

Instructions for Completing the Risk Assessment Form ([Form 517002](#))

A sample Risk Assessment form is included after the instructions below.

1. Hydrologic Evaluation

- A. Check United States Geological Survey (USGS) Water Resources Data.
- B. Check Flood Insurance Studies, USGS reports, U.S. Army Corps of Engineer (Corps) projects, etc.
- C. Estimate backwater for each (method used is optional). The backwater estimates should be based on the recommended structure. Method used to compute discharge is normally USGS Report 00-4233 or gaging station data if a gaging station is near the site.
- D. List the other State or Federal permits or approvals that will be required, such as the Iowa DNR Floodplain Development Permit or Corps 404 Permit.

2. Property Related Evaluations

- A. Low damage potential - no buildings.
Moderate damage potential - outbuildings.
High damage potential - residential/industrial.
- B. For Flood Insurance Studies, all the information should be in the study. Contact the Iowa DNR for additional information.

3. Environmental Considerations

- A. Check the Concept Statement and / or the appropriate environmental documents.

4. Highway and Bridge (Culvert) Related Evaluations

- A. Check appropriate features if any.
- B. Identify recurrence interval at over-topping (proposed road grade) if less than 500 year.

5. Miscellaneous Comments

- A-E. Self explanatory.
- F. Sample comments: "Bank stabilization may be required in the future - not recommended at this time," or "Riprap on spur dikes not recommended on this project."

6. Traffic Related Evaluations

- A-C. Self explanatory.
- D. Detour: If the road (structure) washed out, specify the length of the posted detour route.

7. Present Facility

- A. Self explanatory.
- B. At what discharge and recurrence interval does the existing road overtop?
- C. Self explanatory. Most streams draining less than 500 square miles (1295 square km) are subject to flash flooding.

8. Alternatives

- A. Self explanatory.
- B. Discussion: If other alternatives were considered (e.g., longer bridge or shorter bridge or culvert), state in a general way and give reason for rejection. For example: "A culvert was considered but was rejected because of drift potential," or "A longer bridge was considered but was not necessary hydraulically and was too costly."
- C. For most sites, further analysis would not be necessary.



Iowa Department of Transportation

RISK ASSESSMENT FOR BRIDGES (CULVERTS) (For 20' Span and Longer Structures)

LOCATION

County Bremer Civil Twp. Jackson Sec. 35 Twp. 91N Range 14W
Over (River, Cr., Dr. Ditch) Cedar River Road No. US 218
Project No. F-218-8(20)--20-09 Design Number 189 FHWA No. ---
Assessment Prepared by B. Barrett Date 08-01-88

1. HYDROLOGIC EVALUATION

- A. Nearest Gaging Station available on this stream: At Janesville, 2000' downstream (None)
- B. Are flood studies available on this stream: Yes No
- C. Flood Data:

Q ₁₀ <u>20,000</u> cfs	Est. Bkwtr. <u>0</u> ft.	Q ₂₅ <u>27,000</u> cfs	Est. Bkwtr. <u>0</u> ft.
Q ₅₀ <u>36,200</u> cfs	Est. Bkwtr. <u>0.1</u> ft.	Q ₁₀₀ <u>41,000</u> cfs	Est. Bkwtr. <u>0.1</u> ft.

 Q₅₀₀ 49,000 cfs or Overtopping _____ cfs (Whichever is lower)
 Drainage Area 1661 sq. mi. Method Used to compute Q gage records
- D. Does the crossing require outside agency approval? Yes No
 List Agencies: Iowa DNR, U.S. Army Corps of Engineers

2. PROPERTY RELATED EVALUATIONS

- A. Damage potential: Low Moderate High
 List buildings in flood plain None Location _____
 Floor Elevation _____
 Upstream Land Use Timber
 Anticipate any Change? Yes No
 If yes, describe anticipated change: _____
- B. Any flood zoning? (Flood Insurance Studies (FIS), etc.) Yes No
 Type of Study Janesville Flood Insurance Study
 Base flood elevation 888.2 (100 year)
 Regulatory floodway width 700' (As noted in FIS Studies)
 Comments _____

3. ENVIRONMENTAL CONSIDERATIONS

- A. List commitments in environmental documents which affect hydraulic design (None)

4. HIGHWAY AND BRIDGE (CULVERT) RELATED EVALUATIONS

- A. Note any outside features which might affect Stage, Discharge, or Frequency.
 Levees Aggradation / Degradation Reservoirs Diversions
 Drainage Dist. Navigation Backwater from another source
 Other _____
 Explanation Levee on east bank downstream of proposed bridge.
- B. Proposed Roadway Overflow Section (None) Length _____ Elev. _____ Frequency (if < 500 yr.): _____ yr.
 Embankment: Soil Type _____ Type Slope Cover _____
 Comments: _____

5. MISCELLANEOUS COMMENTS

- A. Is there unusual scour potential? Yes No Protection Needed? Yes No
- B. Are banks stable? Yes No Protection Needed? Yes No
- C. Are spur dikes needed? Yes No
- D. Does stream carry appreciable amount of ice? Yes No Elevation of high ice (unknown)
- E. Does stream carry appreciable amount of large driftwood? Yes No
- F. Comments _____

6. TRAFFIC RELATED EVALUATIONS

- A. Present Year 1992 Traffic Count 7100 VPD % Trucks 8%
 - B. Design Year 2012 Traffic Count 8650 VPD % Trucks 8%
 - C. Emergency Route Yes No School Bus Route Yes No Mail Route Yes No
 - D. Detour Available? Yes No Length of Detour 6.0 Miles
- Comments _____

7. PRESENT FACILITY

- A. Low Roadway Elevation N/A (present roadway is 0.8 miles downstream)
 - B. Bridge Hydraulic Capacity at point of overtopping _____ cfs Frequency (if Less than Q₅₀₀) _____ yr
Roadway Overflow: Length _____ ft. Elevation _____ ft.
 - C. Is flash flooding likely? Yes No
- Comments _____

8. ALTERNATIVES

- A. Recommended Design Dual 673'-10" x 40' PC beam bridges
Low Superstructure (Bridge) 896.0 Top Opening (culvert) _____
Low Roadway Grade 893.1
Bridge Waterway Opening 8,000 ft. Culvert Opening _____
- B. Were other hydraulic alternates considered? Yes No
Discussion The recommended design is considered to be the minimum acceptable structure at this site.

- C. Is this assessment commensurate with the risks identified? Yes No
or is further analysis needed? Yes No