
Office of Inspector General

Audit Report

FRA LACKS GUIDANCE ON OVERSEEING COMPLIANCE WITH BRIDGE SAFETY STANDARDS

Federal Railroad Administration

Report Number: ST-2016-059

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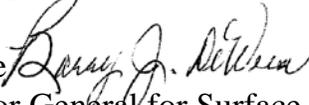
Memorandum

U.S. Department of
Transportation

Office of the Secretary
of Transportation
Office of Inspector General

Subject: **ACTION:** FRA Lacks Guidance on Overseeing
Compliance with Bridge Safety Standards
Federal Railroad Administration
Report No. ST-2016-059

Date: April 21, 2016

From: Barry J. DeWeese 
Assistant Inspector General for Surface
Transportation Audits

Reply to
Attn. of: JA-30

To: Federal Railroad Administrator

Everything transported by rail—including passengers, consumer goods, coal, and hazardous materials—likely travels across one or more of approximately 100,000 railroad bridges in the United States. According to Federal Railroad Administration (FRA) data, structural failures of railroad bridges caused 21 train accidents between 2007 and 2014. Such accidents are rare, but increasing traffic volume and loads traveling over aging bridges are causes for concern.

As required by law,¹ FRA issued a rule on Bridge Safety Standards in 2010² that requires railroad track owners to implement bridge management programs that include procedures for determining bridge load capacities and inspecting bridges. In light of congressional interest and because public and railroad employee safety depends on the structural integrity of bridges, we conducted this audit. Our objective was to assess FRA's oversight for ensuring that track owners' bridge management programs comply with FRA's rule on bridge safety. Specifically, we examined FRA's processes for (1) prioritizing track owners for bridge safety reviews, and (2) conducting bridge safety reviews and following up on identified issues of non-compliance.

We conducted this audit according to generally accepted Government auditing standards. To conduct our work, we visited bridge sites; interviewed FRA and track owners' officials; and examined bridge management programs and supporting documents. We contracted with the U.S. Army Corps of Engineers

¹ Rail Safety Improvement Act of 2008, Public Law 110-432, Div. A.

² 49 C.F.R. § 237.

(Corps) to provide expert technical support and review aspects of track owners' bridge safety practices. We analyzed statistical samples of track owners and bridges, but are not making projections regarding the universe of regulated entities or structures. For details on our scope and methodology, see exhibit A.

RESULTS IN BRIEF

FRA has not developed guidance on prioritization of track owners for bridge safety reviews. According to an FRA official, the Agency has not developed guidance but instead relies on the professional judgment of its bridge safety specialists, who have reached informal consensus on how to prioritize track owners. Furthermore, FRA does not maintain a comprehensive list of track owners that must comply with its Bridge Safety Standards. For example, the Agency lacks information on industrial operations that own railroad track and are subject to the rule. The lack of comprehensive identification of risks and guidance on prioritization makes it difficult for FRA to be sure it is effectively deploying oversight resources to review the highest-risk track owners.

FRA has not developed guidance for its specialists on conducting bridge safety reviews. As a result, FRA specialists may not appropriately address all issues of regulatory non-compliance. For example, for four track owners we analyzed, FRA specialists did not note three non-compliance issues in their reports but instead just discussed the issues with track owners. In another case identified by our experts, specialists did not identify the fact that procedures for protecting bridges from overweight and oversize loads were missing. Furthermore, FRA lacks guidance for its specialists on how to track and follow up on non-compliance and recommend civil penalties. FRA relies on each specialist to determine how to track and follow up on non-compliance. However, within our sample, specialists did not conduct follow-up reviews of track owners responsible for 55 percent of non-compliance issues and track owners were 35 percent less likely to correct issues when FRA did not follow-up. Therefore, FRA cannot be sure that track owners mitigate bridge safety risks.

We have made six recommendations to improve FRA's oversight of railroad bridge safety.

BACKGROUND

FRA oversees railroad bridge safety through a staff of specialists that make up a unit in the Agency's Rail and Infrastructure Integrity Division. The four specialists³ work throughout the country, each focusing on one or more of FRA's

³ In addition to these four, FRA currently has two vacant bridge safety specialist positions and plans to create one additional specialist position.

geographical regions, and report to the Chief Engineer in FRA's headquarters in Washington, DC. FRA's bridge safety specialists conduct a variety of oversight activities related to track owners' compliance with its Bridge Safety Standards: bridge management program reviews; bridge inspection record field audits; bridge inspection record reviews; bridge safety standards compliance evaluations; and bridge waiver investigations. For purposes of this report, we refer to all of these activities collectively as "bridge safety reviews." The specialists also conduct other activities—such as bridge observations and bridge accident investigations—that are not directly related to the Bridge Safety Standards but are related to railroad bridge safety or the safety of people on or around the bridges. For a complete list of FRA's oversight activities related to railroad bridge safety, see exhibit B.

FRA's General Manual⁴ establishes policies, procedures, and guidelines for inspection staff addressing topics such as inspections, civil penalty recommendations, and accident investigations. FRA's Track and Rail Infrastructure Integrity Compliance Manual includes technical interpretations of the Bridge Safety Standards and information on reporting procedures.⁵ Together, these manuals comprise the written guidance for bridge safety specialists.

All of FRA's bridge safety reviews result in a report that summarizes the specialist's findings. When a specialist identifies an issue of regulatory non-compliance during a bridge safety review, several enforcement actions are available to encourage the track owner's compliance. These actions include a defect report, a violation report recommending a civil penalty, and other more severe actions.⁶ A defect report summarizes an issue of regulatory non-compliance—known as a defect—that the specialist identifies. In a violation report, a specialist can recommend to the Agency the assessment of a civil penalty against the track owner for regulatory non-compliance.

FRA LACKS GUIDANCE FOR PRIORITIZING BRIDGE SAFETY REVIEWS AND A COMPREHENSIVE LIST OF REGULATED TRACK OWNERS

FRA has not developed guidance for specialists on prioritizing bridge safety reviews and does not maintain a comprehensive list of track owners that must

⁴ FRA, *General Manual: Policies, Procedures, and General Technical Bulletins*, July 2014.

⁵ FRA, *Track and Rail Infrastructure Integrity Compliance Manual*, Volume I, Chapter 2: Field Reporting Procedures and Forms, January 2014; Volume I, Chapter 4: Exceptions to the Standards, January 2014; and Volume IV, Chapter 1: Bridge Safety Standards, January 2015.

⁶ These more severe enforcement actions include compliance orders and emergency orders. A compliance order requires the track owner to take remedial action to come into compliance with the regulations and may impose restrictions until those actions are completed. Emergency orders may impose restrictions or prohibitions on the operation of rail traffic while the railroad resolves the situation.

comply with its Bridge Safety Standards. As a result, FRA cannot be sure that its specialists apply a standard approach to track owner prioritization and selection, or that they have comprehensively identified the risks posed by track owners.

FRA's Lacks Guidance For Prioritizing Bridge Safety Reviews

FRA's guidance does not explain how its specialists should prioritize track owners and railroad bridges for bridge safety reviews. In addition to its call for agencies to analyze and manage risk, the Government Accountability Office's (GAO) *Standards for Internal Control in the Federal Government*⁷ (Green Book) states that agencies should document their processes in management directives, administrative policies, or operating manuals. Because FRA lacks guidance on prioritization, the Agency cannot be sure that it is effectively managing risk. Furthermore, in 2007, GAO recommended⁸ that FRA devise a systematic risk-based methodology for selecting railroads for its bridge safety reviews. FRA responded to this recommendation by publishing notices in the Federal Register stating that it would collect additional bridge data from railroads. However, an FRA official told us that the Agency stopped the risk management effort in 2008 after passage of the Rail Safety Improvement Act, which included a bridge safety rulemaking mandate that resulted in the Bridge Safety Standards.

According to FRA bridge safety personnel, the specialists have reached an informal consensus on risk factors for prioritizing track owners for bridge safety reviews. The specialists consider several risk factors, including the railroad's size, number of miles operated, and presence of passenger operations. FRA obtains this information from monthly reports of railroad operating data that railroads must submit to the Agency.⁹ Specialists also told us that they consider information about track infrastructure concerns from FRA's regional offices, and issues identified during previous safety reviews to prioritize track owners for reviews.

However, according to an FRA official, the specialists do not document their specific prioritization decisions and the Agency has not developed guidance on the risk factors specialists should consider or how to apply them when deciding which track owners to review. The lack of guidance creates significant risks in the review process. For example, FRA neglected to review a large commuter railroad's bridge management program. When we asked whether the Agency had considered using the list of railroads required to implement positive train control to identify higher risk track owners, the Agency realized it had not reviewed the program. According to an FRA official, the railroad was contacted but "fell through the cracks" when

⁷ GAO, *Standards for Internal Control in the Federal Government*, September 2014.

⁸ GAO, *Federal Role in Providing Safety Oversight and Freight Infrastructure Investment Could Be Better Targeted*, GAO-07-770, August 2007.

⁹ These reports are required by 49 C.F.R. §225.

FRA did not receive a response. Subsequently, the Agency reviewed the program in September 2015.

Furthermore, FRA lacks guidance on how to prioritize other bridge safety reviews, such as assessments of inspection records and the physical conditions of bridges. The Agency allows specialists to decide which oversight activities to conduct. In exercising this discretion, the specialists reported using multiple information sources to decide which track owners and bridges to review:

- Railroad operating data;
- Collaboration with colleagues in other FRA safety disciplines;
- Knowledge of railroads in geographic territories and personal railroad maps;
- Networks developed during prior railroad employment; and
- Tips and complaints from the public.

Three of four specialists we interviewed stated that they also use the presence of hazardous materials cargo to inform their selections of track owners for oversight. The fourth specialist stated that he did not feel that FRA's data on hazardous materials loadings was of sufficient quality to inform his work plans.

According to an FRA official, the Agency has not developed guidance because they reached an informal consensus on risk factors and prioritization methods. FRA's lack of guidance for prioritizing track owners and structures for bridge safety reviews makes it more difficult for the Agency to ensure that it selects those owners and bridges that most likely present safety risks. Furthermore, because specialists do not document their rationales for prioritization, FRA management cannot be sure that the specialists apply a standard approach to track owner selection and prioritization. The risks posed by the lack of guidance are heightened by FRA's tentative plans to double the number of bridge safety specialists,¹⁰ as new staff members will lack knowledge of previous discussions among FRA bridge safety personnel.

FRA Does Not Have a Comprehensive List of Track Owners Required to Comply with the Bridge Safety Standards

FRA does not have a comprehensive list of track owners that must comply with the Bridge Safety Standards. The GAO Green Book states that each Federal agency should define its risk tolerance, and then identify and analyze risks to respond to all risks that exceed the tolerance. FRA's lack of a comprehensive list of track owners prevents the Agency from identifying and analyzing risks posed by unknown track owners.

¹⁰ The President's budget request for fiscal year 2017 includes a request for funding to double the size of FRA's bridge safety staff.

FRA officials stated that, to identify track owners that must comply with the Bridge Safety Standards, the Agency relies primarily on a list of railroads that must submit monthly reports on safety and operating data.¹¹ According to FRA, these railroads own the vast majority of the Nation's rail bridges. However, the list excludes track owners not subject to the reporting requirements—those that own industrial and insular tourist railroads—but that must comply with the Bridge Safety Standards.¹²

FRA staff stated they have little knowledge of industrial track owners and insular tourist railroads and they have not taken action to identify them. One FRA official stated that most industrial operators subject to the Bridge Safety Standards likely move non-hazardous materials such as coal, stone, and grain, and that industrial track owners handling hazardous materials were likely not subject to the Standards because they operate trains on their own tracks with their own equipment. The official further opined that the population of insular tourist railroads is likely small and poses low risk.

Because it lacks specific information about industrial track owners and insular tourist railroads and their operations, FRA cannot identify and analyze risks these entities pose to railroad bridge safety. FRA's lack of a comprehensive list of track owners that must comply with the Bridge Safety Standards makes it more difficult to ensure it can appropriately address bridge safety risks nationwide. Furthermore, because FRA lacks a comprehensive list of track owners who must comply with the regulation, the Agency will likely face difficulties in executing its tentative plan to create a national railroad bridge inventory.¹³

FRA LACKS GUIDANCE ON CONDUCTING BRIDGE SAFETY REVIEWS AND FOLLOWING UP ON NON-COMPLIANCE

FRA has not developed guidance with procedures for specialists to follow when conducting bridge safety reviews, tracking and following up on identified issues of non-compliance, or recommending civil penalties. As a result, FRA cannot be sure that specialists accurately and completely conduct safety reviews or that track owners appropriately mitigate bridge safety risks.

¹¹ 49 C.F.R. §225 requires all railroads except industrial track owners and insular tourist railroads to report monthly accident/incident reports. The monthly reports include summary railroad operating statistics such as number of freight train miles, passenger miles operated, and number of passengers transported.

¹² Unlike most of FRA's regulations, the Bridge Safety Standards apply to owners of track within industrial installations—such as a steel mill—if the trains are operated by railroads and to insular tourist railroads, i.e. those that have no public highway-rail grade crossings or bridges over public roads or waters used for commercial navigation and does not share a common corridor with another railroad.

¹³ The President's budget request for fiscal year 2017 includes a request for funding to create a national railroad bridge inventory.

FRA Lacks Guidance on Conducting Bridge Safety Reviews

FRA lacks guidance on how specialists should conduct their bridge safety reviews. According to GAO's Green Book, each Federal agency should design policies, procedures, techniques, and mechanisms to achieve its objectives and address risks.

FRA's guidance includes reporting procedures and technical interpretations of the Bridge Safety Standards, but does not include procedures for specialists to follow when conducting bridge safety reviews. One senior official stated that instead of issuing guidance to its staff, FRA relies on the specialists and their expertise to accurately and completely carry out bridge safety reviews.

In the absence of FRA guidance, we observed differences in how specialists conducted bridge safety reviews. For example, the specialists did not consistently conduct or report on Bridge Safety Standards compliance evaluations. Also, the extent to which specialists compared track owners' bridge inspection reports with bridges' actual conditions varied. Some specialists spot checked items noted in inspection reports, while others focused on the most deteriorated bridge conditions. Furthermore, although specialists developed checklists to guide and document different types of review, they did not always use the checklists. The checklists provide detailed information about the reviews' scopes and identified defects, which the specialists did not include in the reports that we reviewed.

With assistance from the U.S. Army Corps of Engineers (Corps), we found the specialists did not report problems with several track owners' bridge safety practices. For example, the Corps found one track owner lacked required procedures to protect bridges from overweight and oversize loads. However, we found the specialist did not document the issue in two reports. Additionally, the Corps identified problems with two track owners' bridge inspection procedures and use of improper terminology. Inspection procedures and bridge report terminology are important elements of consistent identification and communication of bridge deterioration. FRA specialists did not report on these issues either. For additional details on some of the issues that the Corps identified, see exhibit C.

FRA's guidance indicates that specialists should report all defects in their inspection reports. On its website, FRA defines a defect as minor non-compliance with Federal regulations discovered during a routine Agency inspection, but does not indicate the difference between minor and more serious non-compliance. Furthermore, we found instances in which specialists noted regulatory non-compliance issues as comments rather than as defects; FRA's regulations do not require the track owner to implement the suggestions contained in comments. Specifically, during our in-depth reviews of four track owners' bridge

management programs' compliance with the Bridge Safety Standards and associated FRA inspection reports, we found that:

- Specialists classified 7 non-compliance issues as comments instead of defects;
- One specialist inconsistently classified a recurring non-compliance issue over two consecutive inspection reports. In the first report, the specialist noted the issue as a defect, and in the next, as a comment to railroad.
- One specialist did not classify 3 of 19 non-compliance issues we identified. According to the specialist, he discussed the issues with the track owners but decided not to document these findings. For example, one track owners' inspection records did not note which portions of a bridge had been inspected when the inspection did not encompass the entire bridge.

Separately, we found that for one track owner, a specialist identified the bridge management program as non-compliant in many areas. However, the specialist summarized the concerns in a single comment, rather than noting the specific defects. These non-compliance issues could result in civil penalties ranging from \$2,500 to \$9,500 per day.¹⁴

Because it lacks guidance, FRA cannot be sure that its specialists are accurately and completely conducting bridge safety reviews and the Agency may face difficulty in clearly communicating performance expectations to new or replacement specialists. An FRA official told us the Agency had not developed written guidance because their specialists work closely and communicate with each other and their supervisor as questions arise. However, he acknowledged the need for guidance going forward because FRA plans to hire several new specialists.

FRA Lacks Guidance for Tracking and Following Up on Defects and Enforcing Violations

FRA has not developed guidance on tracking and following up on non-compliance issues. The Agency relies on each specialist to determine whether and how best to track findings of non-compliance and to follow up on owners' corrective actions.

According to the GAO Green Book, Federal agencies should establish baselines to monitor systems, conduct ongoing monitoring, and ensure that identified deficiencies are remediated on a timely basis. GAO has also noted that ability to

¹⁴ Under 49 U.S.C. §21301(a)(1), a separate violation occurs for each day the violation continues. The schedule of civil penalties is an appendix to the Bridge Safety Standards and constitutes a statement of Agency policy. The Administrator reserves the right to assess a penalty of up to \$105,000 for any violation where circumstances warrant.

perform reviews, document findings, and require finding resolution is one of five elements of effective independent oversight.¹⁵

In the absence of guidance from FRA, the specialists developed their own methods of tracking and follow up. For example, three of four specialists informed us that they maintain paper or electronic records on issues and their requests to owners for resolution. However, these three specialists do not document their tracking and follow-up efforts in any FRA system, preventing other specialists and management from accessing and reviewing the information. As a result, other specialists and management can only infer that a non-compliance issue has been resolved if that issue does not appear in subsequent reports.

For the 56 track owners in our sample, the specialists identified 400 defects with the bridge management programs. However, specialists did not follow-up on 219 defects associated with owners' bridge management programs. For example, the specialists did not conduct follow-up reviews to determine whether passenger railroad track owners had corrected 84 percent of the defects identified during initial bridge management program reviews (see table 1).

Table 1. FRA's Follow-up on Issues Associated with Sampled Track Owners' Bridge Management Programs

Track Owner Class	Number of Defects	Number of Defects with No FRA Follow-up ^a	Percent of Defects with No FRA Follow-up
Class I Freight	5	0	0
Class II Freight	9	1	11
Class III Freight	316	159	50
Passenger	70	59	84
Total	400	219	55

^a Includes defects on which FRA has not followed up since the initial review and defects that recurred but have not received additional follow up.

Source: OIG analysis of FRA data.

We identified 20 defects FRA cited in initial bridge management program review reports that track owners had not corrected, but that FRA did not cite in subsequent reports. For example, we found one track owner failed to document procedures for protecting train operations and providing for inspections after a bridge had been damaged. The specialist initially reported the non-compliance, but in a subsequent review did not indicate that the owner had not resolved the defect. Furthermore, we found track owners corrected 89 percent of defects when FRA conducted follow-up reviews. When FRA did not conduct follow-up reviews, the track owners corrected only 57 percent of defects, and passenger railroad track

¹⁵ GAO, *Key Elements to Consider for Providing Assurance of Effective Independent Oversight*, GAO-10-852T, June 2010. The other 4 elements are technical expertise, enforcement authority, public access, and independence.

owners performed worst, having corrected only 44 percent of the defects that we reviewed (see table 2).

Table 2. Sample Track Owners' Correction of Bridge Management Program Defects without FRA Follow-up

Track owner class	Number of Defects with No FRA Follow-up ^a	Number of Defects Reviewed by OIG ^b	Number of Defects Corrected	Percent of Defects Corrected
Class I Freight	0	0	0	0
Class II Freight	1	1	1	100
Class III Freight	159	108	66	61
Passenger	59	41	18	44
Total	219	150	85	57

^a Includes defects on which FRA has not followed up since the initial review and defects that recurred but have not received additional follow up.

^b We could not review 69 defects because the railroads did not provide all relevant documentation.

Source: OIG analysis of FRA data and railroad documentation.

Specialists had different understandings of how they should follow up on other bridge safety reviews. We identified and analyzed 16 reviews other than those of bridge management programs within our sample of 56 track owners. Of 38 defects FRA identified, 29 were deficiencies in track owners' bridge inspection documentation. One specialist explained that because bridge inspection documentation should not be modified once the track owner's inspector files it, he had nothing to follow up on with the owners. Another specialist informed us that he followed up by having a track owner revise bridge inspection documentation.

Furthermore, FRA has not established guidance for specialists on recommending civil penalties for violations. According to GAO, effective independent oversight requires organizations to exercise enforcement authority to achieve compliance with regulatory requirements. FRA published a Statement of Agency Policy Concerning Enforcement of the Federal Railroad Safety Laws that describes its general policy on civil penalties.¹⁶ However, it has not provided guidance on when specialists should recommend civil penalties under the Bridge Safety Standards.

According to FRA's rule for railroad safety enforcement, a specialist may require a track owner to submit evidence of a corrected non-compliance issue only if the specialist recommends a violation with civil penalties. Otherwise, the specialist may only request the track owner to update the Agency on an issue's status. However, an FRA official informed us that the Agency has decided to complete an initial review of each track owner's bridge management program—tentatively planned for completion in 2020—before pursuing civil penalties to afford the owners an opportunity to learn what actions they need to complete to achieve

¹⁶ 49 C.F.R. § 209, Appendix A.

compliance with the Bridge Safety Standards. Because it lacks guidance for specialists to track and follow up on non-compliance issues and recommend civil penalties, FRA cannot be sure that track owners resolve identified safety issues.

CONCLUSION

FRA is making progress toward completion of at least an initial review of most railroads' bridge management programs. However, the Agency's current approach to carrying out its responsibility for overseeing the safety of railroad bridges raises questions regarding the effectiveness of its oversight. If the Agency does not effectively carry out this responsibility and take action to mitigate risks, loss of life, environmental calamity, and significant financial costs could result.

RECOMMENDATIONS

We recommend that the Federal Railroad Administrator:

1. Issue guidance for specialists to implement a data-driven, risk-based methodology for prioritizing bridge safety reviews.
2. Develop and implement a plan to identify and regularly update a comprehensive list of entities regulated by FRA's bridge safety standards.
3. Issue guidance that defines how bridge safety specialists should conduct their oversight reviews.
4. Require that bridge safety specialists report all instances of regulatory non-compliance in their reviews as defects.
5. Issue guidance that defines how bridge safety specialists should track and follow-up on identified issues of regulatory non-compliance to verify that owners take remedial actions.
6. Issue guidance that defines when and how bridge safety specialists should recommend civil penalties for non-compliance with Bridge Safety Standards.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided FRA with our draft report on March 10, 2016. On April 12, 2016, FRA provided its response, which is included as an appendix to this report, and concurred with our six recommendations as written. On April 19, 2016, FRA provided documentation of its actions to address recommendations 1, 3, 4, 5, and 6 and requested closure of those recommendations. We appreciate FRA's prompt

attention to these recommendations, and, within the next 30 days, will review the Agency's documentation to determine whether its actions appropriately address the intent of our recommendations. In the meantime, we consider these recommendations resolved but open pending completion of our review.

Regarding recommendation 2, despite FRA's assertion to the contrary, we acknowledge in our audit report that the Agency maintains an inventory of railroads that report monthly safety and operating data. In its response, FRA acknowledges that it should work to identify and maintain an inventory of all railroads subject to its bridge safety standards, including those that do not report. FRA has proposed appropriate planned actions and a completion date to address this gap in its oversight of railroad bridge safety. Accordingly, we consider recommendation 2 resolved but open pending completion of planned actions.

We appreciate the courtesies and cooperation of FRA representatives during this audit. If you have any questions concerning this report, please contact me at (202) 366-5630, or Kerry R. Barras, Program Director, at (817) 978-3318.

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cc: DOT Audit Liaison, M-1
FRA Audit Liaison, ROA-03

EXHIBIT A. SCOPE AND METHODOLOGY

We conducted our work from March 2015 to March 2016 in accordance with generally accepted Government auditing standards. Those standards require that we plan and perform an audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence we obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We conducted this performance audit to determine whether FRA's oversight ensures that track owners' bridge management programs comply with FRA's rule on Bridge Safety Standards. Specifically, we assessed processes for (1) prioritizing track owners for oversight and (2) conducting bridge safety reviews and following up on identified issues of non-compliance.

To assess FRA's processes for prioritizing track owners for oversight, we reviewed relevant legislation, regulations, and FRA program documentation, including manuals and spreadsheets. We conducted structured interviews with FRA bridge safety specialists to understand how they select track owners for review. We also interviewed FRA's Chief Engineer for Bridges and Structures and other officials to understand their role in providing planning and guidance for specialists' track owner selection. To assess FRA's processes for conducting bridge safety reviews and following up on identified issues of non-compliance, we examined relevant laws, regulations, policy, and other guidance to understand program requirements and the oversight process developed by FRA. We accompanied each of FRA's bridge safety specialists as they conducted bridge safety reviews at track owner offices and bridges. We also interviewed FRA bridge safety, legal, and safety data personnel.

To obtain an unbiased sample of track owners, we divided the universe of 273 track owners that FRA had previously reviewed into four groups: Class I freight railroads, Class II freight railroads, passenger railroads, and Class III freight railroads and other track owners.¹⁷ From each group, we selected a sample proportional to the population of that group among the universe, resulting in a total

¹⁷ Railroads are classified by the Surface Transportation Board according to annual operating revenues. Class I freight railroads are those with annual operating revenue greater than \$250 million. Class II freight railroads have annual operating revenues between \$20 million and \$250 million. Class III freight railroads have annual operating revenues less than \$20 million. We also developed a separate group in our sample made up of passenger railroads and tourist railroads. Our group for Class III freight railroads also included other track owners—such as State governments and local transportation authorities—that do not operate railroads but own track supported by railroad bridges and are nevertheless required to comply with the Bridge Safety Standards.

sample of 56 track owners.¹⁸ For four track owners—the first from each group—we assessed FRA’s bridge safety reviews by comparing the Agency’s reports to the track owner’s bridge management programs and related documentation. We contracted with the U.S. Army Corps of Engineers (Corps) to review bridge safety practices related to the protection of bridges from overweight and oversize loads at these four track owners, including a random sample of three bridges at each owner. The Corps also reviewed the quality of bridge inspections at two track owners by examining a random sample of six bridges for each owner. We compared the Corps’ findings to the relevant FRA review reports to determine whether FRA had identified the problems that the Corps found.

To assess FRA’s process for following up on identified issues of non-compliance, we analyzed the Agency’s bridge safety reviews for all 56 of the sampled track owners to identify issues of non-compliance noted in its reports. We examined the most recent versions of track owners’ bridge management programs to determine whether the owners had corrected defects that FRA previously identified.

¹⁸ Our initial sample included 58 track owners. We did not review materials related to two owners. One track owner had gone out of business by the time of our review. The other has no bridges and is therefore not subject to the Bridge Safety Standards.

Exhibit A. Scope and Methodology

EXHIBIT B. FRA BRIDGE SAFETY OVERSIGHT ACTIVITIES

FRA established oversight activities to ensure track owners' compliance with the Bridge Safety Standards that we have referred to as bridge safety reviews:

- Bridge Management Program Review: Review of a track owner's bridge management program and other written policies for ensuring the safety of railroad bridges, as required by the Bridge Safety Standards;
- Bridge Inspection Record Field Audit: Comparison of a track owner's bridge inspection records with structures' observed conditions;
- Bridge Inspection Record Review: Review of a track owner's bridge inspection records to determine if inspections were timely performed and that records are complete and comply with requirements of the bridge management program;
- Bridge Safety Standards Compliance Evaluation: Evaluation of a track owner's compliance with its bridge management program and Bridge Safety Standards provisions beyond the scope of the adopted program; and
- Bridge Waiver Investigation: Evaluation of Bridge Safety Standards waiver applications.

FRA also established oversight activities not directly related to compliance with the Bridge Safety Standards, but still relevant to bridge safety:

- Bridge Observation: Railroad bridge structural observations;
- Movable Bridge Observation;
- Miscellaneous Structure Observation: Observations and evaluations of retaining walls, station platforms, culverts, overhead bridges, and other miscellaneous structures not covered by other oversight activities;
- Bridge Track Inspection: Inspection of track located on a railroad bridge;
- Bridge Accident Investigation;
- Bridge Complaint Investigation: Bridge observations and evaluations stemming from a complaint.
- Bridge Worker Safety: Inspections concerning 49 C.F.R. Part 214, Subpart B, Bridge Worker Safety Standards; and

- Roadway Worker Protection: Inspections concerning 49 C.F.R. Part 214, Subpart C, Roadway Worker Protection.

EXHIBIT C. PHOTOGRAPHS OF ISSUES FOUND BY THE CORPS

The Corps took the following photographs that illustrate issues with track owners' bridge inspection practices.

Figure 1. Deterioration on a Steel Bridge Pile



Source: United States Army Corps of Engineers

The track owner's inspection report stated that the steel bridge pile¹⁹ had up to 25 percent delamination. However, it is unclear to what the percentage is referring and the term "delamination" is improperly used in this context.²⁰ Deterioration to steel piles is typically described in terms of severity—the reduction in steel thickness—and extent—how much of the pile is affected. The Corps described the deterioration as pitting corrosion with a loss of thickness of up to one-eighth of an inch and limited to locations near and below the waterline.

¹⁹ A pile is a component of a bridge's foundation driven deep into the ground to give support to the structure above it.

²⁰ "Delamination" typically describes the deterioration of concrete elements, which indicates the separation of outer portions of concrete. For steel elements, the term delamination describes the separation of layers in the material.

Figure 2. Concrete Deterioration on a Bridge



Source: United States Army Corps of Engineers

The track owner's inspection report stated that the concrete had minor to moderate cracking and spalling.²¹ However, the owner's procedures do not define the terms "minor" and "moderate." As a result, it is difficult to understand the severity of the deterioration and evaluate the reported condition. According to the Corps, the deterioration is more significant than the track owner indicated, as they observed the concrete to have major spalling and cracking over large areas of the bridge that warrant further evaluation of the affected members.

²¹ "Spalling" refers to the loss of concrete that has broken or fallen off.

Figure 3. Bridge Scour



Source: United States Army Corps of Engineers

The Corps identified a significant scour²² condition that the track owner's inspection report did not identify. The Corps observed the scour, approximately 18 inches deep, along much of the length of the concrete foundation.

²² "Scour" refers to the result of the erosive action of flowing water that excavates and carries away material from around bridge piers and abutments.

Figure 4. Deterioration on a Timber Pile



Source: United States Army Corps of Engineers

The Corps identified significant deterioration of a timber pile that the track owner's inspection report did not identify. The Corps observed the deterioration to the pile at the ground line.

Figure 5. Insufficient Support for Bridge Components



Source: United States Army Corps of Engineers

The Corps identified a significant condition of insufficient support to the upper part of the bridge the track owner's inspection report did not identify. The Corps observed significant gaps between the timber piles and timber caps above.

EXHIBIT D. ENTITIES VISITED OR CONTACTED

FRA Headquarters

Office of Safety Assurance and Compliance

- Bridge and Structures Safety staff

Office of Chief Counsel

Office of Safety Analysis

- Railroad Safety Information Management Division

EXHIBIT E. MAJOR CONTRIBUTORS TO THIS REPORT

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U.S. Department of
Transportation

Memorandum

Federal Railroad Administration

Date: April 12, 2016

Subject: INFORMATION: Management Comments – Office of Inspector General (OIG) Draft Report on FRA’s Oversight of Bridge Safety Compliance

From: Sarah E. Feinberg
Federal Railroad Administrator

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To: Barry J. DeWeese
Assistant Inspector General for Surface Transportation Audits

The Federal Railroad Administration (FRA) promotes and regulates safety throughout the Nation's railroad industry. OIG’s draft report on FRA’s oversight of bridge safety compliance reflects similar concerns shared by the Department of Transportation (DOT) and FRA leadership. Specifically, we agree with the audit’s findings regarding the need to re-prioritize the bridge safety staff’s work and enhance the leadership and oversight of these efforts. In fact, more than one year ago, FRA recognized the need for, and began implementing, significant changes in its bridge safety oversight organization and approach. Many of these changes are complete, or are nearing completion, and include the following:

- Enhanced Leadership and Increased Oversight of Bridge Specialists: Due to heightened national concern for bridge safety, FRA recognized it needed to reorganize its bridge safety program. In late 2015, we placed the bridge safety specialists under the direct supervision of the Acting Deputy Associate Administrator for Railroad Safety, rather than the Staff Director for Rail and Infrastructure Integrity. The Acting Deputy Associate Administrator began executing closer oversight of the specialists’ work and providing frequent updates to the Associate Administrator for Railroad Safety, as well as to the Administrator. The enhanced oversight is continuing in 2016, including regular and frequent updates to FRA leadership.
- Re-Prioritized Bridge Safety Oversight Reviews: FRA has improved its process for prioritizing bridge safety oversight. We have provided guidance that instructs bridge specialists to consistently use railroad safety data, and other data available to them, when deciding which types of reviews to conduct on which bridge owners and in what priority

order. Specialists are required to adhere to the new prioritization and to use the newly updated Bridge Safety Standards Compliance Manual.

- Renewed Focus on Enforcement: We are finalizing instructions that provide specific direction to our bridge specialists about reporting defects and violations, recommending civil penalties, referring information to the OIG for criminal investigation, and verifying and documenting track owners' completion of remedial actions to address regulatory non-compliance issues.
- Planned Effort to Identify and Conduct More Thorough Reviews of Bridge Owners: Contrary to OIG's finding in its draft report, FRA currently maintains an inventory of bridge owners, including the nearly 800 railroads that operate over the general railroad system. The inventory does not include bridge owners of private industrial plants and insular tourist railroads that do not operate on the general system. FRA agrees, however, that even these bridge owners should maintain safe bridges. Therefore, FRA is planning a multi-pronged effort to identify bridge owners of private industrial plants and insular tourist railroads. For example, we plan to instruct our inspectors to notify FRA bridge specialists when they become aware of these track owners. In addition, FRA is exploring opportunities to work with shippers and railroads to ensure FRA is aware of all entities subject to the bridge safety standards.

The OIG's findings and recommendations augment FRA's concerns that led to our Fiscal Year 2017 budget request for a significant increase in resources to assist our oversight of bridge safety. These resources would allow FRA to double the number of bridge program staff so that we can review all bridge management plans on a risk-based, multi-year cycle and to undertake new activities to increase bridge safety. Additional funding will also allow FRA to build a nationwide bridge inventory containing track owner-submitted data about their bridges' ages and conditions.

While FRA does not regulate construction of railroad bridges, we take seriously our charge from Congress to conduct strenuous and consistent oversight of railroads' own bridge safety management plans. Through data driven practices and stronger internal controls, FRA will be better able to ensure that track owners comply with federal safety regulations.

Based on our review of the draft report, we concur with the recommendations as written. FRA has already initiated actions to address the recommendations and expects to complete actions for Recommendations 1, 3, 4, 5, and 6 by May 15, 2016, and Recommendation 2 by June 30, 2016.

We appreciate the opportunity to comment on OIG's draft report and related issues. Please contact Rosalyn G. Millman, FRA Planning and Performance Officer, at (202) 384-6193 or rosalyn.millman@dot.gov, with any questions regarding these comments or requests for additional assistance.