



# Memorandum

Subject: **ACTION**: National Bridge Inspection Standards  
Inspection Interval Guidance

Date: June 13, 2022  
In Reply Refer To: HIBS-40

From: Joseph L. Hartmann, Ph.D., P.E. /s/  
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To: Division Administrators  
Federal Lands Highway Division Directors

An update to 23 CFR part 650 Subpart C, National Bridge Inspection Standards (NBIS), was published on May 6, 2022. Section 650.311 establishes the standards for risk-based bridge inspection intervals for routine, underwater, and NSTM inspections. State transportation departments, Federal agencies, and Tribal governments (herein collectively referred to as “Agencies”) may develop reduced and extended inspection interval policies using Method 1 – a simplified risk-based interval determination, Method 2 – a more rigorous risk-based interval determination, or a combination of both methods.

By June 6, 2024, all Agencies must develop reduced inspection interval policies in accordance with Section 650.311(a)(1)(ii), (b)(1)(ii), and (c)(1)(ii) (23 CFR 650.311(g)(1)). Extended inspection interval policies in accordance with Section 650.311(a)(1)(iii), (b)(1)(iii), and (c)(1)(iii) may be developed at any time. Until data are collected in accordance with the Specifications for the National Bridge Inventory (SNBI), Agencies may use equivalent criteria per the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges as outlined in the attached guidance to assist in development of their inspection interval policies.

This memorandum replaces the memorandum of the same subject that was issued on May 9, 2022. It also replaces and rescinds the “Risk-Based Interval Determination for Routine Bridge Inspections” guidance dated June 8, 2018, as well as the Federal Highway Administration’s (FHWA) current practice for establishing 48-month inspection intervals, based on TA 5140.21 dated September 16, 1988. Extended inspection interval policies approved by FHWA under the previous regulation will be rescinded on June 6, 2024, pursuant to 23 CFR 650.311(g)(2).

The attached guidance outlines the criteria and the process for Agencies to develop policies that fulfill the requirements of 23 CFR 650.311, and the FHWA process for reviewing these policies. Please work with your stakeholders as they update their policies in accordance with the current NBIS.

Please share this memorandum and its attachment with appropriate staff and with all appropriate Agency officials. Questions on the guidance can be directed to Samantha Lubkin at (202) 366-1575 or [Samantha.Lubkin@dot.gov](mailto:Samantha.Lubkin@dot.gov), or to Thomas Drda at (919) 747-7011 or [Thomas.Drda@dot.gov](mailto:Thomas.Drda@dot.gov).

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# Guidance for the Approval of Inspection Interval Policies

*Except for any statutes and regulations cited, the contents of this document do not have the force and effect of law and are not meant to bind States or the public in any way. This document is intended only to provide clarity regarding existing requirements under the law or agency policies.*

- 1. What is the purpose of this guidance?** This guidance outlines the requirements for risk-based inspection intervals as outlined in 23 CFR 650.311 and establishes a general framework and process for the Federal Highway Administration’s (FHWA) review and, if required, approval of risk-based inspection interval policies submitted by a State transportation department, Federal agency, or Tribal government (herein collectively referred to as “Agency”). Two distinct methods are permitted by the regulation for determining risk-based inspection intervals for a bridge or group of bridges. Method 1 offers a simplified assessment approach to determining inspection intervals, while Method 2 uses a more rigorous assessment methodology.
- 2. Is this new FHWA guidance?** Yes. This replaces the guidance provided by FHWA’s “Risk-Based Interval Determination for Routine Bridge Inspections” guidance dated June 8, 2018, as well as FHWA’s practice for establishing 48-month inspection intervals, based on TA 5140.21 dated September 16, 1988. This guidance serves as the replacement in all FHWA materials citing these documents.
- 3. What authorities govern this guidance?**
  - a. Section 144(h) of title 23, United States Code (U.S.C.), National bridge and tunnel inspection standards
  - b. 23 CFR part 650, Subpart C, National Bridge Inspection Standards (NBIS)
- 4. What is the background of this guidance?**

The NBIS identifies two methods for determining risk-based inspection intervals as outlined in 23 CFR 650.311. While both methods continue FHWA’s principles for establishing reduced and extended inspection intervals, the new regulation provides two separate methodologies for establishing those intervals based on NCHRP Report 782, Proposed Guideline for Reliability Based Inspection Practices<sup>1</sup>. The NCHRP Report 782 is a result of research performed under NCHRP Project 12-82, Developing Reliability-Based Bridge Inspection Practices.
- 5. What is FHWA’s guidance concerning the review and approval of inspection interval policies?**
  - a. Method 1: FHWA approval is not required for any aspect of Method 1 inspection interval determination. However, an Agency must document reduced and extended inspection interval policies. Extended inspection interval policies, along with notification of intent

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<sup>1</sup> The NCHRP Report 782 may be found at the following URL: <http://www.trb.org/Publications/Blurbs/171448.aspx>

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to use, must be submitted to FHWA prior to implementation. This requirement also applies to subsequent changes in policy. 23 CFR 650.311(a)(1)(ii)(A), (a)(1)(iii)(B), (b)(1)(ii)(A), (b)(1)(iii)(B), (c)(1)(ii)(A), and (c)(1)(iii)(B).

- b.** Method 2: The policy and criteria that establish intervals, including subsequent changes, must be submitted for FHWA approval prior to implementation. 23 CFR 650.311(a)(2), (b)(2), and (c)(2).

### **6. What are the responsibilities of FHWA Division offices and Federal Lands Highway Division offices in the review and approval of inspection interval policies?**

- a.** Method 1: FHWA approval is not required; however, FHWA Division office and Federal Lands Highway Division office staff (herein collectively referred to as “Division staff”) should assume stewardship and oversight roles during the development and implementation, respectively, of any such policies. Division staff must also retain the required written notification of extended inspection interval policy implementation. 23 CFR 650.311(a)(1)(ii)(A), (a)(1)(iii)(B), (b)(1)(ii)(A), (b)(1)(iii)(B), (c)(1)(ii)(A), and (c)(1)(iii)(B).
- b.** Method 2: Division staff should provide technical assistance during the development of these policies and must review and provide a recommendation for approval to the Office of Bridges and Structures (HIBS). Division staff must also coordinate with HIBS for its review and concurrence with the Division office’s approval and provide written notification of approval to the Agency, copying HIBS on the correspondence.

### **7. What are the responsibilities of HIBS in the review and approval of inspection interval policies?**

- a.** Method 1: HIBS staff will provide technical assistance when requested. HIBS review and approval of policy is not required.
- b.** Method 2: HIBS staff will provide technical assistance when requested. HIBS staff will review and provide written concurrence with the Division office’s recommended approval of the policy. HIBS staff will also track approved policies to ensure national consistency.

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## **Risk Based Inspection Interval Determination - Supplemental Information**

The intent of the NBIS is not to mandate the application of a single risk-based approach to an entire inventory, although Agencies could choose to do so. Rather, the NBIS allows Agencies to use either Method 1 or Method 2 to determine the inspection interval for routine, underwater, and NSTM inspections for each bridge or for a group of bridges.

Agencies are required to establish a reduced inspection interval policy for routine, underwater, and NSTM inspections by June 6, 2024 (23 CFR 650.311(g)(1)). To meet this requirement, an Agency may elect to use either Method 1 or Method 2, or may choose between the two methods to establish the reduced inspection interval policy for different inspection types (e.g., Method 1 for routine inspection intervals and Method 2 for underwater inspection intervals) or different bridge populations (e.g., Method 1 for simple bridges and Method 2 for complex or major bridges). Agencies are not required to develop an extended inspection interval policy for routine, underwater, and NSTM inspections, but must develop a policy using either Method 1 or Method 2 (23 CFR 650.311(a)(1)(iii), (a)(2), (b)(1)(iii), (b)(2), (c)(1)(iii), and (c)(2)), or a combination of the two methods as described above, if they wish to use extended inspection intervals. Per 23 CFR 650.311(a)(2)(vi), (b)(2), and (c)(2), an Agency must establish criteria to classify applicable bridges in each of the risk categories prescribed when using Method 2.

For any new, rehabilitated, or structurally modified bridge, an initial inspection must be performed, and the bridge must be in service for at least 24 months and receive its next routine inspection, before establishing a routine inspection interval greater than 24 months (23 CFR 650.311(a)(4)).

## **Transition from the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges (Coding Guide) to the Specification for the National Bridge Inventory (SNBI)**

The NBIS requires collection of data in accordance with the SNBI (23 CFR 650.315(a)). Based on the regulation implementation timeline guidance, Agencies must begin collection of SNBI data no later than January 2026. Implementation of 23 CFR 650.311 requires Agencies to collect and use certain SNBI data to establish inspection intervals, and to update and implement reduced inspection interval policies and extended inspection interval policies (if utilized) by June 2024. Agencies can elect to implement Method 1 and/or Method 2 as soon as the regulation is effective if they so choose.

Prior to SNBI data collection, Agencies can utilize equivalent criteria per the Coding Guide as shown in Table 2 below to assist in developing their inspection interval policies, and in determining their initial list of bridges on reduced or extended inspection intervals as follows:

- If using Method 1 for reduced intervals, equivalent criteria per the Coding Guide may be used to determine the initial reduced inspection interval bridge list until the necessary SNBI data have been collected. At that time, the list should be verified against the SNBI data.

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- If using Method 1 for extended intervals, equivalent criteria per the Coding Guide may be used to determine the initial extended inspection interval bridge list, but the Agency must also collect the pertinent SNBI data identified in 23 CFR 650.311(a)(1)(iii), (b)(1)(iii), and (c)(1)(iii).
- If using Method 2 for reduced or extended intervals, equivalent criteria per the Coding Guide may be used to determine the initial reduced or extended interval bridge list, but Agencies must also develop policies based on the pertinent SNBI data and collect the SNBI data utilized in those policies (23 CFR 650.311(a)(2), (b)(2), and (c)(2)).

Once the new inspection interval policies are established by an Agency, SNBI data utilized in the criteria for determination of inspection intervals must be collected and maintained by the Agency and made available to FHWA for oversight (23 CFR 650.313(r) and 315(a)). Once a complete SNBI dataset has been collected and verified, Agencies must reevaluate their reduced and extended inspection interval policies and populations to ensure conformance with the regulation and the SNBI (23 CFR 650.311(f)).

### **Inspection Interval Requirements Applicable to Both Methods**

- Agencies must document any criteria used to determine the level and interval for damage, in-depth, and special inspections in their bridge inspection policies and procedures (23 CFR 650.311(d)).
- Agencies must inspect bridges within two months after the month in which an inspection is due for inspection intervals less than 24 months in accordance with 23 CFR 650.311(e)(1). For inspection intervals of 24 months or greater, Agencies must inspect bridges within three months after the month in which an inspection is due in accordance with 23 CFR 650.311(e)(2).
- Agencies must review the inspection interval criteria after each inspection to ensure the proper interval is assigned to the bridge. They must establish the next inspection due date based on the validated established interval and the last inspection date in accordance with 23 CFR 650.311(f).
- Agencies must implement reduced routine, underwater, and NSTM inspection interval criteria by June 6, 2024 (23 CFR 650.311(g)(1)).
- Extended interval policies approved by FHWA under prior regulations will be rescinded on June 6, 2024 (23 CFR 650.311(g)(2)). Agencies must develop new extended interval policies in accordance with 23 CFR 650.311(a)(1)(iii), (a)(2), (b)(1)(iii), (b)(2), (c)(1)(iii), and (c)(2) if they choose to utilize extended intervals going forward.

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<b><u>TABLE 1 - Inspection Interval Policy Submittal Requirements Under 23 CFR 650.311</u></b>				
<b><u>Interval Method Utilized</u></b>		<b><u>Documented Policy</u></b>	<b><u>Submittal to FHWA</u></b>	<b><u>FHWA Approval</u></b>
<b><u>Method 1</u></b>	Regular Interval	Not required	Not required	Not required
	Reduced Interval	Required	Not required	Not required
	Extended Interval	Required if extended intervals are utilized	Notification Required	Not required
<b><u>Method 2</u></b> Documented policy must include all the bulleted items listed in the Determining Inspection Intervals - Method 2 section below. The policy must also include all the required risk-based intervals for the identified inspection type:  Routine: 12, 24, 48, and 72 months Underwater: 24, 60, and 72 months NSTM: 12, 24, and 48 months		Required	Required	Required  HIBS provides a written “concur with approval” to the Division office. The Division office provides the requesting entity with an approval letter.

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## **Determining Inspection Intervals - Method 1**

Method 1 prescribes a simplified, risk-based approach to implementing reduced and extended intervals for routine, underwater, and NSTM inspections. For reduced inspection intervals, Method 1 requires Agencies to establish a policy that considers a variety of risk factors as they apply to the Agency’s bridge inventory and incorporates the prescribed reduced inspection interval criteria. Method 1 also allows Agencies to establish extended inspection intervals provided they establish a policy that considers similar risk factors but incorporates the prescribed extended inspection interval criteria.

FHWA does not approve an Agency’s policy for reduced or extended inspection intervals established using the Method 1 approach. However, staff should provide technical assistance, as needed, during the Agency’s development of, or revision to, any such policies. When an extended inspection interval is established, an Agency must notify FHWA of its implementation and Division staff must retain the required written notification.

The following table summarizes the risk-based inspection interval provisions of Method 1, as set forth in 23 CFR 650.311. Equivalent criteria per the Coding Guide are shown in brackets.

<b><u>TABLE 2 - Provisions for Determining Inspection Intervals Using Method 1</u></b>			
<b><u>Interval Type</u></b>	<b><u>Inspection Type</u></b>	<b><u>Criteria</u></b>	<b><u>Inspection Interval*</u></b>
Reduced (Required)	Routine	<p>Agencies are required to develop and document a policy based on factors such as structure type, design, materials, age, condition ratings, scour, environment, annual average daily traffic and annual average daily truck traffic, history of vehicle impact damage, loads and safe load capacity, and other known deficiencies.</p> <p>If <u>any</u> of the following criteria are met, the inspection interval shall be <math>\leq</math> 12 months.</p> <ul style="list-style-type: none"> <li>• Deck Condition Rating (Item B.C.01) <math>\leq</math> 3 [Deck Condition Rating (Item 58) <math>\leq</math> 3].</li> <li>• Superstructure Condition Rating (Item B.C.02) <math>\leq</math> 3 [Superstructure Condition Rating (Item 59) <math>\leq</math> 3].</li> <li>• Substructure Condition Rating (Item B.C.03) <math>\leq</math> 3 [Substructure Condition Rating (Item 60) <math>\leq</math> 3].</li> <li>• Culvert Condition Rating (Item B.C.04) <math>\leq</math> 3 [Culvert Condition Rating (Item 62) <math>\leq</math> 3].</li> <li>• Scour Condition Rating (Item B.C.11) <math>\leq</math> 3 [Scour Critical Bridges (Item 113) <math>\leq</math> 3].</li> </ul>	< 24 months



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	Underwater	<p>Agencies are required to develop and document a policy based on factors such as structure type, design, materials, age, condition ratings, scour, environment, annual average daily traffic and annual average daily truck traffic, history of vehicle/vessel impact damage, loads and safe load capacity, and other known deficiencies.</p> <p>If <u>any</u> of the following criteria are met, the inspection interval shall be <math>\leq 24</math> months.</p> <ul style="list-style-type: none"> <li>• Underwater Inspection Condition (Item B.C.15) <math>\leq 3</math> [Substructure Condition Rating (Item 60) <math>\leq 3</math>].</li> <li>• Channel Condition (Item B.C.09) <math>\leq 3</math> [Channel and Channel Protection Condition Rating (Item 61) <math>\leq 5</math>].</li> <li>• Channel Protection Condition (Item B.C.10) <math>\leq 3</math> [Channel and Channel Protection Condition Rating (Item 61) <math>\leq 5</math>].</li> <li>• Scour Condition Rating (Item B.C.11) <math>\leq 3</math> [Scour Critical Bridges (Item 113) <math>\leq 3</math>].</li> </ul>	< 60 months
	NSTM	<p>Agencies are required to develop and document a policy based on factors such as structure type, design, materials, age, condition, environment, annual average daily traffic and annual average daily truck traffic, history of vehicle impact damage, loads and safe load capacity, and other known deficiencies.</p> <p>If the NSTM Inspection Condition (Item B.C.14) <math>\leq 4</math> [Superstructure Condition Rating (Item 59) or Substructure Condition Rating (Item 60) <math>\leq 4</math> and Critical Feature Inspection, Fracture Critical Details (Item 92A) <math>\leq Y12</math>], the inspection interval shall be <math>\leq 12</math> months.</p>	< 24 months
Extended (Optional)	Routine	<p>Agencies are required to develop and document a policy based on factors such as structure type, design, materials, age, condition ratings, scour, environment, annual average daily traffic and annual average daily truck traffic, history of vehicle impact damage, loads and safe load capacity, and other known deficiencies.</p> <p>Inspection intervals up to 48 months are allowed provided <u>all</u> the following criteria are met.</p>	$\leq 48$ months

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	<ul style="list-style-type: none"> <li>• Deck Condition Rating (Item B.C.01) <math>\geq 6</math> [Deck Condition Rating (Item 58) <math>\geq 6</math>].</li> <li>• Superstructure Condition Rating (Item B.C.02) <math>\geq 6</math> [Superstructure Condition Rating (Item 59) <math>\geq 6</math>].</li> <li>• Substructure Condition Rating (Item B.C.03) <math>\geq 6</math> [Substructure Condition Rating (Item 60) <math>\geq 6</math>].</li> <li>• Culvert Condition Rating (Item B.C.04) <math>\geq 6</math> [Culvert Condition Rating (Item 62) <math>\geq 6</math>].</li> <li>• Channel Condition (Item B.C.09) <math>\geq 6</math> [Channel and Channel Protection Condition Rating (Item 61) <math>\geq 6</math>].</li> <li>• Channel Protection Condition (Item B.C.10) <math>\geq 6</math> [Channel and Channel Protection Condition Rating (Item 61) <math>\geq 6</math>].</li> <li>• Inventory Load Rating Factor (Item B.LR.05) <math>\geq 1.0</math> [Inventory Rating (Item 66) <math>\geq 1.0</math>, when expressed as a rating factor].</li> <li>• Routine Permit Loads (Item B.LR.08) = A or N.</li> <li>• Fatigue Details (Item B.IR.02) = N.</li> <li>• Highway Minimum Vertical Clearance (Item B.H.13) <math>\geq 14.0</math> [Minimum Vertical Clearance Over Bridge Roadway and Minimum Vertical Underclearance (Items 53 and 54B) <math>\geq 0420</math> (i.e., 4.20 m)].</li> <li>• Span Material (Item B.SP.04) = C01-C05 or S01-S05 [Main and Approach Span Structure Material (Items 43A and 44A) = 2, 3, 4, or 5].</li> <li>• Span Type (Item B.SP.06) = A01, B02-B03, F01-F02, G01-G08, P01-P02, or S01-S02 [Main and Approach Span Structure Construction (Items 43B and 44B) = 01, 02, or 05].</li> <li>• Scour Vulnerability (Item B.AP.03) = A or B [Scour Critical Bridges (Item 113) = 5 or 8].</li> <li>• Scour Condition Rating (Item B.C.11) <math>\geq 6</math>.</li> </ul>	
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	Underwater	<p>Agencies are required to develop and document a policy based on factors such as structure type, design, materials, age, condition ratings, scour, environment, annual average daily traffic and annual average daily truck traffic, history of vehicle/vessel impact damage, loads and safe load capacity, and other known deficiencies.</p> <p>Inspection intervals up to 72 months are allowed provided <u>all</u> the following criteria are met.</p> <ul style="list-style-type: none"> <li>• Underwater Inspection Condition (Item B.C.15) <math>\geq 6</math> [Substructure Condition Rating (Item 60) <math>\geq 6</math> or Culvert Condition Rating (Item 62) <math>\geq 6</math>].</li> <li>• Channel Condition (Item B.C.09) <math>\geq 6</math> [Channel and Channel Protection Condition Rating (Item 61) <math>\geq 6</math>].</li> <li>• Channel Protection Condition (Item B.C.10) <math>\geq 6</math> [Channel and Channel Protection Condition Rating (Item 61) <math>\geq 6</math>].</li> <li>• Scour Vulnerability (Item B.AP.03) = A or B [Scour Critical Bridges (Item 113) = 5 or 8].</li> <li>• Scour Condition Rating (Item B.C.11) <math>\geq 6</math>.</li> </ul>	$\leq 72$ months
	NSTM	<p>Agencies are required to develop and document a policy based on factors such as structure type, design, materials, age, condition, environment, annual average daily traffic and annual average daily truck traffic, history of vehicle impact damage, loads and safe load capacity, and other known deficiencies.</p> <p>Inspection intervals up to 48 months are allowed provided <u>all</u> the following criteria are met.</p> <ul style="list-style-type: none"> <li>• Year Built (Item B.W.01) <math>\geq 1979</math> [Year Built (Item 27) <math>\geq 1979</math>] and fabricated in accordance with a fracture control plan.</li> <li>• NSTMs have no fatigue details with finite life, history of fatigue cracks, nor pin and hanger assemblies.</li> <li>• NSTM Inspection Condition (Item B.C.14) <math>\geq 6</math> [Superstructure Condition Rating (Item 59) <math>\geq 6</math>, and Substructure Condition Rating (Item 60) <math>\geq 6</math>,</li> </ul>	$\leq 48$ months

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		<p>and Critical Feature Inspection, Fracture Critical Details (Item 92A) = Y24].</p> <ul style="list-style-type: none"> <li>• Inventory Load Rating Factor (Item B.LR.05) <math>\geq</math> 1.0 [Inventory Rating (Item 66) <math>\geq</math> 1.0, when expressed as a rating factor].</li> <li>• Routine Permit Loads (Item B.LR.08) = A or N.</li> </ul>	
Regular	Routine	Bridge does not meet criteria established in Agency's reduced or extended inspection interval policy.	$\leq$ 24 months
	Underwater	Bridge does not meet criteria established in Agency's reduced or extended inspection interval policy.	$\leq$ 60 months
	NSTM	Bridge does not meet criteria established in Agency's reduced or extended inspection interval policy.	$\leq$ 24 months
<p>* Inspection interval applies to routine, underwater, or NSTM inspection of a bridge, there will be only one interval for each inspection type (i.e., the same bridge cannot have two different intervals for the same inspection type).</p> <p>[ ] Denotes equivalent criteria per the <i>1995 Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges</i> that are applicable when specified SNBI data are not available. Where equivalent criteria are not noted, the Agency should use available information to determine if SNBI criteria are satisfied.</p>			
<p><u>General Notes</u></p> <ul style="list-style-type: none"> <li>• Agencies must document any reduced or extended inspection interval policy. In addition, Agencies must notify FHWA in writing prior to implementing any extended inspection interval policy. 23 CFR 650.311(a)(1)(ii)(A), (a)(1)(iii)(B), (b)(1)(ii)(A), (b)(1)(iii)(B), (c)(1)(ii)(A), and (c)(1)(iii)(B).</li> <li>• Agencies may conduct special inspections limited to monitoring localized deficiencies in accordance with 23 CFR 650.313(h), in lieu of full routine or underwater inspections, when one or more condition ratings are coded 3 or less solely due to the localized deficiencies.</li> </ul>			

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## **Determining Inspection Intervals - Method 2**

The Method 2 risk-based inspection interval policy requirements outlined in 23 CFR 650.311(a)(2) and further explained in this guidance are based on NCHRP Report 782, Proposed Guideline for Reliability Based Inspection Practices. This Report is a result of research performed under NCHRP Project 12-82, Developing Reliability-Based Bridge Inspection Practices. NCHRP Report 782 may be found at the following URL: <http://www.trb.org/Publications/Blurbs/171448.aspx>.

Method 2 allows for risk assessment by quantified statistical analysis, when possible, or by qualitative expert judgment. This method provides bridge inspection organizations the latitude for exercising their knowledge in determination of probability, consequence, and risk for bridges in their inventory. The process requires bridges to be classified into risk levels for consistency and uniformity (23 CFR 650.311(a)(2), (b)(2), and (c)(2)). For routine inspections, these risk levels have inspection intervals not to exceed 12, 24, 48, or 72 months, respectively. For underwater inspections, these risk levels have inspection intervals not to exceed 24, 60, or 72 months, respectively. For NSTM inspections, these risk levels have inspection intervals not to exceed 12, 24, or 48 months, respectively.

Per 23 CFR 650.311(a)(2), the risk assessment process must be developed by a Risk Assessment Panel (RAP) and documented as a formal policy. The RAP must be comprised of not less than four people, at least two of which are professional engineers, with collective knowledge in bridge design, evaluation, inspection, maintenance, materials, and construction, and include the NBIS program manager. NCHRP Report 782 recommends the RAP typically consist of four to six members from the Agency. The risk assessment process, criteria, and resulting intervals must be documented and submitted by the Agency to the Division office with a request for FHWA approval. If the criteria are revised after initial FHWA approval, the criteria and a summary report of the changes must be resubmitted to FHWA for re-approval. In accordance with 23 CFR 650.311 (a)(2), the request must include the following:

- Endorsement from a RAP, which must be used to develop a formal policy.
- Definitions for risk factors, categories, and the probability and consequence levels that are used to define the risk for each bridge to be assessed.
- Deterioration modes and attributes that are used in classifying probability and consequence levels, depending on their relevance to the bridge being considered. A system of screening, scoring, and thresholds are defined by the RAP to assess the risks. Scoring is based on prioritizing attributes and their relative influence on deterioration modes.
  - A set of screening criteria must be used to determine how a bridge is to be considered in the assessment and to establish maximum inspection intervals. The screening criteria must include:
    - (1) Requirements for flexure and shear cracking in concrete primary load members;

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- (2) Requirements for fatigue cracking and corrosion in steel primary load members;
  - (3) Requirements for other details, loadings, conditions, and inspection findings that are likely to affect the safety or serviceability of the bridge or its members;
  - (4) Bridges classified as in poor condition cannot have an inspection interval greater than 24 months; and
  - (5) Bridges classified as in fair condition cannot have an inspection interval greater than 48 months.
- The attributes in each assessment must include material properties, loads and safe load capacity, and condition.
  - The deterioration modes in each assessment must include:
    - (1) For steel members: section loss, fatigue, and fracture;
    - (2) For concrete members: flexural cracking, shear cracking, and reinforcing and prestressing steel corrosion;
    - (3) For superstructure members: settlement, rotation, overload, and vehicle/vessel impact; and
    - (4) For substructure members: settlement, rotation, and scour.
  - A set of criteria to assess risk for each bridge member in terms of probability and consequence of structural safety or serviceability loss in the time between inspections.
- A set of risk assessment criteria, written in standard logical format amenable for computer programming.
  - Supplemental inspection and data collection procedures that are aligned with the level of inspection required to obtain the data to apply the criteria.
  - A list classifying each bridge in the applicable population into the appropriate risk category.

An Agency's routine inspection policy developed utilizing Method 2 must also include criteria for service inspection (23 CFR 650.311(a)(3)). Service inspections are required when the risk-based inspection interval exceeds 48 months and shall be performed by personnel with general knowledge of bridge maintenance or bridge inspection. Service inspections must be performed during the month midway between routine inspections.

The requirements outlined above apply to routine inspection intervals developed using Method 2. The process and criteria for underwater and NSTM inspection intervals developed using Method 2 should be similar to those for routine inspections.

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The following guidance establishes a general framework and process for an FHWA Division office in the review and approval of a State's submission of a risk-based inspection interval policy per Method 2. The FHWA Federal Lands Highway Division office review and approval process is similar and should follow the established Federal agency or Tribal government stewardship and oversight process.

During the development of the State's Method 2 risk-based inspection interval policy, Division staff should provide technical assistance, as needed, per the stewardship and oversight roles. It is strongly recommended that the FHWA Division Bridge Engineer (DBE) be involved in the development of the policy in an advisory capacity, but the DBE should not be counted as one of the primary bridge-owning agency members of the RAP. After the policy has been submitted for approval by the State, Division staff should review the submission for inclusion of the required provisions and review the reasonableness of the State-developed criteria and policy. If the Division recommends approval, the inspection interval policy should be forwarded to HIBS for final review and concurrence with the Division's approval, to ensure national consistency. The Division office is responsible for notifying the State in writing of final approval, and for copying HIBS so approved policies may be tracked on a national level. If the criteria are revised after FHWA approval, the same steps for review and approval outlined above are applicable.