

## 34.1 General Discussion

The primary objective of the Federal Highway Bridge Program (HBP) is to ensure public safety through inspection, rehabilitation, and replacement of bridges that meet the requirements for inclusion in the National Bridge Inventory (NBI) as defined by the National Bridge Inspection Standards (NBIS). The bridges that would be eligible for rehabilitation and or replacement using federal funds are described in [Section 34.41](#).

This chapter describes the national requirements for bridge inspection programs and for selecting bridge projects to be funded using federal funds.

## 34.2 Bridge Condition Inspection Program

A methodical Bridge Inspection Program is required for agencies that want to qualify for HBP funds.

The Federal Highway Administration (FHWA) has set the national standards for the proper safety inspection and evaluation of bridges in a document called the National Bridge Inspection Standards (NBIS). These standards are located in the Code of Federal Regulations, Title 23 Highways Part 650, Subpart C. The latest electronic version of the NBIS can be found online at [www.fhwa.dot.gov/bridge/](http://www.fhwa.dot.gov/bridge/). Information and guidance on bridge condition inspection in Washington State is located in the *Washington State Bridge Inspection Manual* (WSBIM) M 36-64. Reference these documents for additional information on the following subjects. In the event of conflicting information or requirements between the WSBIM and [Sections 34.2](#) and [34.3](#) of this manual, the WSBIM will govern.

**.21 Delegation of Bridge Program Manager Status** – Each State Transportation Department is required to have an Inspection Organization responsible to inspect, or cause to be inspected, all highway bridges located on public roads that are fully or partially within the State’s boundaries, except for bridges owned by Federal agencies. The WSDOT Local Agency Bridge Engineer has been delegated as the Program Manager for county and city owned bridges. The NBIS contains provisions to allow further delegation of bridge program functions identified in §650.307(c)(2) to qualified Local Agency bridge program personnel. See [Appendix 34.54](#).

**.22 Bridge Inspection Types and Frequencies** – Each structure in the National Bridge Inventory (NBI) shall receive a routine inspection at intervals not to exceed 24 months except as provided in the NBIS.

Inspection frequency requirements are listed in Section §650.311 of the NBIS. These requirements are also outlined in the flowchart in [Appendix 34.52](#) and are detailed in the WSBIM. The Local Programs Bridge Inventory Engineer will perform quarterly reviews of the Local Agency Bridge Inventory to ensure that bridge inspections are being performed on time. Local Agencies will be provided with lists of bridges and the projected inspection dates to cross check with their own inspection list to ensure concurrence and identify any omissions. Bridges shall be inspected in the calendar

month that is the result of the current inspection month plus the assigned inspection frequency in months. This usually means the inspection will happen in the same calendar month for future inspection years. The inspection update should be entered in Bridge Works within 30 days. This allows Local Programs to monitor inspection progress and provides a record of inspection date compliance. Once inspections are performed, Local Agencies have 90 days to finish the inspections report and have the data released to the Local Agency Bridge Inventory.

Local Agencies will be notified of bridge records that do not have current inspection dates because the field inspection has not been done or because the information has not been released to the Local Agency Bridge Inventory. This notification will be first in the form of email or other correspondence with the Local Programs Bridge Office. If corrections are not made within 30 days of notification, the second notification will be a formal letter of noncompliance from the Local Programs Engineering Services Manager with a corrective action plan. Finally, failure to carry out the corrective action plan will result in formal notification from the Director, Local Programs that federal funds may be restricted until compliance is met.

**.23 Qualification of Bridge Inspection Personnel** – Federal regulations specify the requirements for two positions within a Bridge Inspection organization:

- Bridge Program Manager – hereafter Program Manager
- Bridge Inspection Team Leader – hereafter Team Leader

The Program Manager is the individual charged with managing a specific bridge program and who has been delegated the duties of ensuring timely bridge inspection and reporting and that bridge records are current and valid. The Program Manager provides overall leadership and guidance to bridge program personnel.

Minimum Qualifications for Program Manager are:

- Registered Professional Engineer or 120 months of bridge inspection experience
- Successful completion of FHWA approved Comprehensive Bridge Inspection Training Course

The **Team Leader** is the individual in charge of an inspection team and is responsible for planning, preparing, and performing bridge inspections. The Team Leader is required to be onsite for all condition inspection activities on NBI bridges, and is responsible for inspection reporting and for accurate inventory coding. Qualified Team Leaders are certified by WSDOT and are issued an inspector identification number. Noncertified bridge inspectors are not allowed to submit bridge inspection data for NBI bridges to the Local Agency Bridge Inventory.

Minimum Qualifications for Team Leader are:

- Qualified Program Manager
- Or, 60 months of bridge inspection experience and successful completion of FHWA approved Comprehensive Bridge Inspection Training Course
- Or, Certified Level III or IV NICET bridge safety inspector and successful completion of FHWA approved Comprehensive Bridge Inspection Training Course

- Or, BS degree in engineering, and successfully passed EIT, and 24 months Bridge Inspection experience, and successful completion of FHWA approved Comprehensive Bridge Inspection Training Course
- Or, Associates degree in engineering, and 48 months bridge inspection experience, and successful completion of FHWA approved Comprehensive Bridge Inspection Training Course

Program Manager and Team Leader qualification requirements are listed in Section §650.309 of the NBIS and are outlined in the flowchart in [Appendix 34.51](#). The time requirements listed for qualification are measured by the actual time spent performing the designated activity or related tasks not by calendar years.

All applications for Program Manager delegation and Team Leader certification will be reviewed and approved by Local Programs. Program Manager delegation is issued to an individual within a specific agency that meets the qualifications, not to the agency (see [Appendix 34.54](#) to review the Bridge Program Manager Agreement). If a Bridge Program Manager leaves agency employment, and the agency desires delegation of another Program Manager, delegation to another qualified person within the agency is required (see [Section 34.21](#)). Certification of Bridge Program Manager status will be sent by hard copy letter. Bridge Inspector Team Leader certification will be acknowledged through an email response and by activation of Certified Bridge Inspector privileges in the Bridge Works Bridge Inspection Software. Any bridge certification will become part of the “Staff Qualification” file required for all bridge program personnel and which will be checked on an annual basis and during Quality Assurance (QA) reviews.

WSDOT maintains a list of qualified inspection service consultants which is available through Local Programs. Private consultants wanting to provide in-service bridge inspection services must have bridge inspectors that have been certified by WSDOT staff.

**.24 Continued Certification of Bridge Inspection Personnel** – Each Program Manager and Team Leader must participate in a 40 hour continuing education program to maintain certification. This program requires the following during a five-year period:

- 40 hours of bridge related training including WSDOT sponsored bridge training, bridge conferences, and other NHI Bridge Training courses.
- An approved Bridge Inspector Refresher Training course.
- Field evaluation performed by WSDOT Local Programs during QA reviews or by an agency’s Bridge Program Manager with the approval of the WSDOT Local Programs Bridge Engineer (see [Section 34.3](#)).

The expiration date of Program Managers and Team Leaders privileges are listed under Bridge Works account settings and is updated by Local Programs after verification that the continuing education requirements have been met. Qualification reviews are performed annually and as well as the formal process during the file review during the QA process outlined under [Section 34.3](#).

Visit the Local Programs Bridge Services website at [www.wsdot.wa.gov/localprograms/bridge/training.htm](http://www.wsdot.wa.gov/localprograms/bridge/training.htm) for bridge training opportunities which count toward the 40 hours of continuing education.

**.25 Bridge Inspection Records and File Requirements** – Bridge owners are required to maintain a complete and current official bridge file for each structure included in the NBI. This file is to be maintained throughout the life of the bridge. [Chapter 2](#) of the [WSBIM](#) and [Appendix 34.55](#) list the requirements for each official bridge file and detailed guidance on what to include. In addition, the latest version of the *American Association of State Highway and Transportation Officials (AASHTO) Manual for Bridge Evaluation*, has been incorporated by reference in the NBIS. See NBIS Section §650.313(d).

Agencies must identify bridges requiring special attention and must keep these Master Lists with the official bridge files. Lists of bridges that require special inspections such as, Fracture Critical Member Inspections, Underwater Inspections, and Complex Bridge Inspections or are singled out for deficiencies such as Load Posting or having been determined Scour Critical should be included on Master Lists.

Additionally, each local agency is required to maintain a current file on each member of the Inspection staff detailing their experience and training.

**.26 Bridge Load Ratings** – All NBI bridges, including new structures, require load ratings which must be stamped and signed by the Professional Engineer charged with overall responsibility for the analysis. These ratings must be placed in the official bridge file as discussed in [Section 34.25](#). If the current load rating is suspect because of condition changes or added dead load, a new rating shall be performed and the bridge inventory updated within 90 days of the inspection. Bridges must be posted or restricted when the maximum load carrying capacity drops below the maximum unrestricted legal load. Additional load rating requirements are available in [Chapter 5](#) of the [WSBIM](#). Once it has been determined that an in-service bridge can no longer carry legal loads, load restriction signs shall be installed within 30 days including an update to the Local Agency Bridge Inventory with correct coding that reflects the diminished bridge capacity. The inventory update shall include a photo of the posting for confirmation purposes. Load ratings for new bridges are eligible for HBP funds and should be included in the contract for bridges funded under this program. Load Ratings shall be available for inclusion in the bridge inventory record no later than 90 days from the time the bridge is put in service.

**.27 Bridge Scour Analysis** – A scour evaluation is required for each bridge over water. [Chapter 5](#) of the [WSBIM](#) provides guidance on performing this evaluation. The scour analysis must also yield the federal scour code as detailed in [Chapter 2](#) of the [WSBIM](#) under the Washington State Bridge Inventory System (WSBIS) WB76-80 card. This evaluation becomes part of the official bridge file discussed in [Section 34.25](#).

Plans of action for monitoring as well as scour repair plans are required for all bridges determined to be “scour critical” or to have unknown foundations. A plan of action (POA) has these primary components:

1. Development and implementation of a monitoring program.
2. Instructions regarding the type and frequency of inspections to be made at the bridge.
3. A schedule for the timely design, and construction of scour countermeasures (e.g., riprap).

Each documented plan of action should address each of these components and explain why the preferred actions were chosen. (See [Chapter 5](#) of the [WSBIM](#) for more detailed information on what should be included in each POA).

**.28 Critical Damage Bridge Repair Reports** – A Critical Damage Bridge Repair Report must be completed whenever a bridge is identified as having significant structural damage causing emergency load restrictions, lane closure, bridge closure, or if a bridge has failed.

The WSDOT Local Programs Bridge Engineer must be notified by telephone or email within one working day of identification of a problem. This notification starts a series of reports that are ultimately forwarded to FHWA. This series of reports allows the local agency, Local Programs, and FHWA to track the status of critically damaged bridges until the damage is resolved by repair or replacement of the bridge. See [Chapter 6](#) of the [WSBIM](#) for contact information, timelines, forms and procedures.

### 34.3 Quality Assurance and Quality Control Reviews

Local Programs conducts Quality Assurance and Quality Control (QA/QC) reviews of local agency bridge programs statewide to:

- Verify that local agency bridge inspection programs maintain a high degree of accuracy and consistency.
- Identify future training needs.
- Ensure compliance with the NBIS.

Quality Assurance (QA) is defined per 23 CFR 650.305 as “the use of sampling and other measures to assure the adequacy of quality control procedures in order to verify or measure the quality level of the entire bridge inspection and load rating program.” A QA review must be done by someone outside the work group.

Quality Control (QC) is defined as “procedures that are intended to maintain the quality of a bridge inspection and load rating at or above a specified level.”

The Local Programs Bridge Inventory Engineer continually performs routine Quality Control reviews on the data contained in the Local Agency Bridge Inventory. Queries are run on all bridge inventory data for verification of data consistency and correct data field correlation. In addition, updated bridge inspection data prepared by the bridge owners receives an in-depth review and corrections are made before releasing new data to the bridge inventory. The remote aspect of the QC review process is extended to incorporate additional bridge file components as they become available electronically through the bridge inspection software. This process produces a more efficient and complete review of the Agency’s program during the actual field visits.

Quality Assurance reviews are a formal review that is conducted a minimum of once every five years. This formal review consists of both a bridge file review and the field review as detailed below. See [Appendix 34.57](#) for a copy of the checklist used by Local Programs for this review.

The detailed documented policies and procedures used by Local Programs for the QA/QC reviews are located in [Chapter 7](#) of the [WSBIM](#).

**Local Agency Quality Control** – Each agency that has been delegated Program Manager Responsibilities by WSDOT shall have written quality control procedures in place to ensure that data submitted to the Local Agency Bridge Inventory is accurate and complete. The agency’s quality control procedures must be on file and, at a minimum, comply with the QC requirements outlined in [Chapter 7](#) of the [WSBIM](#) and be approved by the FHWA Washington Division Bridge Engineer.

### 34.4 Local Bridge Program Call for Projects

Counties and cities are invited to submit bridge projects to Local Programs in response to the Local Bridge Program Call for Projects. These bridge projects must meet the federal eligibility requirements in [Section 34.41](#).

The specific application requirements may vary from biennium to biennium and will be outlined in the actual Call for Projects.

**.41 Local Bridge Program Eligibility** – A bridge project must fulfill the following federal criteria to be eligible for funding:

1. The bridge must be more than 20 feet in length measured along the centerline.
2. It must be recorded in the Washington State Bridge Inventory System (WSBIS).
3. For replacement and rehabilitation, the bridge must be structurally deficient (SD) or functionally obsolete (FO) with sufficiency ratings as follow:
  - a. For Replacement: less than 50
  - b. For Rehabilitation: 80 or less
4. Seismic-Paint-Scour – Eligible activities may be funded for bridges regardless of sufficiency rating. However, bridges must be scour critical or have unknown foundations to be eligible for scour projects. Routine maintenance is not eligible for funding.
5. No replacement or rehabilitation projects can have been performed using funds in the past 10 years. There is no moratorium following Seismic-Paint-Scour projects, however, the intent of this funding is for the repair to last at least 10 years.
6. Bridges with structurally deficient decks (Deck Overall codes of 4 or less) are eligible for rehabilitation regardless of sufficiency rating. The 10-year moratorium will not disqualify the candidate. However, once the deck has been replaced or rehabilitated, the 10-year rule will apply.

The Federal Highway Administration (FHWA) has developed a formula that calculates sufficiency ratings and assigns SD or FO designations. This computation is performed by the WSBIS using inventory and inspection data submitted by state and local agency bridge inspectors. The sufficiency rating is based on four factors: structural adequacy and safety, serviceability and functional obsolescence, essentiality for public use, and special reductions. Ratings can range from 0 (worst) to 100 (best). Deteriorated bridges that are in poor condition are considered Structurally Deficient (SD) and bridges with geometric configurations that are below current standards for the route they serve are considered Functionally Obsolete (FO). A further explanation of sufficiency rating and criteria for structural deficiency and functional obsolescence can be found at [www.wsdot.wa.gov/localprograms/bridge/resources.htm](http://www.wsdot.wa.gov/localprograms/bridge/resources.htm) under a link

labeled “Bridge Analysis.” A sufficiency rating generator is included as part of the Bridge Works Bridge Inspection software which is available for download at [www.wsdot.wa.gov/localprograms/bridge/bridgeworks.htm](http://www.wsdot.wa.gov/localprograms/bridge/bridgeworks.htm).

**.42 Bridge Replacement Design Standards** – Bridges shall be designed in accordance with [Chapter 42](#) and the following criteria:

1. **Live Load** – Load and Resistance Factor Design (LRFD) HL 93.
2. **Vertical Clearances** – Clearance over roadways is a minimum 16.5 feet. Clearance over railroads is a minimum 23.5 feet.
3. **Design-Year ADT** – Will be determined per [Section 43.21](#).
4. **Bridge Length** – The length of the replacement bridge can be affected by one or both of the following factors:
  - a. The bottom of the superstructure will be 3 feet above the 100 year flood or as determined by field review.
  - b. The abutment and pier locations(s) of a new bridge generally reduce the existing backwater elevation. In fish bearing waters, acceptable rise in the backwater elevation is 0.2 foot above the existing conditions, as referenced in [WAC 220-110-070\(1\)\(h\)](#). For non-fish bearing waters, the acceptable rise in the backwater elevation is 1 foot above the existing conditions.
5. **Bridge Type** – The bridge type selected will be the most economical type for the span length needed, based on sound engineering judgment and/or economics.
6. **Bridge Foundation Type** – The type and depth of the foundation elements will depend on the results of the geotechnical and hydraulic analyses and shall be considered scour safe (WB76-80 coded 8 or 9).

Both a load rating and a scour analysis for a new bridge shall be provided for the official bridge file. The scour analysis will consist of a summary of the hydraulic design as justification for the scour safe code.

**.43 Bridge Rehabilitation Criteria** – To qualify as a rehabilitation project, the total rehabilitation costs shall not exceed 70 percent of the replacement costs. Rehabilitation projects will be subject to the following requirements:

1. Structural deficiencies will be removed.
2. Structure will be brought up to current standards.
3. Completed bridge must load rate at or above an H-15 inventory rating.

**.44 Seismic-Paint-Scour** – Project eligibility and priority ranking is based on the Washington State Bridge Management System (BMS) element data. See [Chapter 4](#) of the [WSBIM](#) for BMS information.

**.45 Eligible Bridge Costs** – The following are eligible bridge costs:

1. **Bridge Construction** – All items typically detailed by bridge designers (concrete, rebar, piling, barriers, expansion dams, etc.).
2. **Bridge Aesthetics** – Limited to the treatment required in the approved NEPA documents. Typically, paints or pigmented sealers and fractured fin finishes on concrete structures will not be approved.
3. **Demolition** of existing structure(s).
4. **Detour** – All work items required to accommodate the construction of the new bridge.
5. **Traffic Control for the Work Zone** – Prorated by costs of bridge vs. approach work.
6. **Structural Excavation and Backfill for Bridge** – Includes abutments, wing walls, footings, cofferdams, etc.
7. **Riprap Protecting Bridge Structure Within the Right of Way** – Riprap placed within the right of way to protect the structure can be considered a bridge item.
8. **Approach Slab** – The approach slab is a reinforced concrete element that protects the bridge and abutments from impacts and can be considered a bridge item.
9. **Approach Guardrail Transition Section** – Approach guardrail systems are installed in accordance with Standard Plans and are considered a bridge item provided site conditions do not require unusually long transitions.
10. **Retaining Walls** (up to 20 feet maximum distance from the abutment) – Retaining walls are structural elements that serve the same functions as the standard bridge wing walls and are designed by bridge designers. Retaining walls beyond these limits would not be considered bridge items.
11. **Bridge Drainage** – Including components necessary to carry water from the structure.
12. **Environmental Mitigation** – Prorated for the bridge, demolition of existing structure, and/or detours.
13. **Mobilization** – Prorated by costs of bridge and approach work.

Approach costs will be limited to 15 percent of the above items.

**.46 On-Site Field Review of Candidates** – The on-site field review team verifies the condition of the bridge, review site information, and possibly requests updated or additional information. The field review is also an opportunity for the bridge owner to provide additional information related to up-front project scoping and analysis done prior to the call for projects.

- a. **Field Review Team** – The Field Review Team consists of the WSDOT Local Programs Bridge Engineer (Review Team leader), a local agency bridge owner representative, the Region Local Programs Engineer, and FHWA Division Bridge Engineer whenever possible. On non-CA agency bridges, the Field Review Team will also have a representative from the agency providing CA services for the nonCA agency. The Local Programs Bridge Engineer may add other representatives as deemed appropriate for specialized conditions.

**b. Review Procedures**

1. The Field Review Team conducts an on-site review of proposed bridge projects. The Field Review Team may use results of a previous review for a bridge submitted but not funded, provided the review was conducted within the past three years.
2. The Bridge Inspection Report is reviewed at the site. The Field Review Team looks for inconsistencies between condition codes, load ratings, postings, ADT, and other factors. The WSDOT Local Programs Bridge Engineer calculates an independent sufficiency rating based on codes agreed to by the review team. The final sufficiency rating may change again based on information requested by the team but not available during the field review.
3. The items submitted with the application are reviewed at the site. The Field Review Team reviews the site in detail and recommends which of three funding program best fits the condition of the bridge.
  - a. Replacement projects.
  - b. Rehabilitation projects.
  - c. Seismic-Paint-Scour.
4. A consensus is reached on the appropriate funding program and estimated scope of work for the project.
5. The project cost estimate submitted by the agency is discussed in detail and revised as appropriate.

**.47 Bridge Selection** – A local bridge advisory committee convenes after the on-site field reviews are completed with the local agencies. A prioritized list of bridge projects are presented to the committee in order of sufficiency rating, results of the field review, review team recommendations, and other pertinent information. The committee reviews all of the projects and adds comments based on a statewide approach.

The Director, Local Programs approves the final list of bridge projects based upon funding levels, delivery schedules, bridge sufficiency and committee comments. Counties and cities will receive a funding notification letter informing them that their bridge project has been approved for funding. The letter will identify the anticipated federal funding level and asks the agency to submit their request for funds through their Region Local Programs Engineer. This letter will also identify the percentage for bridge approach cost participation and any other requirements specific to the project.

The committee is comprised of seven voting members and two alternates. The committee includes four county representatives, four city representatives, with the Local Programs Engineering Services Manager serving as Chair. Alternates initially serve one year as a non-voting member then for three more years as a voting member. Alternates for either city or county may participate in the event a voting member from their respective association is absent.

**.48 Project Management and Funding** – The level of funding available for the bridge program falls short of meeting all of the needs on the local roadway system. With this limited funding, it is critical that the initial scope, schedule, and budget for each project be as accurate as possible. Identification of changes to the scope, schedule or budget during project delivery need to be communicated to Local Programs, the quarterly project report is the vehicle for this communication.

Updates to the project scope schedule and budget are required for all bridge replacement and rehabilitation projects and all other projects that exceed \$2.0 million are required at 30 percent and 60 percent design.

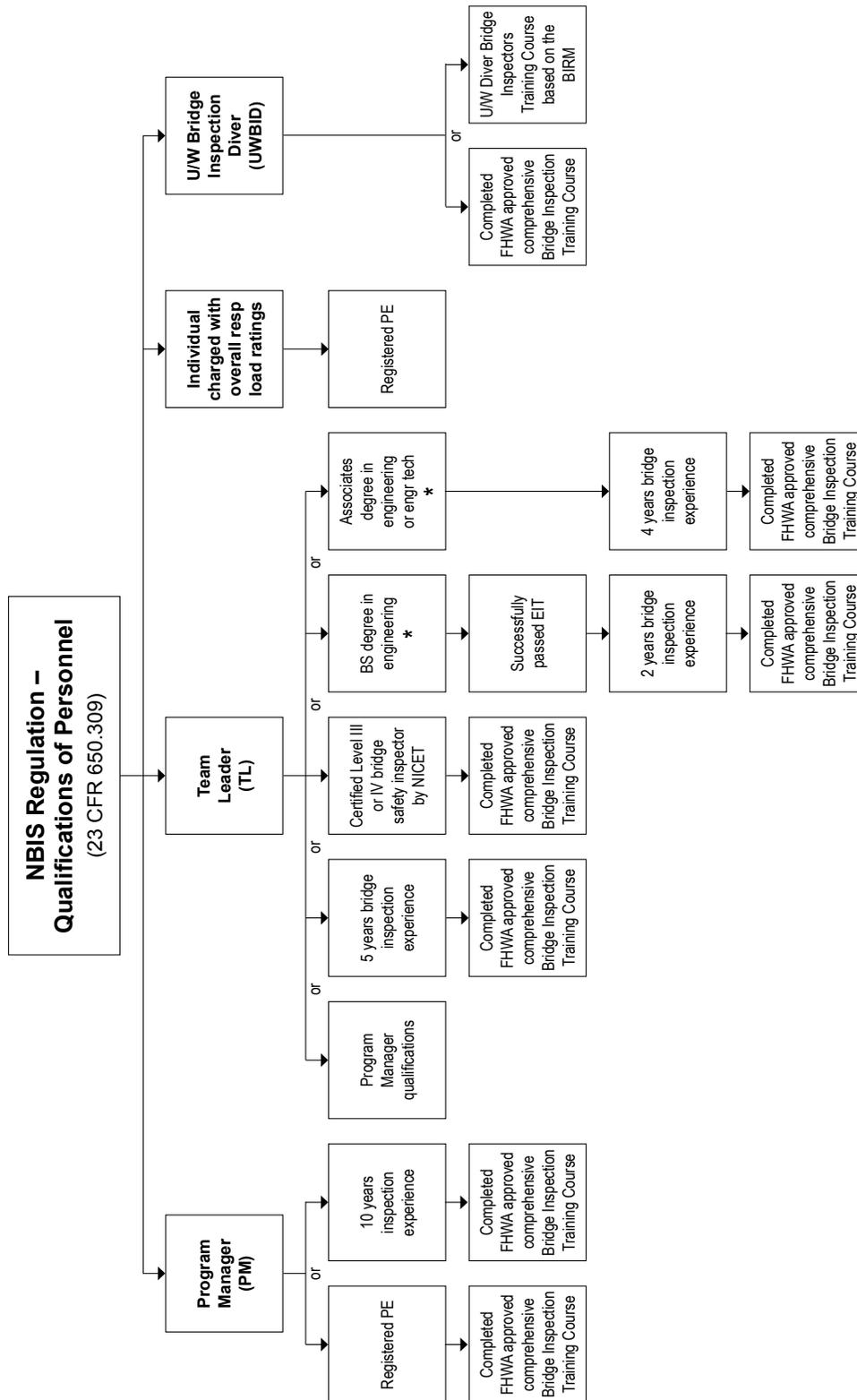
There are two situations when an agency can request additional funding.

1. **Prior to Construction Obligation/Authorization** – Prior to construction authorization, the agency is required to have all necessary funding secured. If the current engineer’s estimate exceeds the amount of funding approved for the project, the agency may submit a request to increase federal funding. Approval for the increase in funding must be received prior to construction authorization or all costs above the original amount approved for the project will be the responsibility of the agency.
2. **After Advertisement But Before Award** – If all bids received exceed the amount of funding approved for the project, the agency may submit a request to increase federal funding.

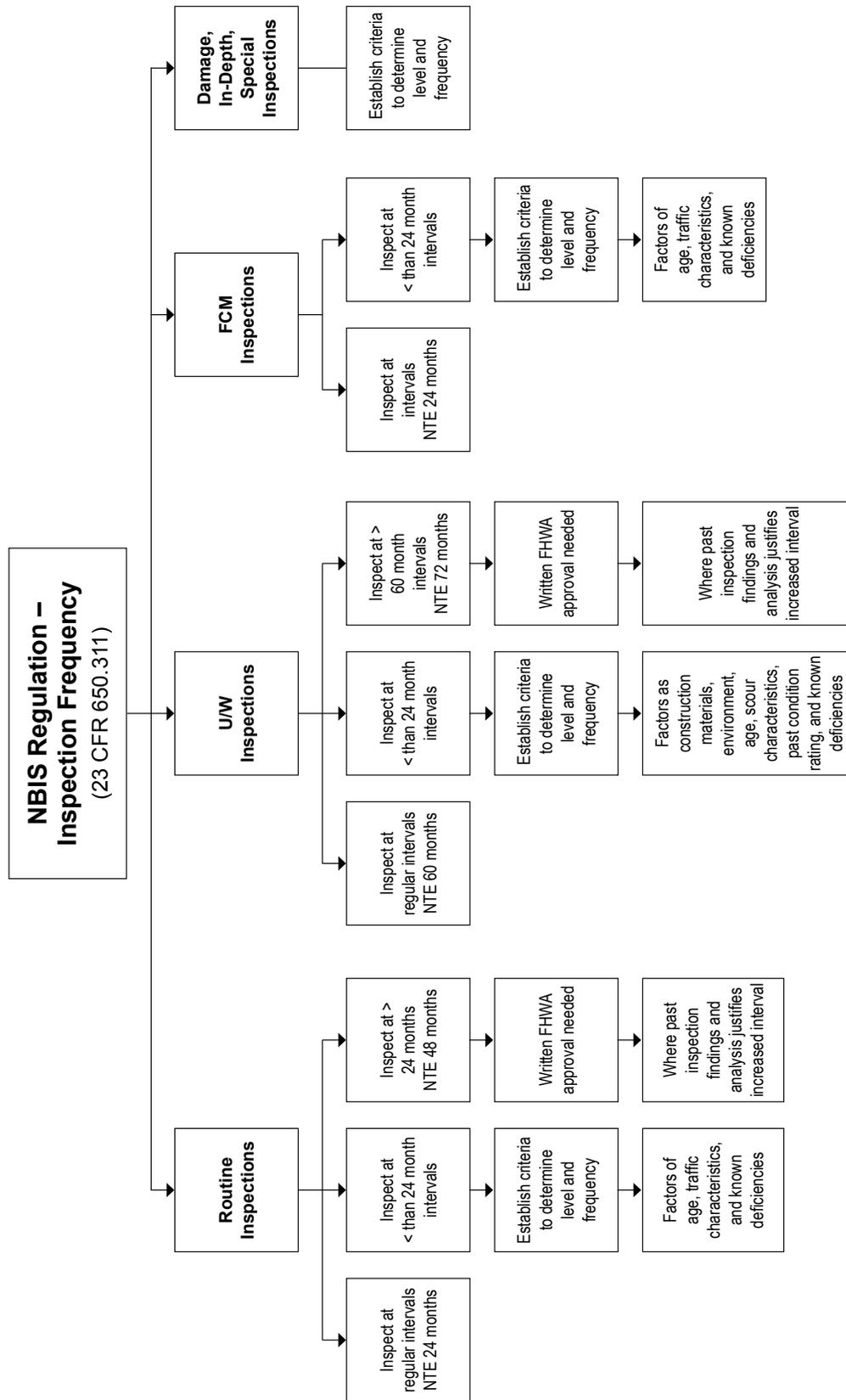
Approval for the increase in funds must be received prior to awarding the project contract or all costs above the original amount approved for the project will be the responsibility of the agency. Local Programs will send a letter to the agency approving or denying the proposed increase. If approved, the local agency must then prepare, sign, and submit a Supplemental Agreement and update the TIP/STIP and Prospectus as applicable to the Region Local Programs Engineer for further processing.

## 34.5 Appendices

- 34.51 NBIS Regulation – Qualifications of Personnel
- 34.52 NBIS Regulation – Inspection Frequency
- 34.53 Bridge Inspector Experience and Training Record
- 34.54 Bridge Program Manager Agreement
- 34.55 Bridge Records
- 34.56 Individual Bridge Record
- 34.57 Local Agency Bridge Program Quality Assurance Checklist



\* An accredited Board for engineering and technology or determined substantially equivalent.



**Key:**  
 NTE = Not to Exceed  
 FCM = Fracture Critical Member  
 UW = Under Water

**Bridge Inspector Experience  
and Training Record**



**Washington State  
Department of Transportation**

**Bridge Inspector Experience  
and Training Record**

Applicant for Bridge Inspector Certification	Date
--	------

Organization
--------------

<b>Education</b>			
Institution	Major	Years	Degree

<b>Professional Registration</b>		
State	Branch/Agency	Registration Number

<b>Bridge Inspection Training</b>			
Course	Hours	Sponsor	Dates

<b>Special Technical Course</b>			
Course	Hours	Sponsor	Dates

<b>Bridge Inspection Experience</b>		
Organization	Bridge Duties	Years

To the best of my knowledge, the above information is true and accurate.

Applicant's Signature \_\_\_\_\_ Date \_\_\_\_\_

Having reviewed the above information, I conclude that this individual meets the minimum qualifications for a bridge inspection team leader as specified in the current National Bridge Inspection Standards.

Team Leader's Signature \_\_\_\_\_ Date \_\_\_\_\_

Team Leader's Name (Print) \_\_\_\_\_ Title \_\_\_\_\_

DOT Form 234-100 EF  
Revised 08/2012



**Washington State  
Department of Transportation**

Lynn Peterson  
Secretary of Transportation

Transportation Building  
310 Maple Park Avenue S.E.  
P.O. Box 47300  
Olympia, WA 98504-7300  
360-705-7000  
TTY: 1-800-833-6388  
www.wsdot.wa.gov

Agency: [Click here to enter text.](#)

Agency No.: [Click here to enter text.](#)

In accordance with Title 23, Code of Federal Regulations, Part 650 - Bridges, Structures, and Hydraulics, Subpart C – The National Bridge Inspection Standards (NBIS) the Washington State Department of Transportation (WSDOT) in its role as the Washington State Bridge Inspection Organization is responsible to inspect, or to cause to be inspected, all highway bridges located on public roads that are fully or partially within the State’s boundaries, except for bridges owned by Federal agencies. The NBIS contains provisions to allow delegation of bridge program functions identified in §650.307(c)(2).

The individual in charge of the bridge program as defined in the NBIS is the Bridge Program Manager. The overall Program Manager for Local Agency owned bridges in Washington State is the WSDOT Local Agency Bridge Engineer. The individual delegated Program Manager status within an agency and deemed in charge of the Agency Bridge Program for that agency is the Agency Bridge Program Manager. While delegation of Program Manager is allowed, such delegation does not relieve WSDOT of any of its responsibilities under the NBIS.

Agency Bridge Program Manager status is assigned to a specific qualified individual within a specific agency. Any change of employment of the Agency Bridge Program Manager requires re-delegation by the WSDOT Local Agency Bridge Engineer of Bridge Program Manager status to another qualified person within that specific agency.

A qualified person within a Local Agency who accepts Bridge Program Manager status agrees to:

- Adhere to the Washington State Bridge Inspection Manual M 36-64 and all policies and procedures promulgated by the Washington State Department of Transportation (WSDOT) which accomplish the policies and objectives set forth in NBIS.
- Provide overall leadership and be available to the inspection team leaders to provide guidance.
- Supervise or provide Bridge Program quality control to ensure that the requirements of the NBIS are met. This includes review of inspection reports and approval of the Team Leaders work, overseeing bridge inspection schedules, ensuring that all analysis, reporting, and inventory requirements are met, and critical deficiencies are addressed in a timely manner. Support staff may be Private Consultant or State Services.

The qualified person within a Local Agency who accepts Bridge Program Manager Status:

\_\_\_\_\_  
Bridge Program Manager (Name)

\_\_\_\_\_  
Bridge Inspector Cert. No.

\_\_\_\_\_  
Mayor or Chairman

\_\_\_\_\_  
Date

Washington State Department of Transportation

Approved By:

\_\_\_\_\_  
Local Programs  
Engineering Services Manager

\_\_\_\_\_  
Date

### A 34.55.1 General

The on-site inspection of each bridge is important for gathering information about the bridge's structural condition and adequacy. This information must be stored as a permanent bridge record. Such a record provides a useful and accurate history. It also contains information on previous repairs and provides others with ready access to information.

Each agency is responsible for maintaining a bridge file for each bridge within its jurisdiction. A detailed list of information that should be in the bridge file is listed and described in [Chapter 2](#) of the *Washington State Bridge Inspection Manual* (WSBIM) M 36-64. Another reference for a detailed list of the information that should be included in the bridge file can be found in American Association of State Highway and Transportation Officials (AASHTO). *The Manual for Bridge Evaluation, Second Edition, 2011*. When inclusion of this information in the bridge file is not possible or impractical, reference to the location where it can be found will suffice.

In addition, agencies are required to maintain a record of other general information. This information may be requested during the quality assurance review of the bridge inspection program. The following general information should be on file:

- An experience and training record for each lead inspector.
- A master list of all bridges within the agency's jurisdiction. This list should identify bridges that have fracture critical members, require underwater inspection, and/or warrant special inspection because of their design features, location, or strategic importance.

### A 34.55.2 Individual Bridge Records

A permanent record on each bridge must be maintained. This record provides a history of the bridge's condition, maintenance, and inventory data. This information must be kept current.

1. **Washington State Bridge Inventory System (WSBIS) Inventory Coding Form** – A copy of the completed WSBIS Inventory Coding Form must be in the bridge file as a ready source of the current bridge information. The procedures for establishing, maintaining, and updating the inventory information is described in detail in WSBIM [Chapter 2](#).
2. **Bridge Inspection Reports** – Copies of all on-site inspection reports must be kept in the individual bridge file and must be signed by the Team Leader responsible for the inspection. The reports provide specific details about the bridge's condition, how conditions have changed over time, and any previous repairs or maintenance performed. This information is reviewed prior to each bridge on-site visit to prepare the inspector for the conditions or problems they may encounter. Procedures for completing bridge inspection reports are covered in WSBIM [Chapter 3](#) and in the Federal Highway Administration (FHWA) *Bridge Inspector Reference Manual* (BIRM).

3. **Critical Damage Bridge Repair Report** – A copy of the Critical Damage Bridge Repair Report must be kept in the bridge file. This report provides evidence that formal recommendations to correct major bridge damage were made and acted upon in a timely manner, ensuring the safety of the public. See WSBIM [Chapter 6](#) for more information.
4. **Photographs** – Labeled and dated copies of elevation and deck photographs of the bridge must be kept in the bridge file. The label should include the structure ID, bridge name, bridge number, inspector's initials, and a description including orientation. Whenever the bridge's condition changes, new photographs should be taken and added to the file. An agency may also keep on file photographs of problems or deficiencies discovered at the bridge (e.g., section loss in a deteriorating piling or significant spalling on a bridge deck). These photographs can provide documentation of existing or developing problems that could lead to repairs. Deterioration requiring a repair should be documented with a photo. The photo is then referenced in the note describing the deterioration and in the repair note initiating the repair. Once the repair is complete, a follow up photo is taken as part of the repair verification procedure.
5. **Plans** – Most bridges will have detailed design plans used for the construction of the bridge and final drawings reflecting the as-built condition of the bridge. These plans should be kept in the bridge file or a note should be included with location of any plans that are too bulky to fit in the file itself. If these plans are not available, a detailed sketch of the bridge needs to be made showing bridge length, width, span length, clearances, and a typical section with bridge materials and dimensions.
6. **Load Rating and Scour Calculations** – Bridge calculations necessary for inclusion in the bridge file are detailed in WSBIM [Chapter 5](#).

A copy of the stamped, signed, and dated load rating must be kept in the bridge file. Include a note in the bridge file with location of any load rating that is too bulky to fit in the file itself. Load test data should be included for any field load tests.

Scour elevations must also be included in the bridge file. The scour evaluation must include the code entered in WB76 - 80 and a Plan of Action for high water events if a bridge is determined to be scour critical.

7. **Correspondence** – All letters regarding the inspection, maintenance, or ownership of the bridge should be kept in the bridge file. This may include correspondence from FHWA, WSDOT, other agencies, and/or individuals.
8. **Inspection Procedures** – Each agency is required to develop and maintain procedures that address the special features of a bridge. Special features include fracture critical members, underwater elements, or any other feature requiring special inspection due to location, strategic importance, or special design features.  
  
The members that require an underwater inspection shall be identified and the inspection procedures specified. Waters deeper than 4 feet will normally require a diver that is trained in bridge inspections. Wading types of inspections can usually be performed by regular bridge inspection teams as part of the structural inspection. Detailed procedures for conducting these inspections are in WSBIM [Chapter 3](#).

9. **Other Information** – All other information gathered about the bridge should be kept on file. This includes details about maintenance work performed, special reports or studies, heat straightening, damage, and paint reports.

### A 34.55.3 Master List

The purpose of a master list is to assist in the management of non-routine inspections, bridges needing special inspection and/or inspection equipment. Each agency is required to maintain a master list of:

- Bridges with fracture critical members.
- Bridges requiring underwater diving inspections.
- Bridges with special features (e.g., segmental bridges).

It is recommended that each agency maintain a master list of:

- Bridges that are scour critical.
- Load posted bridges.
- Bridges requiring an Under Bridge Inspection Truck to inspect limited access members.
- Short span bridges.
- Bridges needing repairs.
- Bridges needing traffic control for routine inspections.
- Fatigue cracked bridges.
- Environmentally sensitive bridges.
- Bridges needing deck replacement.
- Bridges that are seismic vulnerable.
- Bridges needing painting.

This information can be used to plan, schedule, and monitor the special inspections. At a minimum, the following information must be included for each bridge:

- Bridge type and location.
- Type and frequency of inspection required.
- Location of particular members to be inspected.
- Inspection procedures to be used.
- Type of special equipment required.
- Previous inspection dates.
- Most recent inspection findings.
- Any follow-up action taken as a result of the most recent inspection findings.

Bridges are added to the master list when they are identified as needing an underwater, fracture critical, or special features inspections. As these inspections are performed, the master list is updated with the most current information. Bridges are kept on the master list throughout their service life, unless the bridge's category (e.g., fracture critical, special features) changes.

## A 34.55.4 Bridge Construction Files

Bridge construction files should include the following:

- Construction Plans
- As-built Drawings
- Specifications
- Shop and Working Drawings
- Material Certification
- Material Test Data

## A 34.55.5 Short Span Bridges

Short span bridges (see [WSBIM Chapter 3](#)) are bridges or multiple culverts having an opening of 20 feet or less. The short span bridges are generally not reported to the Federal Highway Administration. Washington State encourages the reporting of short span bridge information because of concerns about their condition and possible maintenance repairs required.

## A 34.55.6 Inspector Qualifications

The NBIS outline the minimum training and experience required for the head of the bridge inspection organization or Program Manager and the lead bridge inspector or Team Leader. Each agency is required to maintain a record of qualifications for each of its bridge inspection personnel. The agency needs to include the names and qualifications of each individual performing bridge inspections.

The Bridge Inspector Experience and Training Record Form was developed for this purpose. The form is completed by the head of the bridge inspection organization who verifies that lead inspectors meet the qualifications. The completed form is sent to the WSDOT Local Agencies Bridge Engineer for review and the issuance of a bridge inspector identification number. This number is required on the inspection reports. A copy of the completed form is kept on file with the agency.

Each agency is responsible for keeping this information current. During the quality assurance review process, agencies may be asked to verify the qualifications of their inspectors.

**Bridge Program Files (Chapter 34)  
Washington State Bridge Inspection Manual (WSBIM) Chapter 2**

**Individual Bridge Record**

Bridge Name: \_\_\_\_\_

Bridge Number: \_\_\_\_\_ Structure I.D.  
\_\_\_\_\_

Initials	Date or N/A	
_____	_____	Current Washington State Bridge Inventory Coding Form (WSBIS)
_____	_____	_____ Inspection date is current
_____	_____	_____ Data is complete and correct (WSBIM Chapter 2)
_____	_____	Bridge Condition Inspection Report History
_____	_____	_____ Reports signed and dated by qualified Team Leader
_____	_____	_____ Team Leader qualification and training file up-to-date
_____	_____	_____ History complete according to inspection frequency
_____	_____	Critical Finding (WSBIM Chapter 6)
_____	_____	_____ Critical Damage Bridge Repair Report
_____	_____	_____ Follow-up information (Inspection/Design/Repair)
_____	_____	_____ Conclusion (Bridge reopened or permanently closed)
_____	_____	Photographs (deck and elevation at a minimum)
_____	_____	_____ Date, description, orientation, inspector's initials
_____	_____	_____ Location if not in individual bridge file
_____	_____	Bridge plans or detailed drawings
_____	_____	_____ Plans do not exist
_____	_____	_____ Location if not in individual bridge file
_____	_____	Scour Analysis (WSBIM Chapter 5)
_____	_____	_____ Bridge is not over water
_____	_____	_____ Analysis defines the WB76-80 Scour Code
_____	_____	If Scour Critical
_____	_____	_____ Action plan
_____	_____	_____ Bridge is included on Scour Critical Master List

Initials	Date or N/A	
_____	_____	Load Rating (WSBIM Chapter 5)
_____	_____	_____ Stamped, signed, and dated by Professional Engineer
_____	_____	_____ WB72-93 coded correctly per load rating
_____	_____	_____ Bridge is posted if necessary
_____	_____	_____ Bridge is included on master list of posted bridges
_____	_____	_____ WB76-60 coded correctly
_____	_____	_____ WB75-51 through WB77-55 correctly coded
_____	_____	_____ Location if not in individual bridge file
_____	_____	General Correspondence
_____	_____	Inspection Procedures (WSBIM Chapter 3)
_____	_____	_____ Bridge is Fracture Critical
_____	_____	_____ Bridge is on Fracture Critical Master List
_____	_____	_____ Fracture Critical procedures
_____	_____	_____ Bridge requires underwater inspection
_____	_____	_____ Bridge is on Under Water Inspection Master list
_____	_____	_____ Underwater Inspection procedures
_____	_____	_____ Bridge is Complex
_____	_____	_____ Bridge is Complex Bridge Master List
_____	_____	_____ Complex Bridge Inspection Procedures
_____	_____	Maintenance Records
_____	_____	_____ Maintenance recommendations on inspection report
_____	_____	_____ Maintenance initiation (signed, dated)
_____	_____	_____ Maintenance completed (signed, dated, description)
_____	_____	Other Information
_____	_____	_____ Special reports

---

**Local Agency Bridge Program  
Quality Assurance Checklist**

---

Agency: [Click here to enter text.](#)

Date: [Click here to enter text.](#)

Program Manager:

Name: [Click here to enter text.](#)

Experience: [Click here to enter text.](#)

Refresher Training: [Click here to enter text.](#)

Team Leader(s):

Name: [Click here to enter text.](#)

Experience: [Click here to enter text.](#)

Refresher Training: [Click here to enter text.](#)

Name: [Click here to enter text.](#)

Experience: [Click here to enter text.](#)

Refresher Training: [Click here to enter text.](#)

Team Member(s):

Name: [Click here to enter text.](#)

Experience: [Click here to enter text.](#)

Training: [Click here to enter text.](#)

Name: [Click here to enter text.](#)

Experience: [Click here to enter text.](#)

Training: [Click here to enter text.](#)

Bridge Master List Information:

Number of Bridges in the Agencies Inventory: [Click here to enter text.](#)

Number of NBIS Bridges: [Click here to enter text.](#)

Number of NBI Bridges (on/under): [Click here to enter text.](#)

Number and Types of Specialty Inspections: [Click here to enter text.](#)

Number of Bridges Over Water: [Click here to enter text.](#)

Type of Inspection	No. Bridges	Notes
Fracture Critical		
Underwater		
Complex Bridge (Not F/C)		
Increased Frequency		
Special Access		
SD		
FO		
Valid Load Ratings		
Load Posted		
Scour Critical		
Unknown Foundation		
High Water POA's		

DOT 140-569  
Revised 10/2015

Bridge Inspection Procedures: See attached Bridge File Checklist for each structure reviewed.

Is a Laptop Used in the Field? [Click here to enter text.](#)

Are Manuals Available in Field? [Click here to enter text.](#)

Bridge SID	1)	2)	3)	4)	5)	6)
Coding Accuracy						
WSBIS Accuracy						
Notes						
Sketches (in BW?)						
Procedures (in BW?)						
Photos (in BW?)						
Repairs/Maint.						
Load Posting/Codes/Photo						
LR Summary (In BW?)						
Scour Codes/Justification						
POA's (in BW?)						

Are Consultant inspectors used for any Bridge inspections? [Click here to enter text.](#)

Are 2-man inspection teams scheduled? [Click here to enter text.](#)

Is the Bridge Program Manager involved in the Quality Control of Bridge Inspections? [Click here to enter text.](#)

Inspection Equipment:

Equipment	Agency Owned/Rented	Availability
Ladder		
Manlift		
UBIT/Under Bridge Platform		
Boat		
Climbing Gear		
NDT		

DOT 140-569  
 Revised 10/2015

Inspection Finding Follow-up:

Does inspection team have ability to immediately close a bridge if necessary? [Click here to enter text.](#)

What is process for closing a bridge because of a Critical Finding? [Click here to enter text.](#)

Is the repair list tab up-to-date in Bridge Works? [Click here to enter text.](#)

Do notes referencing maintenance progress exist in inspection report? [Click here to enter text.](#)

How is maintenance funded? [Click here to enter text.](#)

How is maintenance scheduled/closed out? [Click here to enter text.](#)

How are required signs inventoried/ verified? [Click here to enter text.](#)

General Notes:

[Click here to enter text.](#)

DOT 140-569  
Revised 10/2015

