

CRITICAL FINDINGS

2022 Bridge Inspection Workshop

Anthony Marino, Bridge Inspection Program Manager

April 14, 2022

CRITICAL FINDINGS

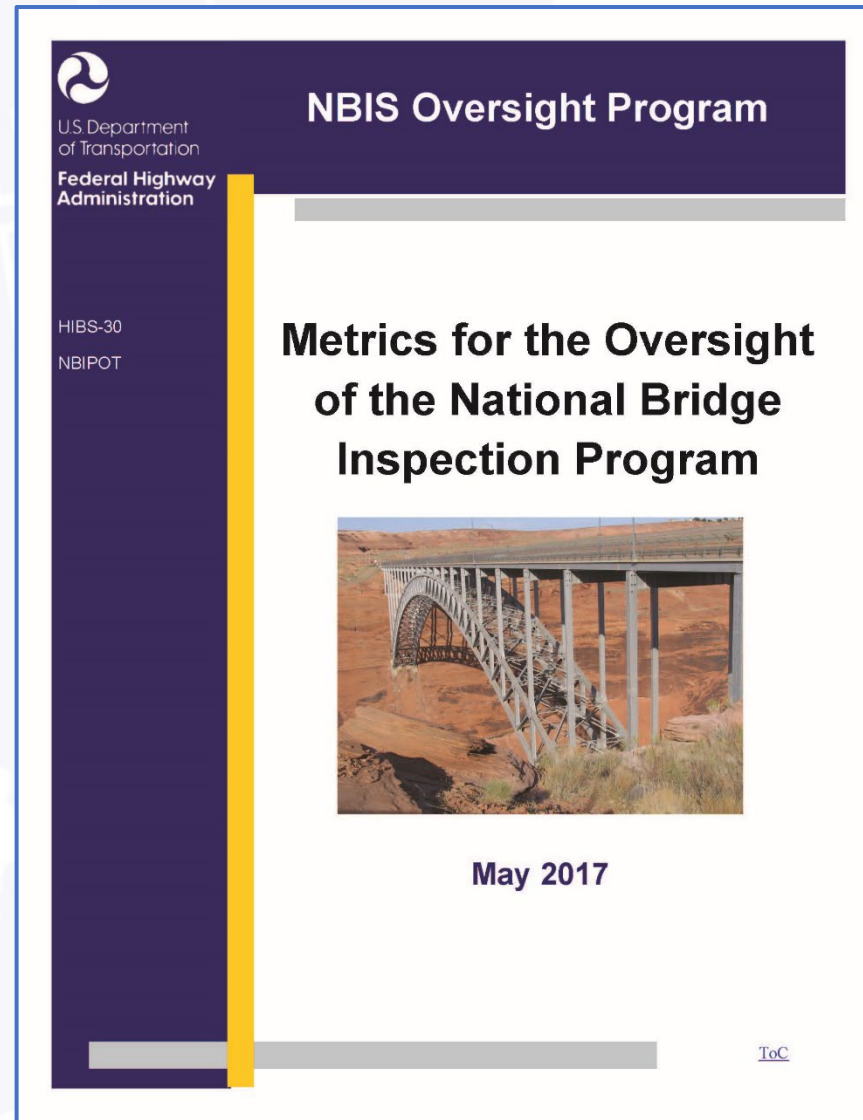
PRESENTATION AGENDA

- NBI Program Metric 21: Critical Findings
- NBI Program Metric 21: Non-Compliance
- Understanding Critical Findings
- Reporting Critical Findings
- BIAS Critical Finding Workflow



GOALS & OBJECTIVES

NBI PROGRAM METRIC 21: CRITICAL FINDINGS



NBI PROGRAM METRIC 21: CRITICAL FINDINGS

Metric #21: Inspection procedures – Critical Findings

rev 5/1/17

NBIS Reference: 23 CFR 650.313 (h) – Follow-up on critical findings

Criteria

- A procedure is established to assure that critical findings, as defined in 650.305, are addressed in a timely manner.
- FHWA is periodically notified of the actions taken to resolve or monitor critical findings.

Population: All bridges identified by State criteria as having an active critical finding at the time of the last assessment, and any critical findings identified since the last assessment.

23 CFR 650.313 (h): Follow-up on critical findings. Establish a statewide or Federal agency wide procedure to assure that critical findings are **addressed in a timely manner**. Periodically **notify** the FHWA of the actions taken to resolve or monitor critical findings.

NBI PROGRAM METRIC 21: CRITICAL FINDINGS

Why all the increased focus on critical findings?

NBI PROGRAM METRIC 21: NON-COMPLIANCE

NON-COMPLIANCE

NBI PROGRAM METRIC 21: NON-COMPLIANCE



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Eric Holcomb, Governor
Joe McGuinness,
Commissioner

Plan Corrective Action – Critical Findings

Metric #21 – Inspection Procedures

2020

FHWA notified INDOT on December 17, ~~2021~~, that they were in non-compliance with Metric #21, 23 CFR 650.313 (h).

GOAL

INDOT is to implement a systematic process to notify FHWA of all critical findings. Notification must contain enough information to determine its severity. Also, INDOT is to train inspectors on critical findings procedures with a set frequency.

NBI PROGRAM METRIC 21: NON-COMPLIANCE

Compliance Levels

Compliance (C): All of the following must be met for C:

- A documented procedure has been established and implemented to assure critical findings are addressed in a timely manner.
- All critical findings are addressed and documented in accordance with the procedure.
- The period for notifying the FHWA of actions taken is established and followed.

Substantial Compliance (SC): All of the following must be met for SC:

- A documented State procedure has been established and implemented to assure critical findings are addressed, but timeframes for addressing critical findings are not clearly defined.
- All critical findings are addressed in accordance with the procedure; isolated instances exist where documentation of actions taken is incomplete.
- The period for FHWA notification of actions taken is established; FHWA was notified of critical findings in all but a few isolated instances, and was notified within the established period in all but a few isolated instances.

Non-Compliance (NC): One or more SC criteria are not met.

Conditional Compliance (CC): Adhering to FHWA approved plan of corrective action (PCA).

INDOT
was here

NBI PROGRAM METRIC 21: NON-COMPLIANCE

Action Item#1: BIAS will be improved to provide an automated notification to the FHWA and other Bridge Inspection Supervisory Staff of new Critical Findings. This notification shall provide notice of the severity of the Critical Finding as defined in Section 2-4.02(01) of the Indiana Bridge Inspection Manual, and shall include photos, and other pertinent bridge identification data. This notification shall be sent by e-mail once an Inspector enters the data into BIAS. The Indiana Bridge Inspection Manual shall be updated to explain this notification process.

Estimated Completion Date: September 30, 2021

Action Item 1 was completed on time, and the automated notification process will be discussed in more detail later during this presentation.

NBI PROGRAM METRIC 21: NON-COMPLIANCE

Action Item #2: INDOT shall revise its current online Critical Finding Training, and all virtual instructor-led training conducted by INDOT on Critical Findings. Bridge Inspectors will be required to take the Critical Finding Training every two years. Critical finding training will include how to identify, submit and address critical findings. If an inspector is found to not to have followed the procedures, they will be required to retake the Critical Finding training within 60 days of notification.

Estimated Completion Date **March 31, 2022**

Action Item 2 was completed on time, and INDOT Bridge Inspection issued BIM Memorandum No. 22-01 on March 10, 2022.

NBI PROGRAM METRIC 21: NON-COMPLIANCE



INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

Bridge Inspection Memorandum No. 22-01
Bridge Inspection Manual Revisions

March 10, 2022

TO: All Inspection Personnel, and Consultants

FROM: /s/ Anthony Marino SPM
Anthony Marino
State Bridge Inspection Program Manager
Bridge Management Division

SUBJECT: Updated Approved Team Leader Minimum requirements – Critical Finding Course

REVISION: INDOT Bridge Inspection Manual 1.04(07)

EFFECTIVE: Immediately

The Bridge Inspection Critical Finding Course has been updated. To register, go to the [INDOT Learning Portal](#)

All current INDOT Approved Team Leaders shall complete this training to maintain their Approved Team Leader status in good standing. In addition, the INDOT Bridge Inspection Manual, Part 1 (Administration), Section 1.04(07), Item 7 is updated as follows:

7. Complete the On-Line Critical Finding Course
 - a. All Approved Team Leaders (ATL) are required to complete and pass the On-Line Critical Finding Course through the INDOT Training Portal. Newly certified bridge inspection team leaders shall complete and pass this course within 60 calendar days of becoming an ATL.
 - b. The certificate acquired upon successful completion shall be uploaded by the ATL into the ATL's BIAS User Account into a folder titled "INDOT Courses". Once the certificate is uploaded to the ATL's BIAS User Account, the ATL shall send an email to the BIAS Administrator at INBridgesHelp@indot.in.gov confirming that the requirement has been completed in the prescribed time frame to maintain a valid "Approved Team Leader" status.
 - c. This course and certification shall be completed and passed no later than 45 calendar days following the date of this memorandum. In addition, this course and certification shall be renewed biennially to maintain a valid Approved Team Leader status.
 - d. The course should take approximately 60 minutes to complete. Successful completion of the course provides 1 Professional Development Hour (PDH) credit.

NBI PROGRAM METRIC 21: NON-COMPLIANCE

7. Complete the On-Line Critical Finding Course

- a. All Approved Team Leaders (ATL) are required to complete and pass the On-Line Critical Finding Course through the INDOT Training Portal. Newly certified bridge inspection team leaders shall complete and pass this course within 60 calendar days of becoming an ATL.
- b. The certificate acquired upon successful completion shall be uploaded by the ATL into the ATL's BIAS User Account into a folder titled "INDOT Courses". Once the certificate is uploaded to the ATL's BIAS User Account, the ATL shall send an email to the BIAS Administrator at INBridgesHelp@indot.in.gov confirming that the requirement has been completed in the prescribed time frame to maintain a valid "Approved Team Leader" status.
- c. This course and certification shall be completed and passed no later than 45 calendar days following the date of this memorandum. In addition, this course and certification shall be renewed biennially to maintain a valid Approved Team Leader status.
- d. The course should take approximately 60 minutes to complete. Successful completion of the course provides 1 Professional Development Hour (PDH) credit.

NBI PROGRAM METRIC 21: NON-COMPLIANCE

In a nutshell...

- All team leaders must complete and pass the On-Line Critical Finding Course and upload completion certificate to your BIAS account.
- Also send certificate to the BIAS administrator (Shari Street).
- This is a requirement to keep your team leader certification.
- Completion no later than 45 calendar days from the date of this memorandum = ***April 24, 2022***
- New team leaders must complete within 60 calendar days once you are given your Team Leader Certification.

UNDERSTANDING CRITICAL FINDINGS



UNDERSTANDING CRITICAL FINDINGS

What is a CRITICAL FINDING?

Per FHWA, a critical finding is a **STRUCTURAL** or **SAFETY** related deficiency that requires immediate follow-up inspection or action.



UNDERSTANDING CRITICAL FINDINGS

Structural Danger (STRUCTURAL CRITICAL FINDING)

A structure-related deficiency that can interrupt the load path and not allow loads to be transferred as designed that, in turn, can cause surrounding components to become overstressed or unstable, potentially leading to a partial or total collapse of the structure.

Public Safety Danger (SAFETY CRITICAL FINDING)

A non-structural deficiency that jeopardizes the safety of motorists, pedestrians, or other users on or below the structure.

UNDERSTANDING CRITICAL FINDINGS

URGENT

A Critical Finding that requires any or all immediate corrective action(s) recommended by the inspection team leader be executed no later than THREE (3) calendar days following the DATE OF FINDING, and not the date that either the Owner or State Program Manager is notified.

SEVERE

A Critical Finding that requires any or all immediate corrective action(s) recommended by the inspection team leader be executed no later than THIRTY (30) calendar days following the DATE OF FINDING, and not the date that either the Owner or State Program Manager is notified.

UNDERSTANDING CRITICAL FINDINGS

Key Takeaways

A critical finding means that IMMEDIATE follow up action is required.
A critical finding MUST NOT BE USED to report maintenance issues.

FHWA/NBIS Oversight Metrics guide the Critical Finding inspection and reporting process.

All Critical Findings must be IMMEDIATELY REPORTED to FHWA when they are identified, and then must be CLOSED OUT timely by the State Program Manager (SPM). INDOT's actions are part of FHWA's annual NBIS Metric Reviews.

REPORTING CRITICAL FINDINGS



REPORTING CRITICAL FINDINGS

Make Assessment:

Does this deficiency present an immediate
STRUCTURAL or PUBLIC SAFETY danger?

If assessment is yes...

1. Determine the Critical Finding Type – URGENT or SEVERE.
2. Take good photographs from multiple positions.
3. Get to a nearby location of safety and initiate immediate Notification Communication Protocols.
4. As soon as feasible (but no later than 24 hours), report the Critical Finding through the BIAS Workflow.

REPORTING CRITICAL FINDINGS

Once deficiency is determined to be a critical finding, need to decide the SEVERITY and IMMEDIATE CORRECTIVE ACTION RECOMMENDATIONS.

URGENT

A Critical Finding that requires any or all immediate corrective action(s) recommended by the inspection team leader be executed no later than THREE (3) calendar days following the DATE OF FINDING, and not the date that either the Owner or State Program Manager is notified.

SEVERE

A Critical Finding that requires any or all immediate corrective action(s) recommended by the inspection team leader be executed no later than THIRTY (30) calendar days following the DATE OF FINDING, and not the date that either the Owner or State Program Manager is notified.

REPORTING CRITICAL FINDINGS

Notification Communication Protocols:

- Defined by Agency/Organization/Firm prior to field inspections.
- Establishes everyone (names, phone numbers, email addresses) who needs to be notified upon discovery of critical finding.
- “Living Document” updated regularly.
- Written protocols required for all District Bridge Inspection Units.
- Recommended for Consultants – especially if the county is new client.
 - Internal notifications
 - Client notifications

REPORTING CRITICAL FINDINGS

URGENT/3-DAY CRITICAL FINDINGS:

FOR EVERY INSTANCE: Upon discovery, and once inspector is in a position of safety and after your Notification Coordination Protocols have started, you shall call the SPM (me) to report in.

Mobile Number: (812) 681-1032 – Normal Work Hours

Personal Mobile Number: (812) 499-6602 - Weekends

Leave me a voice message if I don't immediately pick up.

Then, you may start with your remaining email and/or text messaging notification protocols.

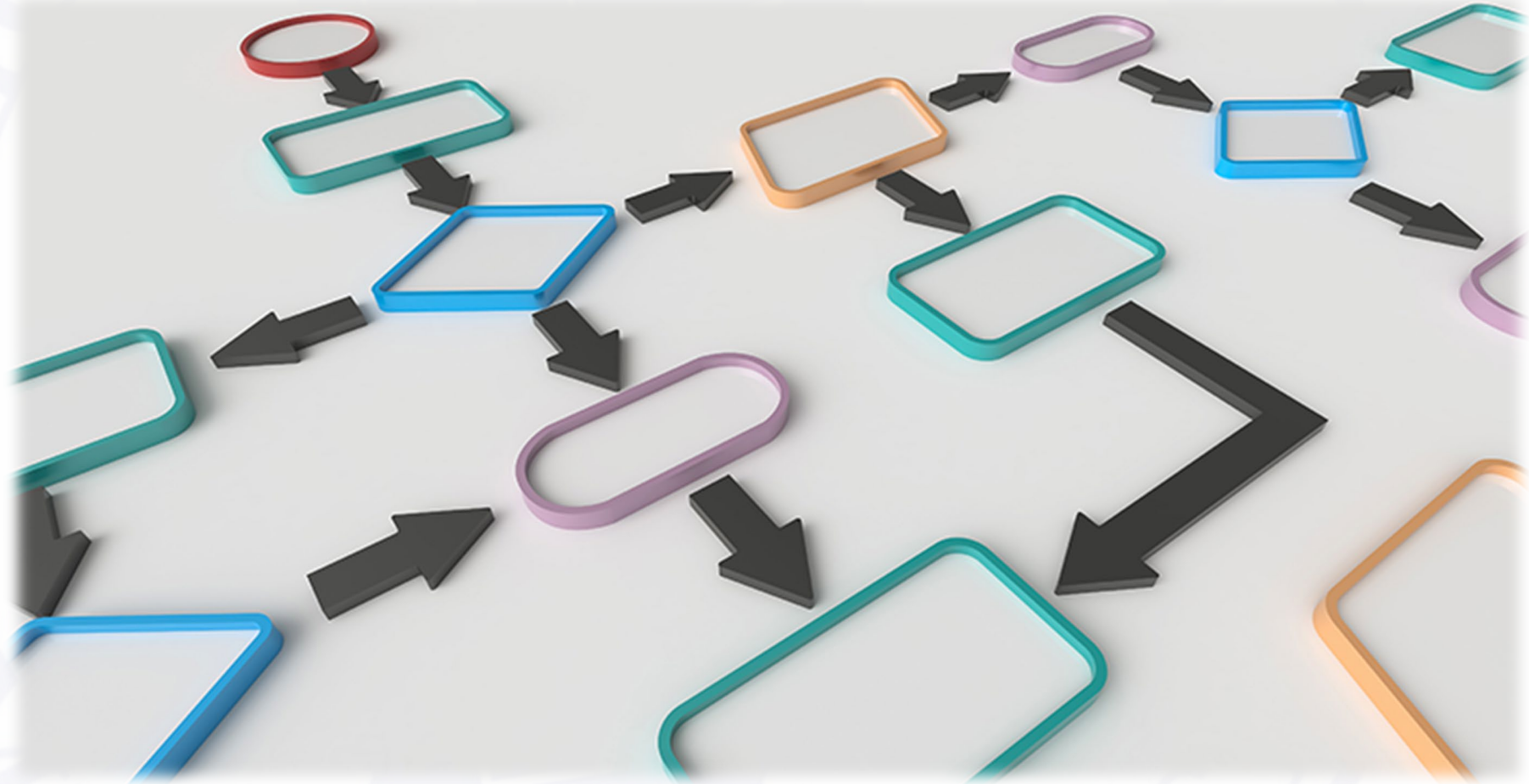
REPORTING CRITICAL FINDINGS

SEVERE/30-DAY CRITICAL FINDINGS:

Email and/or text messaging notification protocols are acceptable; once inspector is in a position of safety and has collected enough information to report.

However, SPM must be included in this email or text correspondence.

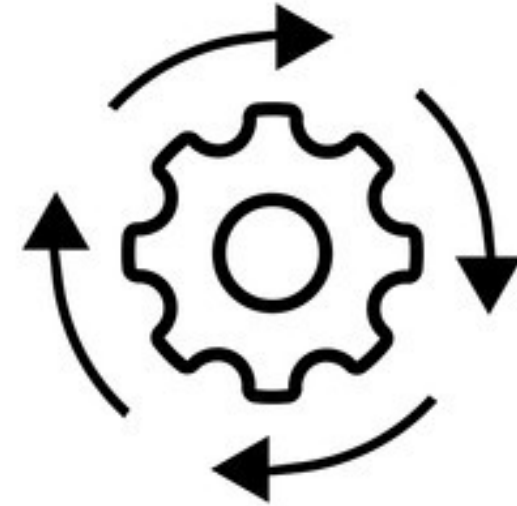
BIAS CRITICAL FINDING WORKFLOW



BIAS CRITICAL FINDING WORKFLOW

CRITICAL FINDING REPORT – BIAS WORKFLOW

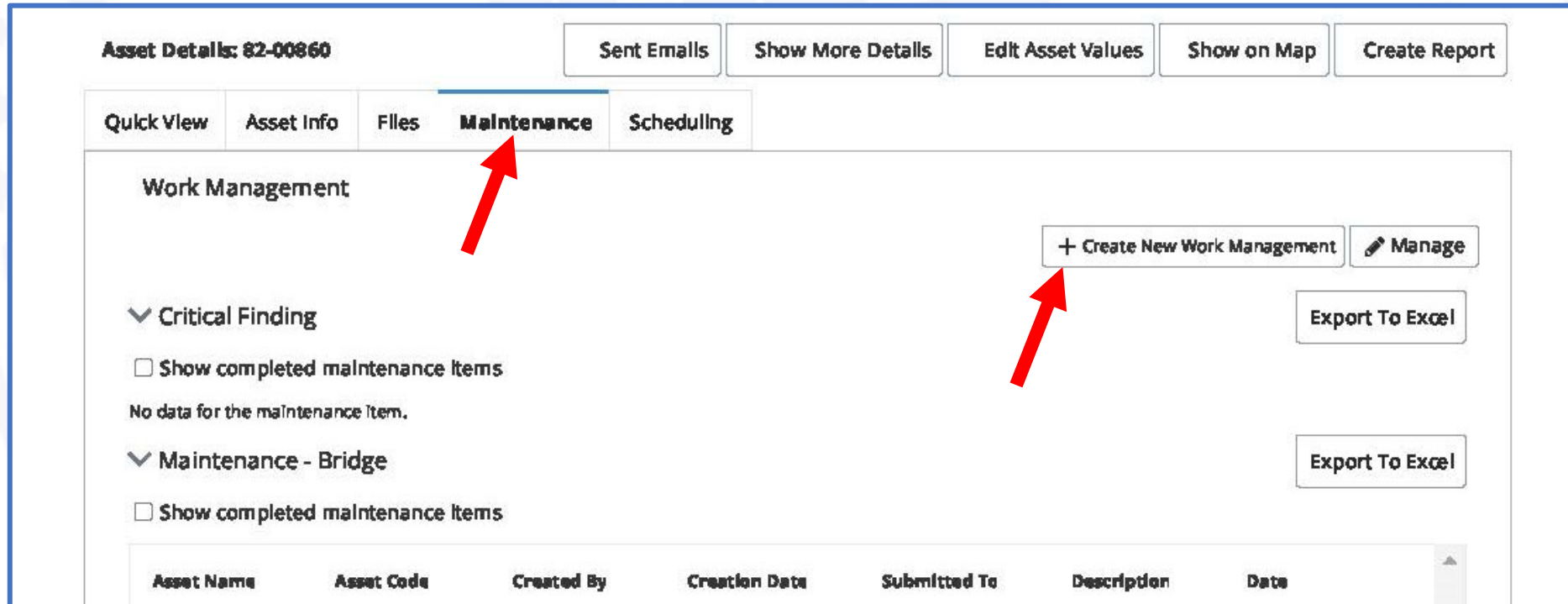
1. Initial Notification
2. Critical Finding QA Review
3. Initial Notification Closed
4. Awaiting Final Resolution
5. Completed



BIAS CRITICAL FINDING WORKFLOW

Step 1: Initial Notification – Done by inspection team following discovery

- Create CF Report in BIAS for Asset in the “Maintenance” Section
- Use “Create New Work Management” incident for the CF



The screenshot displays the BIAS system interface for Asset 82-00860. The top navigation bar includes buttons for 'Sent Emails', 'Show More Details', 'Edit Asset Values', 'Show on Map', and 'Create Report'. Below this, the 'Maintenance' tab is selected and highlighted with a red arrow. The main content area shows a 'Work Management' section with a '+ Create New Work Management' button, also highlighted with a red arrow. Other visible elements include a 'Manage' button, 'Export To Excel' buttons, and a table header with columns: Asset Name, Asset Code, Created By, Creation Date, Submitted To, Description, and Date.

BIAS CRITICAL FINDING WORKFLOW

Step 1: Initial Notification – Done by inspection team following discovery

- Create CF Report in BIAS for Asset in the “Maintenance” Section
- Use “Create New Work Management” incident for the CF
- Enter all required data in RED areas of CF Report
 - Must provide a good description of the deficiency.
 - Must identify the Critical Finding Type.
 - Must provide recommendations for corrective actions.
- Must attach photographs

BIAS CRITICAL FINDING WORKFLOW

Open | None Assigned

Must submit to State Program Manager through WorkFlow and an Email will automatically be sent out

CRITICAL FINDING

WARNING: Once the highlighted areas have been filled in you must submit to the State Program Manager through Workflow. This will automatically send an email alert to the designated individuals. Also ensure that your pictures are attached. In addition, still send an email to the Bridge Inspection Program Manager (amarino@indot.in.gov) with the following: pictures, stated problem, determination of severe or urgent, possible solution to close the critical finding, and attached critical finding report.

8200046

Data Entry By: Entry Date: Team Leader Reporting:

Team Leader Number: Structure #: 82-00860 NBI 8200046

Facility Carried: HOGUE RD Feature Intersected: CARPENTIER CREEK

Location: 00.60 E OF RED BANK RD County: 082

Critical Finding Type: Date of Finding:

Notification of SPM Date: Notification of Owner Date:

Description of Issue:

Provide detailed description of critical finding and other important and related circumstances.

Urgent – 3 DAYS
Severe – 30 DAYS

BIAS CRITICAL FINDING WORKFLOW

Urgent – 3 DAYS
Severe – 30 DAYS

Team Leader Recommended Actions:

Provide recommendations that can be done in required timeframe and by those tasked.

Recommended Date of Action:

I have attached () photos to this document.

Safety Action Taken (By Whom/When)

Comments can be added by team leader if immediate actions were taken, such as closing the bridge.

Critical Finding Addressed

Safety Action Closeout

Must submit to State Program Manager through WorkFlow.

Date Closed by State Program Manager in BIAS: Estimated Final Resolution Date

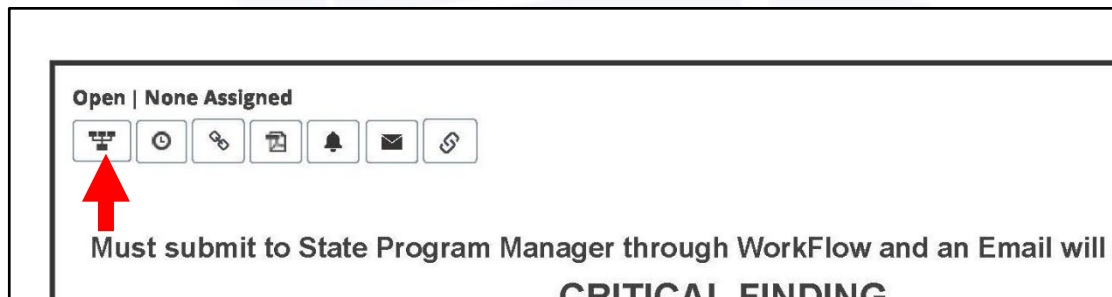
Final Resolution Taken

Must specify – cannot submit if left blank.

BIAS CRITICAL FINDING WORKFLOW

Step 1: Initial Notification – Done by inspection team upon discovery

- Create CF Report in BIAS for Asset in the “Maintenance” Section
- Use “Create New Work Management” incident for the CF
- Enter all required data in RED areas of CF Report
- Must attach photographs
- Submit CF Report to State Program Manager through BIAS Workflow

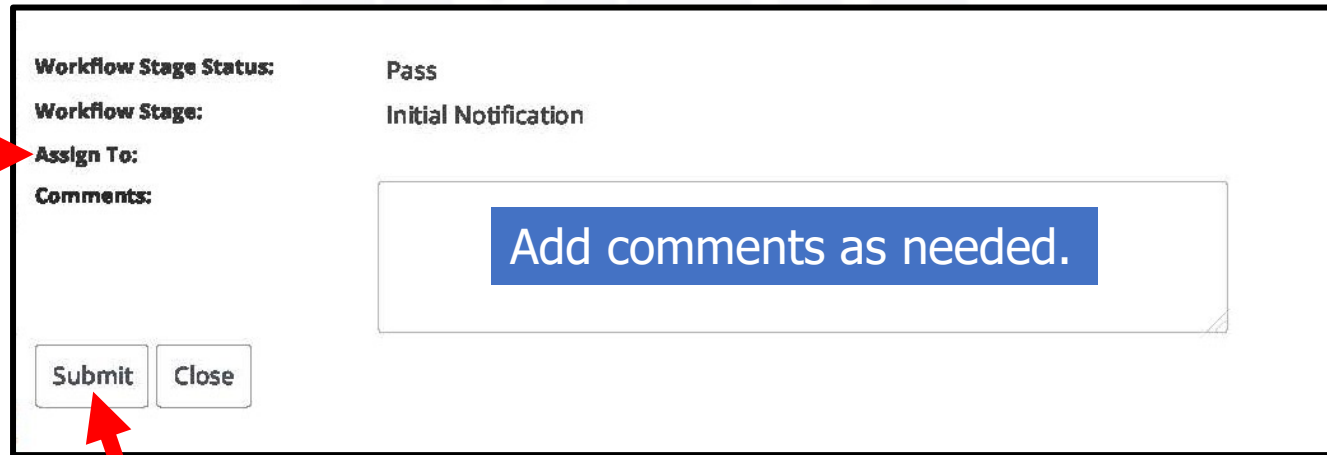


**Must be submitted in BIAS
within 24-hours independent
of any follow-up action.**

BIAS CRITICAL FINDING WORKFLOW

Step 1: Initial Notification – Done by inspection team upon discovery

- Submit CF Report to Program Manager through BIAS Workflow



Workflow Stage Status: Pass
Workflow Stage: Initial Notification
Assign To:
Comments: Add comments as needed.
Submit Close

Use drop down menu to select assignment; then select SPM.

HOWEVER, BEFORE SUBMITTING...



BIAS CRITICAL FINDING WORKFLOW



BIAS CRITICAL FINDING WORKFLOW

FACTORS TO CONSIDER WITH CORRECTIVE ACTION RECOMMENDATIONS

- Pay attention to Critical Finding Type assessed to incident.
 - **URGENT** – Action must be completed within 3 days of *discovery*.
 - **SEVERE** – Action must be completed within 30 days of *discovery*.
- Recommend Immediate Action(s) and, as appropriate, Final Action(s).
- REMEMBER : Immediate Action work must be done within the Urgent/3-day or Severe/30-day deadline starting from the *Date of Discovery*.
- Not all Critical Findings will require both (Load Limit Signage).

BIAS CRITICAL FINDING WORKFLOW

FACTORS TO CONSIDER WITH CORRECTIVE ACTION RECOMMENDATIONS

- Recommend action(s) must be those actions that can be completed within the timeframe required for the Critical Finding Type.
- Recommend action(s) must also be those types of actions that can be successfully executed within the required timeframe by the forces that are tasked to complete the work.
- Final Action work is *not bound* by Urgent or Severe deadline; *However, none should go longer than 6 to 8 weeks.*

BIAS CRITICAL FINDING WORKFLOW

Recommended IMMEDIATE action(s) may include, but not necessarily limited to, the following:

- Structural Analysis through an **EXPEDITED** load rating.
- Complete closure of the structure.
- Partial closure of structure (traffic lanes over deficiency).
- Installation of temporary shoring.
- Completion of immediate repairs to correct the deficiency.

ACTIONS MUST BE COMPLETED **WITHIN DEADLINE** OF CRITICAL FINDING TYPE.

BIAS CRITICAL FINDING WORKFLOW

What if recommended immediate action cannot be done within the required timeframe?

CLOSE THE BRIDGE!

BIAS CRITICAL FINDING WORKFLOW

Step 1: Initial Notification – Done by inspection team upon discovery

- Submit CF Report to Program Manager through BIAS Workflow

Workflow Stage Status:	Pass
Workflow Stage:	Initial Notification
Assign To:	
Comments:	<div style="border: 1px solid gray; padding: 10px; text-align: center;">Add comments as needed.</div>
<input type="button" value="Submit"/>	<input type="button" value="Cancel"/>

This will generate Auto-Notification email to FHWA, Director of Bridge Management, State Inspection Program Manager (SPM), Assistant Inspection Manager, Inspection Area Engineers, and BIAS Administrator.

- *Send email to Program Manager and Assistant Inspection Manager with summary of the critical finding incident.*

BIAS CRITICAL FINDING WORKFLOW

Once Critical Finding is submitted through BIAS Workflow...

- Automated email notifications go to Anne Rearick, Bridge Inspection State Program Manager, Assistant Bridge Inspection Manager, Area Engineers, Jose Ortiz (FHWA), and BIAS Administrator (Shari).
- Inspectors reporting the critical findings shall also send additional email to the SPM (me), Assistant SPM (Bill Dittrich), and all others listed in their notification communication protocols.
 - This email must include information on the recommendation for immediate corrective action, what (if any) action has been taken, and, if needed, final resolution recommendations along with all estimated completion dates.

BIAS CRITICAL FINDING WORKFLOW

Step 2: Critical Finding QA Review – Done by State Program Manager

- SPM reviews report for completeness and suitability of recommendations.
- SPM will reply to notification if additional information is needed.
- Once Report is acceptable – will advance to Step 3.

Step 3: Initial Notification Closed – Done by State Program Manager

- Done by SPM when SPM is notified that *IMMEDIATE ACTION* is complete.
- If additional *FINAL ACTION* is needed – provide estimated date.
- SPM will reply to notification correspondence if additional information is needed.

BIAS CRITICAL FINDING WORKFLOWS

Step 4: Awaiting Final Resolution – Done by State Program Manager

- Usually skipped when only one recommended action must be executed.
- Step is required when additional Final Actions are needed but not yet complete.
- Monitored by SPM through email chain correspondence.

Step 5: Completed – Done by State Program Manager

- Done when SPM is notified that corrective action is done.
- Require *PHOTO DOCUMENTATION* attached to CF Report.
- SPM will send final notification when incident is closed out (including to FHWA).

BIAS CRITICAL FINDING WORKFLOWS

Some Final Thoughts and Updates:

- Since Jose Ortiz (FHWA) receives auto notification, he may also be reviewing these incidents – and has sent feedback regarding the reports and recommendations.
- Completion of Step 3 (Initial Notification Closed) is when the IMMEDIATE CORRECTIVE ACTION is complete. INDOT is working on developing a similar auto notification email at that stage.
- SPM (me) is actively tracking the progression of all critical findings and using Outlook Notifications as reminders to check on corrective action progression.

QUESTIONS?



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