

**THE FEDERAL RAILROAD ADMINISTRATION CAN
IMPROVE HIGHWAY-RAIL GRADE CROSSING
SAFETY BY ENSURING COMPLIANCE WITH
ACCIDENT REPORTING REQUIREMENTS AND
ADDRESSING SIGHT OBSTRUCTIONS**

Federal Railroad Administration

Report Number: MH-2007-044

Date Issued: May 3, 2007



Memorandum

**U.S. Department of
Transportation**

Office of the Secretary
of Transportation
Office of Inspector General

Subject: **ACTION:** The Federal Railroad Administration
Can Improve Highway-Rail Grade Crossing Safety
by Ensuring Compliance With Accident Reporting
Requirements and Addressing Sight Obstructions
Report Number: MH-2007-044

Date: May 3, 2007

From: Kurt W. Hyde 
Assistant Inspector General
for Surface and Maritime Programs

Reply to
Attn. of: JA-40

To: Federal Railroad Administrator

This report presents the results of the Office of Inspector General's (OIG) audit of the Federal Railroad Administration's (FRA) activities to oversee safety at the Nation's highway-rail grade crossings (grade crossings).¹ In response to congressional concerns about grade crossing safety, we conducted this audit at the request of Representatives James L. Oberstar and Corrine Brown of the House Committee on Transportation and Infrastructure and Senator Daniel K. Inouye of the Senate Committee on Commerce, Science, and Transportation.

This report is a follow-up to the audit report we issued on November 28, 2005, which addressed three key grade crossing safety issues. In the 2005 report,² we found that FRA had: (1) not identified collisions that the railroads were required to report to the National Response Center (NRC),³ (2) conducted investigations on less than 1 percent of grade crossing collisions, and (3) not taken strong actions to

¹ Grade crossings are classified as public and private. Public grade crossings are eligible for improvements using Federal funds under the Section 130 program (Title 23, United States Code, Section 130) and are maintained by public transportation authorities. Private grade crossings are on roadways owned by private companies or citizens and are not eligible for these Federal funds.

² OIG Report No. MH-2006-016, "Audit of Oversight of Highway-Rail Grade Crossing Accident Reporting, Investigations, and Safety Regulations," November 28, 2005. OIG reports can be accessed on our website at: www.oig.dot.gov.

³ As part of the Department of Homeland Security, NRC is the Federal Government's 24-hour point of contact for environmental discharges in the United States and its territories. In addition, through agreements containing criteria that serve as triggers for reporting, NRC notifies FRA and other Federal agencies of fatal and serious train accidents and grade crossing collisions.

enforce critical safety laws. To its credit, FRA agreed to take corrective actions to address these safety issues. For example, FRA implemented a reconciliation process in July 2004 to determine whether the railroads report all fatal and serious grade crossing collisions to NRC, as required by Federal regulations.⁴ Subsequently, in March 2005, FRA began issuing civil penalties to railroads that failed to immediately report grade crossing collisions to NRC. The findings presented in our current audit address the non-NRC reporting requirement where railroads must report every grade crossing collision to FRA within 30 days of the end of the month in which the collision occurred. This audit report, and the one issued in 2005 will close out this body of congressionally requested work.

Our body of work on FRA's oversight programs has found grade crossing safety to be a "centerpiece" of rail safety.⁵ The second highest percentage of train accident fatalities—42 percent from 1995 through 2005—is due to collisions at grade crossings.⁶ The objective of this audit was to assess the adequacy of FRA's oversight of the railroads' reporting of grade crossing collisions, as required by Federal law.⁷ Our audit was based on the requirements contained in Title 49, Part 225 of the Code of Federal Regulations and the FRA Guide for Preparing Accident/Incident Reports.⁸ Trespassing fatalities and injuries on railroad property were not included in this audit.

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards prescribed by the Comptroller General of the United States. Exhibit A contains details on the objective, scope, and methodology we used in conducting this audit and information on our prior audit coverage. Exhibit B lists the activities we visited or contacted.

BACKGROUND

From 1995 through 2005,⁹ the U.S. Department of Transportation (Department), state transportation agencies, railroads, law enforcement agencies, and safety advocacy groups made significant progress in reducing the number of grade crossing collisions and fatalities. The total number of grade crossing collisions fell by 34 percent, from 4,633 at the end of 1995 to 3,050 at the end of 2005. During the same time period, the total number of fatalities decreased from 579 to 357, or by 38 percent. Exhibit C presents the total number of grade crossing

⁴ See 49 CFR, Part 225.9.

⁵ OIG Testimony CC-2007-018, "Reauthorization of the Federal Railroad Safety Program," January 30, 2007.

⁶ Trespassing fatalities is the leading category of rail-related fatalities for that period, accounting for 52 percent.

⁷ See 49 CFR, Part 225.19 and Title 49, United States Code, Section 20901, et seq.

⁸ The FRA guide provides instructions to the railroads for reporting rail-related accidents and incidents.

⁹ Throughout this report, unless otherwise indicated, calendar year data are reported. The number of grade crossing collisions, fatalities, and injuries were obtained from FRA, as of March 1, 2007, and represent the most reliable annual statistics available. Statistics for 2006 were too preliminary for inclusion in this report.

collisions, fatalities, and injuries reported by the railroads from 1995 through 2005. Exhibit D shows, by state, the reported number of collisions and fatalities that occurred at grade crossings in the United States during 2005.

Although significant progress was made over the last decade—1995 to 2005—reported grade crossing collisions increased from 2003 to 2005. During the latter period, collisions rose from 2,977 to 3,050 (3 percent) and the number of fatalities increased from 334 to 357 (7 percent), with 2004 documenting a higher increase than 2005. These increases and the upward trend in the volume of train and highway traffic indicate that more must be done at the Federal and state level to improve grade crossing safety. Our body of work on grade crossing safety has shown the need for FRA to develop more focused strategies to further reduce collisions and fatalities.

RESULTS IN BRIEF

We found that FRA can do more to improve grade crossing safety by ensuring compliance with its mandatory reporting requirements for crossing collisions and addressing sight obstructions that block highway users' view of approaching trains. Nationwide, on average, one person died and three people were injured every day in grade crossing collisions that occurred in 2005, based on data reported by the railroads to FRA. The railroads investigate grade crossing collisions involving their on-track equipment and are required to report each collision to FRA within a specified time frame.¹⁰ Accurate, timely, and complete reporting of each grade crossing collision can help FRA to identify safety problems so appropriate corrective actions can be taken. Complete information on grade crossing collisions is also important to state transportation officials who must decide where to spend Federal funds set-aside annually for crossing safety improvements.

Specifically, we found that:

- ***FRA can do more to ensure compliance with mandatory reporting requirements, including reviewing the railroads' grade crossing collision records and assessing civil penalties for reporting failures.*** Federal safety regulations require the railroads to report every grade crossing collision to FRA within 30 days of the end of the month in which the collision occurred. Accurate, timely, and complete reporting of grade crossing collisions serves the important purpose of ensuring that railroad inspections are properly targeted and state transportation officials have essential

¹⁰ Railroads are required to report grade crossing collisions to FRA within 30 days of the end of the month in which the collision occurred. For example, a collision that occurred on any day in March should be reported to FRA by April 30.

information when spending Federal funds on grade crossing safety improvements. Moreover, FRA has the authority to issue a violation and assess a civil penalty when a railroad fails to report a grade crossing collision.

Our work identified 12 railroads between 1999 and 2004 that did not report 139 collisions to FRA on time, with some being reported nearly 3 years late. These collisions resulted in 2 fatalities and 20 injuries, as ultimately reported by the railroads. Although these numbers are not large, FRA does not know whether all collision reports have been submitted, as required, because it had not routinely reviewed the grade crossing collision records maintained by the railroads to ensure compliance with its reporting requirements.

We also found that FRA did not consistently issue violations and assess civil penalties each time a railroad failed to report a grade crossing collision to its accident reporting system. For example, for the 139 instances of noncompliance with mandatory reporting requirements, FRA issued 57 violations to 8 of the 12 railroads and opted not to issue violations for the other 82 collision reports. The need for FRA to take consistent actions to enforce mandatory reporting requirements is an area that calls for additional measures.

We recommend, among other actions, that FRA develop and implement an action plan for reviewing grade crossing collision records maintained by the railroads. Further, FRA should issue a violation every time a railroad does not report a grade crossing collision in accordance with Federal requirements. A violation notice triggers the assessment of civil penalties, and railroads that repeatedly fail to report grade crossing collisions appropriately should receive higher penalties.

- ***FRA has no assurance that sight obstructions are addressed at passive grade crossings (those without automated warning devices) in most states.*** We found that greater attention is needed to ensure that highway users have a full view of approaching trains at the Nation's grade crossings. When grade crossings are not protected by automatic gates, flashing lights, and other automated warning devices, it is imperative that highway users have a clear view of approaching trains to determine when it is safe to cross. Sight obstructions—structures that block highway users' view of approaching trains and overgrown vegetation—can be a contributing factor in grade crossing collisions, based on FRA's data. From 2001 through 2005, 689 grade crossing collision reports submitted to FRA by the railroads

documented a sight obstruction.¹¹ These 689 collisions resulted in 87 fatalities and 242 injuries.

As of March 2007, 37 states lacked laws or regulations for addressing all types of sight obstructions at grade crossings with passive warnings. FRA should work with the Federal Highway Administration (FHWA) to develop model legislation for states to improve safety by addressing sight obstructions at grade crossings without automated warning devices.

FINDINGS

FRA Has Not Periodically Reviewed the Railroads' Grade Crossing Collision Records and More Can Be Done To Ensure Compliance With Mandatory Reporting Requirements

Railroads are required by Federal law to report every impact, regardless of severity, between a railroad's on-track equipment and any user of a public or private grade crossing. Although FRA officials told us that the railroads report most grade crossing collisions, as required, our audit work continues to identify areas where this did not occur. As a result, there are steps that FRA can take to improve safety. Specifically, we found that FRA's oversight for grade crossing safety did not include periodic reviews of railroads' collision records to ensure the railroads had complied with FRA's mandatory reporting requirements. Without such an oversight activity, FRA can not ensure that the 15,416 grade crossing collisions the railroads reported from 2001 through 2005 represent all the collisions that occurred during those years. In addition, FRA's oversight does not include testing random samples of railroads' grade crossing collision reports to determine whether the information is accurate, timely, and complete.

Under Federal safety regulations, the railroads are required to report each collision to FRA within 30 days of the end of the month in which the collision occurred. For instance, a grade crossing collision that occurred on any day in March should be reported to FRA by April 30. However, past reviews of grade crossing collision reports conducted by FRA, state transportation agencies, and our office identified issues with the completeness of FRA's accident reporting system. These reviews identified 12 railroads that did not report 139 collisions to FRA in accordance with mandatory reporting requirements. We documented 135 collisions—involving 2 fatalities and 20 injuries—that were reported from 2 months to nearly 3 years late to FRA's accident reporting system and 4 that have never been reported.

¹¹ FRA's grade crossing collision report requires the railroads to document the conditions at a collision scene. The report does not require the railroads to identify a primary or secondary cause.

When FRA took enforcement action, it issued 57 violations to 8 of the 12 railroads for not complying with its mandatory reporting requirements for grade crossing collisions and opted not to issue violations for the other 82 collision reports. Specific information about the 139 grade crossing collisions that were not reported in accordance with Federal requirements is discussed below.

- From 1999 through 2001, a Class I freight railroad¹² did not report 95 grade crossing collisions. These collisions resulted in 2 fatalities and 15 injuries. FRA officials conducted a system-wide review of this railroad's grade crossing collision reporting process in August 2001, after a Florida transportation official informed FRA of 11 unreported collisions that occurred in 1999. Subsequently, FRA issued violations for 20 of the 95 grade crossing collisions that the railroad had not reported. Because of FRA's practice of bundling or combining multiple violations into one enforcement case,¹³ we could not identify the amount of civil penalties assessed and collected that related to grade crossing collision reporting. For the remaining 75 grade crossing collisions, FRA did not issue additional violations or assess civil penalties.
- In January 2005, FRA officials conducted another review of the same Class I freight railroad cited above and found an additional 29 grade crossing collisions that the railroad had not reported to FRA's accident reporting system in 2003 and 2004. These collisions resulted in 2 injuries and no fatalities. FRA issued violations and assessed civil penalties for each of the 29 required collision reports that the railroad had not submitted because it had previously issued violations against this railroad for not complying with mandatory grade crossing reporting requirements. Again, we could not identify the amount of civil penalties the railroad paid because of FRA's practice of bundling violations.
- In 2003, another Class I freight railroad and two smaller railroads did not report five grade crossing collisions in Iowa. These collisions resulted in three injuries. An Iowa transportation official, as a result of reviewing police accident reports, notified the responsible railroads of the omissions. Because these railroads immediately submitted the required grade crossing collision reports to FRA when the discrepancies were identified, no violations were issued for noncompliance with Federal reporting requirements.

¹² As of 2006, Class I railroads were freight companies with annual operating revenues in excess of \$289.4 million.

¹³ After violations are issued, FRA employees process the violation reports, combine them into cases, and determine the amount of civil penalties to assess for each case. Subsequently, Federal law allows FRA to compromise the amount of the civil penalty with each railroad, resulting in the collection of a lower dollar payment.

- In 2005, we identified 10 grade crossing collisions that had occurred in Illinois in 2003, but had never been reported to FRA. We identified these unreported collisions by comparing motor vehicle accident reports filed by local police departments to data in FRA's accident reporting system. After we informed FRA of these unreported grade crossing collisions, it issued violations against seven railroads for not reporting eight grade crossing collisions, as required by Federal law. FRA did not issue violations for the other two collisions.

Further, for one Class I railroad, FRA officials identified problems with the accuracy of injury data in grade crossing reports submitted from January 2005 through July 2006. In November 2006, FRA officials found an unusually low number of injuries reported for grade crossing collisions involving this railroad when the train and/or motor vehicle were traveling in excess of 35 miles per hour—no injuries were reported for 154 collisions. FRA officials concluded that this railroad was not adequately seeking or collecting injury information. Subsequently, FRA issued one safety violation to this railroad for failing to have an adequate procedure for determining the extent of injuries to highway users involved in grade crossing collisions.

Accurate, timely, and complete reporting of grade crossing collisions serves an important purpose of identifying safety problems so appropriate corrective actions can be taken. Further, by ensuring that every grade crossing collision is reported on time, FRA and states will have access to critical data for identifying dangerous grade crossings and emerging accident trends. Complete information on grade crossing collisions is also essential for state transportation officials who must decide where to spend Federal funds set-aside annually for crossing safety improvements. For example, after written reports for the five unreported grade crossing collisions in Iowa were submitted to FRA, the Iowa Department of Transportation used the information provided by the railroads as the basis for allocating funds for safety improvements at two of the five grade crossings. If those unreported collisions had not been identified, it is likely that safety improvements would not have been made to these two dangerous crossings.

At the time of our fieldwork, FRA did not (1) have an action plan for reviewing the railroads' grade crossing collision records, (2) conduct periodic reviews of the railroads' grade crossing collision records to assess their compliance with mandatory reporting requirements, or (3) test random samples of the railroads' grade crossing collision reports to determine whether the information reported is accurate, timely, and complete. When we inquired about FRA's actions to identify unreported collisions, FRA did not advise us that it had developed a plan for reviewing the railroads' grade crossing collision records. However, after we

issued our March 2007 draft report, FRA provided us excerpts from a National Safety Program Plan for reviewing railroads' grade crossing collision records. FRA has yet to provide us a complete copy for review.

Further, FRA has not consistently issued a violation and assessed a civil penalty *each* time a railroad failed to report a grade crossing collision in accordance with Federal requirements. FRA needs to strengthen its oversight activities to ensure that railroads comply with Federal safety laws to report each grade crossing collision.

FRA Has No Assurance That Sight Obstructions Are Addressed in States That Lack Laws, but It Can Do More To Address This Safety Issue

Our analysis of grade crossing collision reports and related audit work found that greater attention is needed to ensure that highway users have a full view of approaching trains at the Nation's grade crossings. When grade crossings are not protected by automated warning devices, it is imperative that highway users have a clear view of approaching trains to determine when it is safe to cross. As illustrated in Figure 1, vegetation growth at grade crossings can significantly reduce a motorist's ability to see the track and approaching trains.

Figure 1. Photographs of Highway Users' Line of Sight at a Grade Crossing Before and After Vegetation Was Cleared

**Highway Users' View
Before Clearing Vegetation**



**Highway Users' View
After Clearing Vegetation**



Source: Illinois Commerce Commission*

*The State of Illinois requires every rail carrier to remove all brush, shrubbery, and trees from its right-of-way for a distance of at least 500 feet in either direction of a grade crossing.

Based on FRA data, sight obstructions can be a contributing factor in grade crossing collisions. Of the 15,416 grade crossing reports submitted by the railroads from 2001 through 2005, 689 documented a sight obstruction. The

reported sight obstructions included permanent structures (175), standing railroad equipment (82), passing trains (51), topography (76), vegetation (142), highway vehicles (53), and other obstructions (110). These 689 collisions resulted in 87 fatalities and 242 injuries.

Nationwide, there are nearly 76,000 public grade crossings that are not protected with automated warning devices. Currently, FRA regulations only require the railroads to address vegetation growth at these public crossings—as opposed to all types of sight obstructions—and only to the extent that vegetation reduces the visibility of railroad signs and signals. Further, as of March 2007, only 13 states had passed laws or issued regulations that address all types of sight obstructions at grade crossings.¹⁴ In the 37 states without such laws or regulations, highway users must rely on property owners to voluntarily comply with guidance from FHWA and the American Association of State Highway and Transportation Officials and the policies and practices implemented by individual railroad companies.

For the states that lack laws or regulations for addressing sight obstructions at grade crossings that are not protected with automated warning devices, such as gates and lights, more needs to be done. For those 37 states, immediate safety benefits could be achieved if laws were established to address all types of sight obstructions, such as structures that block highway users' view of approaching trains and overgrown vegetation. Although guidelines to address sight obstructions exist at the national level, they are not enough. FRA should work with FHWA to develop model legislation for states to address sight obstructions at grade crossings that are equipped solely with signs, pavement markings, and other passive warnings.

RECOMMENDATIONS

We recommend that FRA:

1. Strengthen safety oversight by ensuring that the railroads comply with mandatory requirements to report each grade crossing collision to FRA's accident reporting system by:
 - a. Developing and implementing an action plan for conducting periodic reviews of the grade crossing collision records maintained by each railroad, including promptly notifying the responsible railroads when unreported collisions are identified.

¹⁴ As of March 2007, 41 states had laws or regulations that address vegetation growth, but only 13 of these states had laws or regulations that address all types of sight obstructions.

- b. Testing random samples of the railroads' grade crossing collision reports to determine whether the information is accurate, timely, and complete, including comparing such reports to those generated by local law enforcement agencies.
 - c. Issuing a violation and assessing a civil penalty *each* time a railroad fails to submit a grade crossing collision report in accordance with Federal requirements, on a consistent basis. Moreover, FRA should assess higher civil penalties against each railroad that repeatedly fails to report crossing collisions.
2. Work with FHWA to develop model legislation for states to improve safety by addressing sight obstructions at grade crossings that are equipped solely with signs, pavement markings, and other passive warnings.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

A draft of this report was provided to FRA for comment on March 22, 2007. On April 16, 2007, FRA provided us with its formal response, which is contained in its entirety in the Appendix. As a general point, in its response FRA stated that it has “no general mandate to oversee safety at the Nation’s highway-rail grade crossings.” Instead, FRA views grade crossing safety as “a shared, intermodal, and intergovernmental challenge.” We find this statement puzzling, since FRA is the Department’s central point of contact for rail safety. For example, the Secretary designated FRA as the lead for developing the Department’s 1994 and 2004 action plans for grade crossing safety. We are, however, encouraged by FRA’s concluding remarks that it is prepared to do its part in addressing the challenges of grade crossing safety.

Recommendation 1a: FRA did not specifically state that it concurred or disagreed with our recommendation to strengthen safety oversight by ensuring that the railroads comply with mandatory requirements to report each grade crossing collision to FRA’s accident reporting system. However, FRA stated that it has already taken actions to develop and implement an action plan, specifically the National Safety Program Plan, for conducting periodic reviews of the railroads’ grade crossing collision records.

OIG Response: FRA actions to initiate its National Safety Program Plan generally meet the intent of our recommendation. However, since FRA did not inform us that it had developed this plan for reviewing railroads’ grade crossing collision records or provide us with a copy of the plan when we inquired about actions to identify unreported collisions, this recommendation will remain

unresolved until FRA provides us a copy of its complete National Safety Program Plan for our review.

Recommendation 1b: FRA generally agreed with this recommendation and stated that it “seeks further consultation regarding means of implementation as experience in working with available resources is gained.”

OIG Response: Although FRA generally agreed with this recommendation, we do not consider its comments responsive. First, FRA’s comment regarding the need for further experience is unclear. Second, FRA did not state what testing will be done. Instead, FRA states what it has already done and what it “can and should require,” but did not provide any specific information regarding exactly what will be done or the timetable for completion. FRA also referred to a pilot study that addressed the feasibility of collecting independent information to corroborate the railroads’ reporting of grade crossing collisions. The pilot study began in April 2006 and was anticipated to take 12 months. However, as of April 2007, FRA had not issued those results. We continue to believe that FRA should not totally rely upon the railroads’ self-certification of grade crossing collision reports. Accordingly, we request that FRA reconsider its response and provide specific actions for testing samples of the railroads’ grade crossing collision records to determine whether the information is accurate, timely, and complete, including a target date for implementing this recommendation.

Recommendation 1c: FRA generally concurred with this recommendation, but stated some reservations about assessing civil penalties on small railroads.

OIG Response: Although FRA generally agreed with the intent of the first part of our recommendation, it did not propose any new actions or address the second part of the recommendation calling for assessing higher civil penalties for railroads that repeatedly fail to report grade crossing collisions. Accordingly, we request that FRA provide target dates for amending its regulation and related guidance for issuing violation reports for failures to report grade crossing collisions. We also request that FRA reconsider its response and provide specific actions, including a target completion date, for assessing higher civil penalties when railroads repeatedly fail to submit grade crossing collision reports.

Recommendation 2: FRA supports the intent of our recommendation and stated that it will work with FHWA to develop model legislation for states to improve safety by addressing sight obstructions at grade crossings with passive warning signs.

OIG Response: FRA's response meets the intent of our recommendation. However, we request that FRA provide a target date for developing and distributing model legislation to the states.

ACTIONS REQUIRED

In accordance with DOT Order 8000.1C, we request that FRA provide us with additional information and target completion dates on all of our recommendations, as discussed above, within 30 calendar days from the date of this report.

We appreciate the courtesies and cooperation of FRA representatives during this audit. If you have any questions concerning this report, please call me at (202) 366-5630 or Brenda R. James, Program Director, at (202) 366-0202.

EXHIBIT A. OBJECTIVE, SCOPE, METHODOLOGY, AND PRIOR AUDIT COVERAGE

Objective, Scope, and Methodology

The objective of this audit was to assess the adequacy of FRA's oversight of the railroads' reporting of grade crossing collisions, as required by Federal laws. To accomplish this objective, we reviewed and analyzed Federal and state laws, regulations, policies, procedures, guidance, and other relevant information to understand FRA's requirements for reporting grade crossing collisions. We conducted audit work at FRA Headquarters in Washington, D.C., by analyzing its Railroad Accident/Incident Reporting System¹⁵ to determine whether the information was accurate, timely, and complete and in compliance with Federal reporting requirements. To identify trends, we analyzed FRA's public and private grade crossing collision data from 2001 through 2005. From January through August 2006, we temporarily suspended our work on this project to devote resources to our audit of emergency repair contracts awarded by the Mississippi Department of Transportation after Hurricane Katrina.

We also conducted audit work through state transportation departments in Florida, Illinois, and Iowa. With their cooperation, we identified grade crossing collisions that were not reported to FRA from 1999 through 2004. We visited the four largest railroads—Burlington Northern Santa Fe Railway (BNSF) in Fort Worth, Texas; CSX Transportation (CSX) in Jacksonville, Florida; Norfolk Southern Corporation (NS) in Norfolk, Virginia; and Union Pacific Railroad (UP) in Omaha, Nebraska. We met with the appropriate railroad representatives and discussed their roles and responsibilities, requirements, processes, and training programs for collision reporting. We used the information obtained to identify weaknesses and to assess compliance with Federal requirements for reporting grade crossing collisions.

We conducted this performance audit from September 2004 through March 2007, in accordance with Generally Accepted Government Auditing Standards prescribed by the Comptroller General of the United States. It was conducted as part of the overall audit effort that resulted in our report on the "Audit of Oversight of Highway-Rail Grade Crossing Accident Reporting, Investigations, and Safety Regulations," which was issued on November 28, 2005.

¹⁵ This system collects data the railroads are required to report on grade crossing collisions, fatalities, and injuries and information on other rail-related accidents/incidents.

Prior Audit Coverage

OIG Report Number RT-1999-140, “Rail-Highway Grade Crossing Safety,” September 30, 1999, disclosed that the Department’s efforts had reduced the number and the rate of grade crossing collisions and fatalities during the first 5 years of the 1994 Action Plan. However, to make further progress, the OIG recommended that FRA focus on proven cost-effective strategies, improve the program’s collision and inventory data, and better monitor state spending of Federal funds.

On June 16, 2004, we issued follow-up Report Number MH-2004-065, “Highway-Rail Grade Crossing Safety Program.” We reported that the Department came close to meeting its 1994 Action Plan goal of fewer than 2,500 grade crossing collisions and 300 fatalities at the end of 2003. Much of this progress largely was attributable to addressing the “low-hanging fruit,” such as upgrading crossings with automatic gates and flashing lights. To achieve further improvements, we recommended that the Department adopt a targeted approach that focuses on states and public crossings that continued to have the most collisions.

On November 28, 2005, we issued Report Number MH-2006-016, “Audit of Oversight of Highway-Rail Grade Crossing Accident Reporting, Investigations, and Safety Regulations.” We reported that railroads failed to immediately notify the National Response Center of 21 percent of reportable grade crossing collisions, the Federal Government investigated only 9 of the 3,045 collisions that occurred in 2004, and FRA recommended only 347 violations for the 7,490 critical safety defects it identified. Given the 2004 increase in collisions and fatalities, we recommended that FRA take a proactive oversight approach by clarifying its reporting requirements, collecting and analyzing independent grade crossing collision data, and increasing enforcement of existing safety regulations in the areas that posed the greatest threat to public safety.

EXHIBIT B. ACTIVITIES VISITED OR CONTACTED**Federal Railroad Administration**

Office of the Associate Administrator for Safety

State Agencies

Department of Transportation

Florida

Illinois

Iowa

Railroads

Burlington Northern Santa Fe Railway Company

CSX Transportation

Norfolk Southern Corporation

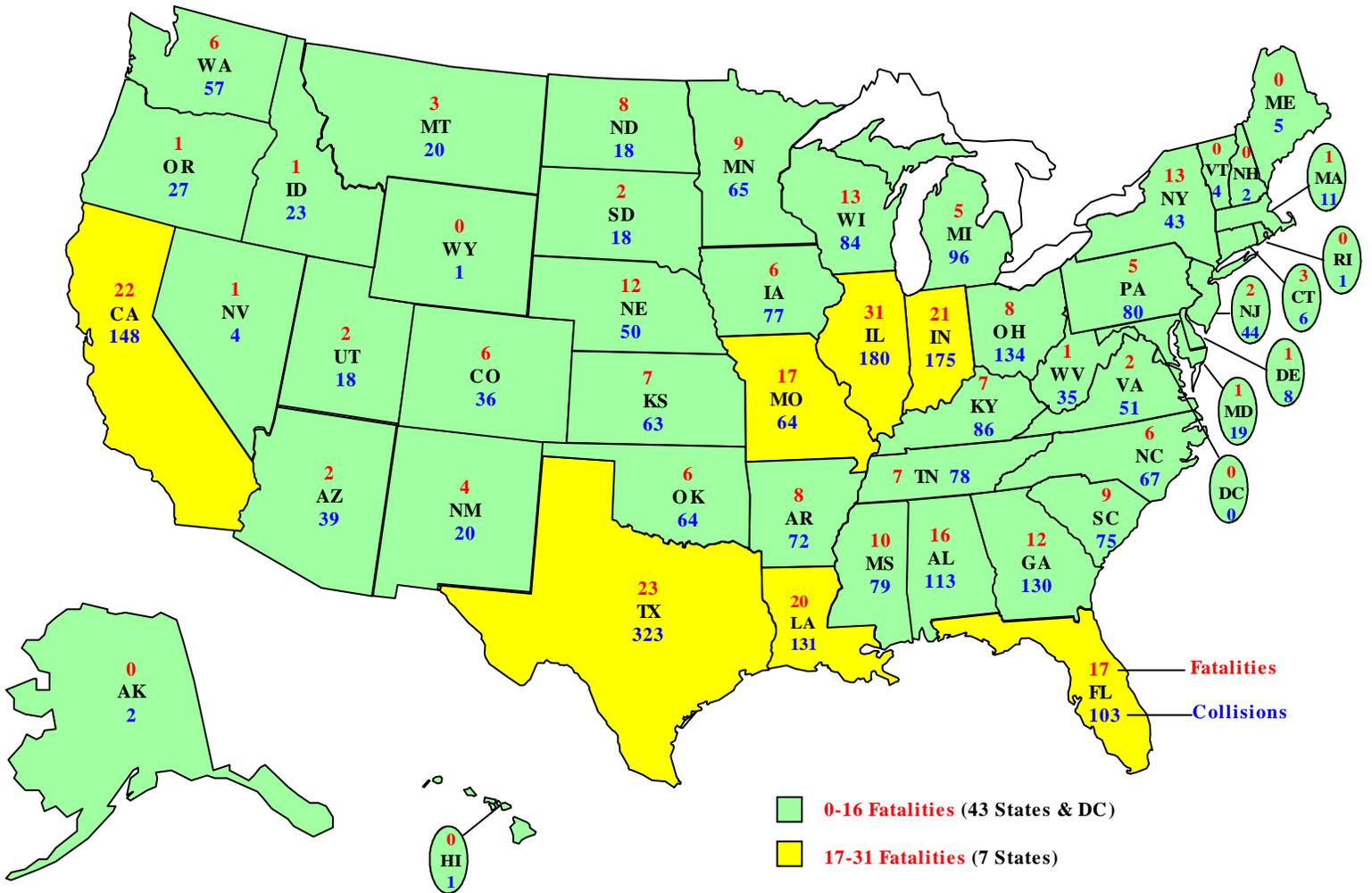
Union Pacific Railroad

EXHIBIT C. NUMBER OF REPORTED GRADE CROSSING COLLISIONS, FATALITIES, AND INJURIES FOR CALENDAR YEARS 1995 THROUGH 2005

Year	Collisions	Fatalities	Injuries
1995	4,633	579	1,894
1996	4,257	488	1,610
1997	3,865	461	1,540
1998	3,508	431	1,303
1999	3,489	402	1,396
2000	3,502	425	1,219
2001	3,237	421	1,157
2002	3,077	357	999
2003	2,977	334	1,035
2004	3,075	372	1,090
2005	3,050	357	1,012
Total Percentage of Change From 1995 to 2005	-34	-38	-47

Source: FRA

EXHIBIT D. U. S. MAP OF THE NUMBER OF REPORTED COLLISIONS AND FATALITIES AT GRADE CROSSINGS BY STATE IN 2005



Source: OIG Analysis of FRA Data

Exhibit D. U. S. Map of the Number of Reported Collisions and Fatalities at Grade Crossings by State in 2005

EXHIBIT E. MAJOR CONTRIBUTORS TO THIS REPORT**THE FOLLOWING INDIVIDUALS CONTRIBUTED TO THIS REPORT.**

Name	Title
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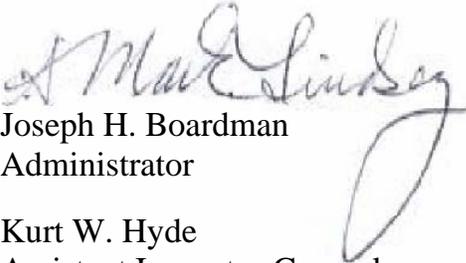
APPENDIX. FEDERAL RAILROAD ADMINISTRATION COMMENTS

Memorandum

U.S. Department
of Transportation
**Federal Railroad
Administration**

Date April 16, 2007

Subject: Response to Draft Audit on Highway-Rail Grade Crossings
Project No. 06M3003M000

From: 
Joseph H. Boardman
Administrator

To: Kurt W. Hyde
Assistant Inspector General
For Surface and Maritime Programs

Thank you for your memorandum of March 22, 2007, transmitting the draft report in the subject audit. We at the Federal Railroad Administration (FRA) appreciate the diligent work that has gone into this report.

I do want to caution that FRA has no general mandate to “oversee safety at the Nation’s highway-rail grade crossings.” Grade crossing safety is a shared, intermodal and intergovernmental challenge, including:

- Investments in grade separations and traffic control devices and proper engineering of highways at grade crossing locations;
- Enactment of suitable laws governing vehicle operator and pedestrian behavior;
- Training of motorists during the licensure process so that they know how to negotiate grade crossings safely; and
- Enforcement of laws governing road user behavior.

Nevertheless, given that reducing collisions at grade crossings is of utmost importance to the Nation and to safe rail operations, FRA has stepped forward to be a strong advocate for crossing safety within the U.S. Department of Transportation (DOT) and the railroad community. For instance, with two other modal administrations, we provide funding to Operation Lifesaver, Inc. (OLI), for public education and awareness, and FRA personnel serve as OLI trainers and presenters. FRA also has been instrumental in assembling the elements of Secretarial Grade Crossing Action Plans in 1994 and 2004.

The FRA does carry a number of very specific and important responsibilities for ensuring that railroads do their part in grade crossing safety. FRA initiated the focus on the use of train horns at highway-rail crossings by issuing Emergency Order No. 15, and we have issued a final rule requiring use of the horn nationwide, except where criteria for quiet zones are met. We enforce regulations requiring the inspection, testing, and maintenance of grade crossing warning devices (which are maintained by the railroads for the States and local governments) that require effective warning at least 20 seconds before a train enters the crossing and that mandate prompt action when a crossing system malfunctions. We have previously required that locomotives be highly visible when approaching crossings (through the use of alerting lights), and railroads and car owners are presently applying retroreflective material to all freight rolling stock under an FRA rule so that trains already on a crossing can be clearly identified, even during hours of darkness or inclement weather. FRA's Track Safety Standards also require that vegetation on railroad property be removed or trimmed back if it could block preview of grade crossing signage. FRA carefully investigates any allegation that the breach of a duty owed by a railroad under FRA regulations or railroad operating rules may have been the cause of a grade crossing collision; and, if breach of a duty is shown, we seek to take whatever actions are appropriate to prevent a recurrence.

Apropos the instant topic, FRA requires railroads to report every impact at a grade crossing, regardless of consequences, and thereby assembles the primary database relied upon by the DOT, States, the research community, and others to assess and analyze grade crossing safety. This database is an important element of the Railroad Accident/Incident Reporting System, details of which are available to the public 24 hours a day through our SafetyData Web page.

Findings and Recommendations Regarding Accident/Incident Reporting

The draft report, which we have had under discussion jointly for several months, finds that FRA could do more to ensure mandatory compliance with grade crossing collision reporting requirements. In fact, FRA has already taken the lessons from this audit and is committed to a sustained effort.

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We have pointed out to OIG staff that, even prior to the vigorous reviews conducted on major railroads over the last 2 years, the likely outside limit for unreported collisions was on the order of 4 percent; and nothing in the current draft report would cause us to rethink that conclusion. We have further pointed out that the RAIRS data is consistently more complete and accurate with respect to crossing fatalities than its only public source equivalent (the Fatal Accident Reporting System). Nevertheless, with the information from participating States and OIG, we have concluded that diversion of additional staff hours from other work is warranted in order to more effectively ensure, insofar as is possible, that each collision and resulting casualty is reported.

I am disappointed that the draft report did not refer to the action FRA has taken during the period of this audit. Our staff has worked diligently to determine railroad compliance with reporting requirements for incidents at highway-rail crossings. At this late date, it is simply erroneous to state that “Currently, FRA does not ... have an action plan for periodic reviews of the railroads’ grade crossing collision records” or to “conduct periodic reviews.” Please see attached excerpts from our National Safety Program Plan (NSPP).

It is true that our current written plans do not include an element to “test samples” to determine the accuracy of data elements on the form; however, in fairness this was first proposed to FRA in the version of the draft report to which we now respond, likely based on techniques employed and findings made by FRA in auditing a railroad in November 2006.

Your office deserves great credit for keeping these issues to the fore, and FRA’s safety program deserves credit for taking necessary actions.

Our responses to your set of recommendations on this topic are interlineated below:

OIG Recommendation:

“Strengthen safety oversight by ensuring that the railroads comply with mandatory requirements to report each grade crossing collision to FRA’s accident reporting system by:

“a. Developing and implementing an action plan for conducting periodic reviews of the grade crossing collision records maintained by each railroad, including promptly notifying the responsible railroads when unreported collisions are identified.”

Response: After coordination with OIG staff, and effective this fiscal year, FRA put in place, as part of its NSPP, a multiyear planning process to review the records of major railroads not less than once every 3 years and with greater frequency, as necessary, to bring about corrective action for any significant deficiencies detected. This formalizes a process that has been in place since 2005. We also have initiated reviews of commuter railroads and major regional railroads, with the objective to cover each at least once every 5 years (again with followup as needed). Excerpts from the NSPP are excerpted in the attachment. Additional guidance will be issued for FY 2008 to ensure that each region is following a parallel course. Railroads scheduled for periodic reviews under the NSPP together account for a very high percentage of crossing collisions, fatalities and injuries. FRA will continue to look at records of short line and tourist railroads as resources permit, in connection with the normal inspection and oversight process.

“b. Testing samples of the railroads’ grade crossing collision reports to determine whether the information is accurate, timely, and complete, including comparing such reports to those generated by local law enforcement agencies.”

Response: FRA generally agrees with this recommendation and seeks further consultation regarding means of implementation as experience in working with available resources is gained.

The FRA has automated routines in place that are used by the database contractor to determine insofar as possible that reports are filed timely, that data within a report is consistent, and that data among the several primary reports (forms 6180.57, 6180.54, 6180.55, etc.) are consistent. Reports found to have apparent errors or omissions are returned to the railroad for correction.

During FRA audits of railroad reporting, exemplary records have been selected for audits to determine consistency among source records on the railroad. In the example cited in the OIG draft report, a set of records involving train speeds of 35 mph or above was selected for more detailed examination to ascertain if casualties occurred that were not reported, based upon an unexpected absence of casualties in the subject data set. FRA will continue to seek to apply this type of sampling technique as it goes forward with railroad reporting reviews.

As suggested by previous drafts of this report, FRA has encouraged participating and nonparticipating States to join with us in using police reports to verify that railroad reports are made and to identify any material discrepancies, including

identification of any apparent injuries in the event. It should be noted that reconciliation of each of these data elements may not be feasible within existing resources. (For instance, under the reporting system, the injury must be followed up and reported only if medical treatment is provided, while a responding police officer will often only know that the vehicle occupant was transported to a hospital and may not be aware in some cases that only first aid or observation was ordered.)

In the previous OIG audit report titled “Audit of Oversight of Highway-Rail Grade Crossing Accident Reporting, Investigations, and Safety Regulations,” dated November 28, 2005, you recommended that FRA:

Collect and analyze independent information on crossing collisions (including event recorder data and accident reports) from railroads and local or state law enforcement agencies, using a pilot program. The pilot should be conducted in the States that have the most grade crossing accidents year after year and designed to collect information that will allow FRA to evaluate the cause of collisions, type of warnings in place, and railroads’ compliance with Federal safety regulations for each crossing fatality.

In response to that recommendation, FRA structured a study that involves at least one State from each of FRA’s eight regions, including the States with the most crossings and collisions. State agencies have obtained and provided police reports, and State rail agencies that conduct their own investigations of these events have provided copies of the reports. These independent source documents have been compared with forms 6180.57 and related forms for the same events to determine (1) that all events have been reported and (2) that data contained on the form 6180.57 is accurate, including information bearing on the cause of the event.

Although FRA is still completing the report of that pilot study, the following tentative conclusions have been reached:

- For the great majority of police reports, matching forms 6180.57 were filed.
- There appears to be no pattern of discrepancies evident from the reports (e.g., no indication that railroads have misrepresented the events in question).
- In general, the 6180.57 forms provided more useful detail, although in some cases police report narratives shed additional light on motorist behavior.

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Nevertheless, FRA agrees that when conducting onsite reviews of samples of railroad reports (6108.57 forms), FRA can and should require production of the matching police reports.

“c. Issuing a violation and assessing a civil penalty *each time* a railroad fails to submit a grade crossing collision report in accordance with Federal requirements, on a consistent basis. Moreover, FRA should assess higher civil penalties against each railroad that repeatedly fails to report crossing collisions.”

Response: FRA generally concurs in this recommendation, with the reservations expressed below.

In mid-2004, the Acting Associate Administrator for Safety issued a verbal instruction that each clear-cut violation of an accident/incident reporting obligation—whether it related to a crossing collision, employee injury, or train accident—should, absent special circumstances, be the subject of a proposed civil penalty. The subject OIG report reflects that this policy has generally taken hold.

However, it should be noted that use of civil penalty authority is subject to the general guidance contained in Title 49 Code of Federal Regulations (CFR) Part 209, Appendix A, which specifies criteria to be applied in making these determinations, and Appendix C, which addresses small entities as required by the Regulatory Flexibility Act and the Small Business Regulatory Enforcement Fairness Act (SBREFA). So, for example, should an FRA inspector encounter a single mistaken failure of a small railroad to report a grade crossing collision (e.g., out of confusion with the monetary threshold required for rail equipment accident/incidents), and should the railroad immediately file a report as required, FRA might omit use of a civil penalty out of deference to the congressional policy related to small entities and in recognition of the fact that the circumstances are unlikely to be repeated.

The FRA does agree that accident/incident reporting is so fundamental to the system of railroad safety oversight and program development that strong emphasis on enforcement is warranted when noncompliance is detected. Accordingly, FRA will amend Part 209, the General Manual, and the Operating Practices Compliance Manual to make obligatory the submission of violation reports for each detected violation of 49 CFR Part 225, when the violation in question is a clear-cut failure to report (i.e., not involving any question with regard to interpretation of the regulation or sufficiency of the facts constituting

the alleged failure), subject to application of SBREFA-mandated considerations where relevant.

The FRA has the right to cite a railroad for each day a violation continues. This can represent a potentially very high liability for each accident/incident not timely reported. FRA will utilize this mechanism (citing for multiple days) to assess more substantial penalties where railroad conduct is persistent and without substantial justification.

Finding and Recommendation Regarding Crossing Sight Distances

The report finds that “FRA has no assurance that sight distances are maintained in States that lack laws, but it can do more to address this safety issue.” Once again, it is necessary to remind OIG that FRA does not have general authority or responsibility for grade crossing safety. Traffic control authorities at the State and local levels need to select traffic control devices that are suitable, given all circumstances at the crossing, including sight distances. A majority of States can and do try to ensure suitable sight distances by requiring removal of vegetation.

Certainly, FRA’s reporting system gathers information regarding sight distance obstructions in crossing accidents because this can be important for safety. Obstructions can be permanent or temporary in nature (e.g., buildings, seasonal vegetation). They may occur on railroad property, private property, or public property abutting the crossing. They may be found at crossings where they are highly relevant to motorist behavior, because the traffic authority has provided only passive signage, or they may be of questionable concern because motorist behavior is unequivocally directed by traffic control devices, particularly flashing lights and gates. Obstructions may be objects to which society attaches great value (well-maintained improvements to property, mature trees of aesthetic value and trees relied upon as windbreaks to protect topsoil), or they may be of no intrinsic value.

The FRA is in a position to address a very small segment of the issues associated with sight distances at crossings. It is interesting to note that of the 689 sight obstructions mentioned (accounting for less than 5 percent of the collisions for the study period), only standing rail equipment (82) and vegetation (142) are conditions that are realistically under the railroad’s control, and it is not feasible to avoid some compromise of sight distances with respect to standing rail equipment in every case.

However, with the Federal Highway Administration (FHWA) and other DOT modes, we have contributed to the development of suitable guidance regarding how adequate sight distance might be determined, and the results are published as a report of the

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Department's Technical Working Group, titled "Guidance on Traffic Control Devices at Highway-Rail Grade Crossings" (November 2002). We are prepared to play a constructive role as part of the larger intermodal and intergovernmental grade crossing team to further advance this area of work.

Your specific recommendation and our response follow:

OIG Recommendation:

"We recommend that FRA work with FHWA to develop model legislation for States to improve safety by addressing sight distances at grade crossings that are equipped solely with signs, pavement markings, and other passive warnings."

Response: FRA supports the intent of this recommendation. FRA will work with FHWA to develop model State legislation addressing sight distances at grade crossings equipped with passive warning signs. Such model legislation would be developed using existing State statutes as a guide and would be distributed to all States with the goal that they consider the legislation and take appropriate action as a result.

Conclusion

Once again, I want to compliment the OIG staff for diligence and creativity in approaching the issues involved in this and prior audits regarding grade crossing safety. Although there is no single entity at the Federal, State, or local level that is capable of addressing every area of concern unilaterally, each element of Government and each private entity implicated in the challenge of grade crossing safety should be willing to take the next steps that will be required to address growing populations, rising motor vehicles miles, and growing rail operations. FRA is prepared to do its part.

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Attachment**Excerpt from National Safety Program Plan, FY 2007**

Project Number: HQ-OP-04-07
Name of Project: Part 225 System Audits (Accident/Incident Reporting)
Time Frame: From: October 1, 2006
To: September 30, 2007

Brief description of proposed project, including purpose: FRA HQ is planning to arrange comprehensive Part 225 audits on the following Class I railroads during FY 2007:

1. CSX Transportation (CSX): Jacksonville, FL–October 2-6, 2006, and November 13-17, 2006.
2. Amtrak: Washington, DC–January 15-26, 2007.
3. NS Railway:
 - Decatur, IL–Illinois Division, March 5-9, 2007;
 - Fort Wayne, IN–Lake Division, April 2-6, 2007;
 - Roanoke, VA–Pocahontas Division, May 7-11, 2007;
 - Roanoke, VA–System Reporting Office, June 4-8, 2007;
 - Norfolk, VA–System Occupational Health Office, June 11-15, 2007.

To address the Office of Inspector General (OIG) audit recommendations, FRA has commenced a cyclical review of highway-rail grade crossing accident/incident reporting by the major railroads and will maintain a maximum interval between the reviews of not more than 3 years. FRA also will conduct followup reviews as indicated. Beginning in 2007, each FRA region also will specify in its segment of the NSPP the Class II railroads and commuter railroads on which it will conduct reviews during the period and will conduct a review on each railroad at least every 5 years.

Brief description of reasons for the project: To determine whether or not accidents/incidents are being properly reported. Since FRA's inspection focus is data driven, the accident/incident data reported to FRA by the Nation's railroads must be accurate.

Total and regional resources needed: Five to seven inspectors per project. Inspectors are requested from the regions where the specific railroad operates.

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FRA HQ Part 225 Audits

FY 2006	FY 2007 (See Above)	FY 2008	FY 2009	FY 2010
Union Pacific (UP) – Completed 11/10/05		UP – TBD	KCS – TBD	UP – TBD
Canadian National (CN) – Completed 2/17/06		CN – TBD	CSX – TBD	CN – TBD
Canadian Pacific (CP) – Completed 3/3/06		CP – TBD	Amtrak – TBD	CP – TBD
BNSF Railway (BNSF) – Completed 6/30/06		BNSF – TBD	NS – TBD	BNSF – TBD
Kansas City Southern (KCS) – Completed 8/11/06				

Region 1 Class II and Commuter Railroads

FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Port Authority Trans Hudson (PATH) – Completed 11/13/06	Mass Bay Commuter Railroad (MBAX) – TBD	Pan Am Railways – TBD	(CRSH) – TBD	PATH – TBD
New Jersey Transit (NJTR) – 04/16/07	Long Island Rail Road (LI) – TBD	Providence & Worcester (PW) – TBD	Buffalo & Pittsburg (BP) – TBD	NJTR – TBD
Conrail Shared Assets (CRSH) – 6/11/07	New York & Atlantic (NYA) – TBD	New York Susquehanna & Western (NYSW) – TBD	New England Central (NECR) – TBD	MMA – TBD
Maine, Montreal & Atlantic (MMA) – 06/18/07	Metro North Railroad (MNCW) – TBD			

Region 2 Class II and Commuter Railroads

FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Wheeling and Lake Erie (WE) – 3/2006	Reading Blue Mountain and Northern (RBNW) – 3/2007	Southeastern Pennsylvania Transportation (SEPTA) – TBD	MARC (MTA) – TBD	RBNW – TBD
	Virginia Railway Express (VRE) – TBD		WE – TBD	

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	Conrail Shared Assets (CRSH) – TBD			
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Region 3 Class II and Commuter Railroads

FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
		Florida East Coast (FEC) – TBD		
Paducah & Louisville (PAL)			PAL – TBD	
		Tri-Rail (SFRTA) – TBD		
		NC/ATK (ATK) – TBD		
Nashville & Eastern (NERR)			NERR – TBD	

Region 4 Class II and Commuter Railroads

FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Elgin, Joliet, & Eastern Railway Co. (EJE)	Northern Indiana Commuter Transportation District (NICD) – TBD	Conrail Shared Assets (CRSH) – TBD	Belt Railway of Chicago (BRC) – TBD	Dakota, Minnesota & Eastern (DME) – TBD
Wisconsin & Southern Railroad Company (WSOR)	Northeast Illinois Regional Commuter District (NIRC/METRA) – TBD		Indiana Harbor Belt (IHB) – TBD	

Region 5 Class II and Commuter Railroads

FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
	Trinity Rail Express (TRE)	Port Terminal Railroad Association (PTRA) – TBD		TRE – TBD
	New Mexico Rail Runner Express (NMRX)			NMRX – TBD

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Region 6 Class II and Commuter Railroads

FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Alton & Southern Railway Company (ALS)	Iowa Interstate Railroad, Ltd (IAIS) – TBD		ALS – TBD	IAIS – TBD
Iowa Chicago and Eastern Railroad Company (ICE)	Missouri & Northern Arkansas Railroad Company (MNA) – TBD		ICE – TBD	MNA – TBD
Kansas and Oklahoma Railroad Company (KO)	Terminal Railroad Association of St. Louis (TRRA) – TBD		KO – TBD	TRRA – TBD
Kyle Railroad Company (KYLE)			KYLE – TBD	

Region 7 Class II and Commuter Railroads

FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Amtrak – Third Quarter FY 07	ACEX – TBD	CORP – TBD	ATK – TBD	ACEX – TBD
Southern California Regional Rail Authority (SCAX) – Fourth Quarter FY 07	NCDX – TBD	PCJX – TBD	SCAX – TBD	NCDX – TBD
Altamont Commuter Express Authority (ACEX)				
Central Oregon Pacific Railroad (CORP)				
North County Transit District (NCDX)				
Peninsula Corridor Joint Powers Board (PCJX)				

Region 8 Class II and Commuter Railroads

FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
BNSF Ft. Worth, TX – 6/2006	Alaska Railroad (AAR) – Scheduled 9/2007	DM&E – TBD	AAR – TBD	DM&E – TBD
Dakota, Minnesota & Eastern (DM&E) – 5/2006	Sound Transit – Scheduled 6/2007	MRL – TBD	Sound Transit – TBD	MRL – TBD
Montana Rail Link (MRL) – 9/2006				

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The following page contains textual version of the graph found in this document. This page was not in the original document but has been added here to assist screen readers.

**The Federal Railroad Administration Can Improve Highway-Rail Grade Crossing Safety
Section 508 Compliant Presentation**

Exhibit D. U. S. Map of the Number of Reported Collisions and Fatalities at Grade Crossings by State in 2005

2005 Grade Crossing Data Per State				
#	State	Collisions	Fatalities	Injuries
1	Alabama	113	16	45
2	Alaska	2	0	0
3	Arizona	39	2	5
4	Arkansas	72	8	40
5	California	148	22	58
6	Colorado	36	6	18
7	Connecticut	6	3	2
8	Delaware	8	1	3
9	District of Columbia	0	0	0
10	Florida	103	17	21
11	Georgia	130	12	18
12	Hawaii	1	0	0
13	Idaho	23	1	6
14	Illinois	180	31	82
15	Indiana	175	21	26
16	Iowa	77	6	32
17	Kansas	63	7	32
18	Kentucky	86	7	26
19	Louisiana	131	20	44
20	Maine	5	0	2
21	Maryland	19	1	1
22	Massachusetts	11	1	6
23	Michigan	96	5	13
24	Minnesota	65	9	28
25	Mississippi	79	10	30
26	Missouri	64	17	31
27	Montana	20	3	4
28	Nebraska	50	12	22
29	Nevada	4	1	0
30	New Hampshire	2	0	0

31	New Jersey	44	2	11
32	New Mexico	20	4	7
33	New York	43	13	10
34	North Carolina	67	6	34
35	North Dakota	18	8	4
36	Ohio	134	8	37
37	Oklahoma	64	6	34
38	Oregon	27	1	4
39	Pennsylvania	80	5	17
40	Rhode Island	1	0	0
41	South Carolina	75	9	17
42	South Dakota	18	2	9
43	Tennessee	78	7	28
44	Texas	323	23	143
45	Utah	18	2	8
46	Vermont	4	0	3
47	Virginia	51	2	12
48	Washington	57	6	14
49	West Virginia	35	1	4
50	Wisconsin	84	13	20
51	Wyoming	1	0	1
	GRAND TOTAL....	3,050	357	1,012