

Reclamation Manual

Directives and Standards

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(Expires 05/22/2019)

Subject:	Bridge Inventory and Inspection Program
Purpose:	To ensure bridges on Bureau of Reclamation projects are comprehensively inventoried for ownership and inspection responsibilities, and to ensure that inspections are conducted properly and uniformly on Reclamation owned bridges. The benefits of this Directive and Standard (D&S) include inventory and inspection activities, protecting the Federal investment, asset management, and public interests.
Authority:	Reclamation Project Act of 1902 (Act of June 17, 1902, 32 Stat. 388) and amendatory and supplementary acts; 23 Code of Federal Regulations (CFR) Part 650 Subpart C, National Bridge Inspection Standards (NBIS), 1971; NBIS revised in December 2004
Approving Official:	Director, Policy and Administration (POLICY)
Contact:	Asset Management Division (84-57000)

1. **Introduction.** Reclamation has established basic requirements for the Bridge Inventory and Inspection Program for the inventory and inspection activities for all Reclamation owned bridges located on public roads in accordance with the NBIS, and all Reclamation owned bridges located on non-public roads. In addition, this D&S provides requirements for the inventory of non-Reclamation owned bridges on Reclamation projects and crossings.
2. **Applicability.** This D&S applies to all Reclamation staff and offices having jurisdiction and oversight responsibility for inventory and inspection of Reclamation owned bridges and inventory of non-Reclamation owned bridges on Reclamation projects and crossings.
3. **Definitions.**
 - A. **Bridge.** In accordance with the NBIS, a “bridge” is defined as a structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet between undercopings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it may also include multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.
 - B. **Bridge Inspector’s Reference Manual (BIRM).** Current edition of the Federal Highway Administration (FHWA) publication referenced in the NBIS.

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- C. **Critical Finding.** A structural or safety related deficiency that requires immediate follow-up inspection or action.
- D. **Crossing.** Structures that generally meet the definition of a bridge, but have an overall span length between 6 feet and 20 feet. Culvert type structures are included as crossings as long as one of the culvert barrels has a span length equal to or greater than 6 feet. Crossings include both Reclamation owned and non-Reclamation owned structures, both vehicular and non-vehicular structures, and both public and non-public structures. The term crossing in this D&S should not be confused with crossing agreements referenced in RM D&S, *Land Use Authorizations* (LND 08-01).
- E. **Fracture Critical Member (FCM).** A steel member in tension, or with a tension element, whose failure would probably cause a portion of or the entire bridge to collapse.
- F. **FCM Inspection.** A hands-on inspection within arms length of a fracture critical member or member components that may include visual and other nondestructive evaluation.
- G. **Fracture Critical Bridge.** A fracture critical bridge is any bridge that includes a FCM member.
- H. **Highway.** The term “highway” includes:
- (1) a road, street, and parkway; and
 - (2) a right-of-way, bridge, railroad-highway crossing, tunnel, drainage structure including public roads on dams, sign, guardrail, and protective structure, in connection with a highway.
- I. **Load Rating.** The determination of the live load carrying capacity of a bridge using bridge drawings and supplemented by information gathered from a field inspection. In cases where design drawings are not available, a more detailed inspection or analysis may be necessary to develop as-built drawings in order to perform a load rating.
- J. **Manual for Bridge Evaluation (MBE).** Current edition of the American Association of State Highway and Transportation Officials (AASHTO) Manual referenced in the NBIS.
- K. **Manual for Uniform Traffic Control Devices (MUTCD).** Current edition of the FHWA manual that can be downloaded from the FHWA MUTCD website.

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- L. **National Bridge Inspection Standards or NBIS.** The national standards (23 CFR Part 650 Subpart C) established by FHWA for the proper safety inspection and evaluation of all highway bridges in accordance with 23 USC 151.
- M. **National Bridge Inventory or NBI.** A database managed by FHWA with information on all bridges on public roads within the United States.
- N. **Non-public Road.** A Reclamation owned road where public travel is restricted by physical barriers including restrictive gates, or restrictive signs prohibiting public travel by four-wheel standard passenger cars on the road. To be considered a non-public road, restrictive signs shall be posted at conspicuous locations such as at normal points of entry and at reasonable intervals along the non-public road according to 43 CFR 423 *Public Conduct on Bureau of Reclamation Facilities, Lands, and Waterbodies*.
- O. **Public.** Any individual that is not a Reclamation employee, transferred works operating entity, contractor authorized to perform work on Reclamation facilities, or otherwise authorized access to utilize Reclamation facilities through a use authorization or contractual obligation.
- P. **Public Authority.** A Federal, State, county, or township, Indian tribe, municipality or other local government or instrumentality thereof (including all water user organizations), with authority to finance, build, operate, or maintain toll or toll-free highway facilities.
- Q. **Public Road.** Any road or street under the jurisdiction of, and maintained by, a public authority and open to public travel per 23 USC 101(a)(22). A public road is available, passable by four-wheel standard passenger cars, and open to general public travel without the use of restrictive signs or physical barriers prohibiting public travel, or regulations other than restrictions based on size, weight, or class of registration.
- R. **Quality Assurance (QA).** QA includes the use of sampling or other measures to assure the adequacy of quality control procedures in order to verify or measure the quality level of the entire bridge inventory, inspection, and load rating program.
- S. **Quality Control (QC).** QC includes procedures that are intended to maintain the quality of performing bridge inventory, inspection, and load rating under their jurisdiction.
- T. **Reclamation Bridge Inventory (RBI) System.** The RBI System is an electronic database and application that is used to store and manage all Reclamation bridge and crossing data along with storing all Reclamation bridge files and having a geospatial viewing component. The RBI System includes data for all Type 1 bridges, Type 2 bridges, Type 3 bridges, and Crossings.

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- U. **Reclamation Facility.** Any facility or structure that is owned by Reclamation or included as part of an authorized Reclamation project.
 - V. **Structure Inventory and Appraisal (SI&A).** NBI required data collected on all Type 1 bridges.
 - W. **Type 1 Bridge.** Any Reclamation owned highway bridge located on a public road.
 - X. **Type 2 Bridge.** Any Reclamation owned bridge not located on a public road. Type 2 Bridges include pedestrian bridges, trail bridges, railroad bridges and non-public highway bridges. Highway bridges included in the Type 2 inventory must have restrictive signs or barriers in place on the road preceding the bridge as defined under “non-public road.”
 - Y. **Type 3 Bridge.** Any non-Reclamation owned bridge that crosses a Reclamation dam, associated facility, or power facility.
 - Z. **Underwater Inspection.** Inspection of the underwater portion of a bridge substructure and the surrounding channel, which cannot be inspected visually at low water by wading or probing, generally requiring diving or other appropriate techniques.
4. **Responsibilities.**
- A. **Commissioner.** The Commissioner is responsible for Reclamation’s overall Bridge Inventory and Inspection Program.
 - B. **Deputy Commissioner, Operations.** The Deputy Commissioner, Operations, is responsible for coordinating with all regional directors to ensure Bridge Inventory and Inspection Program criteria are followed and required activities are implemented consistently.
 - C. **Deputy Commissioner, Policy, Administration and Budget.** The Deputy Commissioner, Policy, Administration, and Budget is responsible for overseeing policy compliance.
 - D. **Director, POLICY.** The Director, POLICY is responsible for:
 - (1) developing and disseminating related Reclamation Manual (RM) Policy and D&S, criteria, guidance, and corporate information; and
 - (2) performing programmatic reviews to verify the consistent implementation of required program activities.

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- E. **Program Manager.** The member of the Asset Management Division of POLICY who is responsible for coordination and promulgation of Reclamation wide policies and program management related to bridge inventory and inspection activities and implementing QA as specified in Paragraph 7 of this D&S.
- F. **Regional Directors.** Each regional director is responsible for:
- (1) decision-making related to bridge inventory and inspection activities within their region; and
 - (2) implementing this D&S for all bridges at Reclamation dams, associated facilities, and power facilities.
- G. **Regional Bridge Program Manager (RBPM).** The representative for each region that is responsible for the overall bridge program, including maintaining the region's bridge inventory, ensuring inspections are performed as required, and implementing QA/QC as specified in Paragraph 7 of this D&S.
- H. **Area Managers.** Area managers are responsible for the routine activities such as maintenance and construction, as well as assisting the RBPM by ensuring that all Reclamation bridges at facilities, associated facilities, and power facilities are identified; ownership is determined; and formal recommendations to address deficiencies are tracked and managed until completion.
- I. **Reclamation Employees.** All Reclamation employees are responsible for communicating bridge issues that have been identified or called to their attention through official channels of the employee's particular organization to the RBPM and the area manager and regional director with jurisdiction over the bridge.
5. **Reclamation Bridge Inventory (RBI).**
- A. **Bridge Inventory Requirements.** The RBPM is responsible for compiling the inventory of all Type 1 bridges, Type 2 bridges, Type 3 bridges, and Crossings. The RBPM shall include all SI&A data for every Type 1 bridge within the RBI system.
 - B. **Maintenance and Updates of Bridge Inventory.** The RBPM shall ensure that the Reclamation Bridge Inventory is reviewed, updated, and revised based on results of inspections or facility reviews/examinations conducted on associated facilities, operational or ownership status changes, or policy changes for all bridge and crossing types.
 - C. **Determination of Bridge Type.** The regional director, or as assigned to the responsible area manager, will determine the bridge Type (Type 1, 2, 3), based on

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ownership and public/non-public vehicular use. As applicable, where it is determined that it is reasonable and prudent to restrict access and use of the bridge by the general public, appropriate restrictive physical devices or barriers, or prohibitive signs are to be installed. The determination or change of bridge Type will be documented by a formal memorandum from the area or field office manager to the RBPM. A copy of the memorandum will be retained in the bridge file, and a courtesy copy will be sent to the Program Manager in POLICY, 84-57000.

D. Determination of Bridge Ownership. The determination of bridge ownership is important for classifying and compiling an inventory of bridges located on and crossing over Reclamation facilities. If bridge ownership changes and results in a change in the bridge Type, then the change in bridge Type shall be documented in a memorandum as indicated in Paragraph 5.C.

- (1) **Public/Private Ownership.** If the owner of the bridge is determined to be a public entity other than Reclamation or a private entity, then the appropriate Reclamation regional or area office shall send a letter to the owner by certified mail return receipt requested. The letter will include a copy of the contract, agreement, or other documentation indicating the bridge's ownership, and also include copies of all previous bridge inspection reports and applicable documents. The letter shall advise the owner of the inspection and reporting responsibilities that are applicable under the NBIS. Once this letter and supporting information is provided to the owner, Reclamation will no longer be responsible for conducting future bridge inspections. However, a copy of the documentation of the non-Reclamation owned bridge will be maintained in the RBI and the bridge will be categorized as a Type 3 bridge.
- (2) **Reclamation Ownership.** If Reclamation is the owner of the bridge, the RBPM shall track the bridge data in the Reclamation Bridge Inventory and shall continue to inspect the bridge in accordance with this D&S.
- (3) **Unconfirmed Ownership.** When ownership of a particular bridge is unknown, Reclamation shall temporarily classify it as a Type 1 or Type 2 bridge, based on public access; perform all necessary inspections; and perform any operation and maintenance activities needed to maintain the bridge in a safe and passable condition. The responsible Reclamation regional/area office will also be required to determine who owns the bridge. If ownership cannot be determined, Reclamation will utilize all legal methods available to either:
 - (a) acquire ownership of the bridge; or
 - (b) dispose of the bridge in accordance with RM D&S, *Disposal of Bridges and Crossings on Bureau of Reclamation Land and Easements* (LND 11-01).

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6. NBI.

A. **Content.** Reclamation will inventory Type 1 bridges in accordance with FHWA's publication "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges," (December 1995) together with subsequent interim changes or the most recent version.

B. **Annual NBI Submission to FHWA.** As required under the NBIS, Reclamation is responsible for annually reporting Type 1 bridge data to FHWA for inclusion into the NBI. The RBPM shall verify the accuracy of the NBI data annually prior to the submission to FHWA. The Program Manager is responsible for submitting the NBI data to FHWA each year.

7. **QA/QC.** The QA and QC organizational requirements apply specifically to activities related to Type 1 bridges reported to the NBI. QA and QC procedures are used to maintain a high degree of accuracy and consistency in the inspection program of Type 1 bridges in accordance with 23 CFR 650.313(g).

A. **Organizational QA/QC Responsibilities.**

(1) **Program Manager.** The Program Manager is responsible for coordination and promulgation of Reclamation wide policies and program management related to bridge inventory and inspection activities, including this D&S. The Program Manager will meet the qualifications outlined in Paragraph 7.B.(1). The Program Manager will provide coordination with FHWA regarding NBI program administration activities, request annual Federal Lands Planning Program funding that can be used for bridge inspection related activities on Type 1 bridges, and distribute amongst the regions. The Program Manager responsibilities include, but are not limited to, the following:

(a) Provide oversight of Reclamation compliance with this D&S.

(b) Coordinate regular bridge inspector meetings and include specialized training as needed.

(c) Perform annual programmatic and field reviews on 10 percent of Type 1 bridge inspections performed each fiscal year.

(d) Develop procedures for sampling parameters for selecting bridges to perform programmatic reviews. Procedures must include, but are not limited to:

(i) whether the bridge is posted or not;

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- (ii) whether the bridge has a recommendation in Dam Safety Information System (DSIS) for replacement or rehabilitation;
 - (iii) whether the bridge has an unusual change in the condition rating from the previous inspection;
 - (iv) whether the bridge requires special inspections (underwater, fracture critical, etc.); and
 - (v) whether the bridge is in poor overall condition.
- (e) Validate the qualifications of the bridge program personnel in each region.
 - (f) Develop procedures for reviewing inspection reports, bridge files, and load ratings.
 - (g) Develop a checklist for QA/QC review of bridge files, load rating analysis, and field inspections.
 - (h) Perform QA checks on a minimum of 10 percent of the NBI data submitted each year to FHWA.
- (2) **RBPM.** The RBPM will manage inventory and inspection activities of all bridges for their region and meet the qualifications outlined in Paragraph 7.B.(1). The RBPM responsibilities include, but are not limited to, the following:
- (a) Implement Reclamation wide bridge inspection policies and procedures, QA/QC, and prepare and maintain a bridge inventory.
 - (b) Manage the bridge program to ensure all Type 1 bridge inspections, reports, and load ratings are performed in compliance with the requirements set forth within the NBIS.
 - (c) Establish and implement necessary processes and procedures to assure QA/QC of the Type 1 bridge inspection program in accordance with the NBIS.
 - (d) Document changes to the bridge Type in the inventory.
 - (e) Maintain Type 1 bridge files which will be available for FHWA to review during NBI compliance reviews. Type 1 bridge files will include as necessary the following items:
 - (i) design and as-built drawings;

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- (ii) routine inspections;
 - (iii) FCM inspection plans and FCM inspection reports;
 - (iv) underwater inspection plans and underwater inspection reports;
 - (v) load ratings; and
 - (vi) scour evaluations.
- (f) Maintain records of the qualifications and refresher trainings for all of the staff that perform inspections or load ratings on bridges in their region, including, inspection team leaders, inspection team members, load raters, underwater bridge inspection divers, and contractors.
- (g) Perform annual programmatic reviews and verification on 10 percent of Type 1 bridge inspection reports performed that year.

B. Qualifications of Personnel.

- (1) **Program Manager and RBPM.** The Program Manager and RBPM shall successfully complete a FHWA-approved comprehensive bridge inspection training course and an inspection refresher course every 5 years thereafter, and meet or possess one of the following qualifications:
- (a) be a registered professional engineer; or
 - (b) have 10 years bridge inspection experience.
- (2) **Inspection Team Leader.** The inspection team leader shall successfully complete a FHWA-approved comprehensive bridge inspection training course and an inspection refresher course every 5 years thereafter, and meet or possess one of the following sets of minimum qualifications:
- (a) have the qualifications specified under Paragraph 7.B.(1);
 - (b) have 5 years bridge inspection experience;
 - (c) be certified as a Level III or IV bridge safety inspector under the National Society of Professional Engineers' Program for National Certification in Engineering Technologies;
 - (d) have all of the following:

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- (i) a bachelor's degree in engineering from a college or university accredited by or determined as substantially equivalent by the Accreditation Board for Engineering and Technology;
 - (ii) successfully passed the National Council of Examiners for Engineering and Surveying Fundamentals of Engineering examination;
 - (iii) 2 years of bridge inspection experience; or
- (e) have all of the following:
- (i) an associate's degree in engineering or engineering technology from a college or university accredited by or determined as substantially equivalent by the Accreditation Board for Engineering and Technology; and
 - (ii) 4 years of bridge inspection experience.
- (3) **Inspection Team Member.** There are no specific requirements to be an inspection team member. However, it is recommended that Reclamation staff that participates in inspections successfully complete an FHWA-approved comprehensive bridge inspection training course and an inspection refresher course every 5 years thereafter.
- (4) **Load Rater.** The individual charged with the overall responsibility for review or calculation of load ratings must be a registered professional engineer.
- (5) **FCM Inspection Team Leader.** The individual leading each FCM inspection shall be a qualified team leader who has also completed the National Highway Institute's training course titled "Fracture Critical Inspection Techniques for Steel Bridges."
- (6) **Lead Underwater Bridge Inspection Diver.** The lead underwater bridge inspection diver must complete an FHWA-approved comprehensive bridge inspection training course or other FHWA-approved underwater bridge inspection training course.
- (7) **Contractor Qualifications.** Consultants, architectural and engineering (A&E) firms, or other governmental agencies may be contracted to provide the inspection requirements described herein. Consultants conducting these inspections will be required to meet the qualifications and experience required as specified in this D&S for the roles and activities they will be performing. All contractors performing bridge inspections shall have an individual with program manager

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qualifications as specified in Paragraph 7.B.(1) that approves all inspection reports. If an A&E service contract is utilized, Reclamation will have a Contracting Officer's Representative (COR), who possesses team leader qualifications, as specified in this D&S.

8. Bridge Inspection Activity Requirements.

- A. **Job Hazard Analysis (JHA).** To help ensure the safety of personnel conducting the onsite inspections, the responsible team leader will prepare a JHA for each bridge to be inspected. The JHA will address all potential safety hazards for activities anticipated and provide acceptable methods, procedures, and equipment to safely accomplish the activities. The JHA will be provided to each inspection team participant at least three work days prior to the inspection to allow review of the JHA and to obtain necessary safety equipment. The JHA will be reviewed by the onsite inspection team members at the bridge site during the entrance briefing for the inspection and signed by all inspection participants. Signing the JHA will indicate acknowledgment of the provisions and intention to comply with the JHA during the inspection. Any non-Reclamation participants declining to sign the JHA will be so noted on the JHA. The team leader leading the inspection will make the final decision on whether and/or how an inspection can proceed if unforeseen circumstances arise during the inspection that are not specifically covered in the JHA or where an interpretation is required. Ultimately, each individual of the inspection party is responsible for his/her own safety.
- B. **Traffic Control.** The inspection team leader is responsible for developing and implementing a temporary traffic control plan if required by the MUTCD. The temporary traffic control plan shall follow the requirements of the MUTCD.
- C. **Type 1 Bridge Inspections/Activities.** Bridge inspection procedures must meet all of the requirements set forth in the NBIS. A qualified team leader shall be at the bridge at all times during each initial, routine, in-depth, FCM, and underwater inspection. All Type 1 bridge inspections shall follow the procedures found in the BIRM. In general, some of the primary requirements are:
- (1) **Load Ratings.**
 - (a) **Requirements.** Each bridge shall be load rated as a basis for determining the safe load-carrying capacity in accordance with the current edition of the AASHTO MBE and all applicable FHWA Memoranda on load ratings. The load rating shall be established based on the current conditions of the bridge. The individual charged with the overall responsibility for load rating bridges shall be a registered professional engineer and shall be noted on the load rating report. Every load rating report shall be independently reviewed by a separate registered professional engineer and shall be noted on the load

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rating report. Every load rating report shall at a minimum contain the following:

- (i) summary;
- (ii) assumptions;
- (iii) controlling member and location;
- (iv) design and legal load rating factors; and
- (v) NBI load rating data to be reported in Items 63 through 66.

(b) **Posting and Closure.** If a load rating results in the closure or posting of the bridge in accordance with the latest MBE edition, then a Critical Finding shall be issued as specified in Paragraph 9.C. If it is determined under the rating procedure that the maximum unrestricted legal loads or State permit loads exceed the load permitted under the operating rating or equivalent rating factor, the bridge shall be posted in accordance with the current edition of the MUTCD.

- (i) All Type 1 bridges located on State routes or with an Average Daily Traffic (ADT) greater than or equal to 50 vehicles per day shall be posted following the posting requirements of the applicable State Department of Transportation.
- (ii) For Type 1 bridges located on non-State routes and with an ADT less than 50 vehicles per day, it is recommended to post the bridge with a maximum weight limit or maximum axle weight sign. The load rating engineer may also use engineering judgment to recommend a posting value and sign based on the characteristics of the bridge, road, and surrounding area.
- (iii) Posting shall be performed by the entity with operations and maintenance (O&M) responsibility within 30 calendar days of the finding.
- (iv) A Critical Finding shall be issued for Type 1 bridges requiring posting that are found with a missing or severely damaged load posting sign and the bridge shall be properly posted within 30 calendar days of the finding.

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- (2) **Initial Inspections.** Initial inspections shall be performed on new or rehabilitated bridges within 90 days of opening to the public.
- (3) **Routine Inspections.** Every bridge is to be inspected at regular intervals not to exceed 24 months, with certain exceptions. With written approval of the FHWA Headquarters Office of Bridge Technologies, bridges will be allowed to be inspected on less frequent intervals, not to exceed 48 months.
- (4) **Special Inspections.** Certain bridges may require inspections more frequently than on a 24-month interval, depending on factors such as age, traffic characteristics, load rating, and known deficiencies. The team leader can make a recommendation to inspect the bridge more frequently based on the conditions and characteristics of the bridge. At a minimum, bridges with a deck, superstructure, or substructure rating of a 3 or less shall be inspected every 12 months. The RBPM may also recommend special inspections based on unique circumstances such as heavy construction or hauling, seismic events, flooding events, or others. Special inspection recommendations shall be documented in the inspection report.
- (5) **FCM Inspections.** A FCM inspection is to be performed at an interval not to exceed 24 months. All fracture critical bridges shall have a fracture critical plan developed prior to inspecting the bridge.
- (6) **Underwater Bridge Inspections.** An underwater inspection is to be performed at an interval not to exceed 60 months. An underwater inspection is required when two subsequent routine inspections cannot inspect all substructure components due to some substructure components being underwater without safe access. All underwater bridge inspections shall have an underwater bridge inspection plan developed prior to inspecting the bridge.
- (7) **Damage Inspections.** A damage inspection is required when damage has been reported at a bridge. A qualified team leader does not have to be present for damage inspections. If a team leader is not present, a professional engineer from the local Reclamation office shall perform the damage inspection and compile the damage inspection report. The RBPM shall review all damage inspection reports and determine if a follow-up inspection by a qualified team leader is required.
- (8) **In-Depth Inspections.** An in-depth inspection is required when more analysis, investigation, or when more advanced tools and equipment are needed at a bridge.
- (9) **Scour Evaluations.** All new bridges over a waterbody shall have a scour analysis performed during design following the requirements of FHWA's publication "Evaluating Scour at Bridges," referred to as HEC-18. All existing

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bridges over a waterbody shall be evaluated for scour using a tiered approach based on risk. A bridge found to be scour critical shall have a Plan of Action (POA) developed which may include various actions based on the risk of bridge failure such as closing the bridge, installing countermeasures, or performing more frequent inspections and monitoring. The POA shall describe the required action and provide a due date.

- (10) **Personnel Involvement.** The team leader of the inspection team for Type 1 bridges will be from the regional office. However, this responsibility can be assigned to an area office upon mutual agreement between the regional director and the area manager, provided that the area office staff meets the qualification requirements in this D&S and is one office removed from the operating office/entity. The regional office can also request TSC, or contract with other Federal agencies or A&E private consultants to perform inspections. Team members are not required to be from the regional office.

D. Type 2 Bridge Inspections/Activities.

- (1) **Qualifications.** A team leader meeting the qualifications found in Paragraph 7.B.(2) shall lead each Type 2 bridge inspection and be on-site for the duration of the bridge inspection. Type 2 bridge inspections will be conducted by at least one office removed from the operating office/entity or an independent review will be made. The conducting office requirements are defined in RM D&S, *Review of Operation and Maintenance (RO&M) Program Examination of Associated Facilities (Facilities Other Than High- and Significant-Hazard Dams)* (FAC 01-04).
- (2) **Inspection Frequency.** Type 2 bridges shall be inspected on a frequency not to exceed 6 years. The qualified team leader or RBPM may recommend more frequent inspections based on factors such as condition, load rating, traffic characteristics, scour, fracture critical members, the desire to align the frequency with other examinations, or other factors.
- (3) **In-Depth Inspection.** In-depth inspections of Type 2 bridges may be recommended by the area or regional office. See Paragraph 8.C.(8).
- (4) **Associated Facility.** The inspection of Type 2 bridges may be included as part of a Review of Operation and Maintenance (RO&M) examination if the bridges are part of, or related to, an “associated facility” as defined in FAC 01-04 as long as there is a qualified team leader on site from the RO&M examination. However, these bridges still need to receive an inspection by a qualified team leader at a frequency not to exceed 6 years if there is not a qualified team leader on-site for the RO&M examination.

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- (5) **High- and Significant-Hazard Dam.** The inspection of Type 2 bridges associated with the review/examination of high- or significant-hazard dams may be included as part of the Periodic Facility Review (PFR) or Comprehensive Review (CR) as defined in RM D&S, *Review/Examination Program for High- and Significant-Hazard Dams* (FAC 01-07) as long as there is a qualified team leader on-site for the PFR or CR. However, these bridges still need to receive an inspection by a qualified team leader at a frequency not to exceed 6 years if there is not a qualified team leader on-site for the PFR or CR.
- (6) **Initial Type 2 Bridge Inspections.** The requirement of a separate bridge inspection on every Type 2 bridge is a new requirement for Reclamation and will take time to implement with a reasonable 6-year inspection cycle. Considering this, every initial Type 2 bridge inspection report needs to be completed by the end of calendar year 2024.
- E. **Type 3 Bridges.** The inspection requirements for these bridges will be implemented by the owner or responsible entity. If the condition of a Type 3 bridge is known to threaten the operation of a Reclamation facility or if the bridge presents an immediate danger to the public or operating personnel, notification is to be promptly given to the responsible owner or entity for their attention and correction.
- F. **Crossings.** Reclamation owned crossings, whether open to public travel or not, are not required to be inspected and reported similar to Type 1 or Type 2 bridges, unless their design and existence, as determined by the responsible regional/area office, presents a significant hazard to the public or operating personnel. Crossings generally will be inspected and reported as a feature of the facility that it is crossing. Crossing information is not required to be submitted for inclusion in the NBI.
9. **O&M Recommendations Resulting from Inspection Activities.**
- A. **Categorizing Recommendations.** Recommendations will be developed by Reclamation staff based on deficiencies identified during the inspection of Type 1 or Type 2 bridges. Recommendations will be categorized according to the three recommendation categories established under FAC 01-04. Refer to FAC 01-04 for more information on each recommendation category. The three types of recommendations are titled:
- (1) Category 1 Recommendations;
 - (2) Category 2 Recommendations; and
 - (3) Category 3 Recommendations.

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- B. Recommendation Tracking.** Regardless of whether the bridge was inspected as part of an associated facilities review or facility review, all Category 1, 2, and 3 recommendations resulting from the inspection of Type 1 or Type 2 bridges will be entered and maintained within DSIS, for tracking purposes.
- C. Critical Findings.**
- (1) **Discovery.** Immediate action is required when a Critical Finding is discovered at a Type 1 bridge. For Critical Findings that require bridge closure, see Paragraph 9.D. The team leader is responsible for summarizing the Critical Finding and notifying the following individuals within 48 hours of identifying the Critical Finding:
 - (a) area manager;
 - (b) RBPM; and
 - (c) Program Manager.
 - (2) **Plan of Action.** Within 30 days of discovering the Critical Finding, a POA shall be developed by the entity with O&M responsibility based on input from the RBPM. The POA shall summarize the finding or findings, describe the required action, and provide a deadline. The area manager shall coordinate with the entity having O&M responsibility to ensure that the critical finding is addressed. The Program Manager is responsible for tracking all critical findings.
- D. Bridge Closures.** If inspection or load rating calculations indicate that the bridge is not safe for public highway travel, then a critical finding with a Category 1 recommendation will be issued in a Notification of Closure letter to close the bridge within 10 calendar days of the date of the letter. Efforts to close the bridge should start immediately upon discovery. Bridges shall be closed using a barrier and a bridge closed sign installed on both sides of the bridge. Following closure of the bridge, Reclamation will document with photos that the closure was completed. If the operating entity does not close the bridge within 10 calendar days of the Notification of Closure letter to close the bridge, then Reclamation will close the bridge and charge the operating entity. Follow up recommendations will be issued to repair or remove the bridge. The follow-up site visits will be performed on a frequency determined by the regional/area office to verify the bridge remains closed until the recommendation to repair or remove the bridge are completed. Once repairs are completed, an initial inspection will be performed and routine inspections will resume. If removed, the regional/area office staff will remove the bridge per LND 11-01, and mark the bridge as Removed in the RBI system. The Notification of Closure letter will include the following:

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- (1) Category 1 recommendation, which identifies the critical finding resulting in the closure of the bridge, and a clear written statement noting that the bridge will not be reopened until the critical finding is corrected.
- (2) Instructions to close the bridge with barriers and sign the bridge as closed in accordance with the MUTCD.
- (3) Notify the operating entity of their duty to monitor and maintain closure barriers and signs to assure they remain in place until the bridge is removed, or repaired and reopened.
- (4) Explanation that a critical finding could cause failure or partial failure of the bridge, or could pose a serious traffic safety hazard and include the sentence, “Bridge failures have occurred nationally that might have been avoided if prompt attention had been given to concerns noted in bridge inspection reports.”
- (5) Notify the operating entity to adhere to 43 CFR Part 423 *Public Conduct on Bureau of Reclamation Facilities, Lands, and Waterbodies*, which describes the process for closing areas otherwise open to the public.

10. Bridge Inspection Reporting.

A. **Type 1 Bridge Inspection Reports.** A separate inspection report for each Type 1 bridge will be prepared even if the inspection was conducted as part of a RO&M Program examination, PFR, or CR. The RBPM is responsible for ensuring that the RBI and SI&A data are updated within the RBI system based on the results of the inspection within 90 calendar days of the bridge inspection date.

- (1) **Inspection Report Format.** Routine Type 1 bridge inspection reports shall use the Reclamation Type 1 bridge inspection report template and shall include all information required in accordance with the NBIS. Unique inspection types such as in-depth, FCM, or underwater inspections may modify the Reclamation Type 1 bridge inspection report template as needed.
- (2) **Repairs/Improvements.** Inspection reports will document all repairs and maintenance improvements that have been performed on the bridge since the previous inspection. This is done to document all known maintenance activities that have been performed on the bridge.
- (3) **Review.** A separate individual who meets the qualifications for a team leader as defined in the NBIS shall independently review every inspection report. If the team leader is not a registered professional engineer, the peer reviewer, who will review and sign the report, must be a registered professional engineer.

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- (4) **Approval.** The RBPM shall approve all inspection reports.
 - (5) **Report Signature.** Every inspection report shall include the name, signature, and date of the team leader, reviewer who is qualified as a team leader, and the RBPM Approver.
 - (6) **Report Transmittal and Distribution.** Final Type 1 bridge inspection reports shall be uploaded into the RBI system within 120 calendar days of the inspection date by the responsible regional or area office that authored the report. The RBPM shall notify the Program Manager once the reports have been uploaded into the RBI system. The area office or field office (when applicable) is responsible for transmitting the bridge inspection reports to the operating entities.
- B. Type 2 Bridge Inspection Reports.** Each Type 2 bridge shall have a separate bridge inspection report similar to Type 1 bridges, but more condensed. If the Type 2 bridge is inspected in conjunction with a larger RO&M examination, PFR, or CR, the Type 2 bridge inspection report information may be included in the RO&M examination, PFR, or CR report as long as the report includes a list of every Type 2 bridge inspected and a separate section on each Type 2 bridge that contains the minimum Type 2 bridge information specified below. For each Type 2 bridge inspection, the data shall be updated and the report uploaded to the RBI system within 180 days of the inspection date. The team leader leading each Type 2 bridge inspection is responsible for the Type 2 bridge data update and report upload into the RBI system. At a minimum, each Type 2 bridge inspection report shall include:
- (1) An overall structural evaluation;
 - (2) A component condition rating for the deck, superstructure, substructure, channel/channel protection, and culvert (when applicable);
 - (3) Recommendations;
 - (4) Photos; and
 - (5) Bridge inventory data based on the requirements in the RBI system.
- 11. Railcar Superstructures.** Railcar superstructures shall not be used as a bridge superstructure for any new Reclamation owned bridge. In addition, no rehabilitations shall be made to existing Reclamation owned railcar superstructures.
- 12. Funding.**

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- A. **Bridge Inventory and Inspection Activities.** Funds expended on all Reclamation owned bridges or crossings related to inventorying, inspection, and load rating activities are non-reimbursable.
- B. **Funding of Recommended Work.** For bridges where O&M responsibility has been transferred to an operating entity, the costs associated with completing a recommendation that was identified in a Type 1 or Type 2 bridge inspection, shall be funded by the operating entity as a project O&M activity unless otherwise authorized (e.g., existing contract language provides for different funding). For reserved works, funding and reimbursement will be in accordance with current project O&M allocations.
13. **Transferred Works O&M Bridge Responsibilities/Status.**
- A. **Notification Letter to Operating Entities.** By formal letter, each regional/area office will inform operating entities, under their jurisdiction, of Reclamation's bridge inspection responsibilities. This is meant to be a one-time notification and documentation effort, unless the operating entity or managing office changes in the future. The formal letter will include the following, as applicable:
- (1) Information regarding Reclamation's bridge inspection program and requirements including definitions of Type 1 and Type 2 bridges.
 - (2) A listing of all confirmed Type 1 and 2 bridges that the operating entity is currently responsible for operating and maintaining.
 - (3) A request for the operating entity to submit a list of current bridges necessary for project purposes and to identify a list of Type 1 bridges that must be restricted for the purpose of reclassification as Type 2 bridges.
 - (4) A request for the operating entity to submit a list of bridges it believes are unnecessary for project purposes and any recommendations regarding removing, selling, or transferring title.
 - (5) Notification that the operating entity is responsible for implementing any access restrictions, in addition to resolving any formal recommendations regarding bridges in order to safeguard employees and the general public. Any such restrictions or improvements are to be subject to the approval of Reclamation. If upgraded, improved, or restricted, the bridge will then be considered for re-categorization and inspected as outlined within this D&S.
 - (6) Notification of Reclamation's inspection schedule related to Type 1 bridges on related project facilities, in accordance with the NBIS.

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- (7) Notification of Reclamation's inspection schedule related to Type 2 bridges on related project facilities, in accordance with this D&S.

B. Bridges Designated as Unneeded.

- (1) Certain bridges will require special attention to determine or verify ownership and their necessity, possibly requiring significant time and resources for resolution. If a bridge is determined to be unnecessary for project purposes by the responsible operating entity, then Reclamation will consider each bridge and do one of the following:
 - (a) formally justify the necessity of the bridge to the operating entity, and retain ownership of the bridge;
 - (b) transfer ownership/title of the bridge to the operating entity;
 - (c) negotiate the terms of, and complete, a disposal of the bridge to a private landowner or other entity if desired;
 - (d) demolish or otherwise permanently remove the bridge from service, because no bridge is to be abandoned in place.
- (2) For items (b), (c), and (d) above, refer to LND 11-01 for Reclamation requirements and procedures related to disposal of bridges that are not needed for project purposes.

- C. **Historic Bridges.** Any action including O&M activities, title transfer, sale, or removal, to be taken on a bridge considered to be "historic" requires consideration under Section 106 of the National Historic Preservation Act. Refer to RM D&S, *Cultural Resources Management (CRM)* (LND 02-01) for further information and requirements.

14. **Bridges and Crossings Constructed for Authorized Use by Others.** A bridge or crossing owned by Reclamation for use by others is required to have a use authorization as defined in LND 08-01 or other contractual obligation. Bridges or crossings constructed and owned by Reclamation for authorized use by others through a contractual obligation shall be considered needed for project purposes, with ownership and maintenance responsibility vested with Reclamation. Such a bridge or crossing cannot be removed or destroyed unless written agreement with the other party is obtained stating the determination of unneeded for project purposes. All efforts should be made to dispose those bridges that are not needed for project purposes in accordance with LND 11-01.

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- A. **Type 2 Bridge Classification.** Reclamation owned bridges constructed for authorized use by others may be classified as Type 2 bridges if the following conditions are met:
- (1) The roadway leading to the bridge has restrictive signs or gates that restrict access to the public in accordance with the definition of a “non-public road”.
 - (2) A use authorization is issued by Reclamation to an authorized party or parties that describes the terms of use for the bridge with specific requirements to ensure the public cannot access the bridge. The use authorization shall follow the requirements of LND 08-01.
- B. **Type 1 Bridge Classification.** If the requirements found in Paragraph 14.A are not met, then the bridge shall be classified as a Type 1 bridge.

RECLAMATION MANUAL TRANSMITTAL SHEET

Effective Date: _____

Release No. _____

Ensure all employees needing this information are provided a copy of this release.

Reclamation Manual Release Number and Subject

Summary of Changes

NOTE: This Reclamation Manual release applies to all Reclamation employees. When an exclusive bargaining unit exists, changes to this release may be subject to the provisions of collective bargaining agreements.

Filing instructions

Remove Sheets

Insert Sheets

All Reclamation Manual releases are available at <http://www.usbr.gov/recman/>

Filed by: _____

Date: _____