

LD-293C
(3/20/07)

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DEPARTMENT OF TRANSPORTATION
LOCATION & DESIGN
ENVIRONMENTAL DATA & HYDRAULIC COMMENTARY FOR PERMITS

LOCATION

Project :
Route :
City/County :
Waterway :

PREPARED BY

Name :
Organization :
Date :

1. Identify involvement within the base flood plain:

This is a skewed crossing of <<stream name >>.
This is a perpendicular crossing of <<stream name >>
The existing bridge will be removed.
The existing bridge will remain in place.

2. Traffic service: ADT

Detours available _____ Length _____ Miles. (km)
Frequency of overtopping Flood
Potential damage to the highway facility

3. Applicable flood plain management criteria:

Note: Use **ONLY the one statement that is applicable and erase all the rest,** including this instruction and the FEMA delineation description information.

For project within a FEMA delineated floodplain:

FEMA regulates flood level, flood velocity, and flow distribution and this project is within FEMA community panel number: _____ and Zone _____. This project complies with FEMA requirements because there will be no increase in flood levels, velocities or flow distribution.

FEMA regulates flood level, flood velocity, and flow distribution and this project is within FEMA community panel number: _____ and Zone _____. This project complies with FEMA requirements because a bridge/culvert will be replaced with a hydraulically equivalent replacement structure.

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For project permits in a FEMA floodplain carrying a **Zone A** (or **X**) designation that does not have base flood elevations. In such instances, an increase in 100-year flood level not exceeding one foot is acceptable.

FEMA regulates flood level, flood velocity, and flow distribution and this project is within FEMA community panel number: _____ and Zone A (or X). This project complies with FEMA requirements because there will be no more than a one foot increase in flood levels, velocities and flow distribution will not be changed significantly.

For projects not within a FEMA floodplain, include the following statement:

FEMA regulates flood level, flood velocity and flood distributions and this project is not within a designated or delineated FEMA floodplain. The project complies because there are no FEMA requirements applicable within the project area.

4. Note social, economic, ecological and human use of the flood plain:

5. Drainage area _____sq. mi. (km²)

6. Overtopping flood

Discharge = _____ cfs (m³/s)

Exceedence Probability _____ %

Stage _____ ft. (m)

7. Compare the hydraulic performance of the proposed action to the hydraulic performance of the existing conditions in terms of:

There will be no change in the flood levels or velocities.

The flood flow characteristics will not change.

This proposed bridge will replace an existing bridge.

There will be no increase in the level of the 1% flood.

There will be an increase of one foot or less for the 1% flood.

This is a proposed bridge in a new location.

8. Riprap abutment protection:

Riprap protection is not being employed

The following riprap protection is being employed:

26" Class I Dry Riprap over 4" no. 25 or 26 aggregate over filter cloth

38" Class II Dry Riprap over 6" no. 25 or 26 aggregate over filter

650 mm Class I Dry Riprap over 100 mm no. 25 or 26 aggregate over filter

950 mm Class II Dry Riprap over 150 mm no. 25 or 26 aggregate over filter cloth

The indicated riprap protection was sized in accordance with the FHWA's

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The indicated riprap protection was sized in accordance with the FHWA's BRIDGE SCOUR AND STREAM INSTABILITY COUNTERMEASURES (HEC-23) publication or other nationally accepted or recognized procedure.

9. HYDRAULIC PERFORMANCE

The data presented herein is the result of statistical analysis and indicates an approximate estimate of the performance of this facility.

Discharge Cfs (m ³ /s)	Estimated Exceedence Probability (%)	Change in existing flood levels ft. (m)	Flood stage upstream of bridge ft. (m)	Velocity thru Bridge Structure ft/s (m/s)
	50%			
	20%			
	10%			
	4%			
	2%			
	1% Natural			
	1% Floodway			
	0.2%			

10. HYDROLOGY

The hydrologic analysis for this project was predicated on Flood Insurance Data for <<county/city name>> county.

The hydrologic analysis for this project was predicated on data obtained by VDOT personnel.

Design Discharge _____ cfs (m³/s) Design Recurrence Interval _____ %

HISTORICAL DATA

Highwater elevations were obtained by field reconnaissance and were correlated with the hydraulic data.

Highwater Elevation _____ ft (m) _____ Date

11. HYDRAULIC

The hydraulic analysis was performed using FHWA water surface profile computer model WSPRO.

The hydraulic analysis was performed using USACE water surface profile computer model (HEC-2/HEC-RAS).

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The hydraulic analysis was performed using accepted principals and techniques of river mechanics applicable to this site.

The proposed facility will not increase the 1% Flood Stage.

The proposed facility will not increase the 1% Flood Stage by more than 1.0 foot.

Design Flood Stage Elevation _____ ft. (m)

12. CAUSEWAYS

The use of causeways for temporary construction access was not considered in this analysis. If it is subsequently found necessary to use causeways, they must be submitted to the Hydraulics Unit for analysis and documentation.

Temporary construction access causeways for this project should be composed of <<specify>>.

The ordinary highwater will be increased by _____ ft. (m)

The high flow profiles will not be affected.

The causeway will not affect the water surface profile.

The maximum causeway elevation is _____ ft. (m)

From abutment A to station

From station _____ to abutment B.

Only one will be in place at a time.

13. EROSION AND SEDIMENT CONTROL

An erosion and sediment control plan will be prepared and implemented in compliance with the Erosion and Sediment Control Law, the Erosion and Sediment Control Regulations, and VDOT's Annual Erosion and Sediment Control Standards and Specifications approved by the Department of Conservation and Recreation.

14. STORMWATER MANAGEMENT

Design of this project will be in compliance with the Stormwater Management Act, the Stormwater Management Regulations, and VDOT's Annual Stormwater Management Standards and Specifications approved by the Department of Conservation and Recreation.