et al. (1988) placed the James spiny mussel in the genus *Pleurobema*. The taxonomic history of this species is described fully in Clarke and Neves (1984).

The James spiny mussel is a small mussel that reaches a maximum size of about 70 millimeters (mm). The shells of small individuals (<40 mm) are subrhomboid in shape, with an obliquely subtruncated posterior with widely spaced concentric striations. The periostracum (outside layer of shell) is shiny and straw yellow, with prominent growth rests. Faint brownish rays are rarely present. One to three short, but prominent, spines are occasionally present on each valve. With age, the shell becomes more ovate, or even arcuate, the periostracum becomes brownish to black, and any spines that were once present are lost. Beaks are typically eroded and only slightly elevated above the hinge line, if elevated at all. The nacre (inner shell) is white, with occasional bluish suffusions. The foot and mantle of live specimens are light orange in color (Service 1990).

Like the majority of all freshwater mussel species, the reproductive strategy of the James spiny mussel involves a larval stage (glochidium) that becomes a temporary obligatory parasite on a fish. The James spiny mussel is a short-term brooder, usually releasing its glochidia in the early summer. Many mussel species have specific fish hosts that must be present in order to complete their life cycle. Based on laboratory infestation experiments, Hove (1990) identified seven fish species, all in the family Cyprinidae (minnows), as potential fish hosts for the James spiny mussel. All of these species have been recorded in the Dan River basin (Rohde 2001).

Suitable habitat generally is described as runs with moderate current, with sand, gravel, and cobble substrata (Clarke and Neves 1984). Individuals from the Dan River population have been found in a variety of substrates, from silt/sand to sand, gravel,

cobble, bedrock crevices, and sand surrounded by boulders, with a variety of flow patterns, from slack pools to runs with moderate to swift currents.

In the South Fork Mayo River in Virginia, suitable James spiny mussel habitat included shallow riffle, run, slack, and pool (50 to 70 percent <61 cm.), with abundant sand/gravel bars present (Petty 2002). The number of individuals observed was greater in slack water, low-energy areas with sand/gravel bars present. The low-energy areas were predominantly silt, sand, cobble, and gravel. The banks of the South Fork Mayo River were very stable.

C. Status and Distribution

James River Basin - The recovery plan for the James spiny mussel described its historic distribution as widespread in the James River drainage. By 1990, surveys indicated that this species had experienced an apparent reduction in range of approximately 90 percent, with the majority of the decline occurring since the mid-1960s. Surveys were conducted near historic locations, and additional searches were conducted in areas with suitable habitat. Of the 28 locations listed in the recovery plan (historic and present), ten streams were found to have James spiny mussels present.

More recent surveys, conducted from 1998 through 2001, found 17 streams with locations occupied by the James spiny mussel. Mill Creek, listed in the recovery plan as a historic record near Millboro, was found to be occupied in the survey from 1998 through 2000. The current distribution of the James spiny mussel in the James River basin includes the following streams: Potts Creek, Craig Creek, Johns Creek, Dicks Creek, Patterson Creek, and Catawba Creek (all within the upper James River tributaries, west of the Blue Ridge Mountains); Meechums River, Moormans River, Wards Creek, Rocky Run, Buck Mountain Creek, Upper North Fork Rivanna River, Swift Run, and Ivy Creek (all within the Rivanna River system); and Mill Creek (Calfpasture/Maury River system), Pedlar River (middle James), and Hardware River.

Although seven more streams had occupied habitat in the 1998 through 2001 survey period than in 1990, densities of James spiny mussel at all sites were low, with fewer than ten individuals observed at any site. Some sites yielded only relict shells. Craig Creek, considered a stronghold for the species in the late 1980s, had reduced numbers in the more recent survey even though habitat in this stream remains in good condition.

The current distribution of the James spiny mussel indicates that the populations are still in decline from the historic distribution (McGregor and Baisden 2002). The best populations of the species are in the Rivanna River system (Wards Creek, Rocky Run, Buck Mountain Creek, and North Fork Rivanna River), Johns Creek (upper James), upper Potts Creek (West Virginia), and Mill Creek (Maury River system).

Major threats to mussels in the James River include agricultural practices, sedimentation, point-source pollutants from industries, sewage, nonpoint-source runoff, and critically low densities. Perhaps the largest combined threat is low densities and isolation. Most of

the occupied sites have very low densities and are isolated from each other. This greatly increases the chances that a single catastrophic event could eliminate one of these individual occurrences.

Dan/Mayo Rivers, Roanoke Basin - The October 2000 discovery of the James spiny mussel in the Dan River in North Carolina greatly expanded the range of this species. Current survey data for the Dan and Mayo Rivers indicate that there are approximately 36 and 8 RM occupied in the Dan and Mayo Rivers in North Carolina, respectively, and approximately 15 RM occupied in the South Fork Mayo River in Virginia.

The species occupies the Mayo River in North Carolina from the North Carolina/Virginia border to approximately 1.5 miles downstream of NC 770 in northwest Rockingham County, North Carolina. Below this point in the Mayo River, there is approximately 3 miles of the river that is not occupied by the James spiny mussel, likely due to point-source discharge (Stoneville Wastewater Treatment Plant), sand/gravel mining (Stoneville Sand Mine), and an impoundment (Avalon Dam). The James spiny mussel has been found in a short reach (~0.5 mile) of the Mayo River between the Avalon Dam and the Mayo Dam. Further surveys are needed below the Mayo Dam.

In Virginia, surveys conducted in 2002 found the James spiny mussel in the South Fork Mayo River but not in the Dan River. Further surveys are planned in 2003 in the Dan River subbasin in Virginia (Melissa Petty, graduate student, Virginia Polytechnic Institute and State University, personal communication, 2003). Based on physical habitat appearance, it is also likely that the James spiny mussel occurred in the Smith River (another large tributary to the Dan River) at some point as well. Similar sources of habitat degradation as described above are evident in the Smith River as well.

Threats to the Species in the Dan River - The cumulative effects of several factors, including sedimentation, point and nonpoint discharge, stream modification (e.g., impoundment, channelization), coupled with the apparent restricted range, are believed to have contributed to the decline of this species throughout its range (Service 1990). When mussel populations are reduced to a small number of individuals and are restricted to short reaches of isolated streams, they are extremely vulnerable to extirpation from a single catastrophic event or activity. Catastrophic events may consist of natural events, such as flooding or drought, as well as human-influenced events, such as toxic spills associated with highways or railroads.

Siltation - Siltation resulting from improper erosion control of various land uses, including agricultural, silvicultural, and development activities, has been recognized as a major contributing factor to the degradation of mussel populations (according to the biological assessment). Siltation has been documented to be extremely detrimental to mussel populations by degrading substrate and water quality, increasing potential exposure to other pollutants, and directly smothering mussels (Service 1990). Sediment accumulations of less than 1 inch have been shown to cause high mortality in most mussel species (Ellis 1936). In Massachusetts, a bridge construction project decimated a

population of the endangered dwarf wedgemussel (*Alasmidonta heterodon*) because of accelerated sedimentation and erosion (Smith 1981).

The soils in the Dan River basin are subject to high erosion rates. Soil erosion rates as great as 21 tons/acre/year have been documented for cultivated cropland in the Upper Dan River (according to the biological assessment). Big Creek, which enters the Dan River just below NC 89 (Project B-3045), and Seven Island Creek, which enters the river just above SR 1668 (Project B-2639), carry heavy sediment loads to the river. Excessive sediment and poor-quality habitat have been observed in the Dan River below the confluences with these creeks.

Mining Operations - Negative impacts from in-stream sand and gravel mining operations on aquatic environments and riparian habitats are well documented (Meador and Layher 1998, Kondolf 1997, Starnes and Gasper 1996). These physical and biotic effects can extend far upstream and downstream from the site of extraction (Brown et al. 1998). The recovery time of the stream ecosystem from mining operations can be very protracted (>20 years), and total restoration in some cases has been considered improbable (Kanehl and Lyons 1992, Brown et al. 1998).

There are a number of active and inactive mining operations in the Dan River subbasin (including the main stem of the Dan and Mayo Rivers) in Stokes and Rockingham Counties. None of the in-stream mines occur within, or upstream of, habitat that is currently believed to be occupied by the James spiny mussel. Without historic distribution data of the James spiny mussel in the Dan River subbasin, it is difficult to determine the effects, if any, these in-stream mine operations have had on the current distribution of the species in the drainage. It is, however, apparent that habitat in the extraction sites is of poor quality for mussels, and it is highly unlikely that recruitment of the James spiny mussel into these areas could be successful in the foreseeable future. The extent of "poor-quality habitat" occurs for considerable distances upstream and downstream (including tributaries) of these extraction sites.

Deforestation - The proposed Godfrey Lumber Wood Chip Mill site near the Dan River in Pine Hall, Stokes County, could potentially threaten the James spiny mussel population(s) in the Dan and Mayo Rivers. The proposed operation is a high-capacity (300,000 tons of chips/year) chip mill. Although the proposed site is located several miles downstream of the Dan River population, this type of operation receives its lumber source from a 75- to 100-mile radius of the site. This would encompass the watersheds of the Dan and Mayo Rivers occupied by the James spiny mussel.

Wide forested buffers have been identified as critical in maintaining stream type (Lhardt et al. 2000), water temperature control (according to the biological assessment), food resources (Palik et al. 2000), and in-stream habitat (Semilitsch 1998) for aquatic resources. Deforestation of large magnitude in the Dan and Mayo River watersheds would be expected to have significant impacts on the James spiny mussel.

Sewage Treatment Effluent - Sewage treatment effluent significantly affects the diversity and abundance of mussel fauna (Goudreau et al. 1988). Goudreau et al. (1988) found that the recovery of mussel populations might not occur for up to 2 miles below points of chlorinated sewage effluent. Clarke and Neves (1984) suggested that sewage and industrial pollution might have contributed to the extirpation of the James spinymussel from the North River in Virginia. Based on field observations, the municipal wastewater treatment plant (Stokes County/Danbury Wastewater Treatment Plant, NPDES # NC0082384) located in Danbury appears to contribute to a reduction of mussel fauna, including the James spinymussel, in the river. However, this discharge is not the limiting factor in the downstream distribution of the James spinymussel in the Dan River. In numerous other streams in North Carolina, mussel populations have been observed to disappear entirely immediately below the point of effluent discharge. The very low volume of discharge at this site and the large size of the Dan River may be the reason the discharge does not totally eliminate the mussel fauna below the discharge.

Impoundments - The impact of impoundments on freshwater mussels has been well documented (Service 1992, Neves 1993). The construction of dams transforms lotic habitats into lentic habitats, which results in changes within aquatic community composition. These changes associated with inundation adversely affect both adult and juvenile mussels as well as fish community structure, which could eliminate possible fish hosts for glochidia (according to the biological assessment). As mentioned earlier, a small impoundment (Jessups Mill, located on the river just above SR 1432), may be restricting the distribution of this species in the river. It is also apparent that the two small hydroelectric dams on the Mayo River (Mayo Dam and Avalon Dam) have negatively affected the distribution of the James spinymussel in the Mayo River. Numerous small impoundments occur on the Dan River downstream of the James spinymussel range in the river. Again, without historic data on the distribution of the James spinymussel in the Dan River, it is difficult to determine if the construction of these structures had any impact on the species.

Exotic Species - The introduction of exotic species, such as the Asian clam (*Corbicula fluminea*) and zebra mussel (*Dreissena polymorpha*), also has been shown to pose significant threats to native freshwater mussels. The Asian clam is now established in most of the major river systems in the United States (Fuller and Powell 1973), including those streams still supporting surviving populations of the James spinymussel. Concern has been raised over competitive interactions for space, food, and oxygen with this species and native mussels, possibly at the juvenile stages (Neves and Widlak 1987, Alderman 1997). The Asian clam is common to abundant within the Dan and Mayo Rivers.

The zebra mussel, native to the drainage basins of the Black, Caspian, and Aral Seas, is an exotic freshwater mussel that was introduced into the Great Lakes in the 1980s and has rapidly expanded its range into the surrounding river basins, including those of the South Atlantic Slope (O'Neill and MacNeill 1991). This species competes for food resources and space with native mussels and is expected to contribute to the extinction of at least 20 freshwater mussel species if it becomes established throughout most of the

Eastern United States (Service 1992). This species has not been recorded in the Roanoke River basin.

III. ENVIRONMENTAL BASELINE

Under section 7(a)(2) of the Act, when considering the “effects of the action” on federally listed species, we are required to take into consideration the environmental baseline. The environmental baseline includes past and ongoing natural factors and the past and present impacts of all federal, state, or private actions and other activities in the action area (50 CFR 402.02), including federal actions in the area that have already undergone section 7 consultation, and the impacts of state or private actions that are contemporaneous with the consultation in process. The environmental baseline for this Opinion considers all projects approved prior to the initiation of formal consultation with the Service.

Since the discovery of the James spiny mussel in the Dan River in October 2000, an extensive survey of the Dan River subbasin has begun (380 man-hours to date). The majority of the survey efforts in North Carolina have been concentrated in Stokes, Rockingham, and Caswell Counties. In addition to the main stem of the Dan River, the James spiny mussel was also discovered in the Mayo River, a tributary to the Dan River, at approximately RM 109 (RKM 175) in northwest Rockingham County. The James spiny mussel has not been found in any other tributaries to the river. In fact, the majority of tributaries in the Dan River drainage appear to be devoid of a mussel fauna.

Although surveys in the Dan River watershed are not complete, a range of the James spiny mussel has been established. The known range is approximately 36 RM. It extends from below the North Carolina/Virginia border, near the first bridge crossing in North Carolina (Flippin Road, SR 1416) in northwest Stokes County, down to at least SR 1695 (Dodgetown Road) below the town of Danbury in central Stokes County.

In the upper part of the established range (reach between SR 1416 [Flippin Road] and SR 1432 [Collinstown Road]), the James spiny mussel is extremely rare and is represented by only one individual. A small impoundment at Jessups Mill, located on the river just above SR 1432, may be restricting the distribution of this species in the river. Because of its fairly small size (31.9 mm), the one individual found above the dam cannot be considered a relict adult. However, the fact that the catch per unit effort (CPUE) is very low (0.06/hour) in this reach compared to the reach immediately below the dam (0.43/hour), it is very likely that the dam may be a factor influencing the distribution of this species in this section of the river. Below Jessups Mill, the James spiny mussel appears to be fairly evenly distributed in the river until it becomes very patchy below Danbury. It appears to be most abundant (based on CPUE) in the stretch between NC 704 and NC 89 (Table 2).

Table 2. Catch Per Unit Effort for the James Spiny mussel (JSM) in the Dan River.

Reach	River Miles	Survey Sites	Man-hours	#JSM	CPUE
VA 103 to SR 1416	6.0	13	24.6	0	0/hour
SR 1416 to SR 1432	6.5	8	12.33	1	0.08/hour
SR 1432 to NC 704	6.3	11	32.7	14	0.43/hour
NC 704 to NC 89	7.12	7	12.86	19	1.48/hour
NC 89 to NC 8/89	6.82	8	22.33	10	0.45/hour
NC 8/89 to SR 1652	4.73	10	27.32	15	0.55/hour
SR 1652 to SR 1695	4.6	15	34.9	4	0.11/hour
Total	36.3*	72	167.04	59	0.41/hour*

*River miles and CPUEs are calculated for combined **occupied** reaches, unoccupied reaches are not factored into the total.

Because it was discovered only recently in the Dan River basin, further research is needed to determine the present and historic distribution of the James spiny mussel throughout the drainage. Based on the current distribution in the Dan and Mayo Rivers, a reasonable assumption can be made that the James spiny mussel historically occurred as one large contiguous population from at least the current upper limits within these two rivers downstream to the confluence of the two rivers. A number of factors, such as point-source and nonpoint-source discharge, in-stream sand/gravel mining, and the loss of riparian buffers, have likely contributed to the elimination of the James spiny mussel from the lower reaches of its historic range in these two rivers, thus creating two smaller subpopulations. There are approximately 25 RM separating the downstream extent of the James spiny mussel in the Dan and Mayo Rivers, with at least four in-stream mining operations and one small impoundment (Mayo Dam) occurring in this reach. Thus, it is very likely that the Dan River and Mayo River subpopulations are functionally isolated from each other.

Although more survey work is needed to determine the distribution of the James spiny mussel within the Dan River basin, the distribution in the action area (Stokes County) is 36 RM. The mussel is rare in the upper portion of its range above Jessups Mill and patchily distributed in the lower portions of this range down river of Danbury. While it most abundant in the approximately 7 RM between NC 704 and NC 89, the James spiny mussel is fairly evenly distributed for the majority of the river between Jessups Mill and Danbury.

IV. EFFECTS OF THE ACTION

Under section 7(a)(2) of the Act, “effects of the action” refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action. The federal agency is responsible for analyzing these effects. The effects of the proposed action are added to the environmental baseline to determine the future baseline, which serves as the basis for the determination in this Opinion. Should the effects of the federal action result in a

situation that would jeopardize the continued existence of the species, we may propose reasonable and prudent alternatives that the federal agency can take to avoid a violation of section 7(a)(2). The discussion that follows is our evaluation of the anticipated direct and indirect effects of replacing two bridges. Indirect effects are those caused by the proposed action that occur later in time but that are still reasonably certain to occur (50 CFR 402.02).

A. Factors to be Considered

Proximity of the Action - A few individuals of the James spiny mussel have been observed in the vicinity of the existing bridges. Although measures to avoid and minimize impacts to the Dan River and the James spiny mussel are included in the project plans, implementation of these projects will result in unavoidable impacts to the river habitat and to individual mussels.

Timing - Construction will begin in late summer or early fall of 2003 and will continue for approximately 2 years. Demolition will occur during the low-flow period in late summer.

Nature of the Effect - Suitable in-stream habitat at both construction sites will be affected for the duration of the construction and demolition and likely for some period after completion of the projects. Portions of the habitat may be impacted permanently. A small portion of the riparian area at both sites will be cleared for equipment access and may result in temporary increases in water temperature at each location until reforestation can occur.

Disturbance Duration, Frequency, and Intensity - The majority of the disturbance to the riverbed will occur in several blocks of time that will be short in duration. Initially, riverbed disturbance will occur as temporary work bridges are placed in the river. At the site of Project B-2639, two work bridges will be installed and will remain in place from demolition through construction. At Project B-3045, two work bridges will be installed for construction, and two work bridges will be installed for demolition at a slightly different location. Initial installation will take 3 to 5 days, and removal will require 1 to 2 days. Drilling shafts for the new bents will require some riverbed disturbance until the casing is in place. Total drilling will require approximately 1 week for every two shafts. Riparian vegetation removal will be conducted and stabilized through erosion-control measures and a combination of hardened work pads or immediate seeding and mulching.

B. Analyses of Effects of the Action

Potential Beneficial Effects

The construction and demolition of the existing bridges have some temporary negative impacts but also have long-term beneficial effects. Specifically, the NCDOT has described the following beneficial effects resulting from these projects:

1. *Reduction of direct storm-water runoff.* Storm water from the existing bridges enters the river directly from the bridge deck. The new bridges will collect and direct storm water to a vegetated buffer area that will filter the runoff before it enters the river. Additionally, storm water coming off of roadways in these locations will not be directly discharged into any water body; rather, it will be directed over a grass swale.
2. *Reduction in number of bents in the main river channel.* The existing structures have bents in the main channel of the river. These bents trap debris during high flows and can change the hydraulics in the immediate vicinity of the structure. These factors, either singly or in combination, can cause scour and deposition that negatively impact aquatic habitat. Project B-2639 will be constructed with no bents in the main channel, and Project B-3045 will reduce the current number of bents in the main channel from two to one. The bent that will be in the channel will be aligned with the direction of flow, further decreasing the potential for debris accumulation. A reduction in the number and orientation of these obstructions will reduce the likelihood of debris accumulation and subsequent negative effects on habitat.
3. *Reduction of sediment inputs from an unnamed tributary at Project B-3045.* This tributary currently is incised and unstable, with mass wasting occurring at several places on its banks. The new channel will be relocated, and appropriate dimension, pattern, and profile will be reestablished. This will reduce sediment inputs and water velocities entering the Dan River from this tributary.

Direct Impacts - Actions that may result in direct impacts include the construction of temporary work bridges for the construction of new structures and the demolition of existing structures, land clearing for access, potential toxic spills, the removal of temporary structures after construction, and the demolition and removal of existing bridge structures. All of these activities have the potential to kill or injure mussels, either by crushing them, poisoning them with the release of some toxic substance, or causing siltation that may suffocate them. These actions may result in direct harm to individuals or negative changes in currently suitable habitat.

Substrate Disturbance and/or Habitat Loss

Project B-2639: The construction of this bridge will not result in the placement of permanent piers or bents in the river. However, temporary work bridges will be constructed as work platforms for building the new bridges and for the demolition and removal of the existing structures. It is anticipated that these structures will create minimal permanent change in the river channel. The work bridges will have a foundation of a precast concrete mass or an A-frame of steel and will not be anchored to the riverbed. They will be fabricated off-site and moved into place by a crane. Girders and decking will be added to provide a platform for the equipment. This foundation will allow for water flow to pass relatively freely, and the structures can be removed from the channel during high flows if needed. The work bridges will impact approximately 300 square feet of streambed habitat at this location.

Project B-3045: This proposed structure will result in 85 square feet of permanent impacts to the streambed as a result of bent placement in the river. This will be an 84.5-square-foot reduction from the existing structure, which has three bents (169.5 square feet) in the river. Additionally, 1,200 square feet of streambed will be impacted by the construction of temporary work bridges.

A total of 1,585 square feet (84.5 square feet permanent and 1,500 square feet temporary) of streambed habitat will be impacted by the construction of these two bridges. An estimated 20 to 30 individuals will be directly impacted by the two projects. The NCDOT is proposing to remove individuals from the impact sites and relocate them (see "Reasonable and Prudent Measures" section of this Opinion).

Sedimentation and/or Siltation Impacts - Because of the topography and the erodable nature of the soils in the project area, project construction has the potential to result in sedimentation in the Dan River. To minimize the potential for sedimentation, the NCDOT has developed specific erosion-control measures for this project that are designed to protect environmentally sensitive areas. Sediment inputs from construction should be of short duration, if they occur.

Indirect Impacts - Indirect effects are defined as those that are caused by the proposed action and are later in time but are still reasonably certain to occur (50 CFR 402.02). Indirect effects to the James spiny mussel may include permanent changes in channel substrate or stability that adversely affect the availability of suitable habitat in the vicinity of the bridges. Additional indirect effects could result from infrastructure improvements and any resulting improvements to levels of service, better accommodation of merging and exiting traffic, or reductions in travel times that could have land development impacts outside the project area. Careful implementation of project plans, including the work bridges, should reduce permanent impacts to Dan River habitat. Given that both projects involve the replacement of existing structures in the same locations, it is unlikely that the new structures would increase accessibility to the adjacent land or result in changes in the type or volume of traffic using the structures.

Interrelated and Interdependent Actions - An interrelated activity is an activity that is part of the proposed action and depends on the proposed action for its justification (Service and National Marine Fisheries Service [NMFS] 1998). An interdependent activity is an activity that has no independent utility apart from the action under consultation (Service and NMFS 1998). A determination of whether other activities are interrelated to, or interdependent with, the proposed action under consultation is made by applying a "but for" test. That is, it must be determined that the other activity under question would not occur "but for" the proposed action under consultation (Service and NMFS 1998). There are no other projects planned that would satisfy the "but for" test; therefore, there are no interrelated or interdependent actions that should be considered in this Opinion.

V. Cumulative Effects

Action Area

Cumulative effects include the combined effects of any future state, local, or private actions that are reasonably certain to occur within the action area covered in this Opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The only potential private action we are currently aware of that may occur and produce significant cumulative impacts would be the proposed Godfrey Lumber Wood Chip Mill site near the Dan River in Pine Hall, Stokes County, North Carolina. This proposed operation would have the potential to significantly impact the Dan River subbasin and the James spiny mussel. However, controversy over these types of facilities and subsequent moratoria on their construction in North Carolina has decreased the likelihood that new facilities will be built. Given the uncertainty of this action, the Service will not address potential wood chip mills further in this Opinion. We are not aware of any other future state, local, or private actions that are reasonably certain to occur within the action area that would not be subject to section 7 review. Therefore, cumulative effects, as defined by the Act, will not occur and will not be addressed further in this Opinion.

Cumulative Impacts of Incidental Take Anticipated by the Service in Previously Issued Biological Opinions

In reaching a decision of whether the implementation of activities outlined in the biological assessment is likely or is not likely to jeopardize the continued existence of the James spiny mussel, the Service must factor into its analysis previous biological opinions issued involving the species, especially those opinions where incidental take was presented as the square footage of habitat lost. Because this species was only recently discovered in the Dan River drainage, all previously issued Service biological opinions involving the James spiny mussel were rendered for activities in the James River drainage in Virginia. All of these opinions have been nonjeopardy and assessed the amount of take to be "minimal."

VI. CONCLUSION

After reviewing the current status of the James spiny mussel; the environmental baseline for the action area; the effects of bridge construction and demolition; measures identified in the NCDOT's biological assessment to help minimize the potential impacts of the proposed projects and assist in the protection, management, and recovery of the species; previously issued Service nonjeopardy biological opinions that allow various levels of incidental take; any potential interrelated and interdependent actions associated with the proposed action; and any potential cumulative effects, it is the Service's biological opinion that implementing these projects is not likely to jeopardize the continued existence of the James spiny mussel. Critical habitat does not occur in the action area; therefore, none will be adversely affected or destroyed by implementing these projects.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and federal regulations pursuant to section 4(d) of the Act prohibit the taking of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, such as breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not for the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act, provided that such taking is in compliance with the terms and conditions of this incidental take statement.

Amount of Take Anticipated

The Service anticipates that incidental take of the James spiny mussel may occur as a result of construction of the subject bridges. During construction, individual mussels may be crushed, harmed by siltation or other water quality degradation, or dislocated because of physical changes in their habitat.

Within the "footprint" of the proposed projects, a total of 1,585 square feet (84.5 square feet permanent and 1,500 square feet temporary) of streambed will be impacted by construction equipment or structures placed in the river (temporary work bridges, bents, etc.). Downstream impacts (sedimentation), if any, are expected to occur within 30 meters of the construction sites. Because there are no reliable data on the number of James spiny mussels buried in the substrate compared to those on the surface (and even those on the surface are difficult to detect), it is not possible to base the amount of incidental take on numbers of individual mussels. Rather, the amount of incidental take will be exceeded if the project "footprint" exceeds 1,600 square feet or downstream impacts are occurring more than 30 meters downstream from the "footprint." If incidental take is exceeded, all work should stop, and the Service should be contacted immediately.

EFFECT OF THE TAKE

In this Opinion the Service has determined that this level of take is not likely to result in jeopardy to the James spiny mussel or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the James spiny mussel. These nondiscretionary measures include, but are not limited to, the terms and conditions outlined in this Opinion.

1. Construction and demolition activities shall be implemented consistent with measures developed to protect the James spiny mussel, including those designed to maintain, improve, or enhance its habitat.
2. The NCDOT will remove James spiny mussels from the impact site and relocate them to suitable locations upstream of the impacted areas according to the procedures in the approved relocation plan.
3. The NCDOT shall monitor the river channel and banks at sites upstream, at the construction sites, and downstream to determine changes in habitat resulting from activities at these sites.
4. The NCDOT will protect riparian buffers along the Dan River or major tributaries through acquisition or perpetual conservation easements using the \$200,000 committed for this purpose.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the NCDOT must comply with the following terms and conditions, which implement the reasonable and prudent measures described previously and outline required reporting and/or monitoring requirements. These terms and conditions are nondiscretionary and apply to the Dan River.

1. A Service biologist will be present at the preconstruction meeting to cover permit conditions and discuss any questions the contractor has regarding implementation of these projects.
2. The NCDOT will ensure that a qualified aquatic biologist is present at critical times to monitor certain phases of construction, including, but not limited to, initial clearing for construction, at the time temporary work bridges are installed, when drilled shaft work begins, when demolition begins, and when temporary work bridges are removed.
3. No in-stream construction; i.e., installing work bridges, removing work bridges, etc., will be allowed from May 15 through July 31 without justification and prior approval from the Service.

4. All appropriate NCDOT BMPs for bridge maintenance, construction, and demolition will be followed or exceeded for these projects.
5. Construction will be accomplished so that wet concrete does not contact water entering or flowing in the river.
6. Upon completion of the projects, the existing approach fill will be removed to natural grade, and the area will be planted with native grasses and/or tree species as appropriate.
7. Activities in the floodplain will be limited to those absolutely necessary to construct the proposed bridges and remove the existing bridges. Areas used for borrow or construction by-products will not be located in wetlands or the 100-year floodplain.
8. All construction equipment should be refueled outside the 100-year floodplain or at least 200 feet from all water bodies (whichever distance is greater) and be protected with secondary containment. Hazardous materials, fuel, lubricating oils, or other chemicals will be stored outside the 100-year floodplain or at least 200 feet from all water bodies (whichever distance is greater), preferably at an upland site.
9. Riparian vegetation will be maintained to the maximum extent possible, especially large trees.
10. If riparian areas are disturbed, they will be revegetated with native species as soon as possible.
11. Bridge demolition will occur during low flow (typically late summer).
12. A Service biologist will review and approve the plans for the restoration of the unnamed tributary at Project B-3045.
13. The NCDOT will implement the "Relocation Plan for the James spinymussel (*Pleurobema collina*) Bridge Replacement Projects on the Dan River (Projects B-2639 and B-3045)." The plan details appropriate collection methods, tagging and recapture, handling and transportation of individuals, and monitoring protocols.
14. The NCDOT will provide a report to the Service for each yearly monitoring period outlined in the relocation plan. In addition, a complete report of the data taken during the relocation and a visual survey 1 month after relocation will be required.
15. The NCDOT has initiated a watershed search for potential riparian properties within the Dan River subbasin above Danbury. The goal is to secure 200-foot forested buffers through perpetual conservation easements with landowners or acquisition. The search area includes the main stem of the Dan River and its tributaries from the North Carolina/Virginia line in Stokes County, downstream to Danbury. The reach between the two bridge projects will be the primary focus of the search.

16. A plan for monitoring the physical characteristics of the river will be reviewed and agreed to by the Service and NCDOT prior to the beginning of construction, with enough lead time to record a baseline for the target parameters. The intent of the monitoring is to characterize any changes to mussel habitat as a result of the construction. Additionally, a decision to move the relocated mussels back to their original location will be based, in part, on the suitability of the habitat after construction. This monitoring will provide critical information for making that decision.
17. The NCDOT will provide a report to the Service for each monitoring period outlined in the monitoring plan detailed in Item 16 above.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The following conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Pursue funding and partnership opportunities to complete any additional research, inventory, and monitoring work in order to better understand the distribution and autecology of the James spiny mussel in the Dan River.
2. Where opportunities exist, work with landowners, the general public, and other agencies to promote education and information about endangered mussels and their conservation.
3. Pursue additional buffers and conservation opportunities along the main stem of the Dan River and its tributaries, either individually or in concert with other conservation organizations.
4. Explore opportunities to work with local and state water quality officials in order to minimize or eliminate wastewater and storm-water discharges into the Dan River.
5. Consult with the Service on projects affecting aquatic habitat in the Dan River drainage, regardless of funding source, to ensure compliance with all provisions of the Act.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

REINITIATION/CLOSING STATEMENT

This concludes formal consultation on the actions outlined in your biological assessments dated September 30, 2002; March 14, 2003; and April 28, 2003, requesting formal consultation. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion, (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion, or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operation causing such take must cease, pending reinitiation.

Consultation should also be reinitiated if new biological information comes to light that invalidates the assumptions made regarding the biology or distribution of the James spiny mussel in the Dan River in North Carolina.

If there are any questions, please contact Ms. Marella Buncick of our staff at 828/258-3939, Ext. 237, or me, Ext. 223. We have assigned our log number 4-2-03-007 to this consultation; please refer to this number in any future correspondence concerning this matter.

Sincerely,



Brian P. Cole
State Supervisor

cc:

Ms. Judith A. Ratcliffe, North Carolina Wildlife Resources Commission,
1117 Woodbrook Way, Garner, NC 27529
Mr. Eric Alsmeyer, U.S. Army Corps of Engineers, Raleigh Regulatory Field Office,
6508 Falls of the Neuse Road, Suite 120, Raleigh, NC 27615
Mr. Chris Militscher, U.S. Environmental Protection Agency, Terry Sanford Federal
Courthouse, 310 New Bern Avenue, Room 206, Raleigh, NC 27601

Electronic copy to:

Mr. Joe Johnston, Ecological Services Division, Endangered Species Section, U.S. Fish
and Wildlife Service, Atlanta Regional Office, Atlanta, GA
Ms. Kim Marbain, U.S. Fish and Wildlife Service, Virginia Field Office, Gloucester, VA
Mr. Gary Jordan, U.S. Fish and Wildlife Service, Raleigh Field Office, Raleigh, NC

Literature Cited

- Alderman, J. M. 1997. Monitoring the Swift Creek freshwater mussel community. Pp. 98-107 in K. S. Cummings, A. C. Buchanan, C. A. Mayer, and T. J. Naimo, eds., 1997. Conservation and Management of Freshwater Mussels II - Initiatives for the Future. Proceedings of an Upper Mississippi River Conservation Committee (UMRCC) Symposium, October 16-18, 1995, St. Louis, Missouri. UMRCC, Rock Island, Illinois. 293 pp.
- Brown, A. V., M. M. Lytle, and K. B. Brown. 1998. Impacts of gravel mining on gravel bed streams. Transactions of the American Fisheries Society, 127:979-994.
- Clarke, A. H., and R. J. Neves. 1984. Status survey of the James River spiny mussel *Cathyria collina*, in the James River, Virginia. A report for Region 5 of the U.S. Fish and Wildlife Service. 32 pp.
- Conrad, T. A. 1837. Monography of the family Unionidae. No. 8:65.
- Ellis, M. M. 1936. Erosion silt as a factor in aquatic environments. Ecology. 17:29-42.
- Fuller, S. L. H., and C. E. Powell. 1973. Range extensions of *Corbicula manilensis* (Philippi) in the Atlantic drainage of the United States. Nautilus. 87(2):59.
- Goudreau, S. E., R. J. Neves, and R. J. Sheehan. 1988. Effects of sewage treatment effluents on mollusks and fish of the Clinch River in Tazewell County, Virginia. Final Report, U.S. Fish and Wildlife Service. 128 pp.
- Hove, M. 1990. Distribution and life history of the endangered James spiny mussel, *Pleurobema collina* (Bivalvia:Unionidae). M.S. Thesis. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. 113 pp.
- Kanehl, P., and J. Lyons. 1992. Impacts of in-stream sand and gravel mining on stream habitat and fish communities, including a survey on the Big Rib River, Marathon County, Wisconsin. Wisconsin Department of Natural Resources, Research Report 155, Madison.
- Kondolf, G. M. 1997. Hungry water: effects of dams and gravel mining on river channels. Environmental Management, 21:533-551.
- Llhardt, B. L., E. S. Verry, and B. J. Palik. 2000. Defining riparian areas. Pp. 23-42 in E. S. Verry, J. W. Hornbeck, and C. A. Doloff, eds. Riparian management of forests of the continental Eastern United States. Lewis Publishers, Boca Raton, Florida.
- McGregor, M. A., and J. Baisden. 2002. Biological assessment of the James spiny mussel, *Pleurobema collina*, in the James River: surveys in select tributaries

of the James River (2000 through 2001). Biological Report for the Virginia Department of Game and Inland Fisheries.

Meador, M. R., and A. O. Layher. 1998. In-stream sand and gravel mining: environmental issues and regulatory process in the United States. *Fisheries*, 23(11):6-13.

Natural Resources Conservation Service. 1995. Soil Survey of Stokes County, North Carolina. U.S. Department of Agriculture.

Neves, R. J. 1993. A state of the Union address. Pp. 1-10 in K. S. Cummings, A. C. Buchanan, and L. M. Kooch, eds. *Proceedings of the UMRCC Symposium on the Conservation and Management of Freshwater Mussels*. UMRCC, Rock Island, Illinois. 189 pp.

Neves, R. J., and J. C. Widlak. 1987. Habitat ecology of juvenile freshwater mussels (*Bivalvia:Unionidae*) in a headwater stream in Virginia. *American Malacology Bulletin*, 1(5):1-7.

North Carolina Department of Environment and Natural Resources, Division of Parks and Recreation. 1995. North Carolina Natural Heritage Program Biennial Protection Plan, Natural Heritage Areas Priority List. Raleigh, North Carolina. 73 pp.

North Carolina Department of Environment and Natural Resources, Division of Water Quality. 2001. Roanoke River Basinwide Water Quality Plan. Water Quality Section, Raleigh, North Carolina. 181 pp.

O'Neill, C. R., Jr., and D. B. MacNeill. 1991. The zebra mussel (*Dreissena polymorpha*): an unwelcome North American invader. Sea Grant, Coastal Resources Fact Sheet. New York Sea Grant Extension. 12 pp.

Palik, B. J., J. C. Zasada, and C. W. Hedman. 2000. Ecological principles for riparian silviculture. Pp. 233-254 in E. S. Verry, J. W. Hornbeck, and C. A. Doloff, eds. *Riparian management of forests of the continental Eastern United States*. Lewis Publishers, Boca Raton, Florida.

Petty, M. 2002. Survey for the newly discovered James spiny mussel in the Dan River system, Virginia. Annual Report for the U.S. Fish and Wildlife Service, Gloucester, Virginia.

Rohde, F. C., R. G. Arndt, and S. M. Smith. 2001. Longitudinal succession of Fishes in the Dan River in Virginia and North Carolina (Blue Ridge/Piedmont Provinces). *Southeastern Fishes Council Proceedings*, 42:1-13.

- Semlitsch, R. D. 1998. Biological delineation of terrestrial buffer zones for pond-breeding salamanders. *Conservation Biology*, 12:1113-1119.
- Starnes, L. B., and D. C. Gasper. 1996. Effects of surface mining on aquatic resources in North America. *Fisheries*, 21(5):24-26.
- U.S. Fish and Wildlife Service. 1990. James Spiny mussel (*Pleurobema collina*) Recovery Plan. Newton Corner, Massachusetts. 38 pp.
- , 1992. Endangered and Threatened Species of the Southeast United States (The Red Book). Prepared by the Division of Ecological Services, Endangered Species, Southeast Region. Government Printing Office, Washington, DC. 1,070 pp.
- U.S. Fish and Wildlife Service and National Marine Fisheries Service. 1998. Endangered Species Consultation Handbook - Procedures for Conducting Consultation and Conference Activities under Section 7 of the Endangered Species Act. Washington, DC.

NATIONWIDE PERMIT 23
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
FINAL NOTICE OF ISSUANCE AND MODIFICATION OF NATIONWIDE PERMITS
FEDERAL REGISTER
AUTHORIZED MARCH 18, 2002

Approved Categorical Exclusions: Activities undertaken, assisted, authorized, regulated, funded, or financed, in whole or in part, by another Federal agency or department where that agency or department has determined, pursuant to the Council on Environmental Quality Regulation for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) (40 CFR part 1500 et seq.), that the activity, work, or discharge is categorically excluded from environmental documentation because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the human environment, and the Office of the Chief of Engineers (ATTN: CECW-OR) has been furnished notice of the agency's or department's application for the categorical exclusion and concurs with that determination. Before to approval for purposes of this nationwide permit of any agency's categorical exclusions, the Chief of Engineers will solicit public comment. In addressing these comments, the Chief of Engineers may require certain conditions for authorization of an agency's categorical exclusions under this nationwide permit. (Sections 10 and 404)



NATIONWIDE PERMIT GENERAL CONDITIONS

The following General Conditions must be followed in order for any authorization by a NWP to be valid:

1. Navigation. No activity may cause more than a minimal adverse effect on navigation.
2. Proper Maintenance. Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.
3. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.
4. Aquatic Life Movements. No activity may substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.
5. Equipment. Heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance.
6. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state or tribe in its Section 401 Water Quality Certification and Coastal Zone Management Act consistency determination.
7. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a 'study river' for possible inclusion in the system, while the river is in an official study status; unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation, or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).
8. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
9. Water Quality.

a. In certain states and tribal lands an individual 401 Water Quality Certification must be obtained or waived (See 33 CFR 330.4(c)).

b. For NWP's 12, 14, 17, 18, 32, 39, 40, 42, 43, and 44, where the state or tribal 401 certification (either generically or individually) does not require or approve water quality management measures, the permittee must provide water quality management measures that will ensure that the authorized work does not result in more than minimal degradation of water quality (or the Corps determines that compliance with state or local standards, where applicable, will ensure no more than minimal adverse effect on water quality). An important component of water quality management includes stormwater management that minimizes degradation of the downstream aquatic system, including water quality (refer to General Condition 21 for stormwater management requirements). Another important component of water quality management is the establishment and maintenance of vegetated buffers next to open waters, including streams (refer to General Condition 19 for vegetated buffer requirements for the NWP's).

This condition is only applicable to projects that have the potential to affect water quality. While appropriate measures must be taken, in most cases it is not necessary to conduct detailed studies to identify such measures or to require monitoring.

10. Coastal Zone Management. In certain states, an individual state coastal zone management consistency concurrence must be obtained or waived (see 33 CFR 330.4(d)).

11. Endangered Species.

a. No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or is located in the designated critical habitat and shall not begin work on the activity until notified by the District Engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that may affect Federally-listed endangered or threatened species or designated critical habitat, the notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. As a result of formal or informal consultation with the FWS or NMFS the District Engineer may add species-specific regional endangered species conditions to the NWP's.

b. Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the

USFWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS or their World Wide Web pages at <http://www.fws.gov/r9endspp/endspp.html> and <http://www.nfms.noaa.gov/protres/overview/es.html> respectively.

12. Historic Properties. No activity that may affect historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the District Engineer has complied with the provisions of 33 CFR part 325, Appendix C. The prospective permittee must notify the District Engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historic Preservation Office and the National Register of Historic Places (see 33 CFR 330.4(g)). For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the notification must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

13. Notification.

a. Timing; where required by the terms of the NWP, the prospective permittee must notify the District Engineer with a preconstruction notification (PCN) as early as possible. The District Engineer must determine if the notification is complete within 30 days of the date of receipt and can request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the District Engineer will notify the prospective permittee that the notification is still incomplete and the PCN review process will not commence until all of the requested information has been received by the District Engineer. The prospective permittee shall not begin the activity:

1. Until notified in writing by the District Engineer that the activity may proceed under the NWP with any special conditions imposed by the District or Division Engineer; or

2. If notified in writing by the District or Division Engineer that an Individual Permit is required; or

3. Unless 45 days have passed from the District Engineer's receipt of the complete notification and the prospective permittee has not received written notice from the District or Division Engineer. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

b. Contents of Notification: The notification must be in writing and include the

following information:

1. Name, address and telephone numbers of the prospective permittee;
2. Location of the proposed project;
3. Brief description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), Regional General Permit(s), or Individual Permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP (Sketches usually clarify the project and when provided result in a quicker decision.);
4. For NWPs 7, 12, 14, 18, 21, 34, 38, 39, 40, 41, 42, and 43, the PCN must also include a delineation of affected special aquatic sites, including wetlands, vegetated shallows (e.g., submerged aquatic vegetation, seagrass beds), and riffle and pool complexes (see paragraph 13(f));
5. For NWP 7 (Cutfall Structures and Maintenance), the PCN must include information regarding the original design capacities and configurations of those areas of the facility where maintenance dredging or excavation is proposed;
6. For NWP 14 (Linear Transportation Projects), the PCN must include a compensatory mitigation proposal to offset permanent losses of waters of the US and a statement describing how temporary losses of waters of the US will be minimized to the maximum extent practicable;
7. For NWP 21 (Surface Coal Mining Activities), the PCN must include an Office of Surface Mining (OSM) or state-approved mitigation plan, if applicable. To be authorized by this NWP, the District Engineer must determine that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are minimal both individually and cumulatively and must notify the project sponsor of this determination in writing;
8. For NWP 27 (Stream and Wetland Restoration Activities), the PCN must include documentation of the prior condition of the site that will be reverted by the permittee;
9. For NWP 29 (Single-Family Housing), the PCN must also include:
 - i. Any past use of this NWP by the Individual Permittee and/or the permittee's spouse;
 - ii. A statement that the single-family housing activity is for a personal residence of the permittee;

iii. A description of the entire parcel, including its size, and a delineation of wetlands. For the purpose of this NWP, parcels of land measuring $\frac{1}{4}$ -acre or less will not require a formal on-site delineation. However, the applicant shall provide an indication of where the wetlands are and the amount of wetlands that exists on the property. For parcels greater than $\frac{1}{4}$ -acre in size, formal wetland delineation must be prepared in accordance with the current method required by the Corps. (See paragraph 13(f));

iv. A written description of all land (including, if available, legal descriptions) owned by the prospective permittee and/or the prospective permittee's spouse, within a one mile radius of the parcel, in any form of ownership (including any land owned as a partner, corporation, joint tenant, co-tenant, or as a tenant-by-the-entirety) and any land on which a purchase and sale agreement or other contract for sale or purchase has been executed;

10. For NWP 31 (Maintenance of Existing Flood Control Facilities), the prospective permittee must either notify the District Engineer with a PCN prior to each maintenance activity or submit a five-year (or less) maintenance plan. In addition, the PCN must include all of the following:

i. Sufficient baseline information identifying the approved channel depths and configurations and existing facilities. Minor deviations are authorized, provided the approved flood control protection or drainage is not increased;

ii. A delineation of any affected special aquatic sites, including wetlands; and,

iii. Location of the dredged material disposal site;

11. For NWP 33 (Temporary Construction, Access, and Dewatering), the PCN must also include a restoration plan of reasonable measures to avoid and minimize adverse effects to aquatic resources;

12. For NWPs 39, 43 and 44, the PCN must also include a written statement to the District Engineer explaining how avoidance and minimization for losses of waters of the US were achieved on the project site;

13. For NWP 39 and NWP 42, the PCN must include a compensatory mitigation proposal to offset losses of waters of the US or justification explaining why compensatory mitigation should not be required. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;

14. For NWP 40 (Agricultural Activities), the PCN must include a compensatory mitigation proposal to offset losses of waters of the US. This NWP does not authorize the

relocation of greater than 300 linear feet of existing serviceable drainage ditches constructed in non-tidal streams unless, for drainage ditches constructed in intermittent nontidal streams, the District Engineer waives this criterion in writing, and the District Engineer has determined that the project complies with all terms and conditions of this NWP, and that any adverse impacts of the project on the aquatic environment are minimal, both individually and cumulatively;

15. For NWP 43 (Stormwater Management Facilities), the PCN must include, for the construction of new stormwater management facilities, a maintenance plan (in accordance with state and local requirements, if applicable) and a compensatory mitigation proposal to offset losses of waters of the US. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;

16. For NWP 44 (Mining Activities), the PCN must include a description of all waters of the US adversely affected by the project, a description of measures taken to minimize adverse effects to waters of the US, a description of measures taken to comply with the criteria of the NWP, and a reclamation plan (for all aggregate mining activities in isolated waters and non-tidal wetlands adjacent to headwaters and any hard rock/mineral mining activities);

17. For activities that may adversely affect Federally-listed endangered or threatened species, the PCN must include the name(s) of those endangered or threatened species that may be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work; and

18. For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

c. Form of Notification: The standard Individual Permit application form (Form ENG 4345) may be used as the notification but must clearly indicate that it is a PCN and must include all of the information required in (b) (1)-(18) of General Condition 13. A letter containing the requisite information may also be used.

d. District Engineer's Decision: In reviewing the PCN for the proposed activity, the District Engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. The prospective permittee may submit a proposed mitigation plan with the PCN to expedite the process. The District Engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. If the District Engineer determines that the activity complies with the terms and conditions of the NWP

and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the District Engineer will notify the permittee and include any conditions the District Engineer deems necessary. The District Engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee is required to submit a compensatory mitigation proposal with the PCN, the proposal may be either conceptual or detailed. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the District Engineer will expeditiously review the proposed compensatory mitigation plan. The District Engineer must review the plan within 45 days of receiving a complete PCN and determine whether the conceptual or specific proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the District Engineer to be minimal, the District Engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the District Engineer determines that the adverse effects of the proposed work are more than minimal, then the District Engineer will notify the applicant either:

1. That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an Individual Permit;
2. that the project is authorized under the NWP subject to the applicant's submission of a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level; or
3. that the project is authorized under the NWP with specific modifications or conditions. Where the District Engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level. When conceptual mitigation is included, or a mitigation plan is required under item (2) above, no work in waters of the US will occur until the District Engineer has approved a specific mitigation plan.

e. Agency Coordination: The District Engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

For activities requiring notification to the District Engineer that result in the loss of greater than $\frac{1}{2}$ -acre of waters of the US, the District Engineer will provide immediately (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy to the appropriate Federal or state offices (USFWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO), and, if appropriate, the NMFS). With the exception of

NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the District Engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the District Engineer will wait an additional 15 calendar days before making a decision on the notification. The District Engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The District Engineer will indicate in the administrative record associated with each notification that the resource agencies' concerns were considered. As required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act, the District Engineer will provide a response to NMFS within 30 days of receipt of any Essential Fish Habitat conservation recommendations. Applicants are encouraged to provide the Corps multiple copies of notifications to expedite agency notification.

f. Wetland Delineations: Wetland delineations must be prepared in accordance with the current method required by the Corps (For NWP 29 see paragraph (b)(9)(iii) for parcels less than (1/4)-acre in size). The permittee may ask the Corps to delineate the special aquatic site. There may be some delay if the Corps does the delineation. Furthermore, the 45-day period will not start until the wetland delineation has been completed and submitted to the Corps, where appropriate.

14. Compliance Certification. Every permittee who has received NWP verification from the Corps will submit a signed certification regarding the completed work and any required mitigation. The certification will be forwarded by the Corps with the authorization letter and will include:

a. A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions;

b. A statement that any required mitigation was completed in accordance with the permit conditions; and

c. The signature of the permittee certifying the completion of the work and mitigation.

15. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the US authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit (e.g. if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the US for the total project cannot exceed 1/3-acre) .

16. Water Supply Intakes. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in the proximity of a public water supply intake except where the activity is for repair of the public water supply intake structures or adjacent bank stabilization.

17. Shellfish Beds. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4.

18. Suitable Material. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the CWA).

19. Mitigation. The District Engineer will consider the factors discussed below when determining the acceptability of appropriate and practicable mitigation necessary to offset adverse effects on the aquatic environment that are more than minimal.

a. The project must be designed and constructed to avoid and minimize adverse effects to waters of the US to the maximum extent practicable at the project site (i.e., on site).

b. Mitigation in all its forms (avoiding, minimizing, rectifying, reducing or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

c. Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland impacts requiring a PCN, unless the District Engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. Consistent with National policy, the District Engineer will establish a preference for restoration of wetlands as compensatory mitigation, with preservation used only in exceptional circumstances.

d. Compensatory mitigation (i.e., replacement or substitution of aquatic resources for those impacted) will not be used to increase the acreage losses allowed by the acreage limits of some of the NWPs. For example, $\frac{1}{4}$ -acre of wetlands cannot be created to change a $\frac{3}{4}$ -acre loss of wetlands to a $\frac{1}{2}$ -acre loss associated with NWP 39 verification. However, $\frac{1}{2}$ -acre of created wetlands can be used to reduce the impacts of a $\frac{1}{2}$ -acre loss of wetlands to the minimum impact level in order to meet the minimal impact requirement associated with NWPs.

e. To be practicable, the mitigation must be available and capable of being done considering costs, existing technology, and logistics in light of the overall project purposes. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferably in the same watershed.

f. Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., easements, deed restrictions) of vegetated buffers to open waters. In many cases, vegetated buffers will be the only compensatory mitigation required. Vegetated buffers should consist of native species. The width of the vegetated buffers required will address documented water quality or aquatic habitat loss concerns. Normally, the vegetated buffer will be 25 to 50 feet wide on each side of the stream, but the District Engineers may require slightly wider vegetated buffers to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the Corps will determine the appropriate compensatory mitigation (e.g., stream buffers or wetlands compensation) based on what is best for the aquatic environment or, a watershed basis. In cases where vegetated buffers are determined to be the most appropriate form of compensatory mitigation, the District Engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland impacts.

g. Compensatory mitigation proposals submitted with the " notification" may be either conceptual or detailed. If conceptual plans are approved under the verification, then the Corps will condition the verification to require detailed plans be submitted and approved by the Corps prior to construction of the authorized activity in waters of the US.

h. Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases that require compensatory mitigation, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

20. Spawning Areas. Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., excavate, fill, or smother downstream by substantial turbidity) of an important spawning area are not authorized.

21. Management of Water Flows. To the maximum extent practicable, the activity must be designed to maintain preconstruction downstream flow conditions (e.g., location, capacity, and flow rates). Furthermore, the activity must not permanently restrict or impede the passage of normal or expected high flows (unless the primary purpose of the fill is to impound waters) and the structure or discharge of dredged or fill material must withstand expected high flows. The activity must, to the maximum extent practicable, provide for retaining excess flows from the site, provide for maintaining surface flow rates from the site similar to preconstruction conditions, and provide for not increasing water flows from the project site, relocating water, or redirecting water flow beyond preconstruction conditions. Stream channelizing will be reduced to the minimal amount necessary, and the activity must, to the maximum extent practicable, reduce adverse effects such as flooding or erosion downstream and upstream of the project site, unless the activity is part of a larger system designed to manage water flows. In most cases, it will not be a requirement to conduct detailed studies and monitoring of water flow.

This condition is only applicable to projects that have the potential to affect waterflows. While appropriate measures must be taken, it is not necessary to conduct detailed studies to identify such measures or require monitoring to ensure their effectiveness. Normally, the Corps will defer to state and local authorities regarding management of water flow.

22. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to the acceleration of the passage of water, and/or the restricting its flow shall be minimized to the maximum extent practicable. This includes structures and work in navigable waters of the US, or discharges of dredged or fill material.

23. Waterfowl Breeding Areas. Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.

24. Removal of Temporary Fills. Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting elevation.

25. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, National Wild and Scenic Rivers, critical habitat for Federally listed threatened and endangered species, coral reefs, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the District Engineer after notice and opportunity for public comment. The District Engineer may also designate additional critical resource waters after notice and opportunity for comment.

a. Except as noted below, discharges of dredged or fill material into waters of the US are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, and 44 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. Discharges of dredged or fill materials into waters of the US may be authorized by the above NWPs in National Wild and Scenic Rivers if the activity complies with General Condition 7. Further, such discharges may be authorized in designated critical habitat for Federally listed threatened or endangered species if the activity complies with General Condition 11 and the USFWS or the NMFS has concurred in a determination of compliance with this condition.

b. For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with General Condition 13, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The District Engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

26. Fills Within 100-Year Floodplains. For purposes of this General Condition, 100-year floodplains will be identified through the existing Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps or FEMA-approved local floodplain maps.

a. Discharges in Floodplain; Below Headwaters. Discharges of dredged or fill material into waters of the US within the mapped 100year floodplain, below headwaters (i.e. five cfs), resulting in permanent above-grade fills, are not authorized by NWPs 39, 40, 42, 43, and 44.

b. Discharges in Floodway; Above Headwaters. Discharges of dredged or fill material into waters of the US within the FEMA or locally mapped floodway, resulting in permanent above-grade fills, are not authorized by NWPs 39, 40, 42, and 44.

c. The permittee must comply with any applicable FEMA-approved state or local floodplain management requirements.

27. Construction Period. For activities that have not been verified by the Corps and the project was commenced or under contract to commence by the expiration date of the NWP (or modification or revocation date), the work must be completed within 12-months after such date (including any modification that affects the project).

For activities that have been verified and the project was commenced or under contract to commence within the verification period, the work must be completed by the date determined by the Corps.

For projects that have been verified by the Corps, an extension of a Corps approved completion date may be requested. This request must be submitted at least one month before the previously approved completion date.

FURTHER INFORMATION

1. District Engineers have authority to determine if an activity complies with the terms and conditions of a NWP.
2. NWPs do not obviate the need to obtain other Federal, State, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

DEFINITIONS

Best Management Practices (BMPs): BMPs are policies, practices, procedures, or structures

implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or nonstructural. A BMP policy may affect the limits on a development.

Compensatory Mitigation: For purposes of Section 10/404, compensatory mitigation is the restoration, creation, enhancement, or in exceptional circumstances, preservation of wetlands and/or other aquatic resources for the purpose of compensating for unavoidable adverse impacts, which remain, after all appropriate and practicable avoidance and minimization has been achieved.

Creation: The establishment of a wetland or other aquatic resource where one did not formerly exist.

Enhancement: Activities conducted in existing wetlands or other aquatic resources that increase one or more aquatic functions.

Ephemeral Stream: An ephemeral stream has *flowing* water only during and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Farm Tract: A unit of contiguous land under one ownership that is operated as a farm or part of a farm.

Flood Fringe: That portion of the 100-year floodplain outside of the floodway (often referred to as “floodway fringe”).

Floodway: The area regulated by Federal, state, or local requirements to provide for the discharge of the base flood so the cumulative increase in water surface elevation is no more than a designated amount (not to exceed one foot as set by the National Flood Insurance Program) within the 100-year floodplain.

Independent Utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent Stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the US: Waters of the US that include the filled area and other waters that are permanently adversely affected by flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent above-grade, at-grade, or below-grade fills that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the US is the threshold measurement of the impact to existing waters for determining whether a project may qualify for a NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and values. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the US temporarily filled, flooded, excavated, or drained, but restored to preconstruction contours and elevations after construction, are not included in the measurement of loss of waters of the US. Impacts to ephemeral waters are only not included in the acreage or linear foot measurements of loss of waters of the US or loss of stream bed, for the purpose of determining compliance with the threshold limits of the NWPs.

Non-tidal Wetland: An area that, during a year with normal patterns of precipitation has standing or flowing water for sufficient duration to establish an ordinary high water mark. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. The term "open water" includes rivers, streams, lakes, and ponds. For the purposes of the NWPs, this term does not include ephemeral waters.

Perennial Stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for the most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Permanent Above-grade Fill: A discharge of dredged or fill material into waters of the US, including wetlands, that results in a substantial increase in ground elevation and permanently converts part or all of the waterbody to dry land. Structural fills authorized by NWPs 3, 25, 36, etc. are not included.

Preservation: The protection of ecologically important wetlands or other aquatic resources in perpetuity through the implementation of appropriate legal and physical mechanisms. Preservation may include protection of upland areas adjacent to wetlands as necessary to ensure protection and/or enhancement of the overall aquatic ecosystem.

Restoration: Re-establishment of wetland and/or other aquatic resource characteristics and function(s) at a site where they have ceased to exist, or exist in a substantially degraded state.

Riffle and Pool Complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Single and Complete Project: The term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers (see definition of independent utility). For linear projects, the “single and complete project” (i.e., a single and complete crossing) will apply to each crossing of a separate water of the US (i.e., a single waterbody) at that location. An exception is for linear projects crossing a single waterbody several times at separate and distant locations; each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies.

Stormwater Management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater Management Facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and BMPs, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream Channelization: The manipulation of a stream channel to increase the rate of water flow through the stream channel. Manipulation may include deepening, widening, straightening, armoring, or other activities that change the stream cross-section or other aspects of stream channel geometry to increase the rate of water flow through the stream channel. A channelized stream remains a water of the US, despite the modifications to increase the rate of water flow.

Tidal Wetland: A tidal wetland is a wetland (i.e., water of the US) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line (i.e., spring high tide line) and are inundated by tidal waters two times per lunar month, during spring high tides.

Vegetated Buffer: A vegetated upland or wetland area next to rivers, streams, lakes, or other

open waters, which separates the open water from developed areas, including agricultural land. Vegetated buffers provide a variety of aquatic habitat functions and values (e.g., aquatic habitat for fish and other aquatic organisms, moderation of water temperature changes, and detritus for aquatic food webs) and help improve or maintain local water quality. A vegetated buffer can be established by maintaining an existing vegetated area or planting native trees, shrubs, and herbaceous plants on land next to openwaters. Mowed lawns are not considered vegetated buffers because they provide little or no aquatic habitat functions and values. The establishment and maintenance of vegetated buffers is a method of compensatory mitigation that can be used in conjunction with the restoration, creation, enhancement or preservation of aquatic habitats to ensure that activities authorized by NWP's result in minimal adverse effects to the aquatic environment. (See General Condition 19.)

Vegetated Shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: A waterbody is any area that in a normal year has water flowing or standing above ground to the extent that evidence of an ordinary high water mark is established. Wetlands contiguous to the waterbody are considered part of the waterbody.

FINAL REGIONAL CONDITIONS FOR NATIONWIDE PERMITS IN THE WILMINGTON DISTRICT

1. Waters Excluded from NWP or Subject to Additional Notification Requirements:
 - a. The Corps identified waters that will be excluded from use of this NWP. These waters are:
 1. Discharges into Waters of the United States designated by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning area are prohibited during the period between February 15 and June 30, without prior written approval from NCDMF or NCWRC and the Corps.
 2. Discharges into Waters of the United States designated as sturgeon spawning areas are prohibited during the period between February 1 and June 30, without prior written approval from the National Marine Fisheries Service (NMFS).
 - b. The Corps identified waters that will be subject to additional notification requirements for activities authorized by this NWP. These waters are:
 1. Prior to the use of any NWP in any of the following North Carolina *designated waters*, applicants must comply with Nationwide Permit General Condition 13. In addition, the

applicant must furnish a written statement of compliance with all of the conditions of the applicable Nationwide Permit. The North Carolina *designated waters* that require additional notification requirements are “Outstanding Resource Waters” (ORW) and “High Quality Waters” (HQW) (as defined by the North Carolina Division of Water Quality), or “Inland Primary Nursery Areas” (IPNA) (as defined by the North Carolina Wildlife Resources Commission), or contiguous wetlands (as defined by the North Carolina Division of Water Quality), or “Primary Nursery Areas” (PNA) (as defined by the North Carolina Division of Marine Fisheries).

2. Applicants for any NWP in a designated “Area of Environmental Concern” (AEC) in the twenty (20) coastal counties of Eastern North Carolina covered by the North Carolina Coastal Area Management Act (CAMA), must also obtain the required CAMA permit. Construction activities may not commence until a copy of the approved CAMA permit is furnished to the appropriate Wilmington District Regulatory Field Office (Wilmington Field Office – P.O. Box 1890, Wilmington, NC 28402 or Washington Field Office – P.O. Box 1000, Washington, NC 27889) for authorization to begin work.

3. Prior to the use of any NWP on a Barrier Island of North Carolina, applicants must comply with Nationwide Permit General Condition 13. In addition, the applicant shall furnish a written statement of compliance with all of the conditions listed of the applicable Nationwide Permit.

4. Prior to the use of any NWP in a “Mountain or Piedmont Bog” of North Carolina, applicants shall comply with Nationwide Permit General Condition 13. In addition, the applicant shall furnish a written statement of compliance with all of the conditions listed of the applicable NWP.

Note: The following wetland community types identified in the N.C. Natural Heritage Program document, “Classification of Natural communities of North Carolina (Michael P. Schafale and Alan S. Weakley, 1990), are subject to this regional condition.

Mountain Bogs

Swamp Forest-Bog Complex
Swamp Forest-Bog Complex (Spruce Subtype)
Southern Appalachian Bog (Northern Subtype)
Southern Appalachian Bog (Southern Subtype)
Southern Appalachian Fen

Piedmont Bogs

Upland Depression Swamp Forest

5. Prior to the use of any NWP in Mountain Trout Waters within twenty-five (25) designated counties of North Carolina, applicants shall comply with Nationwide General Condition 13. In addition, the applicant shall furnish a written statement of compliance with all of the conditions listed of the applicable NWP. Notification will include a letter of comments and recommendations from the North Carolina Wildlife Resources Commission (NCWRC), the

location of work, a delineation of wetlands, a discussion of alternatives to working in the Mountain Trout Waters, why other alternatives were not selected, and a plan to provide compensatory mitigation for all unavoidable adverse impacts to the Mountain Trout Waters. To facilitate coordination with the NCWRC, the proponent may provide a copy of the notification to the NCWRC concurrent with the notification to the District Engineer. The NCWRC will respond both to the proponent and directly to the Corps of Engineers.

The twenty-five (25) designated counties are:

Alleghany	Ashe	Avery	Yancey
Buncombe	Burke	Caldwell	Wilkes
Cherokee	Clay	Graham	Swain
Haywood	Henderson	Jackson	Surry
Macon	Madison	McDowell	Stokes
Mitchell	Polk	Rutherford	
Transylvania	Watauga		

6. Applicants shall notify the NCDENR Shellfish Sanitation Section prior to dredging in or removing sediment from an area closed to shell fishing where the effluent may be released to an area open for shell fishing or swimming in order to avoid contamination of the disposal area and allow a temporary shellfish closure to be made. Any disposal of sand to the beach should occur between November 1 and April 30 when recreational usage is low. Only clean sand should be used and no dredged sand from closed shell fishing areas. If beach disposal was to occur at times other than stated above or if sand from a closed shell fishing area is to be used, a swim advisory shall be posted and a press release shall be made. NCDENR Shellfish Sanitation Section must be notified before commencing this activity.

2. List of Final Corps Regional Modifications and Conditions for All Nationwide Permits

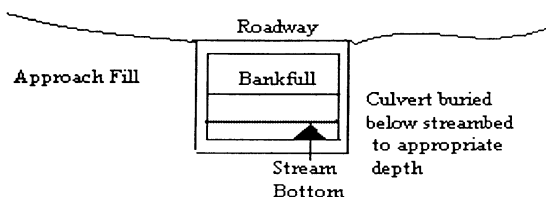
a. Individual or multiple NWP's may not be used for activities that result in the cumulative loss or degradation of greater than 300 total linear feet of perennial streambed or intermittent streambed that exhibits important aquatic function(s).

b. Prior to the use of any NWP (except 13, 27, and 39) for any activity that has more than a total of 150 total linear feet of perennial streambed impacts or intermittent streambed impacts (if the intermittent stream has important aquatic function), the applicant must comply with Nationwide Permit General Condition 13. In addition, the applicant shall furnish a written statement of compliance with all of the conditions listed of the applicable NWP. Compensatory mitigation is typically required for any impact that requires such notification. [Note: The Corps uses the Intermittent Channel Evaluation Form, located with Permit Information on the Regulatory Program Web Site, to aid in the determination of the intermittent channel stream status. Also, NWP's 13, 27 and 39 have specific reporting requirements.]

c. For all Nationwide Permits which allow the use of concrete as a building material, measures will be taken to prevent live or fresh concrete, including bags of uncured concrete, from coming into contact with waters of the state until the concrete has hardened.

d. For all Nationwide Permits that allow for the use of riprap material for bank stabilization, filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters.

e. For all NWP's that involve the construction of culverts, measures will be included in the construction that will promote the safe passage of fish and other aquatic organisms. All culverts in the 20 CAMA coastal counties must be buried to a depth of one foot below the



bed of the stream or wetland. For all culvert construction activities, the dimension, pattern, and profile of the stream, (above and below a pipe or culvert), should not be modified by widening the stream channel or by reducing the depth of the stream. Culvert inverts will be buried at least one foot below the bed of the stream for culverts greater than 48 inches in diameter. For culverts 48 inches in diameter or smaller, culverts must be buried below the bed of the stream to a depth equal to or greater than 20 percent of the diameter of the culvert. Bottomless arch culverts will satisfy this condition. A waiver from the depth specifications in this Regional Condition may be requested in writing. The waiver will only be issued if it can be demonstrated that the impacts of complying with this Regional Condition would result in more adverse impacts to the aquatic environment.

NORTH CAROLINA DIVISION OF WATER QUALITY
GENERAL CERTIFICATION CONDITIONS
GC3361

1. Proposed fill or substantial modification of wetlands or waters (including streams) under this General Certification requires notification to the Division of Water Quality. Two copies shall be submitted to DWQ at the time of notification in accordance with 15A NCAC 2H .0501(a). Written concurrence from DWQ is not required unless any standard conditions of this Certification cannot be met;

2. Appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" or the "North Carolina Surface Mining Manual" whichever is more appropriate (available from the Division of Land Resources (DLR) in the DENR Regional or Central Offices) shall be in full compliance with all specifications governing the proper design,

installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard;

3. In accordance with 15A NCAC 2H .0506 (h) compensatory mitigation may be required for impacts to 150 linear feet or more of streams and/or one acre or more of wetlands. In addition, buffer mitigation may be required for any project with Buffer Rules in effect at the time of application for buffer impacts resulting from activities classified as "allowable with mitigation" within the "Table of Uses" section of the Buffer Rules or require a variance under the Buffer Rules. A determination of buffer, wetland and stream mitigation requirements shall be made for any Certification for this Nationwide Permit. The most current design and monitoring protocols from DWQ shall be followed and written plans submitted for DWQ approval as required in those protocols. When compensatory mitigation is required for a project, the mitigation plans must be approved by DWQ in writing before the impacts approved by the Certification occur. The mitigation plan must be implemented and/or constructed before any permanent building or structure on site is occupied. In the case of public road projects, the mitigation plan must be implemented before the road is opened to the traveling public;

4. Compensatory stream mitigation shall be required at a 1:1 ratio for all perennial and intermittent stream impacts equal to or exceeding 150 feet and that require application to DWQ in watersheds classified as ORW, HQW, Tr, WS-I and WS-II;

5. All sediment and erosion control measures placed in wetlands or waters shall be removed and the original grade restored within two months after the Division of Land Resources has released the project;

6. Measures shall be taken to prevent live or fresh concrete from coming into contact with waters of the state until the concrete has hardened;

7. In accordance with North Carolina General Statute Section 143-215.3D(e), any request for written concurrence for a 401 Water Quality Certification must include the appropriate fee. If a project also requires a CAMA Permit, one payment to both agencies shall be submitted and will be the higher of the two fees;

8. Impacts to any stream length in the Neuse, Tar-Pamlico, Randleman and Catawba River Basins (or any other river basins with Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) requires written concurrence from DWQ in accordance with 15A NCAC 2B.0200. Activities listed as "exempt" from these rules do not need to apply for written concurrence under this Certification. New development activities located in the protected 50-foot wide riparian areas (whether jurisdictional wetlands or not) within the Neuse, Tar-Pamlico, Randleman and Catawba River Basins shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 2B .0200. All new development shall be located, designed, constructed, and maintained to have minimal disturbance to protect water quality to the maximum extent practicable through the use of best management practices;

9. Additional site-specific conditions may be added to projects for which written concurrence is required or requested under this Certification in order to ensure compliance with all applicable water quality and effluent standards;

10. Concurrence from DWQ that this Certification applies to an individual project shall expire three years from the date of the cover letter from DWQ or on the same day as the expiration date of the corresponding Nationwide and Regional General Permits, whichever is sooner;

11. When written concurrence is required, the applicant is required to use the most recent version of the Certification of Completion form to notify DWQ when all work included in the 401 Certification has been completed.

NORTH CAROLINA DIVISION OF COASTAL MANAGEMENT
STATE CONSISTENCY

Consistent.

Citations:

2002 Nationwide Permits - Federal Register Notice 15 Jan 2002

2002 Nationwide Permits Corrections - Federal Register Notice 13 Feb 2002

2002 Regional Conditions – Authorized 17 May 2002

NATIONWIDE PERMIT 33
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
FINAL NOTICE OF ISSUANCE AND MODIFICATION OF NATIONWIDE PERMITS
FEDERAL REGISTER
AUTHORIZED MARCH 18, 2002

Temporary Construction, Access and Dewatering: Temporary structures, work and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites; provided that the associated primary activity is authorized by the Corps of Engineers or the U.S. Coast Guard (USCG), or for other construction activities not subject to the Corps or USCG regulations. Appropriate measures must be taken to maintain near normal downstream flows and to minimize flooding. Fill must be of materials, and placed in a manner, that will not be eroded by expected high flows. The use of dredged material may be allowed if it is determined by the District Engineer that it will not cause more than minimal adverse effects on aquatic resources. Temporary fill must be entirely removed to upland areas, or dredged material returned to its original location, following completion of the construction activity, and the affected areas must be restored to the pre-project conditions. Cofferdams cannot be used to dewater wetlands or other aquatic areas so as to change their use. Structures left in place after cofferdams are removed require a section 10 permit if located in navigable waters of the United States. (See 33 CFR part 322). The permittee must notify the District Engineer in accordance with the "Notification" general condition. The notification must also include a restoration plan of reasonable measures to avoid and minimize adverse effects to aquatic resources. The District Engineer will add special conditions, where necessary, to ensure environmental adverse effects is minimal. Such conditions may include: Limiting the temporary work to the minimum necessary; requiring seasonal restrictions; modifying the restoration plan; and requiring alternative construction methods (e.g., construction mats in wetlands where practicable.). (Sections 10 and 404)



NATIONWIDE PERMIT GENERAL CONDITIONS

The following General Conditions must be followed in order for any authorization by a NWP to be valid:

1. Navigation. No activity may cause more than a minimal adverse effect on navigation.
2. Proper Maintenance. Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.
3. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.
4. Aquatic Life Movements. No activity may substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.
5. Equipment. Heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance.
6. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state or tribe in its Section 401 Water Quality Certification and Coastal Zone Management Act consistency determination.
7. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a 'study river' for possible inclusion in the system, while the river is in an official study status; unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation, or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).
8. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
9. Water Quality.

a. In certain states and tribal lands an individual 401 Water Quality Certification must be obtained or waived (See 33 CFR 330.4(c)).

b. For NWPs 12, 14, 17, 18, 32, 39, 40, 42, 43, and 44, where the state or tribal 401 certification (either generically or individually) does not require or approve water quality management measures, the permittee must provide water quality management measures that will ensure that the authorized work does not result in more than minimal degradation of water quality (or the Corps determines that compliance with state or local standards, where applicable, will ensure no more than minimal adverse effect on water quality). An important component of water quality management includes stormwater management that minimizes degradation of the downstream aquatic system, including water quality (refer to General Condition 21 for stormwater management requirements). Another important component of water quality management is the establishment and maintenance of vegetated buffers next to open waters, including streams (refer to General Condition 19 for vegetated buffer requirements for the NWPs).

This condition is only applicable to projects that have the potential to affect water quality. While appropriate measures must be taken, in most cases it is not necessary to conduct detailed studies to identify such measures or to require monitoring.

10. Coastal Zone Management. In certain states, an individual state coastal zone management consistency concurrence must be obtained or waived (see 33 CFR 330.4(d)).

11. Endangered Species.

a. No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or is located in the designated critical habitat and shall not begin work on the activity until notified by the District Engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that may affect Federally-listed endangered or threatened species or designated critical habitat, the notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. As a result of formal or informal consultation with the FWS or NMFS the District Engineer may add species-specific regional endangered species conditions to the NWPs.

b. Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of

the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS or their World Wide Web pages at <http://www.fws.gov/r9endspp/endspp.html> and <http://www.nfms.noaa.gov/protres/overview/es.html> respectively.

12. Historic Properties. No activity that may affect historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the District Engineer has complied with the provisions of 33 CFR part 325, Appendix C. The prospective permittee must notify the District Engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historic Preservation Office and the National Register of Historic Places (see 33 CFR 330.4(g)). For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the notification must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

13. Notification.

a. Timing; where required by the terms of the NWP, the prospective permittee must notify the District Engineer with a preconstruction notification (PCN) as early as possible. The District Engineer must determine if the notification is complete within 30 days of the date of receipt and can request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the District Engineer will notify the prospective permittee that the notification is still incomplete and the PCN review process will not commence until all of the requested information has been received by the District Engineer. The prospective permittee shall not begin the activity:

1. Until notified in writing by the District Engineer that the activity may proceed under the NWP with any special conditions imposed by the District or Division Engineer; or

2. If notified in writing by the District or Division Engineer that an Individual Permit is required; or

3. Unless 45 days have passed from the District Engineer's receipt of the complete notification and the prospective permittee has not received written notice from the District or Division Engineer. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

b. Contents of Notification: The notification must be in writing and include the following information:

1. Name, address and telephone numbers of the prospective permittee;
2. Location of the proposed project;
3. Brief description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), Regional General Permit(s), or Individual Permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP (Sketches usually clarify the project and when provided result in a quicker decision.);
4. For NWPs 7, 12, 14, 18, 21, 34, 38, 39, 40, 41, 42, and 43, the PCN must also include a delineation of affected special aquatic sites, including wetlands, vegetated shallows (e.g., submerged aquatic vegetation, seagrass beds), and riffle and pool complexes (see paragraph 13(f));
5. For NWP 7 (Cutfall Structures and Maintenance), the PCN must include information regarding the original design capacities and configurations of those areas of the facility where maintenance dredging or excavation is proposed;
6. For NWP 14 (Linear Transportation Projects), the PCN must include a compensatory mitigation proposal to offset permanent losses of waters of the US and a statement describing how temporary losses of waters of the US will be minimized to the maximum extent practicable;
7. For NWP 21 (Surface Coal Mining Activities), the PCN must include an Office of Surface Mining (OSM) or state-approved mitigation plan, if applicable. To be authorized by this NWP, the District Engineer must determine that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are minimal both individually and cumulatively and must notify the project sponsor of this determination in writing;
8. For NWP 27 (Stream and Wetland Restoration Activities), the PCN must include documentation of the prior condition of the site that will be reverted by the permittee;
9. For NWP 29 (Single-Family Housing), the PCN must also include:
 - i. Any past use of this NWP by the Individual Permittee and/or the permittee's spouse;
 - ii. A statement that the single-family housing activity is for a personal residence of the permittee;
 - iii. A description of the entire parcel, including its size, and a delineation of

wetlands. For the purpose of this NWP, parcels of land measuring $\frac{1}{4}$ -acre or less will not require a formal on-site delineation. However, the applicant shall provide an indication of where the wetlands are and the amount of wetlands that exists on the property. For parcels greater than $\frac{1}{4}$ -acre in size, formal wetland delineation must be prepared in accordance with the current method required by the Corps. (See paragraph 13(f));

iv. A written description of all land (including, if available, legal descriptions) owned by the prospective permittee and/or the prospective permittee's spouse, within a one mile radius of the parcel, in any form of ownership (including any land owned as a partner, corporation, joint tenant, co-tenant, or as a tenant-by-the-entirety) and any land on which a purchase and sale agreement or other contract for sale or purchase has been executed;

10. For NWP 31 (Maintenance of Existing Flood Control Facilities), the prospective permittee must either notify the District Engineer with a PCN prior to each maintenance activity or submit a five-year (or less) maintenance plan. In addition, the PCN must include all of the following:

i. Sufficient baseline information identifying the approved channel depths and configurations and existing facilities. Minor deviations are authorized, provided the approved flood control protection or drainage is not increased;

ii. A delineation of any affected special aquatic sites, including wetlands; and,

iii. Location of the dredged material disposal site;

11. For NWP 33 (Temporary Construction, Access, and Dewatering), the PCN must also include a restoration plan of reasonable measures to avoid and minimize adverse effects to aquatic resources;

12. For NWPs 39, 43 and 44, the PCN must also include a written statement to the District Engineer explaining how avoidance and minimization for losses of waters of the US were achieved on the project site;

13. For NWP 39 and NWP 42, the PCN must include a compensatory mitigation proposal to offset losses of waters of the US or justification explaining why compensatory mitigation should not be required. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;

14. For NWP 40 (Agricultural Activities), the PCN must include a compensatory mitigation proposal to offset losses of waters of the US. This NWP does not authorize the relocation of greater than 300 linear feet of existing serviceable drainage ditches constructed in

non-tidal streams unless, for drainage ditches constructed in intermittent nontidal streams, the District Engineer waives this criterion in writing, and the District Engineer has determined that the project complies with all terms and conditions of this NWP, and that any adverse impacts of the project on the aquatic environment are minimal, both individually and cumulatively;

15. For NWP 43 (Stormwater Management Facilities), the PCN must include, for the construction of new stormwater management facilities, a maintenance plan (in accordance with state and local requirements, if applicable) and a compensatory mitigation proposal to offset losses of waters of the US. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;

16. For NWP 44 (Mining Activities), the PCN must include a description of all waters of the US adversely affected by the project, a description of measures taken to minimize adverse effects to waters of the US, a description of measures taken to comply with the criteria of the NWP, and a reclamation plan (for all aggregate mining activities in isolated waters and non-tidal wetlands adjacent to headwaters and any hard rock/mineral mining activities);

17. For activities that may adversely affect Federally-listed endangered or threatened species, the PCN must include the name(s) of those endangered or threatened species that may be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work; and

18. For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

c. Form of Notification: The standard Individual Permit application form (Form ENG 4345) may be used as the notification but must clearly indicate that it is a PCN and must include all of the information required in (b) (1)-(18) of General Condition 13. A letter containing the requisite information may also be used.

d. District Engineer's Decision: In reviewing the PCN for the proposed activity, the District Engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. The prospective permittee may submit a proposed mitigation plan with the PCN to expedite the process. The District Engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. If the District Engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation,

the District Engineer will notify the permittee and include any conditions the District Engineer deems necessary. The District Engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee is required to submit a compensatory mitigation proposal with the PCN, the proposal may be either conceptual or detailed. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the District Engineer will expeditiously review the proposed compensatory mitigation plan. The District Engineer must review the plan within 45 days of receiving a complete PCN and determine whether the conceptual or specific proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the District Engineer to be minimal, the District Engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the District Engineer determines that the adverse effects of the proposed work are more than minimal, then the District Engineer will notify the applicant either:

1. That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an Individual Permit;
2. that the project is authorized under the NWP subject to the applicant's submission of a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level; or
3. that the project is authorized under the NWP with specific modifications or conditions. Where the District Engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level. When conceptual mitigation is included, or a mitigation plan is required under item (2) above, no work in waters of the US will occur until the District Engineer has approved a specific mitigation plan.

e. Agency Coordination: The District Engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

For activities requiring notification to the District Engineer that result in the loss of greater than $\frac{1}{2}$ -acre of waters of the US, the District Engineer will provide immediately (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy to the appropriate Federal or state offices (USFWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted

to telephone or fax the District Engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the District Engineer will wait an additional 15 calendar days before making a decision on the notification. The District Engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The District Engineer will indicate in the administrative record associated with each notification that the resource agencies' concerns were considered. As required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act, the District Engineer will provide a response to NMFS within 30 days of receipt of any Essential Fish Habitat conservation recommendations. Applicants are encouraged to provide the Corps multiple copies of notifications to expedite agency notification.

f. Wetland Delineations: Wetland delineations must be prepared in accordance with the current method required by the Corps (For NWP 29 see paragraph (b)(9)(iii) for parcels less than $\frac{1}{4}$ -acre in size). The permittee may ask the Corps to delineate the special aquatic site. There may be some delay if the Corps does the delineation. Furthermore, the 45-day period will not start until the wetland delineation has been completed and submitted to the Corps, where appropriate.

14. Compliance Certification. Every permittee who has received NWP verification from the Corps will submit a signed certification regarding the completed work and any required mitigation. The certification will be forwarded by the Corps with the authorization letter and will include:

a. A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions;

b. A statement that any required mitigation was completed in accordance with the permit conditions; and

c. The signature of the permittee certifying the completion of the work and mitigation.

15. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the US authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit (e.g. if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the US for the total project cannot exceed $\frac{1}{3}$ -acre).

16. Water Supply Intakes. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in the proximity of a public water supply intake except where the activity is for repair of the public water supply intake structures or adjacent bank stabilization.

17. Shellfish Beds. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4.

18. Suitable Material. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the CWA).

19. Mitigation. The District Engineer will consider the factors discussed below when determining the acceptability of appropriate and practicable mitigation necessary to offset adverse effects on the aquatic environment that are more than minimal.

a. The project must be designed and constructed to avoid and minimize adverse effects to waters of the US to the maximum extent practicable at the project site (i.e., on site).

b. Mitigation in all its forms (avoiding, minimizing, rectifying, reducing or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

c. Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland impacts requiring a PCN, unless the District Engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. Consistent with National policy, the District Engineer will establish a preference for restoration of wetlands as compensatory mitigation, with preservation used only in exceptional circumstances.

d. Compensatory mitigation (i.e., replacement or substitution of aquatic resources for those impacted) will not be used to increase the acreage losses allowed by the acreage limits of some of the NWPs. For example, $\frac{1}{4}$ -acre of wetlands cannot be created to change a $\frac{3}{4}$ -acre loss of wetlands to a $\frac{1}{2}$ -acre loss associated with NWP 39 verification. However, $\frac{1}{2}$ -acre of created wetlands can be used to reduce the impacts of a $\frac{1}{2}$ -acre loss of wetlands to the minimum impact level in order to meet the minimal impact requirement associated with NWPs.

e. To be practicable, the mitigation must be available and capable of being done considering costs, existing technology, and logistics in light of the overall project purposes. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferably in the same watershed.

f. Compensatory mitigation plans for projects in or near streams or other open waters

will normally include a requirement for the establishment, maintenance, and legal protection (e.g., easements, deed restrictions) of vegetated buffers to open waters. In many cases, vegetated buffers will be the only compensatory mitigation required. Vegetated buffers should consist of native species. The width of the vegetated buffers required will address documented water quality or aquatic habitat loss concerns. Normally, the vegetated buffer will be 25 to 50 feet wide on each side of the stream, but the District Engineers may require slightly wider vegetated buffers to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the Corps will determine the appropriate compensatory mitigation (e.g., stream buffers or wetlands compensation) based on what is best for the aquatic environment or, a watershed basis. In cases where vegetated buffers are determined to be the most appropriate form of compensatory mitigation, the District Engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland impacts.

g. Compensatory mitigation proposals submitted with the " notification" may be either conceptual or detailed. If conceptual plans are approved under the verification, then the Corps will condition the verification to require detailed plans be submitted and approved by the Corps prior to construction of the authorized activity in waters of the US.

h. Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases that require compensatory mitigation, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

20. Spawning Areas. Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., excavate, fill, or smother downstream by substantial turbidity) of an important spawning area are not authorized.

21. Management of Water Flows. To the maximum extent practicable, the activity must be designed to maintain preconstruction downstream flow conditions (e.g., location, capacity, and flow rates). Furthermore, the activity must not permanently restrict or impede the passage of normal or expected high flows (unless the primary purpose of the fill is to impound waters) and the structure or discharge of dredged or fill material must withstand expected high flows. The activity must, to the maximum extent practicable, provide for retaining excess flows from the site, provide for maintaining surface flow rates from the site similar to preconstruction conditions, and provide for not increasing water flows from the project site, relocating water, or redirecting water flow beyond preconstruction conditions. Stream channelizing will be reduced to the minimal amount necessary, and the activity must, to the maximum extent practicable, reduce adverse effects such as flooding or erosion downstream and upstream of the project site, unless the activity is part of a larger system designed to manage water flows. In most cases, it will not be a requirement to conduct detailed studies and monitoring of water flow.

This condition is only applicable to projects that have the potential to affect waterflows.

While appropriate measures must be taken, it is not necessary to conduct detailed studies to identify such measures or require monitoring to ensure their effectiveness. Normally, the Corps will defer to state and local authorities regarding management of water flow.

22. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to the acceleration of the passage of water, and/or the restricting its flow shall be minimized to the maximum extent practicable. This includes structures and work in navigable waters of the US, or discharges of dredged or fill material.

23. Waterfowl Breeding Areas. Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.

24. Removal of Temporary Fills. Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting elevation.

25. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, National Wild and Scenic Rivers, critical habitat for Federally listed threatened and endangered species, coral reefs, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the District Engineer after notice and opportunity for public comment. The District Engineer may also designate additional critical resource waters after notice and opportunity for comment.

a. Except as noted below, discharges of dredged or fill material into waters of the US are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, and 44 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. Discharges of dredged or fill materials into waters of the US may be authorized by the above NWPs in National Wild and Scenic Rivers if the activity complies with General Condition 7. Further, such discharges may be authorized in designated critical habitat for Federally listed threatened or endangered species if the activity complies with General Condition 11 and the USFWS or the NMFS has concurred in a determination of compliance with this condition.

b. For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with General Condition 13, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The District Engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

26. Fills Within 100-Year Floodplains. For purposes of this General Condition, 100-year floodplains will be identified through the existing Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps or FEMA-approved local floodplain maps.

a. Discharges in Floodplain; Below Headwaters. Discharges of dredged or fill material

into waters of the US within the mapped 100year floodplain, below headwaters (i.e. five cfs), resulting in permanent above-grade fills, are not authorized by NWP's 39, 40, 42, 43, and 44.

b. Discharges in Floodway; Above Headwaters. Discharges of dredged or fill material into waters of the US within the FEMA or locally mapped floodway, resulting in permanent above-grade fills, are not authorized by NWP's 39, 40, 42, and 44.

c. The permittee must comply with any applicable FEMA-approved state or local floodplain management requirements.

27. Construction Period. For activities that have not been verified by the Corps and the project was commenced or under contract to commence by the expiration date of the NWP (or modification or revocation date), the work must be completed within 12-months after such date (including any modification that affects the project).

For activities that have been verified and the project was commenced or under contract to commence within the verification period, the work must be completed by the date determined by the Corps.

For projects that have been verified by the Corps, an extension of a Corps approved completion date maybe requested. This request must be submitted at least one month before the previously approved completion date.

FURTHER INFORMATION

1. District Engineers have authority to determine if an activity complies with the terms and conditions of a NWP.
2. NWP's do not obviate the need to obtain other Federal, State, or local permits, approvals, or authorizations required by law.
3. NWP's do not grant any property rights or exclusive privileges.
4. NWP's do not authorize any injury to the property or rights of others.
5. NWP's do not authorize interference with any existing or proposed Federal project.

DEFINITIONS

Best Management Practices (BMPs): BMPs are policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or nonstructural. A BMP policy may

affect the limits on a development.

Compensatory Mitigation: For purposes of Section 10/404, compensatory mitigation is the restoration, creation, enhancement, or in exceptional circumstances, preservation of wetlands and/or other aquatic resources for the purpose of compensating for unavoidable adverse impacts, which remain, after all appropriate and practicable avoidance and minimization has been achieved.

Creation: The establishment of a wetland or other aquatic resource where one did not formerly exist.

Enhancement: Activities conducted in existing wetlands or other aquatic resources that increase one or more aquatic functions.

Ephemeral Stream: An ephemeral stream has *flowing* water only during and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Farm Tract: A unit of contiguous land under one ownership that is operated as a farm or part of a farm.

Flood Fringe: That portion of the 100-year floodplain outside of the floodway (often referred to as "floodway fringe").

Floodway: The area regulated by Federal, state, or local requirements to provide for the discharge of the base flood so the cumulative increase in water surface elevation is no more than a designated amount (not to exceed one foot as set by the National Flood Insurance Program) within the 100-year floodplain.

Independent Utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent Stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the US: Waters of the US that include the filled area and other waters that are permanently adversely affected by flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent above-grade, at-grade, or below-grade

fills that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the US is the threshold measurement of the impact to existing waters for determining whether a project may qualify for a NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and values. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the US temporarily filled, flooded, excavated, or drained, but restored to preconstruction contours and elevations after construction, are not included in the measurement of loss of waters of the US. Impacts to ephemeral waters are only not included in the acreage or linear foot measurements of loss of waters of the US or loss of stream bed, for the purpose of determining compliance with the threshold limits of the NWPs.

Non-tidal Wetland: An area that, during a year with normal patterns of precipitation has standing or flowing water for sufficient duration to establish an ordinary high water mark. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. The term “open water” includes rivers, streams, lakes, and ponds. For the purposes of the NWPs, this term does not include ephemeral waters.

Perennial Stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for the most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Permanent Above-grade Fill: A discharge of dredged or fill material into waters of the US, including wetlands, that results in a substantial increase in ground elevation and permanently converts part or all of the waterbody to dry land. Structural fills authorized by NWPs 3, 25, 36, etc. are not included.

Preservation: The protection of ecologically important wetlands or other aquatic resources in perpetuity through the implementation of appropriate legal and physical mechanisms. Preservation may include protection of upland areas adjacent to wetlands as necessary to ensure protection and/or enhancement of the overall aquatic ecosystem.

Restoration: Re-establishment of wetland and/or other aquatic resource characteristics and function(s) at a site where they have ceased to exist, or exist in a substantially degraded state.

Riffle and Pool Complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Single and Complete Project: The term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers (see definition of independent utility). For linear projects, the “single and complete project” (i.e., a single and complete crossing) will apply to each crossing of a separate water of the US (i.e., a single waterbody) at that location. An exception is for linear projects crossing a single waterbody several times at separate and distant locations; each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies.

Stormwater Management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater Management Facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and BMPs, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream Channelization: The manipulation of a stream channel to increase the rate of water flow through the stream channel. Manipulation may include deepening, widening, straightening, armoring, or other activities that change the stream cross-section or other aspects of stream channel geometry to increase the rate of water flow through the stream channel. A channelized stream remains a water of the US, despite the modifications to increase the rate of water flow.

Tidal Wetland: A tidal wetland is a wetland (i.e., water of the US) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line (i.e., spring high tide line) and are inundated by tidal waters two times per lunar month, during spring high tides.

Vegetated Buffer: A vegetated upland or wetland area next to rivers, streams, lakes, or other open waters, which separates the open water from developed areas, including agricultural land. Vegetated buffers provide a variety of aquatic habitat functions and values (e.g., aquatic habitat for fish and other aquatic organisms, moderation of water temperature changes, and detritus for aquatic food webs) and help improve or maintain local water quality. A vegetated buffer can be established by maintaining an existing vegetated area or planting native trees, shrubs, and herbaceous plants on land next to openwaters. Mowed lawns are not considered vegetated buffers because they provide little or no aquatic habitat functions and values. The establishment

and maintenance of vegetated buffers as a method of compensatory mitigation that can be used in conjunction with the restoration, creation, enhancement or preservation of aquatic habitats to ensure that activities authorized by NWP's result in minimal adverse effects to the aquatic environment. (See General Condition 19.)

Vegetated Shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: A waterbody is any area that in a normal year has water flowing or standing above ground to the extent that evidence of an ordinary high water mark is established. Wetlands contiguous to the waterbody are considered part of the waterbody.

FINAL REGIONAL CONDITIONS FOR NATIONWIDE PERMITS IN THE WILMINGTON DISTRICT

1. Waters Excluded from NWP or Subject to Additional Notification Requirements:

a. The Corps identified waters that will be excluded from use of this NWP. These waters are:

1. Discharges into Waters of the United States designated by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning area are prohibited during the period between February 15 and June 30, without prior written approval from NCDMF or NCWRC and the Corps.

2. Discharges into Waters of the United States designated as sturgeon spawning areas are prohibited during the period between February 1 and June 30, without prior written approval from the National Marine Fisheries Service (NMFS).

b. The Corps identified waters that will be subject to additional notification requirements for activities authorized by this NWP. These waters are:

1. Prior to the use of any NWP in any of the following North Carolina *designated waters*, applicants must comply with Nationwide Permit General Condition 13. In addition, the applicant must furnish a written statement of compliance with all of the conditions of the applicable Nationwide Permit. The North Carolina *designated waters* that require additional notification requirements are "Outstanding Resource Waters" (ORW) and "High Quality Waters" (HQW) (as defined by the North Carolina Division of Water Quality), or "Inland Primary Nursery Areas" (IPNA) (as defined by the North Carolina Wildlife Resources Commission), or contiguous wetlands (as defined by the North Carolina Division of Water Quality), or "Primary Nursery Areas" (PNA) (as defined by the North Carolina Division of Marine Fisheries).

2. Applicants for any NWP in a designated “Area of Environmental Concern” (AEC) in the twenty (20) coastal counties of Eastern North Carolina covered by the North Carolina Coastal Area Management Act (CAMA), must also obtain the required CAMA permit. Construction activities may not commence until a copy of the approved CAMA permit is furnished to the appropriate Wilmington District Regulatory Field Office (Wilmington Field Office – P.O. Box 1890, Wilmington, NC 28402 or Washington Field Office – P.O. Box 1000, Washington, NC 27889) for authorization to begin work.

3. Prior to the use of any NWP on a Barrier Island of North Carolina, applicants must comply with Nationwide Permit General Condition 13. In addition, the applicant shall furnish a written statement of compliance with all of the conditions listed of the applicable Nationwide Permit.

4. Prior to the use of any NWP in a “Mountain or Piedmont Bog” of North Carolina, applicants shall comply with Nationwide Permit General Condition 13. In addition, the applicant shall furnish a written statement of compliance with all of the conditions listed of the applicable NWP.

Note: The following wetland community types identified in the N.C. Natural Heritage Program document, “Classification of Natural communities of North Carolina (Michael P. Schafale and Alan S. Weakley, 1990), are subject to this regional condition.

Mountain Bogs

Swamp Forest-Bog Complex
Swamp Forest-Bog Complex (Spruce Subtype)
Southern Appalachian Bog (Northern Subtype)
Southern Appalachian Bog (Southern Subtype)
Southern Appalachian Fen

Piedmont Bogs

Upland Depression Swamp Forest

5. Prior to the use of any NWP in Mountain Trout Waters within twenty-five (25) designated counties of North Carolina, applicants shall comply with Nationwide General Condition 13. In addition, the applicant shall furnish a written statement of compliance with all of the conditions listed of the applicable NWP. Notification will include a letter of comments and recommendations from the North Carolina Wildlife Resources Commission (NCWRC), the location of work, a delineation of wetlands, a discussion of alternatives to working in the Mountain Trout Waters, why other alternatives were not selected, and a plan to provide compensatory mitigation for all unavoidable adverse impacts to the Mountain Trout Waters. To facilitate coordination with the NCWRC, the proponent may provide a copy of the notification to the NCWRC concurrent with the notification to the District Engineer. The NCWRC will respond both to the proponent and directly to the Corps of Engineers.

The twenty-five (25) designated counties are:

Alleghany Ashe Avery Yancey

Buncombe	Burke	Caldwell	Wilkes
Cherokee	Clay	Graham	Swain
Haywood	Henderson	Jackson	Surry
Macon	Madison	McDowell	Stokes
Mitchell	Polk	Rutherford	
Transylvania	Watauga		

6. Applicants shall notify the NCDENR Shellfish Sanitation Section prior to dredging in or removing sediment from an area closed to shell fishing where the effluent may be released to an area open for shell fishing or swimming in order to avoid contamination of the disposal area and allow a temporary shellfish closure to be made. Any disposal of sand to the beach should occur between November 1 and April 30 when recreational usage is low. Only clean sand should be used and no dredged sand from closed shell fishing areas. If beach disposal was to occur at times other than stated above or if sand from a closed shell fishing area is to be used, a swim advisory shall be posted and a press release shall be made. NCDENR Shellfish Sanitation Section must be notified before commencing this activity.

2. List of Final Corps Regional Modifications and Conditions for All Nationwide Permits

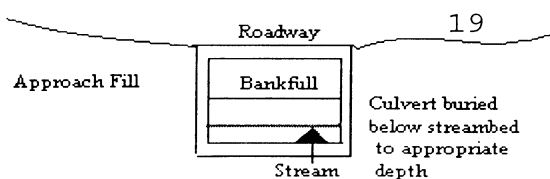
a. Individual or multiple NWP's may not be used for activities that result in the cumulative loss or degradation of greater than 300 total linear feet of perennial streambed or intermittent streambed that exhibits important aquatic function(s).

b. Prior to the use of any NWP (except 13, 27, and 39) for any activity that has more than a total of 150 total linear feet of perennial streambed impacts or intermittent streambed impacts (if the intermittent stream has important aquatic function), the applicant must comply with Nationwide Permit General Condition 13. In addition, the applicant shall furnish a written statement of compliance with all of the conditions listed of the applicable NWP. Compensatory mitigation is typically required for any impact that requires such notification. [Note: The Corps uses the Intermittent Channel Evaluation Form, located with Permit Information on the Regulatory Program Web Site, to aid in the determination of the intermittent channel stream status. Also, NWP's 13, 27 and 39 have specific reporting requirements.]

c. For all Nationwide Permits which allow the use of concrete as a building material, measures will be taken to prevent live or fresh concrete, including bags of uncured concrete, from coming into contact with waters of the state until the concrete has hardened.

d. For all Nationwide Permits that allow for the use of riprap material for bank stabilization, filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters.

e. For all NWP's that involve the construction of culverts, measures will be included in the construction that will promote the safe passage of fish and other aquatic organisms. All culverts in the 20 CAMA coastal counties must be buried to a depth of one foot below the



bed of the stream or wetland. For all culvert construction activities, the dimension, pattern, and profile of the stream, (above and below a pipe or culvert), should not be modified by widening the stream channel or by reducing the depth of the stream. Culvert inverts will be buried at least one foot below the bed of the stream for culverts greater than 48 inches in diameter. For culverts 48 inches in diameter or smaller, culverts must be buried below the bed of the stream to a depth equal to or greater than 20 percent of the diameter of the culvert. Bottomless arch culverts will satisfy this condition. A waiver from the depth specifications in this Regional Condition may be requested in writing. The waiver will only be issued if it can be demonstrated that the impacts of complying with this Regional Condition would result in more adverse impacts to the aquatic environment.

3. Additional Regional Conditions Applicable to this Specific Nationwide Permit.

The required restoration plan must include a timetable for restoration activities.

NORTH CAROLINA DIVISION OF WATER QUALITY
GENERAL CERTIFICATION CONDITIONS
GC3366

1. These activities do not require written concurrence from the Division of Water Quality as long as they comply with all conditions of this General Certification. If any condition in this Certification cannot be met, application to and written concurrence from DWQ are required. Also, Condition No. 2 is applicable to all streams in basins with riparian area protection rules;
2. Impacts to any stream length in the Neuse, Tar-Pamlico and Randleman River Basins (or any other major river basins with Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) requires written concurrence from DWQ in accordance with 15A NCAC 2B.0200. Activities listed as "exempt" from these rules do not need to apply for written concurrence under this Certification. New development activities located in the protected 50-foot wide riparian areas (whether jurisdictional wetlands or not) within the Neuse, Tar-Pamlico, Randleman and Catawba River Basins shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 2B .0200. All new development shall be located, designed, constructed, and maintained to have minimal disturbance to protect water quality to the maximum extent practicable through the use of best management practices;
3. Appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" or the "North Carolina Surface Mining Manual" whichever is more appropriate (available from the Division of Land Resources (DLR) in the DENR Regional or Central Offices) shall be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard;

4. All sediment and erosion control measures placed in wetlands or waters shall be removed and the original grade restored within two months after the Division of Land Resources has released the project;
5. If an environmental document is required, this Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse;
6. Placement of culverts and other structures in waters, streams, and wetlands must be placed below the elevation of the streambed to allow low flow passage of water and aquatic life unless it can be shown to DWQ that providing passage would be impractical. Design and placement of culverts including open bottom or bottomless arch culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in aggradation, degradation or significant changes in hydrology of wetlands or stream beds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium shall be maintained if requested in writing by DWQ. Additionally, when roadways, causeways or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges must be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in aggradation, degradation or significant changes in hydrology of streams or wetlands;
7. Measures shall be taken to prevent live or fresh concrete from coming into contact with waters of the state until the concrete has hardened;
8. All temporary fill shall be removed to the original grade after construction is complete and the site shall be stabilized to prevent erosion;
9. Pipes shall be installed under the road or causeway in all streams to carry at least the 25 year storm event as outlined in the most recent edition of the "North Carolina Sediment and Erosion Control Planning and Design Manual" or the "North Carolina Surface Mining Manual" so as not to restrict stream flow during use of this Certification;
10. In accordance with North Carolina General Statute Section 143-215.3D(e), any request for written concurrence for a 401 Water Quality Certification must include the appropriate fee. If a project also requires a CAMA Permit, one payment to both agencies shall be submitted and will be the higher of the two fees;
11. Additional site-specific conditions may be added to projects for which written concurrence is required or requested under this Certification in order to ensure compliance with all applicable water quality and effluent standards;
12. Concurrence from DWQ that this Certification applies to an individual project shall expire three years from the date of the cover letter from DWQ or on the same day as the expiration date of these corresponding Nationwide and Regional General Permits, whichever is sooner;

13. When written concurrence is required, the applicant is required to use the most recent version of the Certification of Completion form to notify DWQ when all work included in the 401 Certification has been completed.

NORTH CAROLINA DIVISION OF COASTAL MANAGEMENT
STATE CONSISTENCY

Consistent.

Citations:

2002 Nationwide Permits - Federal Register Notice 15 Jan 2002

2002 Nationwide Permits Corrections - Federal Register Notice 13 Feb 2002

2002 Regional Conditions – Authorized 17 May 2002

WQC #3403

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR CORPS OF ENGINEERS NATIONWIDE PERMIT NUMBER 23 (APPROVED CATEGORICAL EXCLUSIONS) AND RIPARIAN AREA PROTECTION RULES (BUFFER RULES)

This General Certification is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality Regulations in 15A NCAC 2H, Section .0500 and 15A NCAC 2B .0200 for the discharge of fill material to waters and wetland areas as described in 33 CFR 330 Appendix A (B) (23) and for the Riparian Area Protection Rules (Buffer Rules) in 15A NCAC 2B .0200. This Certification replaces Water Quality Certification Number 2670 issued on January 21, 1992, Certification Number 2734 issued on May 1 1993, Certification Number 3107 issued on February 11, 1997 and Water Quality Certification Number 3361 issued March 18, 2002. This WQC is rescinded when the Corps of Engineers re-authorizes Nationwide Permit 23 or when deemed appropriate by the Director of the DWQ.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Conditions of Certification:

1. Proposed fill or substantial modification of wetlands or waters (including streams) under this General Certification requires notification to the Division of Water Quality. Two copies shall be submitted to DWQ at the time of notification in accordance with 15A NCAC 2H .0501(a). Written concurrence from DWQ is not required unless any standard conditions of this Certification cannot be met;
2. Appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" or the "North Carolina Surface Mining Manual" whichever is more appropriate (available from the Division of Land Resources (DLR) in the DENR Regional or Central Offices) shall be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard;
3. In accordance with 15A NCAC 2H .0506 (h) compensatory mitigation may be required for impacts to 150 linear feet or more of streams and/or one acre or more of wetlands. In addition, buffer mitigation may be required for any project with Buffer Rules in effect at the time of application for buffer impacts resulting from activities classified as "allowable with mitigation" within the "Table of Uses" section of the Buffer Rules or require a variance under the Buffer Rules. A determination of buffer, wetland and stream mitigation requirements shall be made for any Certification for this Nationwide Permit. The most current design and monitoring protocols from DWQ shall be followed and written plans submitted for DWQ approval as required in those protocols. When compensatory mitigation is required for a project, the mitigation plans must be approved by DWQ in writing before the impacts approved by the Certification occur. The mitigation plan must be implemented and/or constructed before any permanent building or structure on

WQC #3403

site is occupied. In the case of public road projects, the mitigation plan must be implemented before the road is opened to the travelling public;

4. Compensatory stream mitigation shall be required at a 1:1 ratio for not only perennial but also intermittent stream impacts equal to or exceeding 150 feet and that require application to DWQ in watersheds classified as ORW, HQW, Tr, WS-I and WS-II unless the project is a linear, publicly-funded transportation project, which has a 150-foot per-stream impact allowance;
5. All sediment and erosion control measures placed in wetlands or waters shall be removed and the original grade restored within two months after the Division of Land Resources has released the project;
6. Measures shall be taken to prevent live or fresh concrete from coming into contact with freshwaters of the state until the concrete has hardened;
7. In accordance with North Carolina General Statute Section 143-215.3D(e), any request for written concurrence for a 401 Water Quality Certification must include the appropriate fee. If a project also requires a CAMA Permit, one payment to both agencies shall be submitted and will be the higher of the two fees;
8. Impacts to any stream length in the Neuse, Tar-Pamlico, Randleman and Catawba River Basins (or any other river basins with Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) requires written concurrence from DWQ in accordance with 15A NCAC 2B.0200. Activities listed as "exempt" from these rules do not need to apply for written concurrence under this Certification. New development activities located in the protected 50-foot wide riparian areas (whether jurisdictional wetlands or not) within the Neuse, Tar-Pamlico, Randleman and Catawba River Basins shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 2B .0200. All new development shall be located, designed, constructed, and maintained to have minimal disturbance to protect water quality to the maximum extent practicable through the use of best management practices;
9. Additional site-specific conditions may be added to projects for which written concurrence is required or requested under this Certification in order to ensure compliance with all applicable water quality and effluent standards;
10. Concurrence from DWQ that this Certification applies to an individual project shall expire three years from the date of the cover letter from DWQ or on the same day as the expiration date of the corresponding Nationwide and Regional General Permits, whichever is sooner;
11. When written concurrence is required, the applicant is required to use the most recent version of the Certification of Completion form to notify DWQ when all work included in the 401 Certification has been completed.

Non-compliance with or violation of the conditions herein set forth by a specific fill project shall result in revocation of this Certification for the project and may result in criminal and/or civil penalties.

WQC #3403

The Director of the North Carolina Division of Water Quality may require submission of a formal application for individual certification for any project in this category of activity that requires written concurrence under this certification, if it is determined that the project is likely to have a significant adverse effect upon water quality or degrade the waters so that existing uses of the wetland, stream or downstream waters are precluded.

Public hearings may be held for specific applications or group of applications prior to a Certification decision if deemed in the public's best interest by the Director of the North Carolina Division of Water Quality.

Effective date: March 2003

DIVISION OF WATER QUALITY

By

Alan W. Klimek, P.E.

Director

WQC # 3403