**STRUCTURE INSPECTION QUALITY CONTROL**

Wisconsin Department of Transportation

DT2002 10/2020 s.84.17 Wis. Stats.

Date:       Agency (Region/County):

WisDOT requires this form be updated and resubmitted to Bureau of Structures no later than February 1st of the year the program is due for a Quality Assurance Review. Additionally, this form shall be updated and resubmitted when there is a change of County Highway Commissioner or Program Manager. Each program is responsible to keep this document current. An example of this form can be found on the DOT website at [https://wisconsindot.gov/dtsdManuals/strct/inspection/ex-qc-dt.pdf](http://apwmad0p4145:37108/dtsdManuals/strct/inspection/ex-qc-dt.pdf)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Inspection Program Staff** | | | **Special Inspection and Review Credentials** | | | | | |
| **Name** | **Role(s)** | **Employer** | **Routine Team Lead** | **FC Team Lead** | **Dive Team Lead** | **Structural Reviewer** | **Inspector ID** | **Wisconsin PE #** |
|  | Hwy Commissioner |  |  |  |  |  |  |  |
|  | Program Manager |  |  |  |  |  |  |  |
|  | Inspector |  |  |  |  |  |  |  |
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**QUALITY CONTROL BEST PRACTICES**: Entries should be based on a proposed plan for the upcoming inspection cycle. While every inspection does not need to be reviewed under a best practice, the program shall review enough inspections during a cycle to ascertain that consistent, high quality inspection reports are being submitted.

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|  | Best Practices | Quantity | Notes |
|  | Collaborative Inspections |  |  |
|  | Quality Control Inspections |  |  |
|  | Inspector Rotation |  |  |
|  | Independent Entry |  |  |
|  | Inspection Report Review |  |  |
|  | Other: |  |  |
|  | Other: |  |  |

**INSPECTION MEETINGS/TRAINING**: Briefly describe any actions the program partakes in regarding either the Bridge Program or the Structure Inspection Program.

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**MAINTENANCE AND REPAIR ACTIONS**: Describe the process for reviewing inspection recommendations related to both repairs and preventative maintenance actions. Define the process for relaying these actions to local owners (townships, villages, etc.). Describe the follow‐up actions that occur with these owners. Finally, explain how the completed actions are documented.

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**STRUCTURAL REVIEWS AND LOAD RATINGS**: Detail the structural review and/or load rating processes, include the responsible staff for each step in the process. Describe how the work will be reviewed and documented in HSIS.

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**INVENTORY**: Detail the number of structures in each of the inspection types, taking into consideration the frequency of each inspection. Enter N/A for any inspection type that does not apply.

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| **Inspection Type** | **Frequency** | **# of Structures** | **Comments** |
| Routine | 12-Month or less |  |  |
| 24-Month |  |  |
| 48-Month (Extended) |  |  |
| Fracture Critical | 12-Month or less |  |  |
| 24-Month |  |  |
| Underwater Dive | 24-Month or less |  |  |
| 60-Month |  |  |
| 72-Month (Extended) |  |  |
| Underwater Profile | 24-Month |  |  |
| In-Depth | 72-Month |  |  |
| Movable | 12-Month or less |  |  |
| 24-Month |  |  |
| Scour POA | 48-Month |  |  |
| SI&A Field Review | 48-Month |  |  |

**ACCESS EQUIPMENT**: For Fracture Critical and In‐Depth Inspections, describe the methods of access for each bridge.

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| **Bridge #** | **Structure Type** | **Inspection Type** | **Equipment** |
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**Extended Inspection Frequencies: To "opt in" for extended inspection frequencies, please complete this page. For each eligible bridge for the extended inspection frequency, provide the bridge number and inspection type.**

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| OPT-IN | Please check this box if you wish to use the extended inspection frequency policy provisions for eligible bridges in your area. By checking this box, you certify that your Agency will adhere to the policy provisions as set forth in the Wisconsin DOT Structures Inspection Manual for in-service inspections of highway bridges. |

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| **Bridge #** | **Inspection Type** | **Bridge #** | **Inspection Type** |
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**Signature Block**

Local agencies are required to be assessed at a level of Compliance or Substantial Compliance for each of the FHWA 23 metrics for the bridge inspection program to be considered in 'good standing'. Failure to assess at these levels for any of the 23 metrics will require the local agency to write a Plan of Corrective Action that must be approved by the Statewide Inspection Program Manager and Regional Program Manager to correct the deficiencies.

FHWA metrics link : [https://wisconsindot.gov/dtsdManuals/strct/inspection/nbip-metric-manual.pdf](http://apwmad0p4145:37108/dtsdManuals/strct/inspection/nbip-metric-manual.pdf)

Regional PM's are authorized to extend inspection frequencies to eligible structures in the Highway Structures Information System. To be eligible for extended frequencies, the requesting agency must submit this completed form along with all bridges that are to be included in the extended frequency list. The agency must also be considered in good standing with the 23 FHWA Metrics to obtain/maintain eligibility for extended frequencies.

By signing below, I acknowledge that I've reviewed this document and agree to all the terms and conditions. I further agree that all the data provided is accurate to the best of my knowledge.

Highway Commissioner      

Signature Date

Local Program Manager      

Signature Date

Regional Program Manager      

Signature Date

Statewide Program Manager      

Signature Date

**Overview**

WisDOT requires that all inspection programs have a current copy of this form on-file with the Bureau of Structures. The form needs to be updated and re-submitted for approval no later than January 15th of the year the program is due for a Quality Assurance Review. In addition, this form shall be updated and resubmitted when major changes occur in the program, including but not limited to new personnel in either the Commissioner or PM roles, or significant changes to the inspection staff.

For local programs that consult out inspection or program management related services, please provide a copy of that contractual agreement with the consultant(s) performing those services.

**General Instructions:**

# **Page 1**

**Date:** Enter the date that the form is filled out by the Agency representative.

**Agency:**  For local agencies, enter the county name here. For state programs, enter the WisDOT region.

**Inspection Program Staff:** Please fill out the names of the individuals and the specific role they play with the inspection program. These can be both agency staff and consultants as necessary. Names can be repeated if the person fills various roles. For example, a Highway Commissioner who also acts as the Program Manager should have his/her name in both rows. If the team is large, use additional space as necessary to account for all participants. Make sure to add all peripheral staff that may be involved occasionally in the program (load rating engineers, non-destructive testing specialists, data entry specialists, etc.).

**Special Inspection and Review Credentials:** This space is used to fill out specific credentials that staff/consultants have that are important to the inspection program. They include:

**FC TL**: Check this box for each person who is a qualified Fracture Critical Team Leader as defined by WisDOT in Part 1, Chapter 2 of the Structures inspection Manual. Section 1.2.3.2 - Field Inspection Team Qualifications and Responsibility Attributes. The link to the specific Chapter on the WisDOT Maintenance & Inspection website is: [https://wisconsindot.gov/dtsdManuals/strct/inspection/insp-fm-pt1ch2.pdf](http://apwmad0p4145:37108/dtsdManuals/strct/inspection/insp-fm-pt1ch2.pdf)

**Dive TL**: Check this box for each person who is a qualified Underwater Dive Team Leader as defined by WisDOT in Part 1, Chapter 2 of the Structures inspection Manual. See above link.

**Structural Reviewer**: Check this box for each person who is a certified Wisconsin Professional Engineer and has structural experience (inspections, design, analysis, load rating, etc.) with bridges and can perform structural reviews per the WisDOT policy document located on the WisDOT Maintenance & Inspection at this link: [https://wisconsindot.gov/dtsdManuals/strct/policies/inspection/struc-rev-memo.pdf](http://apwmad0p4145:37108/dtsdManuals/strct/policies/inspection/struc-rev-memo.pdf)

**Inspector ID**: For all eligible staff please enter the four-digit inspector ID issued by WisDOT. This is required for all team leaders and encouraged for team members who are working to gain team lead status.

**PE#**: For any staff that has a Wisconsin Professional Engineer’s license, please enter the number here. This is required for anyone who will be performing structural reviews or load rating calculations.

**Quality Control Best Practices:** The purpose of a quality control program is to ensure uniformity and consistency in completeness and accuracy of inspection reports and condition data. Quality control best practices are defined as activities which satisfy the “independent review of inspection reports” section within the criteria language for FHWA’s Metric #20. The intent is to have each program internally provide a level of review as to the completeness and accuracy of information being submitted on inspection reports. For each best practice utilized by the inspection program, please provide information related to the number of structures (**Quantity)** and details on when and how this best practice is being implemented (**Notes).**

A brief description of common best practices is below. For more information, refer to [Section 1.2.5.9](http://apwmad0p4145:37108/dtsdManuals/strct/inspection/insp-fm-pt1ch2.pdf) of the Structures Inspection Manual, Part 1 Chapter 2.

**Collaborative Inspections:** Inspection performed with multiple inspectors where each inspector independently inspects the structure completely. After completion of the inspection, the group of inspectors get together to exchange notes, condition ratings, repair recommendations, etc. and work together to “calibrate” the team for consistent and complete inspection reporting. This is most useful at the beginning of an inspection season.

**Quality Control Inspections:** This is an inspection that is performed by a team leader. During the inspection, another individual (PM or TL) is along to observe the practices and process the inspector uses to perform the inspection. The additional people may or may not participate directly in the inspection, but should provide input on the inspector’s methods and results.

**Inspector Rotation:** This is a common method that is accomplished by alternating Team Leaders each inspection cycle for all or a portion of the program’s inventory. This format allows for several different sets of eyes to view the structure during its lifespan. The additional sets of eyes will provide quality checks on Inventory Data, Elements, Defects, and Component Ratings. This method is predicated upon the assumption that the same inspector does not inspect the same structure in consecutive cycles.

**Independent Entry:** Independent Entry is defined as having another individual enter an inspection for the Team Leader that performed the inspection. The individual entering the inspection must have at least passed the NHI “Safety Inspection of In-Service Bridges” course and must not have participated on the same inspection he/she is entering. This Best Practice is targeted at having a fresh set of eyes review the elements and data present on the report. Elements should make sense for the structure type being inspected and low NBI Component Ratings should be supplemented with sufficient documentation.

**Inspection Report Review:** Inspection Report Review is defined as an independent review of an inspection report by a Bridge Owner or Program Manager. The Program Manager reviewing an inspection report for which he/she was the Team Leader will not qualify under this Best Practice. This is sometimes referred to as an “office review”.

**Inspection Meetings/Trainings:** Use this section to detail any meetings related to the inspection program you might have scheduled. These might include meetings with:

* + The inspection team to work on schedules, coding consistency, or other items of note.
  + The Commissioner and PM to discuss program related items involving traffic control, equipment needs, etc.
  + WisDOT PM’s to discuss inspection policy, reach-all equipment usage, quality assurance reviews, new initiatives, etc.
  + Engineers performing load ratings and/or structural reviews.
  + Local agency representatives to discuss inspection findings, repair needs, etc.

In addition, use this section to detail any training that is scheduled (or anticipated) in the next several years for your team. Include NHI courses, WisDOT sponsored refresher courses, or any other relevant training for the program.

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**Maintenance and Repair Actions:** Use this section to detail your agencies approach to repair and preventative maintenance actions on structures in your inventory. Questions to consider in your answer may be:

* + What preventative maintenance actions does the program employ?
    - See WisDOT policy: [https://wisconsindot.gov/dtsdManuals/strct/manuals/bridge/ch42.pdf](http://apwmad0p4145:37108/dtsdManuals/strct/manuals/bridge/ch42.pdf)
  + What is the process to review repair/maintenance recommendations from inspectors?
  + Who determines what work gets done, what priority it is, and who completes it?
  + How do the local agencies under the County program work with regards to maintenance/repair?
  + How do you communicate repair/maintenance needs to local agencies?
  + Do you have crews that can do the work?
  + How are you “closing the loop” with documentation? Will you be updating the HSIS when requested work is completed (or rejected)?
  + If you need a repair designed, who does that?

**Structural Review and Load Ratings:** Use this section to detail your agencies approach to structural reviews and load rating needs that might come up during the inspection. Include who’ll be performing both, the level of review and documentation in the Highway Structures Information System. More information on the Structural Review requirements can be found here: [https://wisconsindot.gov/dtsdManuals/strct/policies/inspection/struc-rev-memo.pdf](http://apwmad0p4145:37108/dtsdManuals/strct/policies/inspection/struc-rev-memo.pdf)

Some items to address may be:

* + What process will your inspection program employ to complete structural reviews (SR) in a timely manner?
  + Is anyone on your team a PE and qualified to use engineering judgement, where applicable, in lieu of calculations to support SR decisions?
  + What is your process for determining when something can be evaluated using engineering judgement, and when you need calculations to support your conclusions?
  + What protocols do you have in place if/when you need to contact the Bureau of Structures Load Rating Unit for potential assistance?
  + Do you have someone on your team qualified to do load ratings or load posting calculations?
  + If you choose to repair a deficiency in the 60-day window, rather than perform the SR, who’ll design that repair?
  + Who will review SR’s and load ratings on your team? Will all matters related to SR’s go through your PM?
  + If, during the process of performing an SR, your team determines that the defect requires a partial or full lane closure which recategorizes the finding as a Critical Finding (CF), what is the plan of action to adhere to the policy requirements? [https://wisconsindot.gov/dtsdManuals/strct/policies/inspection/crt-fdg-memo.pdf](http://apwmad0p4145:37108/dtsdManuals/strct/policies/inspection/crt-fdg-memo.pdf)

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**Inventory:** This section gets into the specifics related to the inventory of the program, including the required inspection frequencies for each type of inspection and activity. Multiple inspection/activity types are documented in the table, as are applicable risk-based inspection frequencies. For instance, routine inspections are required for every highway bridge. But, depending on policy, need to be inspected either at 12-month, 24-month, or 48-month cycles. The extended frequency (48-months) is new to the WisDOT program.

For each category, indicate how many structures will be inspected at the frequency listed. If an inspection type listed does not apply to your program, simply enter N/A in the **# of Structures** column for that entry.

This is a snapshot in time, and obviously will change as structures are replaced, condition ratings decline, load postings are added, etc. It is expected to be filled out using the most up-to-date information available to the agency at the time.

In the **Comments** section, when applicable, give some specific information related to the inventory in that category. For instance, if there are structures inspected at an increased (12-month) interval, are most due to load postings or condition? For Scour Plan of Action updates, who does that work and when will it be updated in HSIS?

**Access Equipment:** For every structure that requires either In-Depth or Fracture Critical inspections, please list the following:

**Bridge #:**  The ID used in HSIS for the bridge.

**Structure Type:** Indicate the primary superstructure type (or feature). You can also indicate the FC component, if applicable. FC Pier Cap, for instance, if it’s one element that puts the structure into this category.

**Inspection Type:** Use FC for fracture Critical inspections or ID for in-depth inspections.

**Equipment:** In this section, indicate the type of equipment (snooper, man-basket, ladder, rope-access, etc.) used to get hands-on access to each component required in a FC or In-Depth inspection. Be detailed on what equipment is providing access to which member. For instance, if the snooper provides access to all FCM’s, say so. If you use a combination of equipment, note which piece gets the inspector to what element.

For complicated structures, it is also acceptable to attach the specific inspection procedures for the bridge in question to this DT form. In that case, indicate “see attached” in this column. All access must be spelled out, particularly for hard to reach details.

# **Page 4**

**Extended Inspection Frequencies:** This page is only used if the program is wishing to “opt-in” to using the policy provisions developed by WisDOT and approved by FHWA for extended Routine (48-month) and Underwater Dive (72-month) frequencies.

The agency must check the “opt-in” box and provide the bridge ID’s and inspection type/frequency for each eligible structure it wants to inspect using this new policy. By checking this box, the agency is authorizing the Regional PM to update inspection frequencies in the HSIS.

The agency must maintain good standing with the 23 FHWA metrics to be eligible for this provision. Please note that not every eligible bridge is required to use extended frequencies; the PM can choose to schedule inspections on the standard schedule if desired.

To fill this page out properly, simply enter the Bridge ID and the inspection type and frequency for eligible structures. The number of structures on this page must match what was filled out under the Inventory section on page 3 of this form.

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**Signature Block:** After completion of the form, please have all applicable parties sign and date it accordingly. It is strongly recommended that a draft copy be sent to the Regional and/or BOS Program managers to get comments/corrections before signing the “final” copy.

Once all Parties have signed the document, BOS will send a signed copy back to the agency and keep a copy on file at Hill Farms. At that point, the Regional PM will update the inspection frequencies in the Highway Structures Information System.