



## Wisconsin Department of Transportation

Scott Walker  
Governor

Mark Gottlieb, P.E.  
Secretary

Division of Transportation System Development  
Bureau of Structures  
4802 Sheboygan Ave, Rm 601  
Madison, WI 53707-7916  
Phone: 608-266-8195

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TO: WisDOT Certified Bridge Inspectors and Program Managers

FROM: Richard Marz, P.E.  
Chief Structures Maintenance Engineer  
Bureau of Structures

SUBJECT: Technical Memorandum (Update to 9/9/2014 Policy Memo)  
Underwater Profile Activity Frequency  
NBI Channel Criteria Update

IMPLEMENTATION: This memorandum applies to all bridges in the State and is effective immediately.  
(This policy clarifies but does not replace the Structures Inspection Manual)

### GUIDELINES:

This memorandum describes the requirements for preparation and documentation of underwater profiles for bridges in Wisconsin. Profile activities are not required for four-sided structures (i.e. box culverts and round/elliptical pipes). For a bridge over a body of water, the frequency shall be established in accordance with the following criteria:

**Initial Underwater Profile Activity** – All structures over water shall have an initial underwater profile activity taken during the Initial Inspection. The results shall be entered into HSI with documentation that show or explain the profile. For new bridges, this shall be done during the initial NBIS inspection. At a minimum, profiles shall be taken at the upstream and downstream fascia per requirements in the Structures Inspection Manual. It is not required to profile around substructure units (as these are covered by UW-Probe and/or Dive Inspections), but this may be done during the profile activity as directed by the inspection team leader.

### Follow-up Underwater Profile Activities –

**Higher Risk Bridges** – Structures in this category include:

- Bridges that are scour critical, having a code of 3 or less for NBI Item 113 or
- **Bridges that have NBI Channel (Item 61) coded at 5 or below or**
- Bridges that have a Scour Defect (6000) in Condition State 3 or 4

Bridges meeting these criteria shall have profiles taken every 24 months on both the upstream and downstream fascia. These shall be compared with historical data to ascertain potential movement of the channel and risk of substructure undermining.

**Bridges Requiring Dive Inspections** – Structures not falling into the Higher Risk category above, but require dive inspections shall have profiles taken during every dive inspection. These shall be, at a minimum, upstream and downstream fascia, or more complex profiles.

**Structures involved in a significant flooding event** – Structures over water that experience a significant flooding event shall have a post flood profile evaluation to ensure the channel hasn't significantly shifted to affect the structural integrity of the bridge. A significant flood event, for this memo, is defined as one that causes the stream to flow beyond its banks.

**Other** – Subsequent profile measurements for structures over water that do not meet the above criteria are not required, but should be scheduled by the Program Manager if conditions in the field warrant follow-up actions.

### QUESTIONS:

For information on the technical contents of this memorandum, please contact David Genson at (608)-266-3722 or Rick Marz at (608)-266-8195.