Mississippi Bridge Program: MDOT Inspection, Evaluation, Design and Repair

Mississippi's bridge program is governed by MDOT's Mississippi Manual for Bridge Evaluation, a 2025 document written for the 2022 NBIS and the SNBI. MDOT sets a reduced-interval trigger stricter than the federal rule, ties intervals to posting for Mississippi legal loads, and restricts extended intervals to bridges approved by the Bridge Inspection Program Manager. This one-hour course covers those rules plus MDOT's 2026 Bridge Design Guidelines and Mississippi repair practice.

Learning objectives

- Apply the 2022 NBIS baseline to Mississippi practice
- Use the state DOT's intervals, critical finding and rating rules
- Coordinate inspection, load rating and posting
- Apply the state DOT's bridge design and repair standards

Why a Mississippi-specific course

Every bridge in Mississippi that carries a public road is inspected, inventoried and rated under one federal rule, the National Bridge Inspection Standards (NBIS) at 23 CFR Part 650 Subpart C, as rewritten in the final rule published May 6, 2022. The federal rule sets minimums. It deliberately leaves the "how" to each State transportation department, which must write and follow documented procedures for inspection intervals, critical findings, load rating, posting, closure, scour and quality control. In Mississippi that agency is the Mississippi Department of Transportation (MDOT). The documents MDOT publishes are therefore the working rulebook for any engineer, inspector or consultant who signs, seals or reviews bridge work in the state.

Engineers who move between states, or consultants who work for several DOTs, routinely get tripped up by the differences: one state reduces the inspection interval when a component drops to 4, another waits until 3; one state rates for its own legal trucks that do not exist anywhere else; one state demands a load rating revision within a fixed number of days after a report is sealed. None of those details appear in the federal regulation. This course pulls the Mississippi specifics out of the MDOT documents listed in the references, places them next to the federal baseline, and then follows the bridge through the four activities that matter in practice: design, inspection, repair and load rating.

Read this course as a map, not as a substitute for the documents. Every number below is tied to a named source and edition. This course relies on the MDOT Mississippi Manual for Bridge Evaluation, version 2025-1 (October 9, 2025), which is written to the 2022 NBIS and SNBI. MDOT may issue later versions. If you are about to seal a rating, sign an inspection report or close out a critical finding, open the current edition and confirm the number there first.

The federal baseline you are measured against

Before looking at MDOT's procedures it helps to restate exactly what the 2022 NBIS requires, because the state documents are written to satisfy (and often exceed) these paragraphs. The key provisions for day-to-day practice are:

- **Routine inspection interval (23 CFR 650.311(a)).** Bridges are inspected at regular intervals not to exceed 24 months. Bridges whose deck, superstructure, substructure or culvert is in poor-or-worse condition must be inspected at reduced

intervals, and an owner may extend routine intervals to as much as 48 months when every federal criterion (good condition ratings, an inventory rating factor of at least 1.0, no fatigue-prone details, adequate vertical clearance and so on) is met, or up to 72 months under a documented risk-based method approved by FHWA.

- **Underwater inspections** are required at intervals not exceeding 60 months, with reduced intervals for poor underwater conditions and possible extension to 72 months under the federal criteria.
- **Nonredundant steel tension member (NSTM) inspections** are required at intervals not exceeding 24 months, with reduced intervals when NSTM condition is poor; the 2022 rule replaced the old "fracture critical member" vocabulary with NSTM.
- **Interval tolerance (650.311(e)).** An inspection is on time if it is done up to two months after the month it was due for intervals under 24 months, and up to three months after the due month for intervals of 24 months or more. Anything longer requires advance FHWA approval for rare and unusual circumstances.
- **Load rating (650.313(k)).** Each bridge is rated for safe load capacity under Sections 6 and 8 of the AASHTO Manual for Bridge Evaluation. Ratings must be completed as soon as practical but no later than 3 months after the initial inspection, and whenever a change is identified that warrants re-rating, such as a change in condition, reconstruction, new construction, or a change in dead or live load. Routine and special permit loads must be analyzed for each bridge they cross.
- **Load posting (650.313(l)).** Posting is required when legal or routine permit loads exceed what the bridge can carry. Posting must be made as soon as possible but no later than 30 days after a load rating determines the need, and missing or illegible posting signs must be corrected within 30 days of the inspection or notification that finds them.
- **Critical findings (650.313(q)).** Owners must document procedures that, at a minimum, treat as critical any finding that warrants full or partial closure, an NSTM coded 3 or less, a deck, superstructure, substructure or culvert coded 2 or less, or a channel or scour condition coded 2 or less. State DOTs must notify FHWA within 24 hours of discovering a critical finding on the National Highway System and provide monthly written status reports on every critical finding until it is resolved.

Every MDOT rule in this course is one of three things: a restatement of these minimums, a stricter state choice (shorter interval, earlier trigger, extra legal vehicle), or a procedural detail the federal rule requires the state to define (who calls whom, which form, which database). Keeping that frame in mind makes the state documents far easier to read, and it tells you which numbers you can never relax: a state may be stricter than the NBIS but never looser.

Who may inspect and rate in Mississippi

The NBIS qualification rules in 23 CFR 650.309 apply in Mississippi exactly as they do everywhere else, and MDOT adds its own documentation and assignment practices on top. The federal floor is worth knowing precisely, because consultants are routinely asked to prove it:

- **Program manager:** a registered Professional Engineer or a person with 10 years of bridge inspection experience, who has completed FHWA-approved comprehensive bridge inspection training with a score of at least 70 percent, and who completes a cumulative 18 hours of FHWA-approved refresher training in each 60-month period.
- **Team leader:** one of four paths: (i) a PE with 6 months of bridge inspection experience; (ii) 5 years of bridge inspection experience; (iii) an ABET-accredited bachelor's degree in engineering or engineering technology, a passed NCEES FE exam and 2 years of experience; or (iv) an ABET-accredited associate's degree and 4 years of experience. Every team leader also needs the FHWA-approved comprehensive course (70 percent or better) and 18 hours of FHWA-approved refresher training every 60 months, and must give documentation to the program manager of each owner for whom they inspect.

- **NSTM team leader:** all team leader requirements plus an FHWA-approved NSTM inspection course with a passing assessment.
- **Underwater bridge inspection diver:** FHWA-approved underwater bridge inspection training with a passing assessment.
- **Load rating:** performed by, or under the direct supervision of, a registered professional engineer (650.309(d)).
- **Damage and special inspections:** the State must establish documented personnel qualifications for these inspection types.

Mississippi at a glance: the program and its documents

MDOT's Bridge Division administers the program for state-maintained bridges and oversees local-agency bridges through the State Aid Division and county engineers. The **Mississippi Manual for Bridge Evaluation (MMBE), version 2025-1, dated October 9, 2025**, combines inspection and load rating procedures in one document and uses SNBI item names throughout. The MMBE names a Bridge Inspection Program Manager (BIPM) whose approval is needed for extended intervals and other program decisions.

The MMBE requires that a team leader meeting the NBIS qualifications be on-site and actively participate in all routine inspections, and it explains how SNBI records are handled when a bridge is replaced or significantly altered: a structure out of service for more than 24 months, for instance, may need a new SNBI record rather than an update.

Inspection types you will see in the bridge file

The 2022 NBIS defines a set of inspection types, and MDOT's scheduling, reporting and staffing are organized around them. Knowing which type you are performing tells you the scope, the qualifications required and which interval clock you are resetting:

- **Initial** inspection: the first inspection of a new, replaced or rehabilitated bridge (or one newly added to the inventory). It establishes the baseline condition, inventory data and the starting point for load rating, which must then be completed within 3 months.
- **Routine** inspection: the regularly scheduled inspection that determines physical and functional condition and identifies changes since the last inspection. Most of the bridge file is built from routine inspections.
- **Damage** inspection: an unscheduled inspection after an event such as a vehicle or vessel strike, flood, fire or earthquake, to assess the damage and decide on immediate action.
- **In-depth** inspection: a close-up inspection of one or more members, above or below water, to identify deficiencies not readily detectable in a routine inspection; it may use nondestructive evaluation.
- **Special** inspection: an inspection scheduled at the owner's discretion to monitor a particular known or suspected deficiency, for example a crack, settlement or scour condition being watched between routine inspections.
- **NSTM** inspection: a hands-on inspection of nonredundant steel tension members, led by an NSTM-qualified team leader.
- **Underwater** inspection: inspection of the underwater portion of a bridge substructure and surrounding channel that cannot be inspected visually at low water by wading or probing.
- **Service** inspection: a less intensive check by personnel with general knowledge of bridge maintenance or inspection, used to identify major deficiencies and safety issues between more thorough inspections where the owner's procedures call for it.

The NBIS also requires element-level condition data, collected under the AASHTO Manual for Bridge Element Inspection, for bridges on the National Highway System; many states, including several in the Southeast, collect element data on all bridges. Element data drives bridge management and preservation decisions, while component condition ratings drive intervals, critical findings and federal performance measures. Inspectors need to do both well.

Inspection intervals in Mississippi

The MMBE's routine interval rules are a clear example of a state going beyond the federal minimum:

- **Reduced interval, not to exceed 12 months**, for any bridge with Deck, Superstructure or Substructure Condition, or Culvert Condition, coded **4 or less**; or Scour Condition coded 3 or less; or **load posted for any of the Mississippi Legal Loads** (excluding emergency vehicles).
- **Regular interval, not to exceed 24 months**, when components are coded 5 or greater, the bridge is not posted for Mississippi Legal Loads, and it is posted for emergency vehicles (EVs).
- **Extended interval, not to exceed 48 months, with BIPM approval**, when components are 6 or greater; Channel and Channel Protection Condition are 6 or greater; Inventory Load Rating Factor is at least 1.0 and the Routine Permit Loads item is coded A or N; Fatigue Details is N; Highway Minimum Vertical Clearance is at least 14 ft; and other federal criteria are met.

Where ratings of 3 or less are due to localized deficiencies, MDOT allows a **special inspection limited to those deficiencies** to satisfy the reduced-interval requirement, but a complete routine inspection must still be done at least every 24 months. Underwater inspections follow a 60-month regular interval with a 24-month reduced interval for poor underwater conditions. Tolerances follow the federal rule: two months for intervals under 24 months and three months for 24 months or greater.

Critical findings and urgent deficiencies in Mississippi

The MMBE incorporates the federal minimum critical finding definition and assigns follow-up responsibility through the BIPM. Practitioners should expect to notify MDOT immediately of findings that warrant closure or that bring a component, channel or scour condition to 2 or less or an NSTM to 3 or less. Because Mississippi's reduced interval starts at a component code of 4, many bridges approaching critical condition will already be on a 12-month cycle, which gives inspectors an extra opportunity to catch progression before it becomes critical.

Load rating in Mississippi

Load rating procedures are integrated into the MMBE alongside inspection. Mississippi rates the AASHTO legal and specialized hauling vehicles, emergency vehicles and **Mississippi Legal Loads**, and the inspection interval depends directly on the result: a bridge posted for any Mississippi Legal Load moves to the 12-month interval, while a bridge posted only for EVs may stay on a 24-month interval. The Routine Permit Loads item also matters, because extended intervals require it to be coded A or N.

Ratings must be completed within the federal three-month window after initial inspections and after changes warranting re-rating, performed by or under the direct supervision of a PE, and filed with the rating assumptions and the inspection they reflect.

Posting, closure and signs in Mississippi

Posting follows the MBE and the MMBE: a required posting must be in place within 30 days of the rating that determines the need, and missing or illegible signs replaced within 30 days. Because EV posting is distinguished from legal-load posting in MDOT's interval rules, inspectors should photograph and record each posting sign's legend precisely, so the database shows whether the bridge is posted for legal loads, EVs or both.

Scour, underwater and waterway work in Mississippi

Mississippi's river crossings, coastal bridges and Delta waterways make scour and underwater inspection central. A Scour Condition code of 3 or less puts a bridge on a 12-month routine cycle, and Underwater Condition, Channel and Channel Protection codes drive the underwater interval. Bridges along the Gulf Coast also receive post-hurricane inspections; the 2005 Hurricane Katrina damage to the US 90 bridges remains a reference case for storm-surge uplift on bridge superstructures.

Working inside the MMBE as a consultant

Consultants doing Mississippi work should treat the MMBE version number as part of their contract compliance: note "MMBE v2025-1" (or the current version) in reports and rating files. Code all items from SNBI definitions; the MMBE's interval tables are written in SNBI item names, so a team that codes from the old Coding Guide will mis-schedule bridges. When proposing an extended interval, assemble the evidence for each criterion (condition codes, channel codes, inventory rating factor, routine permit code, fatigue details and clearance) so that the BIPM can approve it from the file.

Load rating refresher: methods, vehicles and rating factors

Whatever state you work in, a load rating in the NBIS sense is an MBE rating. The 2022 rule incorporates Sections 6 and 8 of the AASHTO Manual for Bridge Evaluation by reference, so the federal requirement is method-neutral but procedure-specific. Three methods remain in use:

- **Load and Resistance Factor Rating (LRFR)**, MBE Section 6 Part A. Ratings are computed at design load (HL-93 inventory and operating), legal load and permit load levels using calibrated load factors, the condition factor and the system factor. Most states require LRFR for bridges designed by LRFD.
- **Load Factor Rating (LFR)**, MBE Section 6 Part B, using the HS-20 truck at inventory and operating levels. Still widely used for older bridges designed under the Standard Specifications.
- **Allowable Stress Rating (ASR)**, also in Part B, generally reserved for timber, masonry and certain older structures where LFR is not appropriate.

The basic rating factor equation is the same idea in every method: RF = (Capacity - factored dead load effects - other permanent effects) / (factored live load effect including impact). A rating factor of 1.0 or more means the bridge can carry the rated vehicle at that level; below 1.0, the vehicle exceeds capacity at that level. The rating in tons is the rating factor times the gross weight of the rating vehicle, which is why states insist that you report rating factors and not just tons.

Legal load ratings use the AASHTO legal vehicles (Type 3, Type 3S2, Type 3-3 and the lane-type legal loads), the specialized hauling vehicles SU4 through SU7, and the emergency vehicles EV2 and EV3 that FHWA required states to evaluate after the FAST Act of 2015 allowed heavier emergency vehicles on the Interstate System and reasonable access routes. Many states add their own legal or permit vehicles, and Mississippi is no exception; see the state-specific section above. Ratings that rely on engineering judgment, field evaluation or load testing must be documented in the rating file, and the rating must reflect the

bridge's current condition as reported by the latest inspection, which is why the inspector-to-rater handoff is where most programs succeed or fail.

Quality control, quality assurance and the bridge file

The NBIS requires each State to maintain documented quality control (QC) and quality assurance (QA) procedures for inspection and load rating, and FHWA reviews compliance every year using its metrics for the oversight of the National Bridge Inspection Program. For a practitioner in Mississippi, QC and QA show up as concrete obligations:

- **QC is the producer's job.** A consultant or district team checks its own reports before submission: condition codes match the narrative and photos, element quantities add up, every deficiency has a recommendation, and every rating-relevant change has been flagged to the rater.
- **QA is the owner's job.** MDOT or its agents independently re-inspect a sample of bridges, review sample reports and ratings, and track trends in coding. Expect QA findings to come back to the original team leader for correction.
- **The bridge file is the evidence.** Plans, inspection reports, photos, load rating calculations and models, posting documentation, scour evaluations and plans of action, and critical finding follow-up all belong in the file. If it is not in the file, an auditor will treat it as not done.
- **Load rating files carry a seal.** Because ratings must be performed by or under the direct supervision of a PE, the rating report is a sealed engineering document. Treat assumptions, condition factors and software versions as part of what you are sealing.

The most common QA findings across Southeastern programs are mundane: an inspection report that lowers a superstructure rating without a load rating review, a posting status in the database that does not match the signs in the field, a scour-critical bridge without a current plan of action, or a critical finding with no documented follow-up. Each one is a coordination failure between people who all did their own piece correctly. This course's scenario walks through how to avoid them in Mississippi.

Locally owned bridges

A large share of the bridges in Mississippi, as in every Southeastern state, belong to counties, cities and other local agencies rather than to the DOT. The NBIS places responsibility for all public-road bridges in the State (other than those owned by federal agencies and tribes) on the State transportation department, which may delegate functions to local owners but remains accountable to FHWA. In practice this means:

- The DOT sets the procedures, maintains the inventory and reports to FHWA, even when a county or consultant performs the inspection.
- Critical findings and posting needs on local bridges must still meet the federal timelines. The DOT's procedure will specify how the local owner is notified, how quickly it must act, and what the DOT does if it does not.
- Local owners often lack in-house bridge engineers. A consultant working for a county may be the only engineer who sees the bridge between inspections, so clear written recommendations, priorities and deadlines in the report matter more than usual.
- Posting and closure on local roads is carried out by the local owner's forces, and sign verification is part of the next inspection. Photograph every posting sign and note its legend.

Writing an inspection report a load rater can use

Most load rating errors start as inspection report gaps. In Mississippi, as elsewhere, the rater often never visits the bridge; the rating reflects whatever the report says. A report that a rater can actually use includes:

- **Quantified section loss.** Not "heavy corrosion at bearings" but the member, location (span, girder, distance from bearing), remaining web or flange thickness measured with calipers or a UT gauge, and the length affected.
- **Changes in dead load.** New overlays (type and thickness), added utilities, replaced railings, sidewalks, sound walls or signs. Dead load increases reduce rating factors directly.
- **Changes in structural behavior.** Frozen bearings, broken diaphragms, cracked or debonded prestressing strands, lost bearing area, settlement, pile damage or undermining. Say what the change means for the load path.
- **Measured geometry where plans are missing.** Member sizes, spacing, span lengths, deck thickness and any reinforcing visible at spalls. For concrete bridges without plans, many states (including Texas, as described in its own course) use special flow charts that depend on this data.
- **Posting signs as found.** Photographs of each sign, its legend, condition and location, and whether the legend matches the current rating and posting status.
- **An explicit request.** If the inspection changed anything that could affect capacity, write "load rating review requested" and say why. Do not assume someone will notice.

Equally, raters should push back when a report lowers a component rating without describing the cause, and should document in the rating file which inspection the rating reflects. The rating date and the inspection date belong side by side, so a later reviewer can see that the rating reflects current condition, as the NBIS requires.

Southeast hazards: flood, hurricane, salt and trucks

Southeastern bridge programs share a set of hazards that shape how MDOT inspects and rates. Recognizing them helps you anticipate what a reviewer will look for in a Mississippi report:

- **Flood and scour.** Intense rainfall and long periods of high water make scour the leading cause of bridge failure in the region. Post-event damage inspections, plans of action and channel soundings compared across inspections are core skills.
- **Hurricanes and storm surge.** Coastal and Gulf states inspect after hurricanes for unseated superstructures, damaged bearings, debris impact, scour and fender damage; the inspection program usually activates a pre-planned emergency response.
- **Chloride and marine exposure.** Splash zones, tidal piles and decks in coastal areas suffer corrosion-driven cracking and spalling of concrete and section loss of steel. Cracks parallel to corners of concrete members are a classic sign of corrosion underneath.
- **Heavy trucks and specialized haulers.** Logging, agriculture, aggregate, coal and port traffic put heavy short-wheelbase vehicles on rural bridges, which is why many Southeastern states rate their own legal trucks and why SU4 to SU7 ratings and posting matter.
- **Timber and older local bridges.** Many counties still maintain timber bridges and older concrete bridges without plans, which need careful measurement and often conservative ratings.

These hazards also explain why several states in the region adopt intervals shorter than the federal maximums for scour-critical, posted or poor-condition bridges.

Preservation lessons from the Southeast Bridge Preservation Partnership

The **Southeast Bridge Preservation Partnership (SEBPP)** is a regional partnership of state DOTs, FHWA, industry and academia, part of the national bridge preservation partnership network supported by the National Center for Pavement Preservation (NCPP). Its annual meetings are the best place to see what Southeastern DOTs are actually doing to keep bridges out of poor condition. Several presentations are directly useful to inspectors and raters:

- **Tennessee deck and joint preservation (SEBPP, Atlanta, April 2012).** TDOT's Brian Egli described Tennessee's four deck overlay types: a 3 1/4-inch asphalt overlay with a waterproofing membrane, a 4 1/2-inch reinforced concrete overlay placed after hydrodemolition with a long (about 120-hour) wet cure, a 1 1/2-inch polymer-modified concrete overlay, and a 3/8-inch thin epoxy overlay. Each changes dead load and deck condition, which is exactly the kind of change an inspector should flag for the rater.
- **North Carolina arch feasibility study (SEBPP, April 2017).** NCDOT's John Sloan, PE, presented a study of the Pee Dee River arch bridge. Lessons included eliminating joints where possible, recognizing that cracks parallel to a corner indicate corrosion of the underlying bar (so crack injection is not the right repair), and using concrete jackets to protect substructure units at the waterline.
- **New River Gorge Bridge preservation (SEBPP, Charleston, West Virginia, April 2025).** Burgess & Niple presented preservation of the 1,700-foot weathering-steel arch, including measures to keep birds and water off steel (bird screens, drip bars), capping and sealing details, and jacking work at roller bearings. Weathering steel only performs when it can dry; inspectors should report persistent wet areas and debris.

The SEBPP held a joint meeting with the Western Bridge Preservation Partnership in Denver in March 2026, and its next meeting is planned for Biloxi, Mississippi, in March 2027. Presentations are posted by the partnership after each meeting and make useful further reading. The common thread across all of them is that preservation decisions depend on inspection data that is quantified, photographed and consistent from cycle to cycle.

SNBI coding: what changes on the inspection form

The 2022 NBIS adopted FHWA's Specifications for the National Bridge Inventory (SNBI, March 2022), which replaces the 1995 Coding Guide. States are transitioning their data systems so that SNBI data is submitted to FHWA; inspectors and raters in Mississippi will see both vocabularies in older files, manuals and checklists for several years.

The changes that matter most for inspectors and raters are these:

- Component condition items keep the familiar 0-9 scale but are renumbered: Deck Condition is B.C.01, Superstructure B.C.02, Substructure B.C.03 and Culvert B.C.04 (formerly Items 58, 59, 60 and 62).
- Channel and waterway behavior is split into separate items: Channel Condition (B.C.09), Channel Protection Condition (B.C.10) and Scour Condition (B.C.11), with Scour Vulnerability (B.AP.03) taking over much of the role of the old Item 113 coding. Underwater Condition is B.C.15.
- Load rating data is reported per rating method and vehicle, with rating factors rather than the old inventory and operating tonnages alone, and the posting status is reported in its own data group (for example B.PS.01, Load Posting Status).
- Inspection events are recorded with their own type, date and interval items (the B.IE group), which is how FHWA's compliance metrics now test whether each inspection type was done on time.
- Span-level data (B.SP items such as span material and span type) feed the extended-interval and risk-screening rules that several Southeastern states, including those discussed in this course series, now use to decide who qualifies for 48-

month routine intervals.

The practical lesson for a Mississippi inspector is to code from the SNBI specification and the current MDOT field guidance, not from memory of the Coding Guide. A wrong condition code is no longer just a data error: under the 2022 rule, codes of 2 or less automatically meet the federal critical finding definition, codes at or below the state's reduced-interval threshold change the inspection schedule, and the posting status item is checked by FHWA against the load rating. Coding has consequences.

Permit loads and overweight vehicles

The 2022 NBIS added an explicit requirement that owners analyze routine and special permit loads for each bridge those loads cross, to verify that the bridge can safely carry them (23 CFR 650.313(k)(3)). For Mississippi practitioners this has several consequences:

- **Routine permits** (annual or blanket permits for vehicles that exceed legal limits but follow standard configurations) must be supported by ratings for the routine permit vehicle on every bridge the permit allows them to use. If a bridge cannot carry the routine permit load, it must be posted or restricted for that load even if it carries legal loads.
- **Special (single-trip) permits** for superloads require a bridge-by-bridge analysis along the route, often with restrictions such as crossing at crawl speed, centered on the bridge, with no other traffic in the span.
- **Rating factors matter more than tons.** A permit analysis compares the specific vehicle's axle loads and spacing with the bridge's capacity; a single tonnage cannot capture that.
- **Inspection must keep up.** A permit route analysis is only as good as the condition data behind it. When an inspection reduces a component rating or finds section loss on a bridge used by heavy permit traffic, the permit office needs to know as quickly as the posting office does.

In the SNBI, the routine permit load evaluation is reported in its own item, and the extended-interval criteria used by several states (including MDOT where it uses them) require that the routine permit evaluation shows no restriction. Raters should therefore treat the state's routine permit vehicle as a standard part of every rating, not an afterthought.

Closing and reopening a bridge

The NBIS requires each State to develop and document criteria for closing a bridge, considering condition and load-carrying capacity for each legal vehicle (23 CFR 650.313(m)). The MBE adds the long-standing rule of thumb that a bridge that cannot safely carry a minimum gross live load of 3 tons must be closed. In practice, closure decisions in Mississippi follow a sequence every practitioner should know:

- **Recognize.** The inspector identifies a condition that may require closure (collapse or partial collapse, loss of bearing, severe undermining, a critical NSTM crack, a rating below the closure threshold) and treats it as a critical finding.
- **Notify immediately.** Phone first, then write. The owner's representative with authority to close the road must hear about it the same day; the State then meets its own FHWA notification duty.
- **Close physically and in the data.** Barricades and signs go up; the bridge's posting status in the inventory changes to closed; a damage or special inspection documents the closed condition.
- **Repair or replace.** Engineering evaluation, repair design, construction and inspection follow, with a load rating for the repaired condition.
- **Reopen with evidence.** A new inspection and load rating establish that the bridge can carry traffic, with or without posting. The file should show who authorized reopening and on what basis.

Closed bridges are not out of the program. They remain in the inventory, and their barricades and signs must still be checked. Several states also inspect closed bridges on a fixed cycle to confirm that barriers are functioning.

Ten common mistakes, and how to avoid them

Reviewers of Southeastern bridge programs see the same problems again and again. Use this list as a self-check before you submit a Mississippi report or rating:

- Lowering a component rating without describing the defect that justifies it.
- Describing section loss qualitatively, with no thickness measurement or location.
- Failing to request a load rating review after a condition change or added dead load.
- Coding from memory of the 1995 Coding Guide instead of the SNBI and current state guidance.
- Missing the reduced-interval trigger, so a poor-condition bridge stays on a 24-month cycle.
- Treating a critical finding as a routine maintenance recommendation, with no same-day notification.
- Leaving the posting status in the database out of step with the signs in the field.
- Not photographing posting signs, or not noting that a sign is missing or illegible (which starts a 30-day clock).
- Letting a scour plan of action go stale after channel changes or countermeasure work.
- Assuming a delegated local owner will act without a documented follow-up date.

None of these mistakes requires advanced engineering to avoid. They are documentation and communication failures, and they are the issues that most often turn an otherwise sound program into an FHWA compliance finding.

A team leader's field checklist

Before leaving a Mississippi bridge site, a team leader should be able to answer yes to each of these questions. The list pulls together the federal requirements and the MDOT practices described in this course:

- Have I confirmed the inspection type, the scheduled interval and the due month, and noted any reason the next interval should change?
- Did I inspect every member required for this inspection type, including hands-on access where the type or the owner's procedures require it?
- Is every condition code supported by a written description of the controlling defect, with location, size and photographs?
- Have I recorded element quantities by condition state where element data are collected?
- Did I measure section loss, crack lengths, spall areas, scour depths and clearances rather than estimating them?
- Have I checked every posting sign, recorded its legend and condition, and compared it with the current posting status in the file?
- Did I note any new dead load, damage, repairs or temporary supports since the last inspection, and request a load rating review if needed?
- Did I check the channel against the last soundings and the scour plan of action, if the bridge is over water?
- Have I identified anything that may be a critical finding, and made the same-day phone call before leaving the site?
- Have I written maintenance recommendations with a priority the owner understands, and sent them to the right person?

Teams that use a checklist like this one consistently produce files that survive quality assurance review and FHWA metric assessments. The checklist takes five minutes; correcting a deficient file after the fact can take far longer, and an undetected problem can cost much more.

Questions to ask before your first project in Mississippi

Consultants and local agency engineers new to Mississippi work can avoid most early problems by asking MDOT a short set of questions before the first inspection or rating is due:

- Which version of the inspection manual, load rating manual and coding guidance applies to this contract, and where are revisions announced?
- Which inspection software and data templates do you require, and who enters or approves the data?
- Which state legal, permit and emergency vehicles must every rating include, and in what software format do you want the model delivered?
- Who do we call, at what phone number, for a possible critical finding outside business hours?
- What are the deadlines for draft and final reports, posting recommendations and inventory updates?
- What qualifications must team leaders, NSTM inspectors, divers and load raters document, and how should the documentation be submitted?
- How are local owners notified of recommendations, and who follows up if they do not act?

Write the answers down and keep them in the project file. They become the basis for your quality control plan and make the state's expectations visible to every member of the team, including new staff who join mid-contract.

Bridge design in Mississippi: MDOT standards

Mississippi bridge design is governed by the **MDOT Bridge Design Guidelines (BDG, January 2026)**, which replaced the older Bridge Design Manual (Version 6.1, October 2023). The BDG is used with the latest AASHTO LRFD specifications, MDOT Bridge Standard Drawings, MDOT Bridge Design Memos, the Mississippi Standard Specifications and the Mississippi Manual for Bridge Evaluation. Consultants must verify they are using the latest BDG version when Notice to Proceed is received.

- **Defined terms matter.** The BDG defines terms such as warranted, typical, acceptable and efficient; a 'typical' treatment is likely best but not required, and 'warranted' means a treatment should be evaluated, not that it is automatically required.
- **Related AASHTO guides.** The BDG explicitly lists the Guide Specifications for LRFD Seismic Bridge Design, vessel collision design, and Bridges Vulnerable to Coastal Storms, all relevant along the Gulf Coast and the Mississippi River.
- **Evaluation link.** Because the BDG lists the Mississippi Manual for Bridge Evaluation as a companion document, new designs must be rated for Mississippi legal loads consistent with MDOT's evaluation rules.

Bridge repair in Mississippi

MDOT district bridge forces and contractors handle Mississippi repairs. The state's large inventory of timber and older concrete bridges on low-volume routes, and Gulf Coast chloride and hurricane exposure, drive the common work: timber pile and cap replacement, concrete pile jacketing, deck and joint repairs, scour countermeasures in the Delta and Pearl River basins, and replacement of substandard rails.

Repairs that change capacity require design by a structural engineer and a revised evaluation under the Mississippi Manual for Bridge Evaluation. Because MDOT ties intervals to posting status, a repair that removes a posting can also change the inspection interval.

Across the Southeast, repair decisions follow the same chain: the inspection report documents the defect and its quantity, the bridge owner's maintenance or bridge unit prioritizes it, and a structural engineer decides whether the repair affects load-carrying capacity. If it does, the repair is designed and sealed, the load rating is revisited, and the as-built condition goes back into the bridge file. When MDOT work in Mississippi crosses that line, call the structural engineer before the crew mobilizes, not after.

Designing a repair in Mississippi: the structural engineer's workflow

Repair work is where design, inspection and load rating meet. In Mississippi a sound repair project follows a predictable sequence, and skipping a step is the most common cause of a repair that has to be redone or a rating that no longer matches the bridge.

- **Start from the inspection record.** Pull the latest routine and special inspection reports, element quantities, photos and any critical finding history from the MDOT bridge file. Measure section loss and spall extents yourself if the report does not quantify them well enough to design from.
- **Decide whether the repair is structural.** Cosmetic patching and sealing can usually proceed under maintenance standards. Anything that restores or changes section, alters support or continuity conditions, adds dead load (overlays, jackets, heavier rail) or temporarily removes capacity during construction needs a structural engineer's design and seal.
- **Use MDOT standards first.** Check whether MDOT already has a standard repair detail, special provision or approved product list for the work. Non-standard details normally need agency review.
- **Check construction stages.** Many failures happen during repair: removing deteriorated concrete from a pier cap or cutting out a corroded web plate reduces capacity before the new material is placed. Specify shoring, traffic restrictions or a temporary posting for the construction stage when needed.
- **Close the loop with the rater.** Send as-built dimensions, materials and added dead load to the load rater. Under the NBIS the rating must be updated within 3 months of a change that warrants it, and a capacity-restoring repair may allow a posting to be removed.
- **Close the loop with the inspector.** Document the completed repair so the next inspection codes the elements correctly and any open critical finding can be closed in the MDOT system.

The question field crews ask most often is when to call the structural engineer. The short answer in Mississippi, as everywhere: whenever the repair touches capacity, load path or dead load, whenever section loss or cracking is worse than the report describes, and whenever a critical finding is involved.

Scenario: one bridge, start to finish, in Mississippi

A county bridge carrying log trucks is inspected and the superstructure is coded 4 because of timber stringer decay. Under the MMBE the bridge immediately moves to a 12-month interval, even though the federal rule would only require that at 3. The rater updates the rating and finds the bridge can no longer carry one Mississippi Legal Load, so a posting is required within 30 days. The county posts, the next 12-month inspection photographs the signs, and the bridge stays on a 12-month interval while it is posted for Mississippi Legal Loads.

Verify before you rely on it

This course was assembled from the public MDOT documents listed in the references, reviewed in October 2026. This course relies on the MDOT Mississippi Manual for Bridge Evaluation, version 2025-1 (October 9, 2025), which is written to the

2022 NBIS and SNBI. MDOT may issue later versions.

Before you rely on any number in this course for real work, check four things: (1) is there a newer edition, interim memo or instructional bulletin from MDOT; (2) does the owner of the bridge (state, county, city, toll authority or federal agency) have its own adopted procedures; (3) has your contract or task order imposed a different deliverable schedule; and (4) has MDOT issued a newer design manual, memorandum or standard repair detail since this review. When the state document and this course disagree, the state document wins. When the state document and the NBIS disagree, the stricter requirement controls, and you should raise the conflict with the MDOT bridge program manager in writing.

Items this course could not confirm from public sources are listed in the course flags and are written cautiously in the text. They are not hidden: an honest "verify this" is more useful to a practicing engineer than a confident number that turns out to be wrong.

Key takeaways

- The NBIS sets federal minimums; MDOT procedures may be stricter but never looser.
- MDOT reduces routine intervals to 12 months at a component code of 4 or less (stricter than the federal 3), at Scour Condition 3 or less, or when posted for Mississippi Legal Loads.
- Extended 48-month intervals require BIPM approval and every listed SNBI criterion.
- A special inspection limited to localized deficiencies can satisfy the reduced interval, but a full routine is still due every 24 months.
- MDOT design: Bridge Design Guidelines (January 2026) used with AASHTO LRFD and the Mississippi Manual for Bridge Evaluation.
- SEBPP presentations from Tennessee, North Carolina and West Virginia show how preservation work changes dead load and condition, so inspectors must flag it for raters.
- Federal load rating deadline: no later than 3 months after initial inspection or after a change that warrants re-rating; posting within 30 days of the need.

References

1. 23 CFR Part 650, Subpart C — National Bridge Inspection Standards (final rule published May 6, 2022)
2. FHWA, Specifications for the National Bridge Inventory (SNBI), FHWA-HIF-22-017, March 2022
3. AASHTO, The Manual for Bridge Evaluation, 3rd Edition, 2018 (with interim revisions)
4. MDOT, Mississippi Manual for Bridge Evaluation, version 2025-1, October 9, 2025
5. MDOT Bridge Division, Bridge Design Guidelines, January 2026
6. Egli, B. (TDOT), Preserving Tennessee's Bridge Decks and Joints, Southeast Bridge Preservation Partnership meeting, Atlanta, GA, April 2012
7. Sloan, J., PE (NCDOT), Pee Dee River arch bridge feasibility study, Southeast Bridge Preservation Partnership meeting, April 2017
8. Burgess & Niple, New River Gorge Bridge preservation, Southeast Bridge Preservation Partnership meeting, Charleston, WV, April 28-30, 2025
9. eCFR, 23 CFR 650.311 and 650.313 (current text reviewed October 25, 2026)