



WISCONSIN DOT STRUCTURES INSPECTION PROGRAM

TECHNICAL BULLETIN

Issue 6 – Winter 2020

LOAD POSTING FOR EMERGENCY VEHICLES

This fall, Wisconsin DOT has been placing new Emergency Vehicle Weight Limit signs at several bridges on or near the Interstate. This is a result of the 2015 FAST Act, federal legislation that allows emergency vehicles to exceed standard highway weight limits. It also requires states to evaluate bridges specifically for firetruck loads and to notify operators of weight limits, if necessary. Emergency vehicle posting have no bearing on commercial or OSOW vehicles. Please click [HERE](#) for additional details and the location of the affected bridges.

Bureau of Traffic Operations and Bureau of Structures are working together for initial sign installation and documentation. BOS has been in contact with local fire departments to discuss these signs. For bridges with Emergency Vehicle Weight Limits, bridge inspectors need to be aware of the following:



- Assessment 9034 (Weight Limit Posting Signs) shall be included, just as with standard weight limit postings.
- If not already on file at time of next inspection, a Load Posting Verification Form (DT2122) shall be completed and uploaded into the Highway Structures Information System (HSIS).
- Emergency Vehicle posting signs are only required at the bridge, without advanced warning signs.
- Emergency Vehicle postings are excluded from the annual inspection requirement for posted bridges, unless otherwise required based on condition.
- Bureau of Structures will be evaluating all bridges throughout the state for emergency vehicle loads over the next two years, however posting signs are only required on bridges on the Interstate and within one-mile access. Other bridges will be placed on a list distributed to fire departments.

For questions on Emergency Vehicle postings, please contact Alex Pence at alex.pence@dot.wi.gov.

STATE BRIDGE DECK SCANNING POLICY

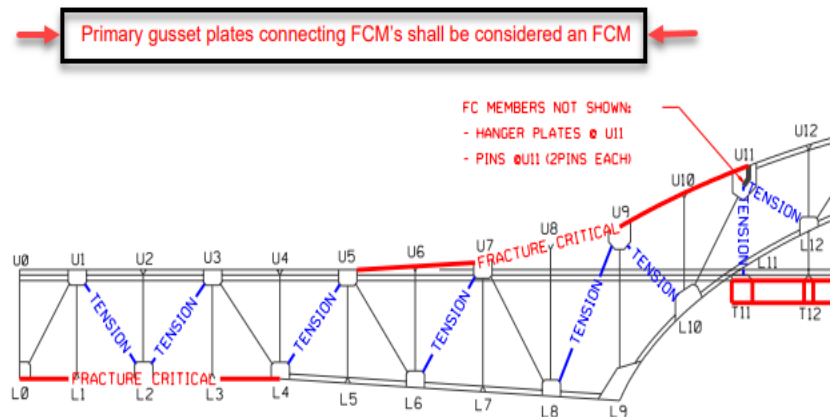
An inspection memo and guidance in Part I of the SIM will be published by the end of the year concerning state-owned structures to describe criteria for non-destructive testing (NDT) on bridge decks. Most of the criteria contained in this memo will be used for managing the bridge deck survey master contracts. Central office will continue to coordinate with regional Inspection Program Managers and other state inspectors to write contracts to perform most NDT. Results from these NDT methods will be entered as Deck Evaluation inspection activities in HSIS. These Deck Evaluations may recommend quantities of defect condition states in the next inspection. The inspector should review the latest Deck Evaluation to determine the actual quantities to record in the inspection. The inspector may also perform chaining on 100% of the wearing surface during the routine inspection. The results of this chaining can be entered as a Deck Evaluation activity within the Routine inspection.

FRACTURE CRITICAL MEMBERS (FCM'S) POLICY

The 2019 FHWA 23 metric review revealed some deficiencies in the FCM's policy. WisDOT reviewed recommendations and have clarified the following two items in the Fracture Critical Policy:

First, FHWA requested a note to be provided on FCM diagrams that primary gusset plates connecting FCM's are considered fracture critical. This is in addition to stating it in the inspection procedures, see example shown. BOS has updated all applicable FCM diagrams to include this statement.

The second clarification involves floor beams. In October 2020, the language was updated and guides the inspector to treat all floor beams spaced greater than 14 feet apart as if they are fracture critical, even though they will not be classified as such.



What this means is that all floor beams meeting the criteria shall have an arms-length inspection for the entire tension portion of the floor beam, including the floor beam connection(s) to the primary load carrying member. These floor beams will be inspected using the same techniques as FCM's. The floor beams shall be inspected at the fracture critical inspection frequency for the bridge in question and be inspected by a certified fracture critical inspector.

In rare cases where arms-length access cannot be safely accomplished by traditional methods (reach-all, ladder, etc.), alternative means of inspection are necessary. These methods require detailed inspection procedures that must be approved by BOS prior to use. Please coordinate with BOS Maintenance prior to developing these procedures. This Policy can be found on our website under [Policy Memos](#) and [Part 1 Chapter 3 of the Structures Inspection Manual \(SIM\)](#).

2019 LOCAL INSPECTION EXTENDED FREQUENCIES

Recently, 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.

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 and can be found at this [website](#). This form details specific information relevant to a successful inspection program and allows the local agency to 'Opt-in' to using extended frequencies for qualifying structures. **The deadline for applying for the 2021 inspection season is February 1st, 2021.** This Policy can be found on our [website](#) under Policy Memos and [Part 1 chapter 3 of the SIM](#).

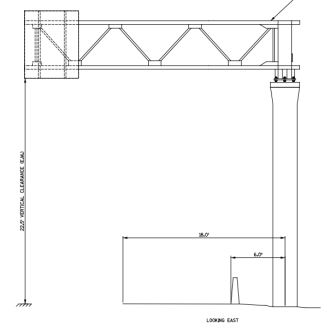
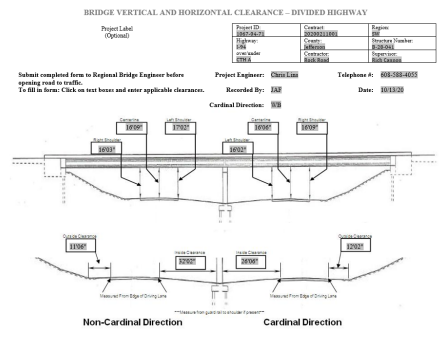
INSPECTION REMINDERS

Structure Review Process - Bureau of Structures Structural Review Process Guide is posted on the Maintenance & Inspection [website](#). This is a flow chart to outline the expectations and necessary steps for completing an Inspection Action.

Inspection Actions are required when element deterioration has reached Condition State 4 or the quantity in CS4 increases. The Structural Review Policy Memo, also on the [website](#), defines cases, responsibility and timelines for completing the structural review. In some cases, HSIS will automatically require an Inspection Action and in other cases, the inspector is responsible for manually adding it. Inspection Actions are most often Structural Reviews completed by a professional engineer, but they can also be completed by performing repairs or following the Critical Finding process.

Official Bridge Files - Official bridge files should be prepared and stored per the SIM [1.2.4 Official Structure Files](#). Paper copies are not required to comply with the FHWA Metrics since the official signed reports are stored in HSIS, but counties may request paper copies for their own records.

Vertical Under Clearance - The vertical under clearance is measured during inspections of bridge and sign structures that span over traffic (usually vehicular, but this could be ship traffic as well). The inspector should check the “Vertical Clearance Measured” activity in HSIS and include a document showing where the clearances were measured. Clearance measurements should be taken if there has been construction affecting the structure. For signs or signal structures measurements are required with every inspection due to the frequency that the sign/signal panels are replaced. Some examples are shown for reference.

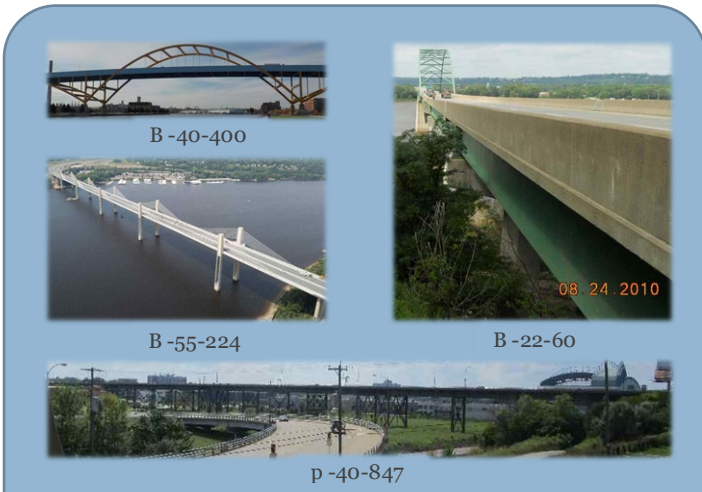


Maintenance Items - Inspectors are to place applicable maintenance recommendations within the inspection report to correct deficient elements and to arrest further deterioration of the element. It is important to include in the maintenance recommendations an appropriate estimate of when the work should be completed. This helps maintenance coordinators select the appropriate maintenance items needed thereby extending the life of the bridge. Please refrain from using a *High Priority* for items that do not require action to be within 30 days. The priorities are defined as follows:

- High Priority - To be completed within 30 days of the finding.
- Medium Priority - To be completed within a year of the finding.
- Low Priority - To be completed before the next inspection.

More information on maintenance items can be found in the [2020 WisDOT Structure Inspection Field Manual](#) on page 14. Inspectors are encouraged to provide additional pictures in inspection reports that help show overall condition of the structure. It is also good practice to take photos of maintenance items needed and can now be uploaded in HSI under the maintenance tab for each item. Below is what it looks like in a completed report. These photos help maintenance coordinators see the extent of problems and serve to help future inspectors to determine if work was done.

Maintenance Items				
Item	Priority	Recommended by	Status	Status change
Drainage - Repair Washouts / Erosion	MEDIUM	Hardinger, Tom J (4001)	IDENTIFIED	10/07/20
ADD RECYCLE OR ASPHALT AT END OF EAST WINGS. BOTH NORTH AND SOUTH SIDE. 1/2 CY EACH. BUILD UP HIGHER THAN SHOULDERS.				



Random Fact: Below is a list of the longest structures in Wisconsin.

Category	Structure #	Length
Bridge (w/units)	B-40-400-	27,347 ft
Bridge (w/o units)	B-55-224	5,079 ft
Bridge (single span)	B-22-60	670 ft
No Plan Bridge	P-40-847	3,415 ft
C-Structure	C-40-38*	3,410 ft
Retaining Wall	R-40-540	3,085 ft
Noise Wall	N-05-10-1	6,304 ft
Sign	S-05-168	205 ft
Signal	S-18-52	138 ft
High Mast Light	Tie L-40/L-67	150 ft

*Part of STH145 Storm Sewer, connects to SS to the north and MMSD SS to the South. To get to structure, add an additional 2,000± ft through MMSD SS box culvert which outlets at Lincoln Cr.



C-40-38



L-40\67



R-40-540



S-5-168



N-5-10-1



S 18-52

INITIAL SIGN/HML INSPECTIONS

As part of the Wind Loaded Structures Initiative, the Standard Specifications were updated to include the initial inspection of overhead sign and high mast light structures. Language for this change can be found in ASP-6. The initial inspection will be completed per the SIM for overhead signs and HML structures but will now be the responsibility of the contractor for state LET construction projects. BOS will continue to maintain master contracts for sign, signal and HML inspections for routine and quality assurance inspections for state structures.

STRUCTURES INSPECTION TRAINING

- 2019 WisDOT Structure Inspection Refresher Training, see Attachment A of May 2019 [Bulletin](#) for complete directions. This training is required for all inspectors that want to remain active team leaders and all new inspectors coming into the program. Inspectors can take the training modules multiple times if they wish.
- NHI Course 130056 - Safety Inspection of In-Service Bridges for Professional Engineers
 - Course has been tentatively postponed to Fall of 2021.
- Ancillary Structures Bolt & Anchor Rod Training
 - The Bureau of Structures posted a 2-part ancillary structures bolt and anchor rod training module that will be added to the Structures Inspection Refresher Training currently on the Learn Center. This online training is intended to replace the previous 1-day bolting course and covers WisDOT specific requirements and procedures for bolt and anchor rod tensioning. These modules will be required refresher training for all Ancillary Sign/ Signal/HML inspection team leads and recommended for team members, who will need to submit the completion certificate by December 31, 2020.

The modules will also be required for contractors who build “S” Sign and “L” High Mast Lighting structures and highly recommended for region and consultant construction staff. Please contact Steve Doocy, Steve.Doocy@dot.wi.gov, if you have any questions.

ABOUT THE BULLETIN

The Bureau of Structures at WisDOT will publish 1~2 newsletters a year to discuss topics involving inspection, maintenance, repair, or improvement information and initiatives. If you have ideas for future topics, please submit to Rick Marz, Travis McDaniel, Matt Coupar or Steve Doocy.

INSPECTION PROGRAM CONTACTS

Office	Name	Phone	Cell	Email	Role
FHWA	Joe Balice	608-829-7528	608-609-5025	joe.balice@dot.gov	FHWA Bridge Engineer
Bureau of Structures	Richard Marz	608-266-8195	608-516-6376	richard.marz@dot.wi.gov	Statewide Inspection Program Manager
Bureau of Structures	Travis McDaniel	608-266-5097		travis.mcdaniel@dot.wi.gov	Assistant Statewide Inspection Program Manager
Bureau of Structures	Matt Coupar	608-266-5083		Matthew.Coupar@dot.wi.gov	Statewide Bridge Inspection Program Manager
Bureau of Structures	Steve Doocy	608-261-6063		Steve.doocy@dot.wi.gov	Statewide Ancillary Inspection Program Manager
Bureau of Structures	James Kast		608-516-6370	james.kast@dot.wi.gov	Reach-All Operator & Inspection/Maintenance
Bureau of Structures	Mark Dent		608-516-6374	mark.dent@dot.wi.gov	Reach-All Operator & Inspection/Maintenance
Bureau of Structures	Craig Hampton		608-516-6373	craig.hampton@dot.wi.gov	Reach-All Operator & Inspection (Scheduling)
Bureau of Structures	Matt Tourdot			Matthew.tourdot@dot.wi.gov	Reach-All Operator & Inspection/Maintenance
Bureau of Structures	Nate Sippel			Nathaniel.Sippel@dot.wi.gov	Reach-All Operator & Inspection/Maintenance
Bureau of Structures	Dean Strey			dean.strey@dot.wi.gov	Reach-All Operator & Inspection/Maintenance
Bureau of Structures	Ryan Bowers	608-267-3577		Ryan.bowers@dot.wi.gov	Bridge Management Engineer / HSI Contact
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Green Bay (NE)	Dale Weber	920-492-7161	920-366-6430	dale.weber@dot.wi.gov	NE Region Bridge Inspection Program Manager
Wisconsin Rapids (NC)	Tom Hardinger	715-421-8323	715-459-4269	thomas.hardinger@dot.wi.gov	NC Region Bridge Inspection Program Manager
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Eau Claire (NW)	Gregory Haig		715-577-0646	gregory.haig@dot.wi.gov	NW Region Bridge Inspection Program Manager

To make an appointment to visit our socially distanced office, please call ahead. When calling to set up an appointment, please be patient, our internet connection and availability is subject to livestock and high water.



This “office” was found in a cattle pass structure in Lafayette County, complete with working phone, desk and chair. The plywood makes for a wind block. Not a bad way to stay socially distant.