



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



DAN WYANT
DIRECTOR

Updated March 22, 2012

Public Transportation Agencies

Dear Messieurs or Mses.:

SUBJECT: Emergency Replacement of Bridges and Culverts

Permits are required from the Water Resources Division (WRD) for emergency situations. Failure to submit the proper paperwork may result in the loss of state and federal emergency funding for the replacement work. An unpermitted replacement could become a liability to the PTA, resulting in civil or criminal litigation.

In the event of a bridge or culvert failure, the Public Transportation Agency (PTA) is required to notify the WRD Transportation Specialist covering their area as soon as possible. If the WRD personnel cannot be reached (i.e. after hours or on the weekends) the PTA must notify the WRD Transportation Specialist the next workday **if they cannot be reached before replacing the structure.**

Depending on the timeframe and situation the following options are available:

- 1) If the road must be re-opened immediately, contact the WRD transportation specialist as indicated above and submit the 2 page emergency information sheet for bridge and culvert failure (attached). WRD will review the information and if acceptable either issue an emergency permit or provide an email approval to re-open the road immediately. Once the failed crossing has been replaced, the PTA must submit a regular application to the WRD within 30 days.
- 2) If the road does not have to be re-opened immediately, contact the WRD transportation specialist and submit the regular application form indicating the likely time frame that the structure will be replaced. WRD will review the information and if acceptable issue a regular permit.

The replacement structure may be a permanent replacement or a temporary structure while the PTA designs a permanent crossing. On streams/drains with a drainage area of two square miles or more, the replacement cannot cause additional backwater on upstream properties without a signed damage waiver from the affected property owner or a hydraulic certification indicating no harmful interference.

The PTA should take time to examine why the crossing failed and determine if there were any existing problems at the crossing, i.e. scour holes or poor alignment. They should correct these problems if possible during the replacement process. The WRD Transportation Specialist will inspect each site to ensure that the replacement structure was adequately sized and placed, and that proper soil erosion controls are in place.

Some common mistakes which should be avoided during the emergency replacement include:

1. Putting in a culvert that does not properly match the stream size.
2. Putting in a smaller structure - this will likely cause additional backwater and increase the potential for future failure.
3. Failure to properly bury the culvert which may cause the culvert to become perched over time.
4. Raising the road grade - this will likely cause additional backwater and erosion if water previously or currently goes over the road during a flood event.
5. Improper alignment - this may cause additional stream bank erosion and future failure.
6. Improper soil erosion measures - once the floodwaters have receded, it is required that the site be stabilized within five days to prevent more soil from entering the stream. Proper stabilization will also help to prevent future failures.

If the stream or drain has a contributing drainage area at the crossing of two square miles or more, final approval will be needed from the WRD's hydraulic staff.

Please see the attached map and flow chart to contact the appropriate WRD staff for your area.

Sincerely,

Gerald W. Fulcher, Jr., P. E., Chief
Transportation and Flood Hazard Unit
Water Resources Division
517-335-3172

Attachments

EMERGENCY INFORMATION SHEET FOR BRIDGE OR CULVERT FAILURE

Road Name: _____ Stream Name: _____ T____ R____ Section _____

Township: _____ County: _____

Existing Conditions: (Before failure)

	YES	NO
Was the culvert perched (waterfall at outlet)?	<input type="checkbox"/>	<input type="checkbox"/>
Is there erosion of the banks upstream or downstream?	<input type="checkbox"/>	<input type="checkbox"/>
Was the invert buried?	<input type="checkbox"/>	<input type="checkbox"/>
Was the structure properly aligned with the stream?	<input type="checkbox"/>	<input type="checkbox"/>
Are there wetlands adjacent to the site?	<input type="checkbox"/>	<input type="checkbox"/>
Will adjacent wetlands be affected by the proposed construction?	<input type="checkbox"/>	<input type="checkbox"/>
Has water ever overtopped the road?	<input type="checkbox"/>	<input type="checkbox"/>
Does this structure control the water elevation of a wetland, pond, or lake?	<input type="checkbox"/>	<input type="checkbox"/>
What is the width of the base flow channel (outside the influence of the structure)? _____ feet		
What is the bankfull width? _____ feet		
Stream invert 100-200 feet from the structure: Upstream – distance_____ feet, elevation_____ feet		
Downstream- distance_____ feet, elevation_____ feet		

Existing Structure: **circle one (culvert or bridge)** **circle one (metal** **concrete** **timber)**

Culvert entrance **circle one or more** **(projecting** **mitered** **headwall** **wingwalls)**

Diameter _____ feet Span _____ feet Rise _____ feet

Length of culvert _____ feet Width of bridge _____ feet

Waterway (end area) opening (ft²) _____

Low chord elevation (ft) _____

Invert elevation (ft) structure _____

Invert elevation (ft) stream _____

High-water elevation (ft) _____

Road grade elevation at structure (ft) _____

Elevation of low point of approach (ft) _____

Comments: (describe emergency conditions)

Proposed Conditions:

	YES	NO
Will the proposed structure have a different span, rise, length or width than the existing structure?	<input type="checkbox"/>	<input type="checkbox"/>
Will temporary and permanent soil erosion controls be implemented?	<input type="checkbox"/>	<input type="checkbox"/>
Will there be any changes to the invert elevation from the existing conditions?	<input type="checkbox"/>	<input type="checkbox"/>
Will the road low point elevation be increased?	<input type="checkbox"/>	<input type="checkbox"/>

Proposed Structure: circle one (culvert or bridge) circle one (metal concrete timber)

Culvert entrance circle one (projecting mitered headwall wingwalls)

Culvert Diameter _____ feet Span _____ feet Rise _____ feet

Length of culvert _____ feet Width of bridge _____ feet

Waterway (end area) opening (ft²) _____

Low steel elevation (ft) _____

Invert elevation (ft) structure _____

Invert elevation (ft) stream _____

High-water elevation (ft) _____

Road grade elevation at structure (ft) _____

Elevation of low point of approach (ft) _____

Description (Construction staging including soil erosion control measures to be implemented):

Signature: _____ (owner) **Phone:** _____ **Date:** _____

Print Name: _____ (owner) **Agency:** _____

MDEQ Transportation Specialists:

Upper Peninsula: Ginny Pennala, 906-346-8559: Fax 906-346-4480

Northern Lower Peninsula: Jeff Silagy, 989-705-3429: Fax 989-731-6181

Southern Lower Peninsula: Alex Sanchez, 517-335-3473 and Holly Vickers, 517-373-4667: Fax: 517-373-9958

Please mail to: TRANSPORTATION AND FLOOD HAZARD UNIT
WATER RESOURCES DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
PO BOX 30458
LANSING MI 48909-7958