

AssetWise Bridge Inspection and Load Rating: Local Owner Responsibilities

2021 LPESA

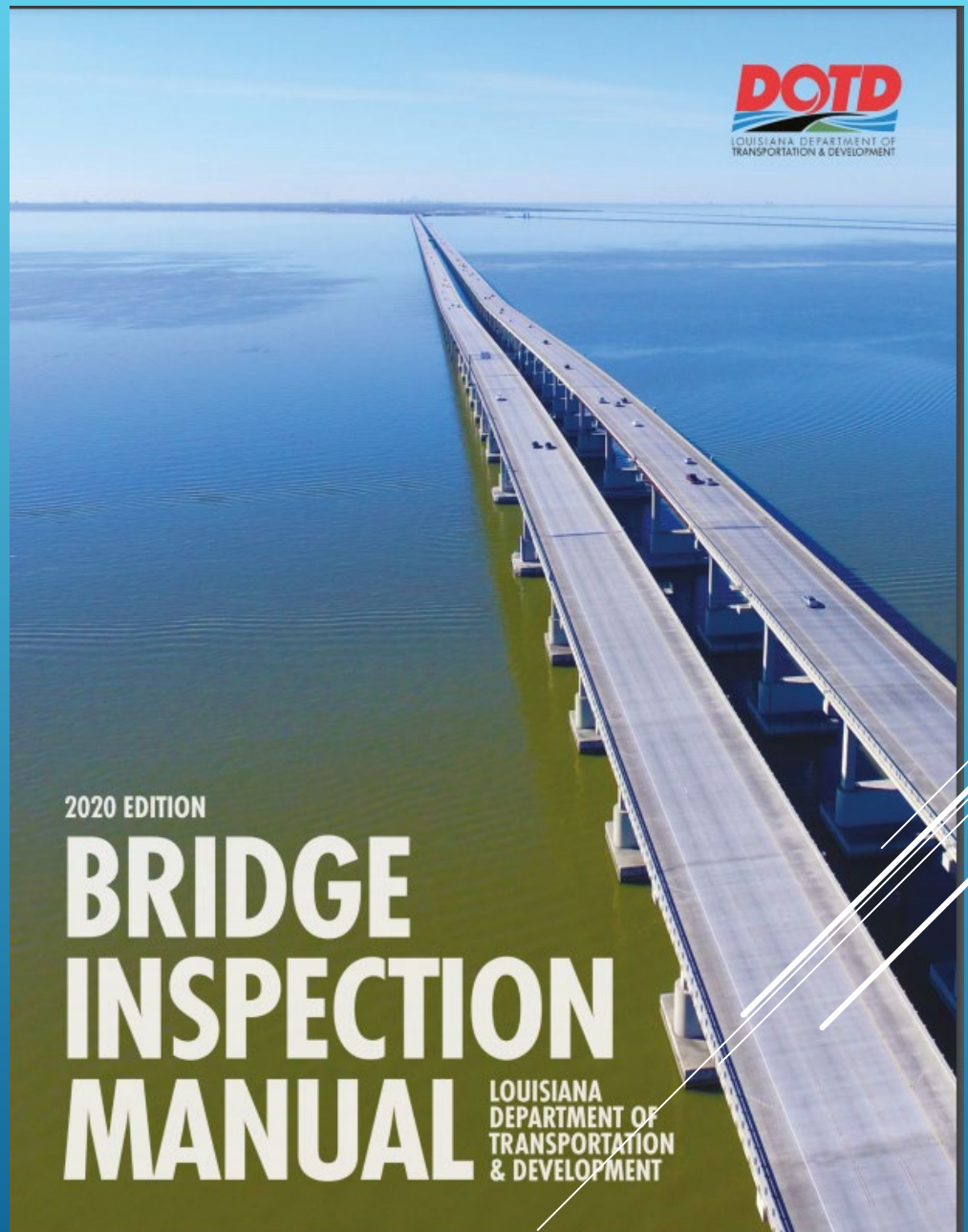
SPRING CONFERENCE

BATON ROUGE
MAY 27, 2021

STEPHANIE DOOLITTLE



NEW MANUAL



2020 EDITION

BRIDGE INSPECTION MANUAL

LOUISIANA
DEPARTMENT OF
TRANSPORTATION
& DEVELOPMENT

LOCAL BRIDGE OWNER BRIDGE FILE RESPONSIBILITIES

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- ▶ LA is required to inventory and maintain a file on every public bridge- FHWA Metric 15
- ▶ Headquarters inspection office maintains the bridge files
- ▶ Both DOTD and local bridge owners have responsibilities related to maintaining and updating bridge files

BRIDGE FILES



| FILE COMPONENT | DOTD RESPONSIBILITY | OFF-SYSTEM BRIDGE OWNER RESPONSIBILITY |
|--|---|--|
| Inspection Reports | Document inspections for any initial, routine, fracture critical, underwater, and in-depth inspection and maintain records of those inspections. | <ul style="list-style-type: none"> • Maintain records of special/interim and damage inspection types. • Notify DOTD if responsible parties for inspection management change. |
| Channel Cross-Sections/Stream Profiles | Maintain profiles (preferably within the same Plot) with initial inspection data and at each routine, fracture critical, underwater, and in-depth inspection (to include if data is gathered after an event). | Plot at each special/interim inspection for every scour critical bridge or bridge with a scour POA. |
| Special Inspection Procedures/ Requirements | Document unique procedures and requirements such as access and equipment needs, notification requirements or specialized technicians needed for routine, fracture critical, underwater and in-depth inspections | Ensure special procedures are followed as necessary at special/interim inspections. |

RESPONSIBILITIES FOR OFF-SYSTEM

| FILE COMPONENT | DOTD RESPONSIBILITY | OFF-SYSTEM BRIDGE OWNER RESPONSIBILITY |
|--|--|--|
| Load Rating Documentation – Load Posting/Restrictions | <ul style="list-style-type: none"> • Maintain load rating records for all bridge files: any posting/closure documentation, including plans, sketches, and calculations. • Load rate locally owned timber bridges and notify owners of results. | <ul style="list-style-type: none"> • Maintain and provide load ratings per the procedures in Sections 7.10 and EDSM I.1.1.15. • Ensure that all new bridges being added to the DOTD inventory have an updated and valid load rating. • Apply load posting/restriction within 30 days from uploading load rating to AssetWise. |
| Critical Findings | <ul style="list-style-type: none"> • Maintain report of critical findings monthly and ensure that local owners address critical findings properly. • DOTD HQ will report to FHWA critical finding status. | Document and notify DOTD of any critical finding status per the procedures in Sections 5.17 and 7.4 . |
| Scour Assessment | Maintain records of scour assessments in the individual bridge file for all bridges over waterways. | Perform and maintain a scour assessment on all bridges over water and provide DOTD with a copy. |
| Scour POA | DOTD HQ will develop and maintain updated scour POAs for scour critical bridges and unknown foundations. | <ul style="list-style-type: none"> • Maintain current POAs for scour critical bridges and unknown foundations. • Document any action taken after a storm event. |
| Inventory and Evaluation Data and Collection Forms | <ul style="list-style-type: none"> • Maintain and update records for bridge inventory and evaluation data. • Provide local bridge owners with copy of current bridge data on a semiannual basis. | Document and provide DOTD with all changes to bridge inventory data according to Section 3.3 . |


LOCAL BRIDGE OWNER FEDERAL COMPLIANCE

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COMPLIANCE CONDITIONS & LEVELS

| Condition | Level |
|---|------------------------|
| 1. Closed Bridges | |
| All bridges properly closed | Compliance |
| Any bridge open that should be closed with the owner's jurisdiction | Non-Compliance |
| 2. Posted Bridges | |
| All bridges requiring posting are properly posted | Compliance |
| Not all bridges requiring posting properly posted | Conditional Compliance |
| 3. Interim Inspections | |
| All inspections performed on time | Compliance |
| All inspections performed, majority on time | Substantial Compliance |
| All inspections performed, majority late | Conditional Compliance |
| Inspections not performed | Non-Compliance |
| 4. Load Ratings | |
| All bridges load rated | Compliance |
| Plan of corrective action submitted to rate remaining | Substantial Compliance |
| No plan of corrective action submitted for missing ratings | Non-Compliance |
| 5. Bridge Data Corrections | |
| Corrections performed by deadlines | Compliance |
| Corrections submitted late | Substantial Compliance |
| No corrections submitted for one period | Conditional Compliance |
| No corrections submitted for either period | Non-Compliance |
| 6. Annual Resolution and Contact Information | |
| Submitted | Compliance |
| Not submitted | Conditional Compliance |
| 7. New Bridge Documentation | |
| Submitted on time | Compliance |
| Bridge opened to traffic without notification and/or proper documents | Non-Compliance |
| 8. Failure to Respond to Critical Findings | |
| Acceptable Response | Compliance |
| No Response upon any critical finding | Non-Compliance |
| 9. Falsification of Inspection Reports or Bridge Data | |
| Non-falsified records | Compliance |
| Falsified records | Non-Compliance |
| 10. Failure to Submit or Follow Plan of Corrective Action | |
| Plan Submitted | Conditional Compliance |
| Plan Not Submitted or No Improvement in Year 2 | Non-Compliance |

COMPLIANCE LEVELS

- ▶ Compliance
 - ▶ All conditions met
 - ▶ Substantial Compliance
 - ▶ Improvement must be made within the next review year or Conditional Comp.
 - ▶ Conditional Compliance
 - ▶ Improvement needed in the next review year or non compliance
 - ▶ Plan of corrective action needed to address deficiencies
 - ▶ Non-Compliance
 - ▶ Critical conditions not addressed, no improvement made
 - ▶ Loss of inclusion in the OS Bridge Replacement Program
- 

COMPLIANCE ITEMS –

1. CLOSED BRIDGES



Local Bridge Owners are responsible for closing any bridge under their jurisdiction that has been recommended for closure by DOTD or rated for a load-carrying capacity of less than 3 tons.

Bridge Inspection Procedures

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NOTE: Closure will include locked gates, deep beam barriers, and other similar devices capable of preventing traffic from using the bridge. Closure does not include piles of dirt, saw horse barricades, timbers across the roadway, or signs alone. It must be a physical positive barrier.

- ▶ **Any bridge not properly closed = NON COMPLIANCE**

COMPLIANCE ITEMS – 1. CLOSED BRIDGES



COMPLIANCE ITEMS –

2. POSTED BRIDGES



For locally owned bridges, load limit regulations should be established by an official act of the local governmental body to be legally enforceable.

Local bridge owners are expected to have a system in place to maintain and replace signs if necessary.

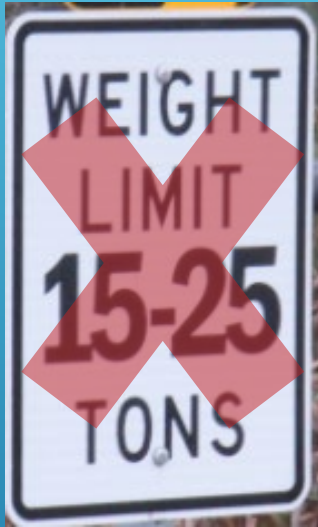
For compliance purposes, a properly posted or restricted bridge is defined as follows:

1. The required weight limit posting as determined by a load rating analysis is reflected at the bridge structure by installation of load posting signs.
 - a. If the owner desires, a lower load limit may be selected and posted. DOTD must be notified and the bridge inventory data updated.
 - b. A bridge will not be posted at a higher load limit than the maximum required weight limit; if encountered, this should be categorized as a deficiency.
2. Weight limit posting signs must comply with the Manual for Uniform Traffic Control Devices.

In accordance with the FHWA Memo *Timeframe for Installing Load Posting Signs at Bridges*, dated April 17, 2019, and it's the bridge inspection program policy that "bridge load postings are to be made as soon as possible but no later than 30 days after a load rating determines a need for such posting."


- ▶ Any bridge not properly posted =
Conditional Compliance
- ▶ PCA will be required to address the posting
deficiency

COMPLIANCE ITEMS – 2. POSTED BRIDGES



PROPERLY POSTED = MUTCD SIGN
WITHIN 30 DAYS OF NOTIFICATION

OPENING AND POSTING A BRIDGE

- ▶ “Prior to re-opening or increasing/removing the posted load limit of any such bridge, the bridge shall be inspected and load rated by the Owner’s Engineer, and a new Bridge Inspection Report and new calculated and stamped load capacity ratings shall be submitted by the Bridge Owner or Owner’s Engineer to the LA DOTD District ADA of Operations for review and approval.”
- 

COMPLIANCE ITEMS –

3. INTERIM INSPECTIONS

- ▶ LADOTD performs all 24 month routine inspections
 - ▶ Bridges w/deficiencies require 6 or 12 month interims performed by owners
 - ▶ Inspections must be performed in the calendar month they are due

| LOAD CARRYING CAPACITY (TONS) | LOWEST <u>CONDITION</u> RATING (DECK, SUPER, SUB, OR CULVERT) | MAXIMUM INTERVAL OF SPECIAL INSPECTIONS |
|-----------------------------------|---|---|
| N/A | 0-2 | 6 months |
| 5 or Less* | 3-4 | 6 months |
| 10-15, 15-25, 20-35, 25-40, 30-44 | 3-4 | 12 months |
| 10-15, 5 or less* | 5-9 | 12 months |
| N/A | 5-9 | 24 months |

**If a bridge will not carry a minimum of 3 tons of live load, the bridge should be physically closed.*

- ▶ All Inspected & On Time = Compliance
- ▶ All Inspected, Most On Time = Substantial Com.
- ▶ All Inspected, Most Late = Conditional Comp.
- ▶ Missing Inspections = Non-Compliance

COMPLIANCE ITEMS – 3. INTERIM INSPECTIONS

Create Inspection Report Based On:

Blank report

Asset Values **DO NOT CHANGE**

Options:

Copy report files (photos, etc.)

Copy previous report section attachments (PDF)

Report Type:

PARISH INTERIM INSPECTION ▼

Inspection Type:

Interim 6 Month Interim 12 Month **SELECT ONE**

Create Cancel

AssetWise CONNECT Edition Main Collector

Asset Details: Test Bridge

Quick View Asset Info

Parent Asset: Test Assets
Asset Name: Test Bridge
Asset Code: Test_Bridge
Asset Type: Bridge
BRKEY: TEST
NBI 007: Facility Carried by Structure
NBI 006: Feature Intersected: 6516
NBI 041: Structure Open, Posted, or
Posted Load: Not Posted
NBI 049: Structure Length: 000300
Bridge Type:
NBI 027: Year Built: 2018
Deck_Super_Sub_Culvert_Scour Crit
waters
Routine Date_Freq: 08/27/2018 - 24
FC Req_Date_Freq: N - 08/27/2018 -
Special Insp Req_Date_Freq: N - 09/
UWI Req_Date_Freq: Y - 03/16/2014
Surface Thickness:

Open Reports

| Inspection Date | Last Revision | Asset Name | Asset Code |
|-----------------|---------------|------------|------------|
| 4/28/2021 | 4/28/2021 | Test_Br... | Ar |
| 4/26/2021 | 4/26/2021 | Test_Br... | D |

Scheduling

DOTD Interim Inspection
Routine Inspection
Special Inspection
PARISH INTERIM INSPECTION
PARISH LOAD RATING

In Progress

In Progress

Page 1 of 1

COMPLIANCE ITEMS –

3. INTERIM INSPECTIONS

- ▶ If you think the NBI condition rating needs to be changed. Please note this in the inspection notes and the comments field for submission for preliminary review.
- ▶ If you have questions or need training in Assetwise, contact Stephanie Doolittle. We can set-up training upon request.



COMPLIANCE ITEMS –

4. LOAD RATINGS

Each local bridge owner is responsible for determining the load-carrying capacity of bridges under its jurisdiction in accordance with the AASHTO Manual for Bridge Evaluation, Chapter 6 – Load Rating, 23 CFR 650.313 (c) and the DOTD EDSM I.1.1.8. DOTD provides assistance to the local bridge owner by load rating timber structures with timber super structure and timber substructure elements.

Reporting Procedures

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If a subsequent routine or interim inspection shows that the bridge condition has changed and invalidates the original load rating, the Bridge Owner is responsible for load rating the bridge to reflect the current condition. DOTD bridge inspectors must ensure that load ratings and load postings in the bridge inventory data for each off-system bridge agree with the observed/reported condition of the bridge.

- ▶ **PCA Submitted for missing ratings= Substantial Compliance**
- ▶ **Missing Ratings with no PCA = Non-Comp.**

COMPLIANCE ITEMS – LOAD RATINGS STATUS

- ▶ Spreadsheets were sent out to each district with the status of ratings- 8 Parishes have outstanding ratings
 - ▶ District 02 – 3 Parishes missing total of 43 ratings
 - ▶ District 03 – 1 Parish missing 1 rating
 - ▶ District 04 – Resolved
 - ▶ District 05 – Resolved
 - ▶ District 07 - Resolved
 - ▶ District 08 – 2 Parishes missing total of 7 ratings
 - ▶ District 58 – Resolved
 - ▶ District 61 – 1 Parish missing 3 ratings
 - ▶ District 62 - Resolved

COMPLIANCE ITEMS –

5. BRIDGE DATA CORRECTIONS

- ▶ Bridge inventory data sent out in January and July
 - ▶ Bridge owners must review, correct and certify the data by March 1 and September 1 (or two months after receipt)
- ▶ **Corrections Submitted by Deadline = Compliance**
- ▶ **Corrections Late = Substantial Comp.**
- ▶ **No Corrections Submitted for 1 Cycle = Conditional Comp**
- ▶ **No Corrections for Both Cycles = Non-Comp.**

Important Off-System Compliance Due Dates


Table 8-1: Off-System Compliance Due Dates

| | |
|-------------|---|
| January 31 | Bi-annual reports are sent out for corrections |
| February 1 | Deadline to submit plan of corrective action for conditional compliance level |
| March 1 | Submittal of January bi-annual report corrections |
| July 31 | Bi-annual reports are sent out for corrections |
| September 1 | Submittal of July bi-annual report corrections |
| November 15 | Annual resolution |
| | Contact information for bridge files, inspection, and maintenance |
| December 31 | Final compliance determination and notification to owners |

COMPLIANCE DEADLINES

COMPLIANCE ITEMS –

6. ANNUAL CERT. & CONTACT INFO

- ▶ Annual resolution certifying:
 - ▶ Owner has and will continue to comply with all requirements for interim inspections, load ratings, load posting/closure
 - ▶ Contact info must be submitted for the following:
 - ▶ Individuals/firms performing inspections, load ratings, maintenance, scour evaluations
 - ▶ Must have name, phone number, physical/mailling address, email
 - ▶ **Not Submitted = Conditional Compliance**
- 

COMPLIANCE ITEMS –

7. NEW BRIDGE DOCUMENTATION



For off-system bridges, under no circumstances will a newly constructed bridge be added to the inventory without a valid load rating, scour analysis (if over a waterway), or plans. For existing bridges recently added or acquired by the off-system bridge owner, the owner must provide a load rating and a scour analysis (if over a waterway) performed by a Louisiana licensed professional engineer.

If a local bridge owner opens a bridge to traffic without previously notifying and providing the required documentation to the DOTD, the parish will be placed in non-compliance.

Bridge Records

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DOTD will not conduct the initial inspection until the required paperwork is received.

- ▶ **Opening a bridge to traffic without providing proper documents or notifying DOTD = Non-Compliance**

COMPLIANCE ITEMS –

7. NEW BRIDGE DOCUMENTATION

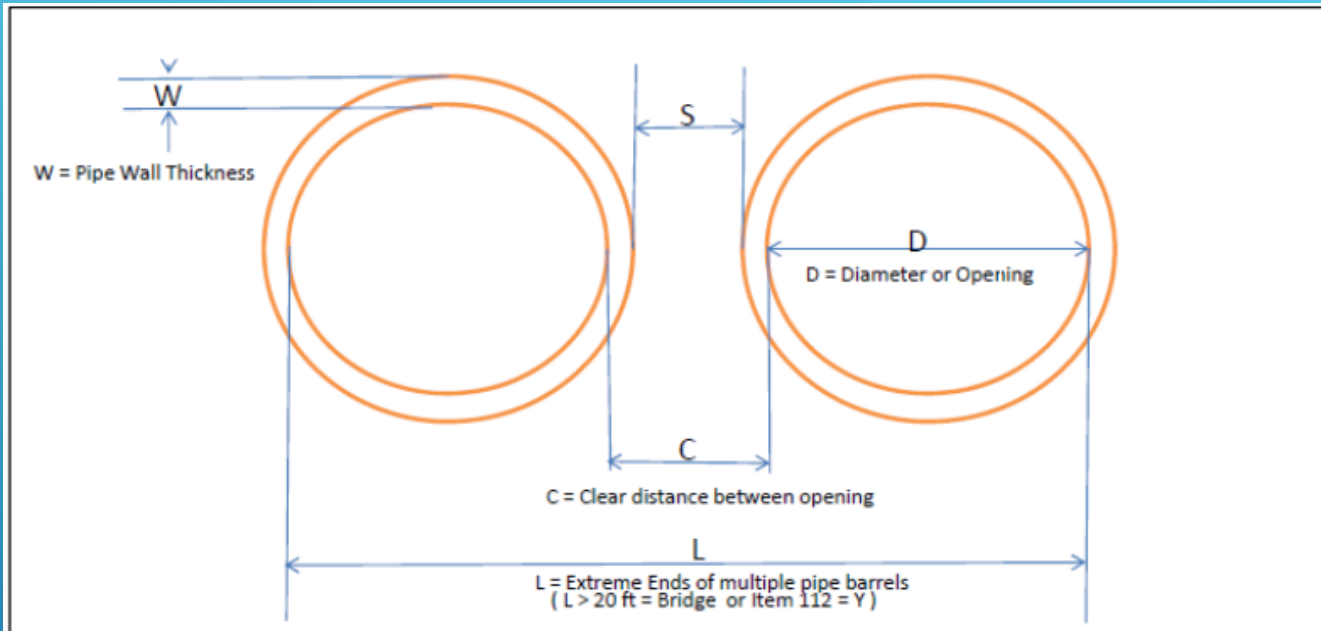


Figure 5-2: Guidelines for Measuring Culverts

A culvert is defined as a bridge

- ▶ If $L > 20$ ft and $C < 0.5D$.

S.P. No:

FAP. No:

Date:

**PHASE 1
SCOUR ASSESSMENT OF
BRIDGES OVER WATERWAYS**

DISTRICT:

PARISH:

STRUCT. No.:

Stream Name:

Route:

Func. Class:

SIA Item 113 Worksheet

___ Unknown Foundation (U)

___ Bridge Not Over Water (N)

___ Scour Stable (8)

___ Min. pile penetration of 50%, 20-ft minimum (drainage area < 10-sq mi)

___ Min. pile penetration of 50%, 25-ft minimum (10-sq mi < drainage area < 25-sq mi)

___ Min. pile penetration of 50%, 25-ft min; if Q lies in shaded area (25-sq mi < drainage area < 100-sq mi)

___ Engineering Judgment (See Notes/Report) Drainage area <= 2-sq mi No history of scour (from available records)
 Bridge service life >= 20-yrs Not on Interstate/NHS Route
 No significant signs of lateral/vertical instability

___ Scour Susceptible (6), scour evaluation (Phase 2) required

___ Pile penetration less than 50%

___ Pile penetration less than 20-ft (drainage area < 10-sq mi)

___ Pile penetration less than 25-ft (drainage area > 10-sq mi)

___ Q lies outside Discharge/Drainage Area diagram, (25-sq mi < drainage area < 100-sq mi)

___ Drainage area greater than 100-sq mi

___ Scour Critical (3 or less) NBIS Item 113 Rating: _____

Phase I NBIS Item 113 Rating

Notes:

COMPLIANCE ITEMS –

8. CRITICAL FINDINGS



The Owner must respond with an acceptable response to remain compliant with the NBIS.

The procedures to be followed are defined as:

- Off-System bridge recommended for closure
- Off-System bridge recommended for load posting
- Owner review of rating, posting, and closing data and requirements
- Monitoring Off-System Bridge Owner compliance with the NBIS by DOTD

Any response other than one of the appropriate responses, non-action, or no-response within the first seven calendar days after the original notification will place the Owner on formal notice of pending non-compliance with the NBIS. Upon expiration of the initial seven calendar day time period, the DOTD District ADA of Operations will give the Owner final notification via a certified letter and in person that a formal, irrevocable notice of non-compliance with the NBIS will be issued unless an acceptable response is received by the DOTD District ADA of Operations within seven additional calendar days. If an acceptable response has not been received after the first 14 days, the Parish will be in non-compliance with the NBIS and barred from participating in the joint FHWA/DOTD Bridge Replacement & Rehabilitation Program for at least one calendar year. The DOTD District ADA of Operations will notify the Parish of non-compliance with the NBIS by certified letter.

- ▶ Failure to Respond to Critical Findings/Provide Acceptable Response= Non- Compliance

COMPLIANCE ITEMS –


9. FALSIFYING REPORT DATA

- ▶ Inspection dates and report data must be accurate and true
 - ▶ No back dating reports, or re-using a previous report and changing dates
 - ▶ Inspectors can be held liable for falsification of reports as seen with the Memphis Bridge situation.

▶ **Falsified Records= Non- Compliance**

COMPLIANCE ITEMS –

10. PLAN OF CORRECTIVE ACTION

- ▶ If placed in Conditional Compliance or Non-Compliance, PCA must be submitted and followed through
 - ▶ Two years of Conditional Compliance with no measurable improvement will result in Non-Compliance
 - ▶ **Failure to Submit PCA or make improvements = Non-Compliance**
- 

QUESTIONS?

