



U.S. Department
of Transportation
**Federal Highway
Administration**

Memorandum

Subject: Hydrology in NEPA Documents

Date: August 18, 2011

From: FHWA Division Office
Columbia, South Carolina

In Reply Refer To: HDA-SC

To: Mr. Randy Williamson
Environmental Engineer
SC Dept. of Transportation

As you know, we have met several times over the past few weeks to discuss the best way to handle hydrology issues in our NEPA documents. After consulting internally and with your staff, we will begin utilizing the process outlined below for all projects.

For all bridge replacement projects, a qualified Hydraulic Engineer will complete the Bridge Replacement Scoping Trip Risk Assessment Form during the initial field review. As a result of this assessment, the Hydraulic Engineer should be able to conclude, that:

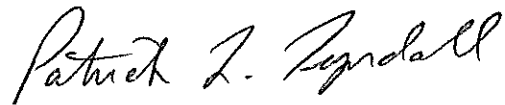
- (1) the project, while located in a floodplain, is expected to cause no more than a 1 ft. rise in the backwater flood elevation,
- (2) the project, while located in a FEMA designated floodway/floodplain, will result in a "No Rise/Impact" certificate. A detailed hydraulic analysis will be performed to verify this assessment, or
- (3) the project, while located in a FEMA designated floodway/floodplain, will result in a CLOMR submittal. Impacts will be determined with a detailed hydraulic analysis.

The results of the assessment will be summarized in the NEPA document and the completed assessment form will be attached as an appendix. This will satisfy the NEPA requirements in evaluating the project's impacts to the floodplain/floodway and the project will continue through the designated contracting method (D/B or D/B/B). If a more detailed hydraulic analysis is necessary to verify the conclusion of the initial field review, it will be completed by the responsible hydraulic engineer as final design details become available. If a detailed hydraulic analysis is deemed necessary and fails to verify (1) or (2) above, the project will go through the environmental re-evaluation process prior to proceeding to construction.

If, as a result of the Risk Assessment, the Hydraulic Engineer anticipates that the project will result in a CLOMR submittal, SCDOT and FHWA will need to agree on the level of additional

hydraulic analysis that is necessary to complete the NEPA process. In these cases, a project scheduled to go through the design/build process may be pulled and processed through normal design-bid-build practices.

The Bridge Replacement Scoping Trip Risk Assessment Form is attached to this memo and we will look for this on future NEPA document submittals. We appreciate your patience and coordination in getting this issue resolved and look forward to implementing these changes.



Patrick L. Tyndall
Planning and Environment Team Leader

Attachment: Bridge Replacement Scoping Trip Risk Assessment Form

Cc:

Wayne Corley, SCDOT

Mark Lester, SCODT

MOVING THE
AMERICAN
ECONOMY



BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

COUNTY: _____

DATE: _____

ROAD #: _____

STREAM CROSSING: _____

Purpose & Need for the Project:

I. FEMA Acknowledgement

Is this project located in a regulated FEMA Floodway? Yes No

Panel Number: _____ Effective Date: _____ (See Attached)

II. FEMA Floodmap Investigation

FEMA Flood Profile Sheet Number _____ illustrates the existing 100 year flood:

- Passes under the existing low chord elevation.
- Is in contact with the existing low chord elevation.
- Overtops the existing bridge finished grade elevation.

III. No Rise/CLOMR Preliminary Determination

Preliminary assessment indicates this project may be constructed to meet the "No-Rise" requirements. A detailed hydraulic analysis will be performed to verify this assessment.

Justification:

Preliminary assessment indicates this project may require a CLOMR/LOMR. Impacts will be determined by a detailed hydraulic analysis.

Justification:

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

IV. Preliminary Bridge Assessment

A. Locate Existing Plans

a. Bridge Plans Yes File No. _____ Sheet No. _____ (See Attached)
 No

b. Road Plans Yes File No. _____ Sheet No. _____ (See Attached)
 No

B. Historical Highwater Data

a. USGS Gage Yes Gage No. _____ Results: _____
 No

b. SCDOT/USGS Documented Highwater Elevations
 Yes Results: _____
 No

c. Existing Plans Yes See Above
 No

V. Field Review

A. Existing Bridge

Length: _____ ft. Width: _____ ft. Max. span Length: _____ ft.

Alignment: Tangent Curved

Bridge Skewed: Yes No Angle: _____

End Abutment Type: _____

Riprap on End Fills: Yes No Condition: _____

Superstructure Type: _____

Substructure Type: _____

Utilities Present: Yes No
Describe: _____

Debris Accumulation on Bridge: Percent Blocked Horizontally: 0 %
Percent Blocked Vertically: 0 %

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

Hydraulic Problems: Yes No

Describe:

V. Field Review (cont.)

B. Hydraulic Features

a. Scour Present: Yes No Location: _____

b. Distance from F.G. to Normal Water Elevation: _____ ft.

c. Distance from Low Steel to Normal Water Elev.: _____ ft.

d. Distance from F.G. to High Water Elevation: _____ ft.

e. Distance from Low Steel to High Water Elev.: _____ ft.

f. Channel Banks Stable: Yes No

Describe:

g. Soil Type: _____ Sand channel with large boulders

h. Exposed Rock: Yes No Location: _____

i. Give Description and Location of any structures or other property that could be damaged due to additional backwater.

C. Existing Roadway Geometry

a. Can the existing roadway be closed for an On-Alignment Bridge Replacement

Yes No

Describe:

If "yes", does the existing vertical and horizontal curves meet the proposed design speed criteria?

BRIDGE REPLACEMENT SCOPING TRIP RISK ASSESSMENT FORM

If "No", will the proposed bridge be"

- Staged Constructed
- Replaced on New Alignment

VI. Field Review (cont.)

A. Proposed Bridge Recommendation:

Length: _____ ft. Width: _____ ft. Elevation: _____ ft.

Span Arrangement: _____

Notes:

DIAGRAM: (Show North Arrow and Direction of Flow)

