

**FISH AND WILDLIFE SERVICE  
ENGINEERING AND CONSTRUCTION**

**3.1 What is the purpose of this chapter?** This chapter establishes:

- A.** Policy and guidelines for implementing the U.S. Fish and Wildlife Service's (Service) vehicular bridge inspection program, and
- B.** The *USFWS Bridge Inspection Handbook* as the procedural handbook employees and contractors must follow to conduct bridge inspections.

**3.2 What is the objective of this chapter?** Our objective is to conduct vehicular bridge inspections in compliance with National Bridge Inspection Standards to ensure the safety and structural integrity of Service-owned and Service-managed vehicular bridges.

**3.3 What is the scope of this chapter?** This chapter pertains to all Service-owned and Service-managed vehicular bridges.

**3.4 What are the authorities for this chapter?**

- A.** Highway Bridge Replacement and Rehabilitation Program, Highway Safety Act ([23 U.S.C. 144 and 151](#)).
- B.** Federal Highway Administration (FHWA) Regulations; Standards for Bridges, Structures, and Hydraulics ([23 CFR 650](#)).

**3.5 What terms do you need to know to understand this chapter?**

**A. Bridge:** A structure that can support moving loads that travel over a depression or an obstruction, such as water, a highway, or a railway.

**B. Fracture Critical Member (FCM):** An element of a structure whose failure would result in the catastrophic failure of the structure. A fracture critical member can be a beam, a pin, a bar, a plate, or a connector, such as a bolt. Fracture critical members are sometimes referred to as fracture critical elements.

**C. Functional Level:** An indication of the type of service a bridge is intended to provide.

**D. National Bridge Inspection Standards (NBIS):** Refers to 23 CFR 650 Subpart C criteria for the proper safety inspection and evaluation of all highway bridges located on public roads.

**E. National Bridge Inventory (NBI):** A database compiled by the Federal Highway Administration that contains location, structure and material type, age and service, geometric, navigation, classification, condition, load rating and posting, appraisal, proposed improvement, and inspection information about all public roadway bridges over 20 feet long in the United States.

**F. Public Road or Public Use Road:** Any road or street under the jurisdiction of and maintained by a public authority and open to public travel.

**3.6 Who is responsible for the vehicular bridge inspection program?** Table 3-1 shows the personnel who are responsible for the program.

<b>Table 3-1: Responsibilities for Vehicular Bridge Inspection Program</b>	
These employees...	Are responsible for...
<b>A. The Director</b>	Approving policy for all of our engineering and construction management activities.

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<b>Table 3-1: Responsibilities for Vehicular Bridge Inspection Program</b>	
<b>These employees...</b>	<b>Are responsible for...</b>
<b>B. The Assistant Director – Business Management and Operations</b>	Ensuring we have policy in place for all of our engineering and construction management activities.
<b>C. The Chief - Division of Engineering (DEN)</b>	Appointing a Service Bridge Inspection Program Manager.
<b>D. The Service Bridge Inspection Program Manager</b>	<ul style="list-style-type: none"> <li>(1) Administering the inspection program and developing guidelines, standards, and procedures for bridge inspection.</li> <li>(2) Hiring consultants to perform the inspections.</li> <li>(3) Preparing or overseeing the preparation of bridge inspection reports.</li> <li>(4) Maintaining inspection records and the Service bridge inventory.</li> <li>(5) Sending our inventory data to the FHWA for inclusion in the NBI.</li> </ul>
<b>E. Regional Engineers</b>	Appointing a Regional Bridge Coordinator in his or her Region.
<b>F. Regional Bridge Coordinators</b>	<ul style="list-style-type: none"> <li>(1) Providing bridge data to the Service Bridge Inspection Program Manager when they have been informed of a newly constructed or acquired bridge that must be added to the Service bridge inventory.</li> <li>(2) Notifying the Service Bridge Inspection Program Manager that a bridge has been removed from or returned to service.</li> <li>(3) Assisting the Service Bridge Inspection Program Manager with coordination of inspections within his or her Region.</li> <li>(4) Distributing bridge inspection reports to field stations and others within his or her Region.</li> </ul>
<b>G. Project Leaders/Facility Managers</b>	<ul style="list-style-type: none"> <li>(1) Determining public use status of bridges within their domain.</li> <li>(2) Determining the functional level of bridges within their domain.</li> <li>(3) Providing operational information such as traffic volume, speed limits, and types of vehicles using bridges within their domain, when this information is available.</li> <li>(4) Reviewing the findings and recommendations included in the bridge inspection reports that the Regional Bridge Coordinator gives them.</li> <li>(5) Completing station level maintenance work.</li> <li>(6) Initiating non-exempt bridge replacement and rehabilitation projects (see <a href="#">360 FW 1</a>).</li> <li>(7) Informing the Regional Bridge Coordinator when a bridge within their</li> </ul>

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Table 3-1: Responsibilities for Vehicular Bridge Inspection Program	
These employees...	Are responsible for...
	domain is: (a) Taken out of service (no longer used), (b) Removed, or (c) Newly acquired or constructed.

**3.7 What criteria do Project Leaders, Facility Managers, and others use to determine the functional level of bridges within their domain?** The functional levels of Service bridges are shown in Table 3-2.

Table 3-2: Functional Levels of Service Bridges	
This functional level...	Provides this type of service...
<b>A. Level 1</b>	Serves the main circulatory tour or thoroughfare for visitors or critical administrative/management functions.
<b>B. Level 2</b>	Provides access to areas of scenic beauty, picnic areas, etc., for visitors or serves secondary administrative/management functions.
<b>C. Level 3</b>	Provides convenience for visitors or Service personnel, but is not critical to the function of the Service. Reasonable alternative access exists.
<b>D. Level 4</b>	Provides only truck or four wheel drive access or serves lower priority administrative/management functions. There is no public use of the bridge.

**3.8 What bridges does the Service inspect?** We inspect vehicular bridges described here and shown graphically in [Exhibit 1](#).

- A.** Bridges, including multiple cell culverts, greater than 10 feet long, measured along the center of the roadway between end supports, and
- B.** Structures made up of a series of pipes or culverts, when the distance from the edge of the first pipe to the edge of the last pipe, measured along the center of the roadway, is greater than 20 feet, and the distance between adjacent pipes is less than half of the smaller pipe diameter.

**3.9 How often does the Service inspect its vehicular bridges?** The *USFWS Bridge Inspection Handbook* describes in detail how often we inspect our vehicular bridges. In general, we:

- A.** Inspect bridges that are included in the NBI at least once every 24 months, as required by the NBIS.

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**B.** May inspect other, non-NBI bridges at greater than 24-month intervals depending on how they are classified.

**C.** Inspect any bridge before its next regularly scheduled inspection when station or other Regional personnel raise safety concerns because flooding, fire, or some other natural disaster has impacted the area where the bridge is located, or the bridge has sustained animal, vehicular, or other damage.

**3.10 How does the Service classify bridges for inspection purposes?**

**A.** We classify bridges based on their length, use, and condition.

**B.** The *USFWS Bridge Inspection Handbook* lists the various classes and their characteristics.

**3.11 Who inspects the Service's bridges?**

**A.** The Service Bridge Inspection Program Manager typically hires specialized engineering consultants to inspect all of the Service's bridges through a nationwide Indefinite Delivery/Indefinite Quantity contract.

**B.** The Service Bridge Inspection Program Manager may inspect a bridge himself or herself.

**3.12 Are the people involved with bridge inspection required to have special qualifications?**

**A.** For Service personnel, only the Service Bridge Inspection Program Manager must have specific qualifications. He or she must:

- (1) Be a registered professional engineer or have 10 years of bridge inspection experience, and
- (2) Successfully complete an FHWA-approved comprehensive bridge inspection training course.

**B.** The *USFWS Bridge Inspection Handbook* describes the qualification requirements for bridge inspection team leaders and underwater inspectors (divers).

**C.** The person charged with the overall responsibility for the load rating of our bridges—typically the engineering consultant's technical lead—must be a registered professional engineer.

**3.13 Are Service bridges inspected differently based on their functional level or class?** The degree to which a bridge is inspected is determined solely by the type of inspection scheduled, not the functional level or class assigned to it.

**3.14 What types of inspections do we schedule?**

**A.** There are eight types of inspections that Service bridges may be subject to during their lifetime. Those most frequently conducted are routine, underwater, and fracture critical member inspections.

**B.** The *USFWS Bridge Inspection Handbook* describes all eight types and provides the circumstances under which each is required.

**3.15 How does the Service share the information it gets from the inspections?**

**A.** The Service compiles and disseminates the information internally in two ways: bridge inspection reports, which include the most recent information only, and the Service Bridge Inspection Management System ([BIMS](#)), which contains current and past inspection findings.

(1) The bridge inspectors upload field data to the Service [BIMS](#) as they collect it. Once this data has been reviewed and approved by the Service's Bridge Inspection Program Manager and the bridge inspection team leader, it is available to everyone with access to the system.

(2) About 3 months after the bridge inspectors have completed their field inspections, the Service's Bridge Inspection Program Manager distributes reports containing the most recent bridge inspection findings to the Regional Bridge Coordinator. He or she, in turn:

- (a) Files one copy of the report in the Regional bridge file; and

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(b) Provides copies of the report to the Regional staff responsible for maintaining the bridge, including those responsible for any maintenance, rehabilitation, and replacement actions recommended in the report.

B. We also provide the inspection data for certain Service bridges to the FHWA for inclusion in the NBI.

**3.16 Who has access to the BIMS?**

A. The Service Bridge Inspection Program Manager provides Regional Bridge Coordinators access to the system as soon as they are assigned to the position.

B. Regional Engineers, Project Leaders/Facility Managers, Regional Facility Management Coordinators, bridge inspection team members, and others are provided access on a case-by-case basis, upon request.

**3.17 How are the bridge inspection findings used?**

A. The Service Bridge Inspection Program Manager uses the findings to set future inspection types, frequencies, and reporting requirements.

B. Project Leaders and Facility Managers review the findings and prioritize bridge maintenance recommendations along with other station maintenance needs.

C. Regional Engineers, Regional Bridge Coordinators, Facility Management Coordinators, Refuge Roads Coordinators, and others review the information and work together to advocate and initiate bridge rehabilitation and replacement projects according to [360 FW 1](#).

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