



Wisconsin Department of Transportation

Tony Evers
Governor

Craig Thompson
Secretary

Division of Transportation System Development
Bureau of Structures
4822 Madison Yards Way
Madison, WI 53707-7916
Phone: 608-266-8195

DATE: 10/15/2020

TO: Wisconsin Bridge Inspection Team Leaders and Program Managers

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

SUBJECT: Technical Memorandum
Local Bridge Inspections – Extended Frequencies

GUIDELINES: This memorandum describes the policy to extend inspection frequencies for eligible local bridge structures.

Notice to all local bridge owners: the policy concerning inspection frequencies for both Routine and Underwater Dive inspections has been updated to include distinct criteria to qualify for 48- and 72-month inspection frequencies, respectively.

The details of the policy can be found both in the attached documents and in the Structures Inspection Manual.

Background

The National Bridge Inspection Standards (NBIS) were created in 1971 under the 1968 Federal Aid Highway Act. This led to the formulation of national guidelines requiring that all states maintain an up-to-date inventory of all bridges over 20 feet in span and inspect them at regular intervals. For most routine inspections, this interval is 24 months.

In 2018, Wisconsin requested permission from the Federal Highway Administration (FHWA) to implement extended bridge inspection frequencies for lower risk structures. Included in that request were distinct criteria for bridges to qualify for extended Routine and Underwater Dive intervals.

On November 5, 2019 FHWA formally approved that request. Subsequently, WisDOT developed an implementation plan for 2020 to include State owned structures as a pilot project and targeted 2021 as the year that local agencies would be eligible to utilize these policies.

Structure Criteria and Qualifications

For a bridge to be eligible for 48-month routine inspections, there are 15 specific criteria that must be met (see attached). In general, these criteria relate to condition, age, risk, and complexity to determine eligibility. As of the request in 2018, roughly 36% of the structures on the local inventory qualified.

In addition, for a bridge to be eligible for 72-month underwater dive inspections, there are 11 criteria that must be met. Like the above, there were close to 40% of structures that qualified for extended dive frequencies in 2018.

Agency Qualifications

Local agencies are required to be assessed at a level of Compliance or Substantial Compliance for each of the FHWA 23 metrics to be eligible to utilize the extended frequency provisions. The link to the Metric document is below.

<https://wisconsindot.gov/dtsdManuals/strct/inspection/nbip-metric-manual.pdf>

Failure to assess at these levels for any of the 23 metrics will require the local agency to write a Plan of Corrective Action (PCA) to correct the deficiencies. The plan must be approved by the Statewide Inspection Program Manager and Regional Program Manager and the deficiencies must be corrected within the timeline agreed to in the PCA to maintain eligibility.

Application Process

To utilize these policies (it is not a requirement), a new version of the DT2002 Structure Inspection Quality Control Form will need to be submitted by the County PM or Commissioner. This form details specific information relevant to a successful inspection program and allows the local agency to 'Opt-in' to using extended frequencies.

THE DEADLINE FOR APPLYING FOR THE 2021 INSPECTION SEASON IS FEBRUARY 1ST, 2021

Implementation Plan and Schedule

1. Week of November 2nd, 2020:
 - a. Regional PM's will be sent an Excel sheet listing eligible local structures to disseminate to local agencies.
 - b. Regional PM's will contact local agencies with list and a link to the DT2002 form.
2. February 1st, 2021:
 - a. Deadline for county to have a completed (and signed) DT2002 form submitted electronically to the Regional and Statewide PM's. **Forms not received by this date cannot be guaranteed approval for extended frequencies in the 2021 season.**
3. March 15th, 2021:
 - a. This is the due date of the National Bridge Inventory File. After submittal of the file, this will be the first day the policy will be open to use in the Highway Structures Information System. Regional and BOS PM's will update frequencies accordingly to reflect DT2002 form requests.

QUESTIONS:

For information on the technical contents of this memorandum, please contact Richard Marz at (608)-266-8195 or Travis McDaniel at (608)-266-5097.



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

Wisconsin Division

November 5, 2019

525 Junction Road, Suite 8000
Madison, WI 53717
Phone: (608) 829-7500
Fax: (608) 662-2121
www.fhwa.dot.gov/widiv/

In Reply Refer To:
HDA-WI

Richard Marz, P.E.
Chief Structure Maintenance Engineer, Bureau of Structures
Division of Transportation Systems Development
Wisconsin Department of Transportation
4822 Madison Yards Way
P.O. Box 7910
Madison, WI 53707-7910

Dear Mr. Marz:

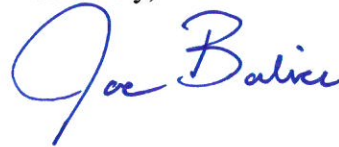
I'm writing in response to Travis McDaniel's October 31, 2019 email in which the Wisconsin Department of Transportation (WisDOT) requested a letter of approval from the Federal Highway Administration (FHWA) to implement an extended bridge inspection frequency program for lower risk structures. Our records indicate the Wisconsin Division office, along with the FHWA Office of Bridges Structures, conditionally approved two separate WisDOT proposals on May 7 and 8, 2018 which identified distinct criteria for bridges to qualify for extended routine and underwater dive inspection intervals. The basis for granting conditional approval was to allow WisDOT the opportunity to address FHWA comments which were adequately resolved on July 12, 2018. FHWA and WisDOT also mutually agreed that verbal approval was sufficient until WisDOT was ready to implement extended bridge inspection frequencies on the state system.

Based on our recent discussions, WisDOT is tentatively targeting implementation of extended intervals for eligible structures in the state inventory after the March 15, 2020 National Bridge Inventory submittal. Please consider this letter as formal approval to implement 72-month underwater dive and 48-month routine inspection intervals for state highway bridges in accordance with the FHWA Technical Advisory 5140.21 and 23 CFR 650.311(a)(3) and (b)(3) of the National Bridge Inspection Standards. Please note, the Division Office will annually assess that the provisions outlined in the June 27 and July 12, 2018 agreements between FHWA and WisDOT are adhered to and in compliance with Metrics 6 and 8 of the National Bridge Inspection Program (see attached).

Lastly, it is our understanding that local bridges will be eligible to participate in extended routine and underwater dive inspection frequencies in the future. When WisDOT finalizes these program details and identifies a specific timeframe for implementation, please submit them to our office for review and concurrence.

If you have any questions or concerns, please call me at (608) 829-7528. Thank you.

Sincerely,

A handwritten signature in blue ink that reads "Joe Balice". The signature is written in a cursive style with a large, looping "J" and "B".

Joe Balice, P.E.
Structures Program Manager

attachments



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Scott Walker, Governor
Dave Ross, Secretary
Internet: www.dot.wisconsin.gov

June 27, 2018

**National Bridge Inspection Standards (NBIS)
Extended 72-Month Inspection Interval – Underwater Dive Inspections
Wisconsin Department of Transportation**

Joe Balice
Division Bridge Engineer
FHWA Wisconsin Division
525 Junction Road, Suite 8000
Madison, WI 53717

The Wisconsin Department of Transportation (WisDOT) is requesting approval to establish an underwater dive inspection interval of 72 months for bridges that meet the criteria included in this request. The criteria were researched and developed using the FHWA Technical Advisory 5140.21, the Code of Federal Regulations (23 CFR 650.311), Wisconsin Trans 212.06, and the National Bridge Inspection Standards.

As of April 2017, Wisconsin has 14,187 bridge structures that carry highway traffic, of which 5293 are State owned and maintained. Local agencies own and maintain the remainder (8894). WisDOT currently has a risk based underwater inspection policy in place to increase the frequency of inspections when structures fall below metrics for condition and/or load carrying capacity. Currently 18 structures are being inspected at an increased frequency.

The total number of structures that will potentially qualify for an extended frequency is 293, or roughly 40% of the structures requiring UW-Dive inspections. The list of qualifying bridges is included with this request.

WisDOT currently has 72 local (County) programs and 8 state (regional office) programs. No agency will be required to utilize the 72-month frequency, if they so choose. The State Inspection Program Manager will oversee the implementation of the 72 month intervals and provide guidance to local programs. Local agencies will be required to opt-in to be eligible for the extended frequency. Only the State or Regional program managers will be authorized to change a bridge to the 72-month Underwater Dive inspection frequency in the Highway Structures Inspection System (HSI).

Similar to what has been programmed for the increased frequencies, the HSI system will be programmed to verify that each structure meets the established criteria. During an inspection entry, when a structure fails to meet the criteria, the HSI system will automatically change the frequency back to 60 months for subsequent inspection scheduling.

The criteria a bridge must meet to be considered for the 72-month inspection frequency are as follows:

1. The NBI Condition Ratings for Substructure (60) or Culvert (62) must be greater than 6 or N (Good Condition).
2. The NBI Scour Critical Bridge code (113) shall be coded as 9, 8, 7, or 5.
3. The structure must be less than 50 years old to have an extended inspection frequency. Item 27.
4. Structure must have at least two (2) Underwater Dive inspections on file to be eligible.
5. Border bridges with adjoining states are not eligible, unless the adjoining state has criteria in place that matches or exceeds the WisDOT criteria and both States have a signed agreement to inspect the bridge at the extended interval. NBI Item 98
6. No complex bridges, as defined by WisDOT and the NBIS, are eligible. NBI Item 43B <> 13, 14, 15, 16, 17.
7. No substructure Elements with the Settlement Defect (4000) in CS2, CS3, or CS4 are eligible.
8. No substructure Elements with the Scour Defect (6000) in CS2, CS3, or CS4 are eligible.
9. No substructure Elements with the Microbial Induced Corrosion Defect (8901).
10. No substructures with timber substructure elements (206, 208, 212, 216, 228, 235, or 242) are eligible.
11. No structures that carry an ADT greater that 50,000 are eligible.

Thank you for the opportunity to submit this request. Please let me know if you need additional information.

Regards,

Travis McDaniel, P.E.
Wisconsin Department of Transportation



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Scott Walker, Governor
Dave Ross, Secretary
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July 12, 2018

**National Bridge Inspection Standards (NBIS)
Extended 48-Month Inspection Interval – Routine Inspections
Wisconsin Department of Transportation**

Joe Balice
Division Bridge Engineer
FHWA Wisconsin Division
525 Junction Road, Suite 8000
Madison, WI 53717

Mr. Balice:

The Wisconsin Department of Transportation (WisDOT) is requesting approval to establish a routine inspection interval of 48 months for bridges that meet the criteria included in this request. The criteria were researched and developed using the FHWA Technical Advisory 5140.21, the Code of Federal Regulations (23 CFR 650.311), Wisconsin Trans 212.06, and the National Bridge Inspection Standards.

As of April 2017, Wisconsin has 14,187 bridge structures that carry highway traffic, of which 5293 are State owned and maintained. Local agencies own and maintain the remainder (8894). WisDOT currently has a risk based policy in place to increase the frequency of Routine inspections when structures fall below metrics for condition and/or load carrying capacity. Currently 1131 structures are being inspected at this increased frequency.

The total number of structures that qualify for an extended frequency is 5292 (2133 State and 3159 Local), or roughly 37% of the inventory. The list of qualifying bridges is included with this request.

WisDOT currently has 72 local (County) programs and 8 state (regional office) programs. No agency will be required to utilize the 48-month frequency, if they so choose. Local agencies will be required to opt-in to be eligible for the extended frequency.

The State Inspection Program Manager will oversee the implementation of the 48-month intervals and provide guidance to local programs. Only the State or Regional program managers will be authorized to update a bridge to the 48-month Routine inspection frequency in the Highway Structures Inspection System (HSI). The HSI system will be programmed to verify that each structure meets the established criteria. During an inspection entry, when a structure fails to meet the criteria, the HSI system will automatically change the frequency back to 24 months for subsequent inspection scheduling and automatically notify the State Inspection Program Manager of the change.

The criteria a bridge must meet to be considered for the 48-month Routine inspection frequency are as follows:

1. The NBI Condition Ratings for Deck (58), Superstructure (59), Substructure (60), Culvert (62), or Channel (61) must be greater than 6 or N.
2. The bridge cannot have an unknown foundation. The NBI Scour Critical Bridge code (113) shall be coded as 9, 8, 7, 5, or N.
3. The bridge cannot have Fracture Critical members. Item 92A will be used to identify these bridges.
4. The bridge cannot have a steel defect of 1010 (Cracking) in CS2, CS3, or CS4.
5. The Inventory load rating must be greater than or equal to RF1.0 (LRFR) or HS20 (LFR). Item 66 will be used to determine this.
6. The structure cannot be load posted; Item 70 shall equal 5.
7. The structure must be less than 50 years old to have an extended inspection frequency. Item 27.
8. The ADT on the structure must be less than 50,000. Item 29.
9. The primary superstructure or substructure material cannot be Timber. Item 43A will be used to determine this.
10. Bridges with vertical clearance on or under (Item 53 and 54) must be greater than 14.0'.
11. Structures with Pin & Hanger assemblies or Pin thru Web assemblies do not qualify. Element 161.
12. Structures with Primary Gusset Plates do not qualify. Element 162.
13. Structure must have at least two (2) routine inspections on file to be eligible.
14. Border bridges with adjoining states are not eligible, unless the adjoining state has criteria in place that matches or exceeds the WisDOT criteria and both States have a signed agreement to inspect the bridge at the extended interval. NBI Item 98
15. No complex bridges, as defined by WisDOT (movable, suspension, or cable-stayed), are eligible. NBI Item 43B <> 13, 14, 15, 16, 17

Thank you for the opportunity to submit this request. Please let me know if you need additional information.

Regards,

Travis McDaniel, P.E.
Wisconsin Department of Transportation