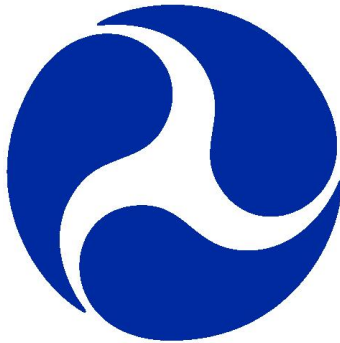


Report to Congress

Private Highway-Rail Grade Crossings: Safety Data and Engineering Practices



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Abbreviations, Acronyms, and Phrases in this Report

AAR	Association of American Railroads
CPUC	California Public Utilities Commission
DOT or USDOT	U.S. Department of Transportation
ENS	Emergency Notification System
FRA	Federal Railroad Administration
FAST Act	<i>Fixing America’s Surface Transportation Act</i> , P.L. 114-94
FHWA	Federal Highway Administration
Inventory	U.S. DOT National Highway-Rail Crossing Inventory
Inventory Rule	National Highway-Rail Crossing Inventory Reporting Requirements, Code of Federal Regulations, Title 49, Part 234
MUTCD	Manual on Uniform Traffic Control Devices
ODOT	Oregon Department of Transportation
PUC	Public Utility Commission
RSIA	<i>Rail Safety Improvement Act of 2008</i> , P.L. 110-432
Section 130	United States Code, Title 23, Section 130

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Private Crossings: Safety Data and Engineering Practices

Executive Summary

This report responds to the *Fixing America's Surface Transportation Act* (the Act),¹ which directed the U.S. Secretary of Transportation to review private grade crossings, in consultation with railroad carriers. The Act directed the Secretary to determine whether data on private crossings is available and useful for safety purposes and to evaluate existing engineering practices on private crossings. The Act further directed the Secretary to recommend ways to improve the utility of private crossings data and implementation of safety measures.

Private highway-rail grade crossings are level intersections of railroads and roadways that are either not open to public travel or not maintained by public authorities. Of the more than 210,000 at-grade highway-rail grade crossings in the United States, more than 80,000 (38 percent) were private, as of December 31, 2017. Almost 90 percent of open private crossings between 2007 and 2017 were either farm, industrial, or residential. Between 2007 and 2017, almost 24,000 crossing accidents occurred, of which almost 86 percent were at public crossings and 14 percent were at private crossings.

Information currently available about private crossings resides in the U.S. DOT National Highway-Rail Crossing Inventory, whose purpose is to provide uniform national data to improve crossing safety across the Nation. Changing Inventory reporting in 2015 from voluntary to mandatory has greatly increased the availability and usefulness of data for analysis of private crossing safety. Of the 80,428 private crossings, data for 73 percent of them have been updated since mandatory Inventory reporting started in March 2015. The final rule requiring mandatory railroad submission and updating of Inventory data will have a long lasting positive effect. Increasing data reporting on highway traffic at private crossings and their physical characteristics would further improve our ability to analyze safety and implement countermeasures.

Data limitations prevent FRA from evaluating private crossing engineering practices quantitatively. However, FRA's subject matter experts have found that engineering treatments or improvements (such as warning signs) at private crossings are typically not elaborate. Some states specify a required sign for use at private crossings. Pavement markings are rare at private crossings not open for public use.

In light of the safety benefits a uniform system of warning devices provides, private crossings would benefit from the widespread use of devices that conform to the Manual on Uniform Traffic Control Devices, where states or railroads have not already established standards. FRA further recommends that railroads periodically inspect each crossing and, when notified of poor crossing surfaces, the railroad work with the roadway owner to provide for sufficient drainage and safe and unimpeded vehicular movement across the tracks.

¹ Section 11402, Public Law 114-94, December 5, 2015.

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Private Crossings: Safety Data and Engineering Practices

Introduction

Highway rail-grade crossings consist of an at-grade (or level) intersection of railroad tracks and a roadway.² At *public* crossings, the highway, road, or street (including associated sidewalks and pathways) is open to the public. At *private* crossings, the roadway is either not open for public travel or not maintained by a public authority.

At the end of 2017, the United States had more than 210,000 grade crossings, of which more than 80,000 were private.³ During the past decade, U.S. private crossings as a percentage of all crossings was approximately 38 percent, even as the number of public crossings fell 6 percent and the number of private crossings fell 4 percent.

Private crossings include the following types:⁴

- *Farm crossings*, which provide access between tracts of land separated by railroad tracks or access from roadways to farmland;
- *Industrial crossings*, which provide access between plant facilities on both sides of the tracks or access from roadways to the plant;
- *Residential crossings*, which enable people to reach private residences from another road, which is frequently a public road parallel and adjacent to a railroad right-of-way.

Table 1: Open Private Crossings by Type of Land Use, 2007 to 2017

Land Use Type	Total	Percent of Total	Highway	Pathway
Farm	39,238	49%	39,015	223
Industrial	20,843	26%	20,653	190
Residential	11,316	14%	11,187	129
Open Space	4,285	5%	4,142	143
Commercial	1,730	2%	1,625	105
Recreational	1,611	2%	1,554	57
Railroad Yard	760	1%	707	53
None Indicated	502	1%	494	8
Institutional	143	< 1%	104	39
Total	80,428		79,481	947

Source: FRA data

Almost 90 percent of open private crossings between 2007 and 2017 were either farm, industrial, or residential (Table 1).

² In this report, the phrase *grade crossing* does not include grade-separated crossings, wherein railroad tracks pass over or under a roadway.

³ U.S. DOT National Highway-Rail Crossing Inventory.

⁴ Another type of crossing is a *temporary crossing* for private construction projects or other seasonal activities. FRA did not include this type to its short-term nature in Table 1 or other tables in this report.

This report responds to the *Fixing America's Surface Transportation Act* (the Act),⁵ which directed the U.S. Secretary of Transportation to review private grade crossings, in consultation with railroad carriers. The Act directed the Secretary to determine whether data on private crossings is available and useful for safety purposes and to evaluate existing engineering practices on private crossings. The Act further directed the Secretary to recommend ways to improve the utility of private crossings data and implementation of safety measures.

To consult with railroad carriers, FRA met with the Association of American Railroads (AAR) and requested information from five railroads and two State organizations. AAR provided a written response to FRA, which addressed several issues, including grade crossing ownership, data analysis, and signage at private crossings. AAR and its member railroads stated that they are willing to participate in future discussions on this topic. Appendix A provides information about FRA's consultation with railroad carriers and includes the full text of AAR's letter.

Grade Crossing Inventory

To provide uniform national data to improve crossing safety, FRA maintains the U.S. DOT National Highway-Rail Crossing Inventory (Inventory). This computerized database contains information railroads and states submit on the identification, location, physical characteristics, operating characteristics, and other features of all U.S. crossings—public and private, at-grade, above-grade overpasses and below-grade underpasses, open and closed. The Inventory also contains a copy of every record submitted. Public and private agencies responsible for crossing safety use this data for planning and implementing safety improvement programs. FRA grade crossing inspectors verify a representative sample of Inventory data each year. Appendix B provides information on the evolution of the Inventory over the past 40 years.

At the end of 2017, the Inventory had information on 127,738 open public crossings and 80,428 open private crossings. FRA revised the reporting form in 2015 to enable FRA to collect more detailed information. Consequently, the crossing totals from 2007 to 2014 are in Table 2 and from 2015 to 2017 are in Table 3.

⁵ Section 11402, Public Law 114-94, December 5, 2015.

Private Crossings: Safety Data and Engineering Practices

Table 2: Private and Public Crossings, 2007 to 2014

Year	Total	Private	Public	Pedestrian
2007	222,297	83,562	136,821	1,914
2008	220,775	82,885	135,976	1,914
2009	218,688	82,477	134,256	1,955
2010	214,499	81,410	131,123	1,966
2011	212,982	80,798	130,189	1,995
2012	212,138	80,538	129,537	2,063
2013	211,705	80,124	129,436	2,145
2014	211,528	79,879	129,465	2,184

Source: FRA data

Table 3: Private and Public Crossings, 2015 to 2017

Year	Total	Private			Public			Private or Public Not Specified
		Highway	Pathway, Pedestrian	At Station and Other*	Highway	Pathway, Pedestrian	At Station and Other*	
2015	211,673	79,882	217	5	129,384	103	63	2,019
2016	211,848	80,603	517	367	128,089	517	323	1,432
2017	210,321	79,206	832	390	127,738	777	363	1,015

* *At Station* refers to pedestrian crossings at passenger rail stations and *Other* refers to type not specified.

Source: FRA data

FRA’s Inventory Rule requires railroads to update certain data periodically, such as railroad operations through the crossings, sales of crossings, and crossing closures, including the following fields:

- Operating railroad and location (state, county and city),
- Street/road name,
- Railroad location (division, subdivision and milepost),
- Longitude and latitude,
- Type of crossing (public, private, pathway, at-grade, or grade separated),
- Number of trains per day,
- Maximum train speed, and
- Number and types of tracks.

Private Crossings: Safety Data and Engineering Practices

Federal regulations require railroads to update certain data fields in each crossing Inventory record at least every three years. In addition, railroads must report within three months any crossing closure or sale of a crossing. The Inventory Rule also requires railroads to submit current information about warning devices and signs for previously unreported and new highway-rail and pathway crossings through which they operate.

Railroads and states provide Inventory information to FRA using Form FRA 6180.71, which has 104 data fields organized into five parts.

Part I: Location and Classification Information.

Part II: Railroad Information.

Part III: Highway or Pathway Traffic Control Device Information.

Part IV: Physical Characteristics.

Part V: Public Highway Information.

Completing Parts III, IV, and V is optional for the railroads, except for the required Part III field on private crossing signs. FRA encourages the submission of any changed data elements for any crossing, no matter how recent the previous update. Appendix B has additional detail on the Inventory reporting requirements regarding private crossings.

States voluntarily provide additional information to the Inventory for public crossings, such as:

- Type of signs (e.g., crossbuck, STOP, and YIELD),
- Type of train activated warning devices (e.g., flashing lights only and flashing lights with gates),
- Presence of nearby highway traffic signals,
- Number of traffic lanes,
- Type of crossing surface,
- Highway speed limit, and
- Average annual daily traffic

In general, each crossing has a unique Inventory number, which consists of six numerals and one alpha character. No Inventory numbers are reused. The number stays assigned to its crossing, even if the crossing is closed. The Inventory number is a required element on the signs that FRA's emergency notification systems (ENS) rule requires.⁶ Every public and private highway-rail and pathway (pedestrian) grade crossing must have signs that display a toll-free telephone number to which the public can report crossing emergencies and problems, such as signal

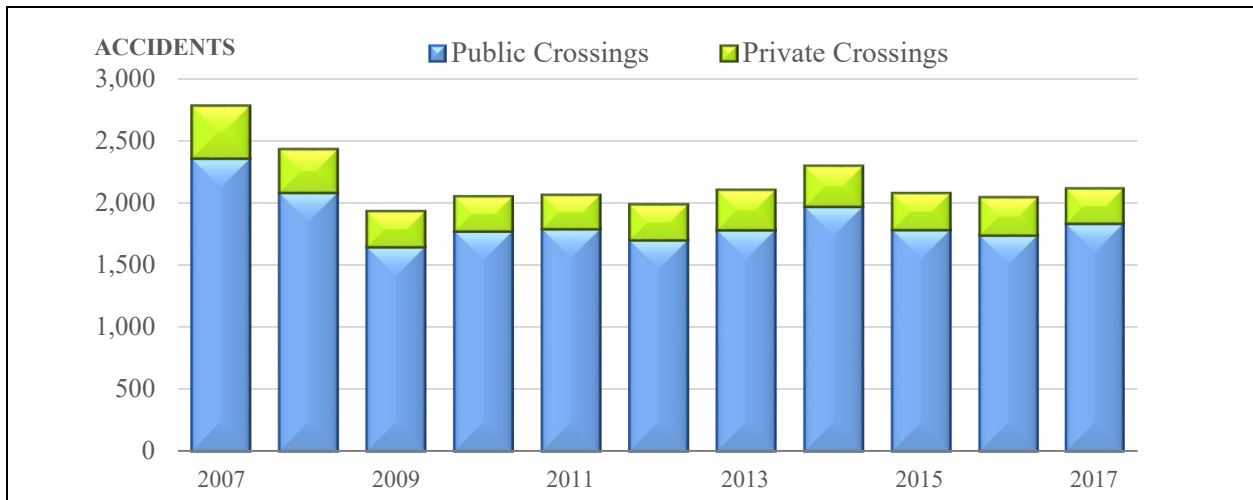
⁶ On June 12, 2012, FRA published the final rule, *Systems for Telephonic Notification of Unsafe Conditions at Highway-Rail and Pathway Grade Crossings*. Code of Federal Regulations, title 49, part 234, subpart E.

malfunctions or track obstructions. Railroads must have systems to receive and respond to these reports.

Accidents at Private Crossings

Between 2007 and 2017, almost 24,000 accidents occurred at grade crossings.⁷ The figure below depicts the yearly total number of accidents, by public and private for this period (Figure 1).

Figure 1: U.S. Crossing Accidents, by Public and Private, 2007 to 2017



Source: FRA analysis

The average number of accidents per year and per crossing were much higher at public crossings than at private crossings (Table 4).

⁷ Any collision between on-track equipment (e.g., a train or specialized track maintenance equipment) and a highway user at a crossing.

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Table 4: Average Number of Accidents per Year and per Crossing, 2007 to 2017

Crossing Type	Average Number of Crossings	Accidents			
		Total 2007 to 2017	Percent of Accidents	Average Per Year	Average Per Year Per Crossing
Public	131,324	20,441	85.6%	1,858	0.014
Private	81,245	3,427	14.4%	312	0.004
Total	214,405	23,868	100.0%	2,170	0.010

Source: FRA analysis

Of the 3,427 accidents at private crossings during the 11-year period, approximately two-thirds occurred at crossings with a single accident and one-third occurred at crossings with two or more accidents (Table 5).

Table 5: Private Crossings Accidents by Number per Crossing, 2007 to 2017

Number of Accidents Per Private Crossing	Number of Private Crossings with Accidents	Number of Accidents	Percentage of Private Crossing Accidents
1	2,319	2,319	67.7%
2	285	570	16.6%
3	61	183	5.3%
4	31	124	3.6%
5	15	75	2.2%
6	8	48	1.4%
7	4	28	0.8%
8	3	24	0.7%
9	3	27	0.8%
13	1	13	0.4%
16	1	16	0.5%
Total	2,731	3,427	100.0%

Source: FRA analysis

Of the analyzed accidents at private crossings, 1,476 (43.1 percent) occurred in industrial settings and 923 (26.9 percent) occurred on farmland (Table 6).

Table 6: Private Crossing Accidents by Type of Land Use, 2007 to 2017

Land Use Type	Number of Accidents	Percentage of Accidents	Cumulative Percentage of Accidents
Industrial	1,476	43.1%	43.1%
Farm	923	26.9%	70.0%
Residential	519	15.1%	85.1%
Open Space	125	3.6%	88.8%
Commercial	114	3.3%	92.1%
Railroad Yard	101	2.9%	95.1%
Not Specified	69	2.0%	97.1%
Recreational	61	1.8%	98.9%
Institutional	39	1.1%	100.0%
Total	3,427	100.0%	100.0%

Source: FRA analysis

Of the analyzed accidents at private crossings, 648 (18.9 percent) occurred at private crossings that were reported to have public access (Table 7).⁸ The actual number could be higher, because access was not specified for more than 20 percent of these accidents.

Table 7: Number of Accidents at Private Crossings with Public Access, 2007 to 2017

Public Access	Number of Crossings	Percentage of All Accidents
No	2,035	59.4%
Yes	648	18.9%
Not specified	744	21.7%
Total	3,427	100.0%

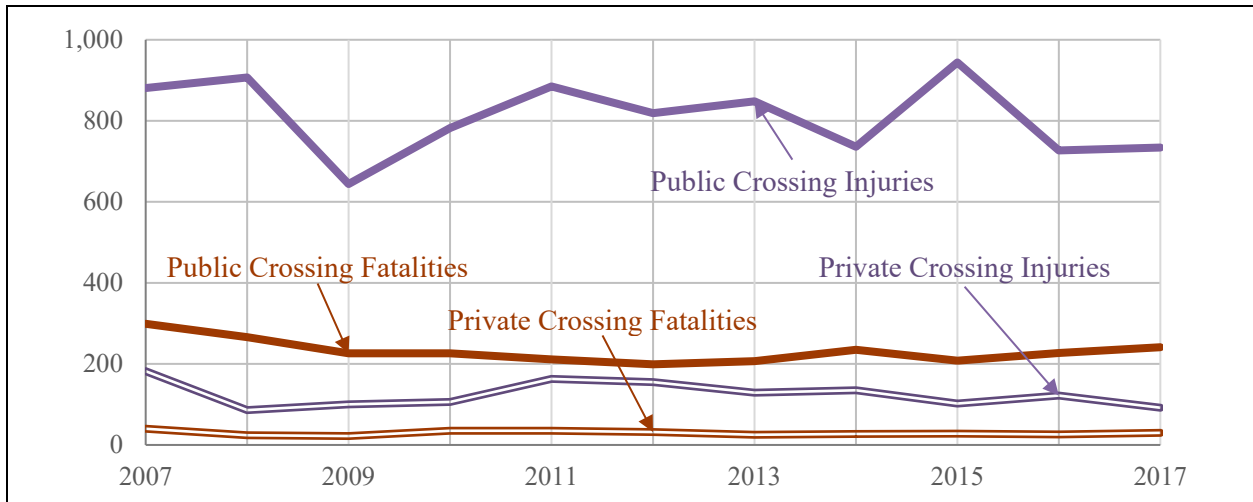
Source: FRA analysis

Fatalities and Injuries at Private Crossings

The majority of casualties occurred at public crossings, and generally the trends over time were similar for private and public crossings, between 2007 and 2017 (Figure 2).

⁸ Part I, item 20 of the Inventory Form indicates whether a crossing has public access even if the crossing itself is private.

Figure 2: Crossing Fatalities and Injuries, by Public and Private, 2007 to 2017



Source: FRA analysis

The average number of fatalities per crossing and injuries per crossing were much greater for public crossings than for private crossings (Table 8).

Table 8: Average Number of Fatalities and Injuries per Year and per Crossing, 2007 to 2017

Crossing Type	Fatalities			Injuries		
	Total 2007 to 2017	Average Per Year	Average Per Year Per Crossing	Total 2007 to 2017	Average Per Year	Average Per Year Per Crossing
Public	2,550	232	0.0018	8,879	807	0.0061
Private	324	29	0.0004	1,369	124	0.0015
Total	2,874	261	0.0014	10,248	931	0.0043

Source: FRA analysis

Availability and Usefulness of Data on Private Crossings

The availability and usefulness of data for private crossing safety analysis have greatly increased since Inventory reporting by railroads changed from voluntary to mandatory in March 2015.⁹ To date, 73 percent of the approximately 80,400 private crossings in the United States have been

⁹ The *Rail Safety Improvement Act of 2008* (RSIA), section 204(a), Public Law 114-432, required the change and FRA published the implementing final rule (Inventory Rule) on January 6, 2015, *Federal Register*, Volume 80, Number 3.

updated since the start of mandatory reporting. Between March 2015 and December 2017, FRA received updated information on 69,316 private crossings and 117,961 public crossings. The private crossing updates included 9,590 reports to close existing records; 8,419 to identify new crossings; 5,911 to record no train traffic at the crossing; and 1,215 to reopen closed records. Before the new requirement, the average age of Inventory records for private crossings was 13.9 years, twice the average age of records for public crossings.¹⁰ “The data . . . for private crossings [were] generally not current and not suited for most analyses, and were historically not intended to support effective resource allocation,” according to FRA’s research report.¹¹

From December 2014 to October 2017, 70,398 private crossings were updated or added to the Inventory. Of these updates and additions, 18,230 (25.9 percent) included updated information on traffic control devices (Part III, excluding the required reporting on the presence of a private crossing sign), 12,068 (17.1 percent) included updated information for physical characteristics (Part IV), and 3,532 (5.0 percent) included updated information for highway information (Part V).

In addition to more current information, the amount of data has increased. For example, the data field Street Name had a completion rate of 44 percent in 1996 and 80 percent in 2007, both years reflecting voluntary reporting. By contrast, in December 2017 under mandatory reporting, the same data field had a completion rate of 99 percent. Similarly, the data field Crossing Owner had a completion rate of less than 1 percent in 1996 and less than 8 percent in 2007. Under mandatory reporting, the completion rate for Crossing Owner is currently 53 percent. The Inventory fields related to the railroad in Part I had almost 100 percent completion rates for the 1996, 2007, and 2015 versions of the Inventory form.

Private Crossing Data Needs

Highway Traffic Through the Crossing: Increasing reporting of highway traffic through private crossings would improve data adequacy for safety analysis. States submit this information to the Inventory for public crossings, but not for private crossings. Railroads generally do not have the highway volume data.

Existing formulas to predict crossing collision likelihood and the probability of resulting casualties require data on the crossing’s highway traffic. For example, the U.S. DOT Accident Prediction and Severity Formulas combine 11 Inventory data elements with the crossing’s 5-year collision history from FRA accident data. Five of the 11 Inventory data elements come from State submitted information, such as highway traffic through the crossing. States do not report these data elements for private crossings. Many states use these formulas to help decide where

¹⁰ FRA, *Private Highway-Rail Grade Crossing Safety Research and Inquiry*, DOT/FRA/ORD-10/02, February 2010.

¹¹ *Ibid*, page 97.

to allocate their Federal Railway-Highway Crossing Program (Section 130) funds for safety enhancements at public crossings.

Traffic data for industrial or commercial private crossings might be more readily available than data for other types of private crossings, such as farm and residential. FRA assumes these crossing owners know the types (truck, car, pedestrian, etc.) and amounts of their freight receiving and shipping activity, employee travel to and from work sites, and other customer and supplier movements. Analyzing the safety of industrial and commercial private crossings should also be a priority because they accounted for 28 percent of private crossings and almost 47 percent of private crossing accidents. The amount of roadway traffic over private crossings into these sites is higher and the consequences of a collision could be greater. A train collision with a heavy, commercial vehicle is more likely to result in a derailment or major damage to rail equipment than a collision with an automobile. The likelihood that hazardous materials are present is also increased.

Warning Devices and Physical Characteristics: The Inventory lacks comprehensive data on warning devices at and physical characteristics of private crossings. As a result, FRA cannot complete a comprehensive up-to-date analysis of the highway/pathway traffic control devices and the physical characteristics of the private crossings.

Engineering Improvements for Private Crossings

As the previous section of this report demonstrates, data limitations prevent FRA from evaluating private crossing engineering practices quantitatively. However, FRA's subject matter experts, including track inspectors, regional grade crossing and trespass prevention managers, and headquarters safety specialists, in consultation with railroads, have found that engineering treatments or improvements (such as warning signs and roadway surfacing) at private crossings are typically not elaborate. Many private crossing owners are unlikely to see much benefit from installing sophisticated warning device systems, given often exclusive and infrequent use of the crossing. It is rare to see pavement markings at private crossings that are not open for public or commercial use. Crossing surfaces are generally made of the same material as the roadway or driveway approaches. In some cases, the crossing surface is paved, even when the roadway approaches are unpaved. Low ground clearance signs are not, however, in place at many private crossings where they would be appropriate.

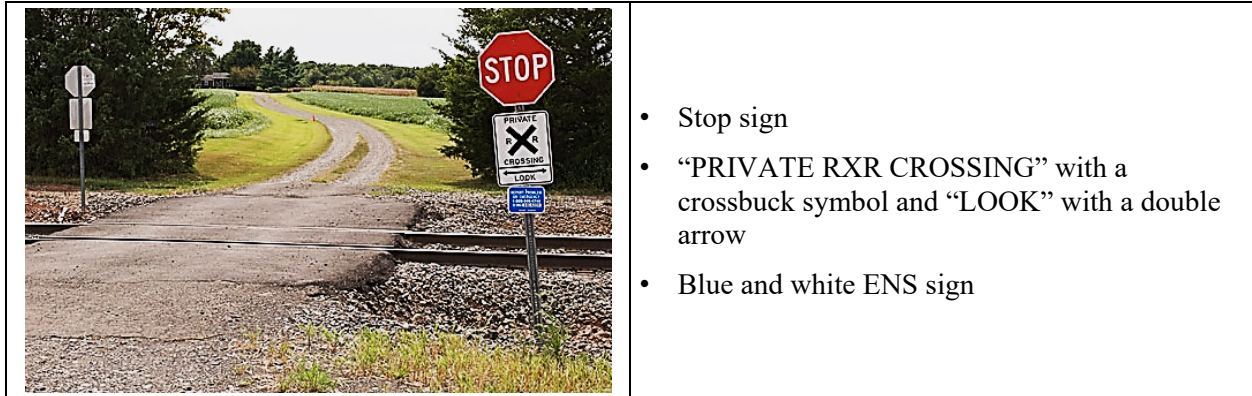
Requirements

Except for private crossings in quiet zones, FRA regulations do not address the selection of warning devices for private crossings. Some state public utilities commissions (PUC) with jurisdiction over railroads, or similar organizations with legislated involvement in private crossings, have established standard practices for private crossings, such as the examples in Appendix C. In some states, private grade crossings are subject to laws requiring specific signage, such as a designated private crossing sign. Some states require the railroad, not the

crossing owner, to post a particular warning sign at private crossings. Appendix D contains a compilation of state laws regarding private crossings.

In states that do not require specific signs at private crossings, some Class I railroads have developed standard warning signs for use at authorized private grade crossings on their lines. Figure 3 shows an example of a private crossing with a Norfolk Southern sign.

Figure 3: Typical Private Crossing Passive Signage



Federal regulations require ENS signs and railroads are responsible for installing and maintaining them.¹² An ENS sign is required on each approach to every public and private crossing, except farm crossings and crossings in a railroad yard or port or dock facility, which may be treated with a single sign.

Guidance

Guidance regarding design for private crossings is limited, as the Federal laws and regulations do not address the creation or maintenance of private crossings. Currently, private crossings typically result from an agreement between the railroad whose tracks are being crossed and the holder of (or petitioner for) the right to cross the railroad. Federal, state, and local transportation agencies are not parties to these agreements and generally lack jurisdiction over them. States with PUCs or with specific jurisdiction over the establishment of private crossings are exceptions.

Administered by FHWA since 1971, the Manual on Uniform Traffic Control Devices (MUTCD) establishes the basic principles for the design and installation of signs, signals, and pavement markings for any street, highway, or bicycle trail open to public travel. FHWA updates it

Figure 4: Example of an ENS Sign



¹² Code of Federal Regulations, title 49, part 234, subpart E.

periodically to reflect changing transportation patterns, technological developments, and traffic management techniques. It also describes the signs and pavement markings to be used at public passive and active crossings¹³ and specifies restrictions on use of a device when it is intended for limited application or for a specific system. Generally, to be effective, a traffic control device should have the following attributes:


- Fulfill a specific need;
- Command the attention of road users;
- Convey a clear, simple meaning in its appearance and function;
- Command respect from road users; and
- Be located and contain an appropriate message to provide adequate time for road users to make a proper response to the device.

Recommended Improvements at Private Crossings

Although current data show fewer collisions occur at private crossings than public crossings, lessons learned from public crossings are applicable to private crossings, especially regarding the physical characteristics of the crossing. FRA’s recommendations reflect its decades of experience driving down the number of public crossing collisions, fatalities, and injuries with some of the cost-effective measures described below. Given the benefits of a uniform system of warning devices road users readily comprehend, FRA recommends—where warning signs are installed at private crossings—the use of devices conforming to MUTCD, such as those in Figure 5, unless State law requires other signs or the railroad designates a specific sign.

Figure 5: MUTCD Warning Signs for Typical Two-Lane Private Crossings



NOTE: Before installing any device, refer to MUTCD for recommendations on placement, dimensions, configuration, and other specifics.

Sign	Description
	<p>Grade Crossing Advance Warning or RXR Sign: Installed in advance of a crossing to provide road users notice of a crossing ahead. This sign is required for use at every public grade crossing, as shown in Section 8B.06 in the 2009 MUTCD.</p>

¹³ *Passive* refers to warning devices that consist entirely of signs and/or pavement markings that cannot change their appearance or function with the approach or presence of a train.

Figure 5: MUTCD Warning Signs for Typical Two-Lane Private Crossings

NOTE: Before installing any device, refer to MUTCD for recommendations on placement, dimensions, configuration, and other specifics.

	<p>Low Ground Clearance Grade Crossing Sign: Installed in advance of the crossing where approach roadway grades are steep enough to create the possibility for a long wheelbase vehicle or a trailer with low ground clearance to get stuck on the crossing. The Low Ground Clearance educational plaque should be installed below the symbol sign. This device is shown in Section 8B.23 in the 2009 MUTCD.</p>
	<p>Crossbuck Assembly with Yield or Stop Sign: Installed on each approach to a passive grade crossing, as shown in Section 8B.04 in the 2009 MUTCD. However, a Stop sign should only be used if an engineering study determines the stop condition is required at the specific crossing.</p> <ul style="list-style-type: none"> • If a stop sign is used and the approach is paved, a stop line should also be installed on the roadway approach. • If there are two or more tracks at the private crossing, the number of tracks plaque should be used.

Roadway approaches to private crossings that are subject to long vehicle or trailer traffic should be evaluated to determine whether they have vertical gradients that create a “humped” crossing, with the risk that those vehicles or trailers might get stuck on the crossing. If the roadway approaches have such gradients, the roadway owner should install MUTCD-compliant, W10-5 low ground clearance signs in advance of the crossing.

Private roadways that cross railroad tracks that run parallel to a public roadway should be reviewed to ensure there is sufficient storage space for the longest or largest vehicle that uses the crossing (the *design vehicle*) to be able to stop clear of the crossing while waiting to enter the public roadway. If there is limited storage space between the railroad tracks and the parallel roadway, the roadway authority should install MUTCD-compliant signs to indicate operators of long combination vehicles should exercise extra care in these situations.

For crossings with posted roadway speeds of 40 miles per hour or greater, MUTCD indicates that stop line pavement markings should be used, if the roadway approaches are paved.¹⁴ As shown in MUTCD Figure 8B-6, a 24-inch stop line should be placed at a right angle to the traveled way and approximately 15 feet from the near rail for each roadway approach. Any grade crossing pavement markings should be retro-reflectorized in white.

¹⁴ Section 8B.27.

Private Crossings: Safety Data and Engineering Practices

Private crossings with passive warning devices should be reviewed for available sight distances, including the stopping sight distance for roadway traffic and approach or corner sight distances. Stopping sight distance is the length of highway required to safely stop a vehicle traveling at a given speed. Clearing sight distance is the distance measured along the track that a highway user must be able to see to decide whether it is safe to cross based upon the speed of an approaching train and the acceleration characteristics of the highway vehicle.

FRA recommends railroads ensure that all appropriate signage is in place at grade crossings and the signs are clearly visible and not obscured by vegetation or other obstacles. FRA also recommends that, after becoming aware of a private crossing with a poor crossing surface, the railroad should work with the roadway owner to construct and maintain a crossing surface sufficient to drain properly and to permit safe and unimpeded vehicular movement across the tracks. Proper maintenance is particularly important for crossings over multiple tracks. The cost of crossing maintenance is typically specified in a crossing agreement.

Conclusions

As time passes and more private crossing records are updated, the body of data on private crossings, and its usefulness for safety purposes, will continue to improve. Limitations existed in the availability and usefulness of data on private highway-rail grade crossings before reporting to the Inventory became mandatory. However, continual updating of the Inventory will result in more, and more accurate, information for each private crossing than was available in the past.

The requirement to have railroads assign Inventory numbers to private crossings and periodically update the Inventory will enhance the availability and usability of private crossing data. Being able to quickly identify and locate private crossings, which are often far from public roadways, is essential for any safety reviews and effectiveness of the ENS program.

Subject to the availability of resources to oversee the frequency and completeness of mandatory reporting, FRA expects to build on previous improvements and ensure useful crossing data will be available in the future for safety practitioners and railroads. Enforcement of the reporting regulations will enhance the availability and usability of private crossing data.

While the data collected on private crossings has improved, weaknesses still exist when it comes to information about traffic control devices, private roadways at private crossings, and roadway traffic.¹⁵ Some lessons learned from public crossings are applicable to private crossings, particularly when it comes to a crossing's physical characteristics. As FRA and stakeholders continue using the Inventory and current data forms, FRA will consider the feasibility and utility of collecting additional Inventory data on private crossings.

The use of uniform traffic control devices (messages, locations, sizes, shapes, and colors) helps reduce crashes and congestion, and improves the efficiency of the surface transportation system. However, engineering treatments or improvements (such as warning signs) at private crossings are typically not elaborate. Few Federal requirements exist, while some states specify a required sign for use at private crossings.

In light of potential safety benefits from warning devices that road users readily comprehend, FRA recommends the use of standard warning devices conforming to MUTCD at private crossings with significant roadway traffic, where states or railroads have not established standard warning devices. FRA further recommends railroads periodically inspect each crossing and work with roadway owners to provide for sufficient drainage and safe and unimpeded vehicular movement across the railroad tracks.

¹⁵ Crossing Inventory Form FRA F 6180.71 Parts III, IV, and V.

Appendix A: Consultation with Railroad Carriers

FRA met with the Association of American Railroads' (AAR) Grade Crossing and Trespasser Prevention Committee on January 3, 2017. On January 25, 2017, FRA sent a request for information to select railroads, state departments of transportation, and public utilities commissions. On February 16, 2017, FRA requested additional information from AAR on standards or recommended practices for engineering or constructing private grade crossings.

AAR responded to FRA's requests in a March 31, 2017, letter. The letter addressed several issues, including grade crossing ownership, data analysis, and signage at private crossings. AAR and its member railroads stated that they are willing to participate in future discussions on this topic. The following paragraphs summarize AAR's response.

Ownership. AAR stated that the term *private crossing* encompasses a broad array of legal rights, uses, and maintenance obligations. For instance, one private crossing might connect one field to another for use a few times per year to move agricultural equipment; another might provide access to a regional shopping mall for hundreds of vehicles.

According to AAR, its members have found it can be difficult, complicated, and time-consuming to identify the owner(s) of property accessed by a private crossing. AAR asserted that many private crossings have existed for over a century and have changed ownership countless times without being recorded or reported to the railroad. AAR also asserted that, in many cases, a railroad discovers a private crossing on its right-of-way with no information about who owns the crossing or when the crossing was constructed. According to AAR, its recent member survey found that 5 percent to 10 percent of private crossings on the general railroad system have valid agreements between the operating railroad and private crossing owner. The lack of a current agreement makes it difficult to identify the crossing owner. AAR asserted that the owner of a crossing might not want to be identified by the railroad due to liability concerns. For example, a railroad might require a private crossing owner to show proof of insurance to obtain the right to cross the railroad's right-of-way.

Additionally, AAR noted some private crossings are forced upon the railroads for the development of adjoining property or access to the nearest road by landlocked property owners. Railroads assert there is little a railroad can do to influence the development of properties around their lines. The precise location or construction details of a private crossing might not be under the railroad's control. For example, many private crossings exist in somewhat undeveloped environments (e.g., between farm fields), where the elevation of the track might be significantly different from the surrounding terrain, making preferable engineering standards difficult or impossible to achieve.

The railroads' representatives at the January 2017 FRA-AAR meeting expressed a need for a Federal rule to allow a railroad to close, or order the closure of, a private crossing for reasons of redundancy or similar causes (e.g., an alternative means of accessing the property).

Data Collection and Analysis. Railroads expressed concern that private crossing owners do not have access to the tools, knowledge, or expertise public authorities have to collect data to identify high-risk crossings. While noting that data in the U.S. DOT National Highway-Rail Crossing Inventory (Inventory) might be useful for identifying high-risk private crossings, the railroads asserted that qualified, trained professionals need to gather and analyze the data. The railroads acknowledged they can report the location of a private crossing to the Inventory, but they asserted they are unable to provide data on the road surface or vehicular traffic patterns. The railroads questioned who should pay for collection of data for an accident prediction model.

The railroads also stated that because each private crossing is unique, estimating “typical” costs for installing standardized grade crossing warning devices is difficult. Additionally, private property owners might not be able to purchase devices in sufficient quantities to gain economies of scale.

Participants also said an Inventory Rule¹⁶ provision makes it difficult to develop effectiveness measures for devices at specific private crossings. The provision allows railroads to use a single Inventory number for multiple private crossings within a railroad yard, plant, or port. As a result, incidents are not assigned to a specific crossing where an incident occurred, but are charged to the entire facility. FRA noted that the railroads may assign an Inventory number to every private grade crossing, if they so choose.

Signage. The railroads asserted that the diversity in ownership and types of private crossings hinders any effort to create uniform sign or warning device requirements. The railroads stated that a survey of state oversight practices should precede any Federal attempt to establish requirements for signs or other safety measures at private crossings. The railroads also asserted that it is difficult to develop effectiveness rates for warning devices, such as crossbuck assemblies (i.e., a crossbuck sign, either a YIELD or STOP sign, and retroreflective tape on the post), because no Federal, State, or local governmental unit has traffic enforcement jurisdiction at private crossings.

¹⁶ 49 CFR Part 234, Subpart E.



ASSOCIATION OF
AMERICAN RAILROADS

Michael J. Martino
Senior Director, Operations
Safety and Operations

March 31, 2017

Mr. Karl Alexy
Director, Office of Safety Analysis
The Department of Transportation
Federal Railroad Administration, FRA-RRS-20
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Mr. Alexy:

The Association of American Railroads (“AAR”) would like to thank the Federal Railroad Administration (“FRA”) for the opportunity to provide information to support the agency’s mission to improve safety at private grade crossings. We hope that the experience of our member railroads can help FRA fulfill its mandate pursuant to the FAST Act to “determine whether limitations or weaknesses exist regarding the availability and usefulness for safety purposes of data on private highway-rail grade crossings.” (Pub. L. No. 114-94). Our comments will focus on grade crossing ownership, data analysis and signage at private crossings.

I. Private Grade Crossing Ownership

FRA defines a public crossing at 49 CFR § 234.401 as a “highway-rail or pathway crossing where the approaches are under the jurisdiction of and maintained by a public authority and open to public travel.” A private crossing, on the other hand, is defined as “a highway-rail or pathway crossing that is not a public crossing.” As a default definition, the term “private crossing” therefore encompasses a broad array of legal rights, uses, and maintenance obligations. For example, a private grade crossing may be as rudimentary as a crossing at a track connecting one field to another and transited a few times a year by agricultural equipment. On the other hand, a private grade crossing can be a complex configuration of multiple home driveways that cross a section of track to reach a public roadway, or can be the access to a regional shopping mall.

While public grade crossings fall under the purview of a public authority and are easily identified, it can be extremely difficult to identify the owner of a private grade crossing. Many private grade crossings have existed for over a century and have changed ownership countless numbers of times. Often, these changes in ownership were not recorded or reported to the

railroad. Railroads have found that, in some cases, the owner does not want to be identified by the railroad due to liability concerns. In some circumstances, the railroad will require the owner to show proof of an insurance policy to obtain the right to use the crossing. If the crossing owner has recently obtained the crossing and is concerned about the cost of the insurance premium, he or she may not readily contact the railroad.

In many cases, a railroad will find a private grade crossing on their right-of-way with no notification as to who owns the crossing or when the crossing was implemented. A recent survey of AAR member railroads found that only between five to ten percent of private grade crossings on the general rail system have a valid agreement on record with the railroads. Even when agreements for a private crossing exist, they were often entered into by the ancestors of the current landowners, making identification of heirs of the original landowners problematic. Lacking an effective agreement further exacerbates the process of identifying the crossing owner. Thus, identifying the owner(s) of a private grade crossing can be a complicated and labor-intensive process.

II. Data Analysis

Pursuant to Subpart F of 49 CFR § 234, public authorities may provide information to the U.S. DOT National Highway-Rail Crossing Inventory (“Crossing Inventory”) for public grade crossings such as surface type and vehicle traffic counts. Public authorities utilize trained highway engineers who have knowledge and experience to identify the necessary elements required for the data collection. Private owners, lacking the expertise and regulatory awareness, generally do not furnish data to the Crossing Inventory. While the railroads can report a private crossing location to the Crossing Inventory, they are unable to provide further data on the crossing that would be useful to FRA because they do not collect data on the road surface or vehicular traffic patterns.

It is also unclear what entity (ies) would be responsible for funding the data collection, particularly data to be used in an accident prediction model. For public grade crossings, a model is funded by the Federal Highway Administration’s (“FHWA”) Section 130 fund. However, the National Transportation Safety Board’s (“NTSB”) Rosedale Accident Report noted that there is “a prohibition in 23 United States Code Section 130 about using public funds for improvements at private crossings.” HAR-14-02, NTSB, pg. 30. As an accident prediction model could be considered a tool to be used to improve a private crossing, and the statute prohibits the use of public funds, it is unclear who would be responsible for costs associated with the development and application of the model.

While public entities regularly conduct comprehensive studies for public grade crossings, private grade crossing owners may lack the means to conduct such an analysis. The NTSB’s Rosedale Accident Report also stated, “prediction estimates based on grade crossing inventory data could serve as one important tool to identify high-risk private highway–railroad grade crossings.” HAR-14-02, NTSB, pg. 74. While data in the Crossing Inventory may have some limited use to identify problematic or high risk private crossings, such data analysis needs to be gathered and analyzed by qualified trained professionals. The railroads are concerned that most

Private Crossings: Safety Data and Engineering Practices

private grade crossing owners do not possess the tools, knowledge or expertise to collect the necessary data that could identify high-risk private grade crossings.

Further, some private crossings are forced upon railroads by development of property adjoining the railroad or by landlocked properties demanding access to the nearest road, so that the presence of or engineering aspects of a private crossing often are not within the railroad's control. A railroad has little control of actions occurring outside of its right-of-way. Also, many private crossings exist in somewhat undeveloped environments (e.g., between farm fields), where the elevation of the track may be significantly different than the surrounding terrain, making preferable engineering standards difficult or impossible to meet.

III. Signage at Private Crossings


The FHWA sets the standards for road signage at public grade crossings because they relate to vehicular traffic. 23 U.S.C. § 109(d). However, FHWA standards do not apply at private grade crossings. The diversity in ownership and type of crossing would make creating requirements for signage or warning devices for private crossings problematic, particularly in rural areas. For example, when two agricultural fields are connected, signage meeting the criteria under the Manual for Uniform Traffic Control Devices would likely prevent some larger farm equipment (like combines) from passing freely over the crossing. This would create an undue burden on the crossing owner.

In addition, oversight of private grade crossings varies by the laws of each State. Before any signage or safety measures are considered, the federal government should survey all State oversight practices.

IV. Conclusion

We hope that this letter illustrates the point that the issues surrounding private grade crossings are more complex than one might readily assume. The AAR and its member railroads are willing to participate in any discussions on this topic in the future. Please contact me if you need any further information or assistance.

Sincerely,



Michael J. Martino

Appendix B: History of the Inventory Related to Private Crossings

In 1996, FRA issued the Highway-Rail Crossing Inventory Instructions and Procedures Manual, which defined private crossings as follows:

1. Definition. A private crossing is a highway-rail crossing which is not a public crossing. (A public crossing is defined as the location where railroad tracks intersect a roadway which is under the jurisdiction of and maintained by a public authority and open to public travel).
2. Discussion. A private crossing is one that is on a private roadway which may connect to part of the general system of public streets and highways but is not maintained by a public authority. Usually, it is a crossing where the property on both sides, or at least one side of the railroad tracks, is private property. It may also be on a roadway that is publicly owned but which is either restricted or not intended for use by the general public. Private crossings are generally intended for the exclusive use of the adjoining property owner and the property owner's family, employees, agents, patrons and invitees. Crossings are classified as private where the normal need or use is for residential, farm, recreation/cultural, industrial or commercial activities.
3. Most private crossings exist by virtue of railroad charter provisions, deed covenants, State statute or other prescriptive rights. If none of these apply, the railroad may require an agreement with the private property owner whereby the railroad may install and maintain the crossing proper and any necessary signs or signals at the property owner's expense, and the property owner will assume liability for the crossing and provide coverage via a liability insurance policy.
4. In some instances, changes in land use have resulted in an expansion of crossing use to the extent that a previously private crossing has some attributes of a public crossing, whether or not any public agency has accepted responsibility for maintenance or control of the use of the roadway over the crossing. The railroad company and highway agency should make every effort to mutually resolve and agree on the appropriate classification (either public or private) of such a questionable crossing.
5. Private Crossings with Public Access. A private crossing may exist with permitted or limited public access for the primary purpose of providing public access to facilities (either public or privately owned) such as shopping centers, fairgrounds parks, golf courses, zoos, museums, schools, libraries, hospitals, clinics, airports, bus terminals, beaches, piers, boat ramps, recreational facilities, etc. Such crossings permit access or invite use by the general public, but usually restrict or discourage general public use by requiring permits, or charging admission or other fees to gain entry or use of the facility. For such crossings, the primary roadway use is to gain entry to the facility. The entrance may even be equipped with gates to effect seasonal or periodic closures. These crossings generally do not qualify as being "open to the general traveling public" and should not be deemed as a public crossing. Crossings which exist primarily to provide access to publicly owned facilities for "authorized personnel only," such as military bases, ports, equipment yards, maintenance/storage facilities, water or sewerage treatment plants, landfills, levees, service and/or maintenance only entrances, or other facilities, are not normally intended for on-site use by the general public and should be deemed as a private crossing.
6. Private Crossing with No Public Access. A private crossing with no public access would include, for instance, the crossing within a secured industrial complex or between farm fields where public access to the complex or fields is precluded.
7. Responsibilities. The railroad should ensure that each crossing is listed in the National Inventory.

The 1996 manual directed the collection of information for private crossings using the form that applied to every crossing, public and private (Figure 6). Part I—Location and Classification of

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Table 9: Data Fields in the 1996 Inventory Form

Item 1. Railroad Operating Company	<p>Item 16A, Private Vehicle Crossing (Type): Enter a check in the box which best describes the usage of a private crossing based on the following categories:</p> <ul style="list-style-type: none"> • Farm. A farm crossing is any crossing used for the movement of farm motor vehicles, farm machinery of livestock in connection with agricultural pursuits, forestry, or other land-productive purposes. • Residential. A residential crossing is any crossing used to provide vehicular access for occupants and their invitees to a private residence or residences. • Recreational. A recreational crossing is any crossing used to provide access to otherwise isolated recreational areas. • Industrial. An industrial crossing is any crossing used to provide access between industrial plant facilities or to an industrial or other commercial area.
Item 2. Railroad Division or Region	
Item 3. Railroad Subdivision or District	
Item 4. State	
Item 5. County	
Item 6. County Map Ref. No.	
Item 7. City	
Item 8. Nearest City	
Item 9. Highway Type and No.	
Item 10. Street or Road Name	
Item 11. RR I.D. No.	
Item 12. Nearest RR Timetable Station	
Item 13. Branch or Line Name	<p>Items 16B and 16C were check-box entries for describing where the railroad crossed the highway (at grade, RR under, or RR over) and for signs or signals (or “none”) at the crossing, with a short text field to describe them.</p>
Item 14. Railroad Mile Post	
Item 15. Pedestrian Crossing (Position)	Item 17. Public Vehicle Crossing (Position)

In August 2007, FRA issued the next revision to the Inventory with an updated policy and instructions, U.S. DOT National Highway-Rail Crossing Inventory Policy, Procedures and Instructions for States and Railroads (Figure 7). While this was a notable enhancement to the data available for analysis of private crossings, it required railroads to provide only Part I information for private crossings (Table 10: Data Fields in the 2007 Inventory Form).

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Figure 7: 2007 U.S. DOT Highway-Rail Crossing Inventory Form, FRA F 6180.71

U.S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA) OMB Control No. 2130-0017
Expires: 7/31/2006

A. Initiating Agency <input type="checkbox"/> Railroad <input type="checkbox"/> State		B. Crossing Number (max. 7 char.)		C. Reason for Update <input type="checkbox"/> Changes in Existing Data <input type="checkbox"/> New Crossing <input type="checkbox"/> Closed Crossing or Abandoned		D. Effective Date (MM/DD/YYYY)	
Part I: Location and Classification Information							
1. Railroad Oper. Co. (code (max. 4 char.) or name)			2. State (2 char.)		3. County (max. 20 char.)		
4. Railroad Division or Region (max. 14 char.)		5. Railroad Subdivision or District (max. 14 char.)		6. Branch or Line Name (max. 15 char.)		7. RR Milepost (max. 7 char.) (nnnnn.m)	
8. RR I.D. No. (max. 10 char.)		9. Nearest RR Timetable Station (max. 15 char.) (optional)		10. Parent RR (max. 4 char.) (if applicable)		11. Crossing Owner (RR or Company name) (if applicable)	
12. City (max. 16 char.) (check <input type="checkbox"/> In <input type="checkbox"/> New one)			13. Street or Road Name (max. 17 char.)			STATE SUPPLIED INFORMATION	
14. Highway Type & No. (max. 7 char.)		15. ENS Sign Installed (1-800) <input type="checkbox"/> Yes <input type="checkbox"/> No		16. Quiet Zone <input type="checkbox"/> No <input type="checkbox"/> 24 hr <input type="checkbox"/> Partial <input type="checkbox"/> Unknown		21. HSR Corridor ID (2 char.)	
17. Crossing Type (choose one only) <input type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Pedestrian		18. Crossing Position <input type="checkbox"/> At Grade <input type="checkbox"/> RR Under <input type="checkbox"/> RR Over		19. Type of Passenger Service <input type="checkbox"/> AMTRAK <input type="checkbox"/> AMTRAK & Other <input type="checkbox"/> Other <input type="checkbox"/> None		20. Average Passenger Train Count Per Day	
						22. County Map Ref. No. (max. 10 char.)	
						23. Latitude (max. 10 char., nn.nnnnnn)	
						24. Longitude (max. 11 char., nnn.nnnnnn)	
						25. Lat/Long Source <input type="checkbox"/> Actual <input type="checkbox"/> Estimated	
26. Is There an Adjacent Crossing With a Separate Number? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Provide Number _____ (7 characters)							
27. PRIVATE CROSSING INFORMATION							
27.A. Category (check one) <input type="checkbox"/> Farm <input type="checkbox"/> Residential <input type="checkbox"/> Recreational <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial		27.B. Public Access <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		27.C. Signs/Signals <input type="checkbox"/> None <input type="checkbox"/> Signs <input type="checkbox"/> Signals Specify (max. 15 char.) _____ Specify (max. 15 char.) _____			
28.A. Railroad Use (max. 20 char.)				29.A. State Use (max. 20 char.)			
28.B. Railroad Use (max. 20 char.)				29.B. State Use (max. 20 char.)			
28.C. Railroad Use (max. 20 char.)				29.C. State Use (max. 20 char.)			
28.D. Railroad Use (max. 20 char.)				29.D. State Use (max. 20 char.)			
30. Narrative (max. 100 char.)							
31. Emergency Contact (Telephone No.)			32. Railroad Contact (Telephone No.)			33. State Contact (Telephone No.)	
MUST COMPLETE REMAINDER OF FORM FOR PUBLIC VEHICLE CROSSINGS AT GRADE							
Part II: Railroad Information							
1. Number of Daily Train Movements							
1.A. Total Trains		1.B. Total Switching Trains		1.C. Total Daylight Thru Trains (6 AM to 6 PM)		1.D. Check if Less Than One Movement Per Day <input type="checkbox"/>	
2. Speed of Train at Crossing 2.A. Maximum Time Table Speed (mph) _____ 2.B. Typical Speed Range Over Crossing (mph) from _____ to _____							
3. Type and Number of Tracks Main _____ Other _____ If Other, Specify (max. 10 char.) _____							
4. Does Another RR Operate a Separate Track at Crossing? <input type="checkbox"/> Yes If Yes, Specify RR (max. 16 char.) <input type="checkbox"/> No _____, _____, _____				5. Does Another RR Operate Over Your Track at Crossing? <input type="checkbox"/> Yes If Yes, Specify RR (max. 16 char.) <input type="checkbox"/> No _____, _____, _____			

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Figure 7: 2007 U.S. DOT Highway-Rail Crossing Inventory Form, FRA F 6180.71

U.S. DOT CROSSING INVENTORY FORM

B. Crossing Number (max. 7 char.)	PAGE 2	D. Effective Date (MM/DD/YYYY)
Part III: Traffic Control Device Information		
1. No Signs or Signals <input type="checkbox"/> Check if Correct		2. Type of Warning Device at Crossing - Signs (specify number of each)
2.A. Crossbucks _____	2.B. Highway Stop Signs (R1-1) _____	2.C. RR Advance Warning Signs (W10-1) <input type="checkbox"/> Yes <input type="checkbox"/> No
		2.D. Hump Crossing Sign (W10-5) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
2.E. Pavement Markings <input type="checkbox"/> Stoplines <input type="checkbox"/> RR Xing Symbols <input type="checkbox"/> None		2.F. Other Signs: (specify MUTCD type) Number _____ Specify Type (max. 10 char.) _____ Number _____ Specify Type (max. 10 char.) _____
3. Type of Warning Device at Crossing - Train Activated Devices (specify number of each)		
3.A. Gates _____	3.B. Four-quadrant (or full barrier) Gates <input type="checkbox"/> Yes <input type="checkbox"/> No	3.C. Cantilevered (or Bridged) Flashing Lights Over Traffic Lane (number) _____ Not Over Traffic Lane (number) _____
		3.D. Mast Mounted Flashing Lights (number) _____
		3.E. Number of Flashing Light Pairs _____
3.F. Other Flashing Lights Number _____ Specify Type (max. 9 char.) _____		3.G. Highway Traffic Signals (number) _____
		3.H. Wigwags (number) _____
		3.J. Bells (number) _____
3.K. Other Train Activated Warning Devices: (specify) (max. 9 char.) _____		
4. Specify Special Warning Device NOT Train Activated (max. 20 char.) _____		5. Channelization Devices With Gates <input type="checkbox"/> All Approaches <input type="checkbox"/> One Approach <input type="checkbox"/> None
6. Train Detection <input type="checkbox"/> Constant Warning Time <input type="checkbox"/> DC/AFO <input type="checkbox"/> Motion Detectors <input type="checkbox"/> Other <input type="checkbox"/> None		7. Signalling for Train Operation: Is Track Equipped with Train Signals? <input type="checkbox"/> Yes <input type="checkbox"/> No
		8. Traffic Light Interconnection/Preemption <input type="checkbox"/> Not Interconnected <input type="checkbox"/> N/A <input type="checkbox"/> Simultaneous Preemption <input type="checkbox"/> Advance Preemption
9. Reserved For Future Use	10. Reserved For Future Use	11. Reserved For Future Use
12. Reserved For Future Use		
Part IV: Physical Characteristics		
1. Type of Development <input type="checkbox"/> Open Space <input type="checkbox"/> Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Institutional		2. Smallest Crossing Angle <input type="checkbox"/> 0° - 29° <input type="checkbox"/> 30° - 59° <input type="checkbox"/> 60° - 90°
3. Number of Traffic Lanes Crossing Railroad _____		4. Are Truck Pullout Lanes Present? <input type="checkbox"/> Yes <input type="checkbox"/> No
		5. Is Highway Paved? <input type="checkbox"/> Yes <input type="checkbox"/> No
6. Crossing Surface (on main line) <input type="checkbox"/> 1. Timber <input type="checkbox"/> 2. Asphalt <input type="checkbox"/> 3. Asphalt and Flange <input type="checkbox"/> 4. Concrete <input type="checkbox"/> 5. Concrete and Rubber <input type="checkbox"/> 6. Rubber <input type="checkbox"/> 7. Metal <input type="checkbox"/> 8. Unconsolidated <input type="checkbox"/> 9. Other (Specify) _____		
7. Does Track Run Down a Street? <input type="checkbox"/> Yes <input type="checkbox"/> No		8. Nearby Intersecting Highway? <input type="checkbox"/> Less than 75 feet <input type="checkbox"/> 75 to 200 feet <input type="checkbox"/> 200 to 500 feet <input type="checkbox"/> N/A Is it Signalized? <input type="checkbox"/> Yes <input type="checkbox"/> No
9. Is Crossing Illuminated? (street lights within approx. 50 feet from nearest rail) <input type="checkbox"/> Yes <input type="checkbox"/> No		10. Is Commercial Power Available? <input type="checkbox"/> Yes <input type="checkbox"/> No
11. Space Reserved For Future Use		
Part V: Highway Information		
1. Highway System <input type="checkbox"/> Interstate <input type="checkbox"/> Federal Aid, Not NHS <input type="checkbox"/> Nat. Hwy System (NHS) <input type="checkbox"/> Non Federal Aid		2. Is Crossing on State Highway System? <input type="checkbox"/> Yes <input type="checkbox"/> No
		3. Functional Classification of Road at Crossing _____
		4. Posted Highway Speed _____
5. Annual Average Daily Traffic (AADT) Year _____ AADT _____		6. Estimate Percent Trucks _____
		7. Average Number of School Buses Over Crossing per School Day _____

Paperwork Reduction Act: Public reporting for this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a currently valid OMB Control Number. The valid OMB Control Number for this collection is 2130-0017.

Table 10: Data Fields in the 2007 Inventory Form

Item 1. Railroad Operating Company	<p>Item 27.A. Category: Enter a check in the box that best describes the usage of the private crossing:</p> <ul style="list-style-type: none"> • Farm. A farm crossing is any crossing used for the movement of farm motor vehicles, farm machinery or livestock in connection with agricultural pursuits, forestry, or other land-productive purposes. • Residential. A residential crossing is any crossing used to provide vehicular access for residence owners. • Recreational. A recreational crossing is any crossing used to provide access to recreation areas. • Industrial. An industrial crossing is any crossing used to provide access to industrial plant facilities or other industrial areas. • Commercial. A commercial crossing is any crossing used to provide access to privately owned commercial facilities that openly invite and solicit the general public as patrons (e.g., shopping centers and stores).
Item 2. State	
Item 3. County	
Item 4. Railroad Division or Region	
Item 5. Railroad Subdivision or District	
Item 6. Branch or Line Name	
Item 7. Railroad Mile Post	
Item 8. RR I.D. No.	
Item 9. Nearest RR Timetable Station	
Item 10. Parent Railroad	
Item 11. Crossing Owner	
Item 12. City	
Item 13. Street or Road Name	
Item 14. Highway Type and No.	
Item 15. ENS Sign Installed (1-800)	<p>Item 27.B. Public Access: Enter a check in the box to indicate “Yes” if the private crossing is open to the general public for access, or “No” if it is not, or “Unknown” if its status is not known. Examples where “Yes” is appropriate are shopping centers, certain residential areas, fairgrounds, parks, schools, libraries, hospitals, clinics, airports, bus terminals, beaches, piers, boat launching ramps, and recreational facilities.</p>
Item 16. Quiet Zone	
Item 17. Crossing Type	
Item 18. Crossing Position	
Item 19. Type of Passenger Service	
Item 20. Average Passenger Train Count Per Day	<p>Item 27.C. Signs/Signals: Enter a check in the box to indicate which one of the following three choices apply: None / Signs / Signals – with space to specify the signs or signals present.</p>
Item 26. Is There an Adjacent Crossing with a Separate Number?	
Item 27. Private Crossing Information. When the type of crossing is Private, this item must be completed. Paths created by trespassers are not considered to be private crossings.	

Section 204(a) of the *Rail Safety Improvement Act of 2008* mandated that railroads submit information about previously unreported crossings and new crossings to the Inventory. Prior to this Act, submission and updating of grade crossing data was done on a voluntary basis. In response to this Congressional mandate, and after extensive public and industry involvement, FRA published a final rule on January 6, 2015, requiring railroads to submit to the Inventory current information about warning devices and signs for previously unreported and new highway-rail and pathway crossings through which they operate. The final rule also requires railroads to periodically update certain data in the Inventory, including the prompt reporting of a crossing sale and a crossing closure. The updated form is shown in Figure 8.

Private Crossings: Safety Data and Engineering Practices

Figure 8: 2015 U.S. DOT Highway-Rail Crossing Inventory Form, FRA F 6180.71

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Part I, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY) ____/____/____	B. Reporting Agency <input type="checkbox"/> Railroad <input type="checkbox"/> Transit <input type="checkbox"/> State <input type="checkbox"/> Other	C. Reason for Update (Select only one) <input type="checkbox"/> Change in Data <input type="checkbox"/> Re-Open <input type="checkbox"/> Change Only <input type="checkbox"/> New Crossing <input type="checkbox"/> Date <input type="checkbox"/> Change in Primary Operating RR <input type="checkbox"/> Closed <input type="checkbox"/> Admin. Correction <input type="checkbox"/> No Train Traffic <input type="checkbox"/> Quiet Zone Update	D. DOT Crossing Inventory Number _____	
Part I: Location and Classification Information				
1. Primary Operating Railroad _____		2. State _____	3. County _____	
4. City / Municipality <input type="checkbox"/> In _____ <input type="checkbox"/> Near _____		5. Street/Road Name & Block Number _____ (Street/Road Name) _____ (Block Number)		
6. Highway Type & No. _____		7. Do Other Railroads Operate a Separate Track at Crossing? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Specify RR _____		
8. Do Other Railroads Operate Over Your Track at Crossing? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Specify RR _____		9. Railroad Division or Region _____ <input type="checkbox"/> None		
10. Railroad Subdivision or District _____ <input type="checkbox"/> None		11. Branch or Line Name _____ <input type="checkbox"/> None	12. RR Milepost _____ (prefix) (nnn.nnn) (suffix)	
13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR (if applicable) <input type="checkbox"/> N/A	16. Crossing Owner (if applicable) <input type="checkbox"/> N/A	
17. Crossing Type <input type="checkbox"/> Public <input type="checkbox"/> Private	18. Crossing Purpose <input type="checkbox"/> Highway <input type="checkbox"/> Pathway, Ped. <input type="checkbox"/> Station, Ped.	19. Crossing Position <input type="checkbox"/> At Grade <input type="checkbox"/> RR Under <input type="checkbox"/> RR Over	20. Public Access (if Private Crossing) <input type="checkbox"/> Yes <input type="checkbox"/> No	
21. Type of Train <input type="checkbox"/> Freight <input type="checkbox"/> Transit <input type="checkbox"/> Intercity Passenger <input type="checkbox"/> Shared Use Transit <input type="checkbox"/> Commuter <input type="checkbox"/> Tourist/Other		22. Average Passenger Train Count Per Day <input type="checkbox"/> Less Than One Per Day <input type="checkbox"/> Number Per Day _____		
23. Type of Land Use <input type="checkbox"/> Open Space <input type="checkbox"/> Farm <input type="checkbox"/> Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Institutional <input type="checkbox"/> Recreational <input type="checkbox"/> RR Yard				
24. Is there an Adjacent Crossing with a Separate Number? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Provide Crossing Number _____		25. Quiet Zone (FRA provided) <input type="checkbox"/> No <input type="checkbox"/> 24 Hr <input type="checkbox"/> Partial <input type="checkbox"/> Chicago Excused Date Established _____		
26. HSR Corridor ID <input type="checkbox"/> N/A	27. Latitude in decimal degrees (WGS84 std: nn.nnnnnnn)	28. Longitude in decimal degrees (WGS84 std: -nnn.nnnnnnn)	29. Lat/Long Source <input type="checkbox"/> Actual <input type="checkbox"/> Estimated	
30.A. Railroad Use *		31.A. State Use *		
30.B. Railroad Use *		31.B. State Use *		
30.C. Railroad Use *		31.C. State Use *		
30.D. Railroad Use *		31.D. State Use *		
32.A. Narrative (Railroad Use) *		32.B. Narrative (State Use) *		
33. Emergency Notification Telephone No. (posted) _____		34. Railroad Contact (Telephone No.) _____	35. State Contact (Telephone No.) _____	
Part II: Railroad Information				
1. Estimated Number of Daily Train Movements				
1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day <input type="checkbox"/> How many trains per week? _____
2. Year of Train Count Data (YYYY) _____		3. Speed of Train at Crossing 3.A. Maximum Timetable Speed (mph) _____ 3.B. Typical Speed Range Over Crossing (mph) From _____ to _____		
4. Type and Count of Tracks Main _____ Siding _____ Yard _____ Transit _____ Industry _____				
5. Train Detection (Main Track only) <input type="checkbox"/> Constant Warning Time <input type="checkbox"/> Motion Detection <input type="checkbox"/> AFO <input type="checkbox"/> PTC <input type="checkbox"/> DC <input type="checkbox"/> Other <input type="checkbox"/> None				
6. Is Track Signaled? <input type="checkbox"/> Yes <input type="checkbox"/> No		7.A. Event Recorder <input type="checkbox"/> Yes <input type="checkbox"/> No		7.B. Remote Health Monitoring <input type="checkbox"/> Yes <input type="checkbox"/> No

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Figure 8: 2015 U.S. DOT Highway-Rail Crossing Inventory Form, FRA F 6180.71

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY)		PAGE 2		D. Crossing Inventory Number (7 char.)	
Part III: Highway or Pathway Traffic Control Device Information					
1. Are there Signs or Signals? <input type="checkbox"/> Yes <input type="checkbox"/> No	2. Types of Passive Traffic Control Devices associated with the Crossing				
2.A. Crossbuck Assemblies (count)	2.B. STOP Signs (R1-1) (count)	2.C. YIELD Signs (R1-2) (count)	2.D. Advance Warning Signs (Check all that apply; include count) <input type="checkbox"/> None <input type="checkbox"/> W10-1 <input type="checkbox"/> W10-2 <input type="checkbox"/> W10-3 <input type="checkbox"/> W10-4 <input type="checkbox"/> W10-11 <input type="checkbox"/> W10-12		
2.E. Low Ground Clearance Sign (W10-5) <input type="checkbox"/> Yes (count _____) <input type="checkbox"/> No	2.F. Pavement Markings <input type="checkbox"/> Stop Lines <input type="checkbox"/> Dynamic Envelope <input type="checkbox"/> RR Xing Symbols <input type="checkbox"/> None	2.G. Channelization Devices/Medians <input type="checkbox"/> All Approaches <input type="checkbox"/> Median <input type="checkbox"/> One Approach <input type="checkbox"/> None	2.H. EXEMPT Sign (R15-3) <input type="checkbox"/> Yes <input type="checkbox"/> No	2.I. ENS Sign (F-13) Displayed <input type="checkbox"/> Yes <input type="checkbox"/> No	
2.J. Other MUTCD Signs Specify Type _____ Count _____ Specify Type _____ Count _____ Specify Type _____ Count _____	<input type="checkbox"/> Yes <input type="checkbox"/> No	2.K. Private Crossing Signs (if private) <input type="checkbox"/> Yes <input type="checkbox"/> No	2.L. LED Enhanced Signs (List types)		
3. Types of Train Activated Warning Devices at the Grade Crossing (specify count of each device for all that apply)					
3.A. Gate Arms (count) Roadway _____ Pedestrian _____	3.B. Gate Configuration <input type="checkbox"/> 2 Quad <input type="checkbox"/> Full (Barrier) <input type="checkbox"/> 3 Quad <input type="checkbox"/> Resistance <input type="checkbox"/> 4 Quad <input type="checkbox"/> Median Gates	3.C. Cantilevered (or Bridged) Flashing Light Structures (count) Over Traffic Lane _____ <input type="checkbox"/> Incandescent Not Over Traffic Lane _____ <input type="checkbox"/> LED	3.D. Mast Mounted Flashing Lights (count of masts) <input type="checkbox"/> Incandescent <input type="checkbox"/> LED <input type="checkbox"/> Back Lights Included <input type="checkbox"/> Side Lights Included	3.E. Total Count of Flashing Light Pairs	
3.F. Installation Date of Current Active Warning Devices: (MM/YYYY) ____/____/____ <input type="checkbox"/> Not Required	3.G. Wayside Horn <input type="checkbox"/> Yes <input type="checkbox"/> No Installed on (MM/YYYY) ____/____/____	3.H. Highway Traffic Signals Controlling Crossing <input type="checkbox"/> Yes <input type="checkbox"/> No	3.I. Bells (count)		
3.J. Non-Train Active Warning <input type="checkbox"/> Flagging/Flagman <input type="checkbox"/> Manually Operated Signals <input type="checkbox"/> Watchman <input type="checkbox"/> Floodlighting <input type="checkbox"/> None	3.K. Other Flashing Lights or Warning Devices Count _____ Specify type _____				
4.A. Does nearby Hwy Intersection have Traffic Signals? <input type="checkbox"/> Yes <input type="checkbox"/> No	4.B. Hwy Traffic Signal Interconnection <input type="checkbox"/> Not Interconnected <input type="checkbox"/> For Traffic Signals <input type="checkbox"/> For Warning Signs	4.C. Hwy Traffic Signal Preemption <input type="checkbox"/> Simultaneous <input type="checkbox"/> Advance	5. Highway Traffic Pre-Signals <input type="checkbox"/> Yes <input type="checkbox"/> No Storage Distance * _____ Stop Line Distance * _____	6. Highway Monitoring Devices (Check all that apply) <input type="checkbox"/> Yes - Photo/Video Recording <input type="checkbox"/> Yes - Vehicle Presence Detection <input type="checkbox"/> None	
Part IV: Physical Characteristics					
1. Traffic Lanes Crossing Railroad Number of Lanes _____ <input type="checkbox"/> One-way Traffic <input type="checkbox"/> Two-way Traffic <input type="checkbox"/> Divided Traffic	2. Is Roadway/Pathway Paved? <input type="checkbox"/> Yes <input type="checkbox"/> No	3. Does Track Run Down a Street? <input type="checkbox"/> Yes <input type="checkbox"/> No	4. Is Crossing Illuminated? (Street lights within approx. 50 feet from nearest rail) <input type="checkbox"/> Yes <input type="checkbox"/> No		
5. Crossing Surface (on Main Track, multiple types allowed) <input type="checkbox"/> 1 Timber <input type="checkbox"/> 2 Asphalt <input type="checkbox"/> 3 Asphalt and Timber <input type="checkbox"/> 4 Concrete <input type="checkbox"/> 5 Concrete and Rubber <input type="checkbox"/> 6 Rubber <input type="checkbox"/> 7 Metal <input type="checkbox"/> 8 Unconsolidated <input type="checkbox"/> 9 Composite <input type="checkbox"/> 10 Other (specify) _____	Installation Date * (MM/YYYY) ____/____/____	Width * _____	Length * _____		
6. Intersecting Roadway within 500 feet? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Approximate Distance (feet) _____	7. Smallest Crossing Angle <input type="checkbox"/> 0° - 29° <input type="checkbox"/> 30° - 59° <input type="checkbox"/> 60° - 90°	8. Is Commercial Power Available? * <input type="checkbox"/> Yes <input type="checkbox"/> No			
Part V: Public Highway Information					
1. Highway System <input type="checkbox"/> (01) Interstate Highway System <input type="checkbox"/> (02) Other Nat Hwy System (NHS) <input type="checkbox"/> (03) Federal AID, Not NHS <input type="checkbox"/> (08) Non-Federal Aid	2. Functional Classification of Road at Crossing <input type="checkbox"/> (0) Rural <input type="checkbox"/> (1) Urban <input type="checkbox"/> (1) Interstate <input type="checkbox"/> (5) Major Collector <input type="checkbox"/> (2) Other Freeways and Expressways <input type="checkbox"/> (3) Other Principal Arterial <input type="checkbox"/> (6) Minor Collector <input type="checkbox"/> (4) Minor Arterial <input type="checkbox"/> (7) Local	3. Is Crossing on State Highway System? <input type="checkbox"/> Yes <input type="checkbox"/> No	4. Highway Speed Limit System _____ MPH <input type="checkbox"/> Posted <input type="checkbox"/> Statutory	5. Linear Referencing System (LRS Route ID) * 6. LRS Milepost *	
7. Annual Average Daily Traffic (AADT) Year _____ AADT _____	8. Estimated Percent Trucks _____ %	9. Regularly Used by School Buses? <input type="checkbox"/> Yes <input type="checkbox"/> No Average Number per Day _____	10. Emergency Services Route <input type="checkbox"/> Yes <input type="checkbox"/> No		
Submission Information - This information is used for administrative purposes and is not available on the public website.					
Submitted by _____	Organization _____	Phone _____	Date _____		
Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.					

For private crossings, railroads must periodically update Part I (Location and Classification Information), Part II (Railroad Information), and Part III (Highway or Pathway Traffic Control

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Device Information) Item 2.K. – Private Crossing Signs. Data elements specifically for private crossings include:

Part I, Item 5 Street/Road Name and Block Number: If the roadway is private and it has a name, enter the name of the road or the owner’s name. If such information is unknown, enter “private.”

Part I, Item 17 Crossing Type, Public or Private: Check “Private” if:

- The crossing is a location where a private roadway crosses one or more railroad tracks either at grade or grade-separated.
- The crossing is a private pathway, either at grade or grade-separated, explicitly authorized by a railroad carrier that is dedicated for the use of non-vehicular traffic, including pedestrians, bicyclists, and others, which is not associated with a private roadway.

If the crossing changes from “Private” to “Public,” complete the entire Inventory Form (or its electronic equivalent).

Part I, Item 20 Public Access at Private Crossing. Check “Yes” if there is public access at the private crossing or “No” if there is not. There should be no entry if the crossing is public.

- Public access means the crossing is a location where railroad tracks intersect a private toll road or privately-owned road or pathway where the public is allowed to travel without access restrictions. Examples include shopping centers, fairgrounds, parks, schools, residential housing developments of at least five dwellings, libraries, hospitals, clinics, airports, bus terminals, beaches, piers, boat launching ramps, and recreational areas.

All Part II items, some with multiple fields, must be completed for private crossings.

1. Daily Train Movements

1.A. Day Thru Trains: Enter the total number of through (thru) trains that operate through the crossing from 6 a.m.–6 pm per day during normal railroad operating periods.

1.B. Night Thru Trains: Enter the total number of thru trains that operate through the crossing from 6 p.m. to 6 a.m. per day during normal railroad operating periods.

1.C. Switching Trains: Enter the total number switching train movements through the crossing per day. “Switching Trains” are those trains whose movements primarily involve the pickup and set-out of cars for various industries and/or rail yards.

1.D. Transit Trains: Enter the total number of urban rapid transit train movements (either light rail or heavy rail) through the crossing per day during normal railroad operating periods.

1.E. Less Than One Movement Per Day: Check if this crossing averages less than one train movement per day. Enter a count or estimate of the number of trains using this crossing per week.

2. Year of Train Count Data: Enter the year that the train count data was collected or last verified. If any train count data changes, the data field must be updated at time of submission.

3. Speed of Train at Crossing:

3.A. Maximum Timetable Speed: Enter the highest maximum timetable speed in miles-per-hour for any type of train movement over the crossing. If there are both freight and passenger train movements over the crossing, enter the highest maximum authorized speed (which will generally be the maximum authorized speed for passenger train movements).

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3.B. Typical Speed Range Over Crossing: Enter the typical minimum speed (“from”) through the crossing in miles-per-hour. This should be the typical minimum speed for normal operations through the crossing, not the minimum speed possible.

4. Type and Number of Tracks:

- “Main”—a track extending through yards or between stations, upon which trains are operated by timetable or train order or both, or the use of which is governed by a signal system.
- “Siding”—a track auxiliary to the main track used for meeting or passing trains.
- “Yard”—a system of tracks within defined limits used for the making up or breaking up of trains, for the storage of cars, and for other purposes over which movements not authorized by timetable or by train order may be made, subject to prescribed signals, rules or other special instructions. Spur track and lead track are included in this definition for purposes of this Inventory Form. Sidings and industry track are not included, nor is mainline track within yard limits.
- “Transit”—a track on which a light-rail train, trolley, or streetcar moves passengers from station to station, typically within an urban area (and its suburbs), that is not connected with the general railroad system of transportation.
- “Industry”—a switching track or series of tracks serving a commercial industry other than a railroad.

5. Train Detection (Main Track Only): Indicate the type of train detection equipment used to activate the warning system at the crossing for movements on the main track(s). The types of train detection equipment are: constant warning time, motion detection, direct current, audio frequency overlay, positive train control,¹⁷ other – for example when signals are activated manually by a watchman or by means of other technologies, none – crossing warning devices are not activated upon the arrival of a train. More than one checkbox can be selected.

6. Is Track Signaled: Indicate whether or not the track is equipped with a block signal, cab signal, or train control system to govern train operations.

7. Monitoring Devices: Indicate whether an event recorder and/or a remote health monitoring system is installed at the crossing.

7.A. Event recorder means a device designed to resist tampering that monitors and records data on information at the grade crossing location such as train speed, direction of motion, time, and distance over the most recent timeframe (e.g., last 24 or 48 hours) of the grade crossing warning system operation.

7.B. Remote health monitoring means an electronic system designed to notify the railroad (typically the railroad signal maintainer or a trouble desk) remotely that components of the automatic warning system are not functioning as intended.

Part III, Item 2.K. Private Crossing Signs. If the crossing is a private crossing, check “Yes” if a private crossing sign is installed. Check “No” if there are none. Leave blank for public crossings.

¹⁷ Refer to Code of Federal Regulations, title 49, section 236.1005 for a description of positive train control systems.

Appendix C: Examples from States with a Public Utilities Commission or Other Legislated Involvement in Private Grade Crossings

California Public Utilities Commission (CPUC)

CPUC establishes the process for creating private at-grade crossings and standards for the signs that are required at all private at-grade crossings.¹⁸ CPUC has the authority to determine whether any proposed private at-grade crossing is needed and the placement and construction of the private crossing and the costs related thereto. Interested parties may petition CPUC for a private crossing. With the exception of a private at-grade crossing built by the owning railroad, all private crossings must be authorized through a written agreement between the railroad and the party requiring the crossing. In addition to the Standard 1-X sign (Figure 9), CPUC requires either a stop sign or an automatic warning device on all approaches to a private at-grade crossing. If a stop sign is used, the Standard 1-X is mounted below it on the post (Figure 9). The language in the lower portion of the Standard 1-X sign (Figure 10) may be used if the railroad so chooses.

Figure 9: Illustration of CPUC Standard 1-X Private Crossing Sign



Figure 10: Stop Sign with CPUC Private Grade Crossing Sign



Washington State Utilities and Transportation Commission (UTC)

For many years, UTC exercised minimal jurisdiction over private crossings. If a collision or other incident occurred at a private crossing, UTC would investigate and work to determine the

¹⁸ Item 7 of its General Order 75-D.

causes of the collision to the extent possible. At private crossings, UTC jurisdiction largely did not extend beyond investigations.

In 2015, the legislature expanded UTC's regulatory jurisdiction to improve safety in response to increasing movements of crude oil trains traveling through the state. One element of this new legislation gave UTC the authority to inspect and develop safety standards for private crossings over which crude oil is transported. Accordingly, the UTC adopted new rules, which require the following signs at private crossings through which any amount of crude oil is transported:

- 30-inch or larger stop signs (R1-1 in MUTCD);
- ENS signs;
- Rectangular private crossing signs at least 300 square inches with the legend "Private Crossing" and the crossbuck symbol.

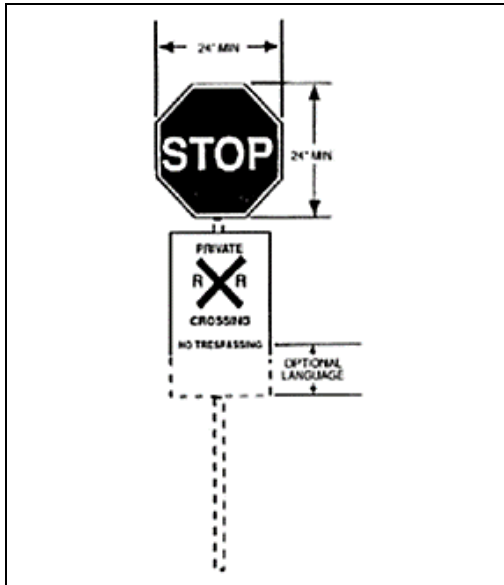
The rule, which went into effect in March 2016, also allows UTC, upon examination of one of these private crossings, to require additional safety measures if issues such as restricted sight distance, unfavorable roadway or crossing configurations, or other hazards are found.

Through its Grade Crossing Protective Fund, UTC provides grants for projects that eliminate or mitigate public safety hazards at passive grade crossings. As part of this emphasis, the UTC is also committed to improving safety at private grade crossings (with passive warning devices) through which crude oil is transported. The grants (a maximum of \$250 for each crossing) may be used for purchasing stop and yield signs, retro-reflective tape, posts (if required), retro-reflective crossbuck signs, and ENS signs.

Oregon Department of Transportation (ODOT)

ODOT has authority over Oregon's public highway-railroad grade crossings. ODOT's Rail and Public Transit Division oversees Oregon rail operations to ensure the structural safety of railroad cars, equipment, track, crossings, and signals and to maintain a safe environment for railroad employees. In addition to monitoring the safety compliance of light rail, streetcar, and trolley service providers, ODOT's Rail and Public Transit Division also regulates the signs required for private crossings. Figure 11, below, provides the required dimensions and text for stop signs at private crossings in Oregon.

Figure 11: Oregon 741-115-0060 Stop Signs at Private Crossings



(1) Unless otherwise ordered by the Department under ORS 824.224, the railroad shall cause to be installed one vehicle stop sign (24-inch minimum) on each side of any private or farm crossing at grade that is not equipped with automatic protective devices.

(2) The railroad shall also cause to be installed an auxiliary sign identifying the crossing as a private crossing by stating the words "PRIVATE CROSSING" in letters at least two inches high. The color of the sign shall be black letters on a white background (see Figure 15). Optional information such as the words "NO TRESPASSING," the name of the railroad from which permission must be secured for use of the crossing and permit number may be included on the auxiliary sign.

Appendix D: Selected State Laws Regarding Private Crossings

FRA's *Compilation of State Laws and Regulations Affecting Highway-Rail Grade Crossings* (Compilation)¹⁹ is a reference for researchers, engineers, students, and legal practitioners in the field of highway-rail grade crossing safety seeking State-specific laws and regulations affecting highway-rail grade crossings. This appendix contains information from the Compilation about State oversight of private crossings. As the following excerpts illustrate, local rules and regulations for private crossings vary widely from State to State. For more complete citations of statute or law, and to ensure reference to the most current information, readers should directly consult the particular State of their interest.

Arkansas

(a) (1) It shall be the duty of the State Highway Commission, or any representative of it, to inspect any road or street crossing in this state, either on its own initiative or when its attention is called to it by any citizen. (2) Upon a hearing the commission may make an order requiring the railroad company to protect the crossing in any manner which it considers just and reasonable, whether the crossings are at grade or over or under crossing and whether a public or private crossing. (b)(1) It shall further be the duty of the commission, or any representative thereof, to make a personal inspection of any designated place where it is desired that a road or street, either public or private, cross any railroad in this state. (2) Upon ten (10) days' notice as required by law and after a public hearing, the commission may make such order as in its judgment shall be just and proper. The order may provide for a crossing at grade, over or under the railroad, and shall be enforced as other orders made by the commission.

Ark. Code Ann. § 23-12-304(a)(b) (2017)

California Public Utilities Commission

The owner of any lands along or through which any railroad is constructed or maintained, may have such farm or private crossings over the railroad and railroad right of way as are reasonably necessary or convenient for ingress to or egress from such lands, or in order to connect such lands with other adjacent lands of the owner. The owner or operator of the railroad shall construct and at all times maintain such farm or private crossing in a good, safe, and passable condition. The commission shall have the authority to determine the necessity for any crossing and the place, manner, and conditions under which the crossing shall be constructed and maintained, and shall fix and assess the cost and expense thereof.

Cal. Pub. Util. Code § 7537 (Deering 2012)

At every farm or private grade crossing of a railroad where no automatic grade crossing protective device is in place there shall be installed, as a means of protecting the crossing, one or more stop signs of the type described in Section 21400 of the Vehicle Code or of such other design as the commission may prescribe unless, after a hearing, the commission shall find that the installation of such sign or signs at a particular crossing would create a hazard or dangerous condition that would not otherwise exist. At any grade crossing where stop signs are installed or in place, before traversing such crossing the driver of any vehicle shall stop such vehicle not less than 10 nor more than 50 feet from the nearest rail of the track and while so stopped shall listen, and look in both directions along the track, for any approaching train or other equipment using such rails. The vehicle shall remain

¹⁹ FRA, sixth edition, 2013, <https://www.fra.dot.gov/Elib/Document/3622>.

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standing while any train or other equipment using such rails is approaching the crossing and is close enough to constitute a hazard. A driver of any vehicle who fails to keep his vehicle standing while any train or equipment using such rails is approaching the crossing and which is so close as to constitute a hazard is guilty of a misdemeanor.

Cal. Pub. Util. Code § 7538 (Deering 2012)

Connecticut

Easements and private crossings may be condemned.

The owner of any private crossing at grade of the tracks of a railroad company, or of any right, title, interest, easement or privilege in land used by a company for railroad purposes, or any such company whose land is encumbered by any such private rights, may bring a written petition to the Commissioner of Transportation for the condemnation of such rights, alleging that public safety requires the elimination of such encumbrance. The commissioner shall thereupon appoint a time and place for hearing the petition, and shall give such notice thereof as he judges reasonable to the owner of such rights, to the company and to the owners of land adjoining the highway to be laid out as a substitute for such private crossing, as hereinafter provided, if any such highway is to be laid out. Upon the hearing of such petition, if public safety so requires, the commissioner shall authorize the company to condemn such private rights, and thereupon the company may proceed to condemn the same in the manner provided by law for the taking of lands by such companies. Upon the hearing of such petition, if the commissioner is of the opinion that public convenience and necessity require a highway on account of the elimination of such private rights in the land of the railroad company, he may lay out a highway sufficient to satisfy public convenience; but such highway shall not be laid out if the land of a private owner, with which the encumbrance is associated, is already connected with a public highway. If the commissioner orders a new highway, he shall assess the expense of making the same, including the damages to any person whose land is taken, proportionately, upon the person and parties especially benefited thereby, but at least one-half of such expense shall be paid by the company. The commissioner may order the elimination of any private crossing at grade by the substitution of an overhead or underneath crossing, in which case the expense of making such change, including land damages, shall be paid by the company.

Conn. Gen. Stat. § 13b-289 (2015)

Private crossing to be restored.

When a private crossing has been removed by a railroad company without the consent of the owner or owners, the company from whose tracks such crossing has been removed shall restore the same in good order upon the written request of the owner or owners, and, for failure so to do, such company shall forfeit five dollars per day to the person or persons owning or having a right to use such crossing, such forfeiture to begin thirty days from the date of such notice.

Conn. Gen. Stat. § 13b-291 (2015)

Private crossings; protection requirements.

(a) For the purposes of this section, private crossing means any private way, private drive or any facility other than a public highway for the use of pedestrians, motor vehicles or other types of conveyances, which crosses at grade any railroad track. No private crossing shall be established, except that the Commissioner of Transportation may authorize the establishment of a private crossing if it is deemed necessary for the economic welfare of the community but only after imposing specific requirements for the protection of persons using the crossing. The cost of meeting such protection requirements shall be borne by the party requesting such private crossing or the town, city, or borough in which such crossing is located may, in its discretion, assume all or part of such cost. The

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provisions of this section shall not apply to a private crossing used by a railroad company in connection with its operation or for access to its facilities.

(b) Each town, city or borough shall erect and maintain traffic control devices within the limits of the railroad right-of-way at each private crossing, or each town, city or borough shall require the person, association or corporation that owns or has the right to use such crossing to erect and maintain such traffic control devices at each private crossing. Such order shall specify the time within which such protective measures shall be installed. Upon failure of a person, association or corporation to comply with an order issued pursuant to this subsection, the required installation shall be made by the authority issuing such order and the expense of such installation shall be a lien on premises owned by such person, association or corporation. If under the provisions of subsection (d) of this section the Commissioner of Transportation and the State Traffic Commission order the erection of traffic control devices at a private crossing and the town, city or borough within which such crossing is located fails to erect or have erected such devices within one hundred eighty days of such order, the Commissioner of Transportation and the State Traffic Commission shall order the railroad to erect such devices and the expense of such erection shall be a lien on premises owned by the person, association or corporation that owns or has the right to use such crossing. If the Commissioner of Transportation and the State Traffic Commission prescribe traffic control measures in addition to traffic control devices, the town, city or borough shall invoke the provisions of this subsection for the purpose of complying with such order, and the cost of such compliance, if one thousand dollars or less, shall be borne one-half by the town, city or borough and one-half by the property owner and, if over one thousand dollars, shall be borne one-sixth by the town, city or borough, one-sixth by the state, one-third by the property owner, and one-third by the railroad.

(c) The town, city or borough within which any private way leads to a private crossing from a town, city or borough highway, and the Commissioner of Transportation, in the case of any private way which leads to a private crossing from a state highway, shall erect and maintain at the entrance to such private way a suitable sign warning of the railroad grade crossing.

(d) The Commissioner of Transportation shall give notice of the commissioner's intent to (1) prescribe or order traffic control devices or traffic control measures under subsection (a) or (b) of this section; (2) afford any person an opportunity to present evidence on the impact; (3) render findings of fact; and (4) issue a decision before prescribing the nature of traffic control devices and traffic control measures to be erected at each private crossing and at approaches to such private crossings. The commissioner's decision shall not constitute a final decision in a contested case and shall not be subject to appeal under section 4-183.

(e) The Commissioner of Transportation shall make all necessary orders for the closing of any private crossing if the commissioner finds that the necessity for such crossing has ceased or that such private crossing constitutes a hazard to public safety. The commissioner shall (1) give notice of intent to issue such orders; (2) afford any person an opportunity to present evidence on the impact of such orders; (3) render findings of fact; and (4) issue a decision before making all necessary orders for the permanent closing of any private crossing if the commissioner finds that the necessity for such crossing has ceased or that such private crossing constitutes a hazard to public safety. The commissioner's decision shall not constitute a final decision in a contested case and shall not be subject to appeal under section 4-183. The commissioner may order the consolidation into one crossing of two or more private crossings located in close proximity to each other.

(f) The provisions of section 13b-281 shall apply to private crossings.

[“If the view of that portion of the tracks of any railroad, crossing a highway at grade, which adjoins such crossing, is obstructed by trees, shrubbery or embankments of earth, the Commissioner of Transportation may, after a hearing upon such notice as the commissioner deems reasonable to the company or companies owning or operating such railroad or railroads and to the selectmen of the

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town, mayor of the city or warden of the borough wherein such crossing is situated and to the owners of the land adjoining such crossing, make such orders for or concerning the removal of any such obstruction as will afford an unobstructed view of such railroad tracks and such highway in accordance with current American Association of State Highway and Transportation Officials' Policy for vehicles to safely traverse a railroad crossing from a stopped position. All orders of the commissioner pursuant to the provisions of this section shall specifically set forth the limits within which land may be taken and the nature, purposes and specific limits of the easements so authorized to be taken. The expense occasioned by any order of said commissioner under the provisions of this section shall be paid by the owner of the land upon which the obstruction is located." Conn. Gen. Stat. § 13b-281 (2012)]

(g) Representatives of towns, cities, boroughs, railroads and state agencies may enter private ways, drives or other facilities to the extent required to perform their duties pursuant to this section.

(h) Any person who fails to comply with traffic control measures installed pursuant to this section shall be fined not more than one hundred dollars.

Conn. Gen. Stat. § 13b-292 (2015)

Florida

Railroad-highway grade-crossing warning signs and signals; audible warnings; exercise of reasonable care; blocking highways, roads, and streets during darkness. –

(1) Every railroad company shall exercise reasonable care for the safety of motorists whenever its track crosses a highway and shall be responsible for erecting and maintaining crossbuck grade-crossing warning signs in accordance with the uniform system of traffic control devices adopted pursuant to s. 316.0745. Such crossbuck signs shall be erected and maintained at all public or private railroad-highway grade crossings.

Fla. Stat. Ann. § 351.03(1) (2018)

Illinois Commerce Commission

Private crossings do not fall under ICC jurisdiction.

See Illinois Grade Crossing Protection Fund Resource Guide (September 2015) (Page 1).

Iowa

Private farm crossings.

When a person owns farmland on both sides of a railway, or when a railway runs parallel with a public highway thereby separating a farm from such highway, the corporation owning or operating the railway, on request of the owner of the farmland, shall construct and maintain a safe and adequate farm crossing or roadway across the railway and right-of-way at such reasonable place as the owner of the farmland may designate. A private farm crossing established or installed pursuant to this section shall be used solely for farming or agricultural purposes.

Iowa Code § 327G.11 (2016)

Overhead, underground, or more than one crossing.

The owner of land may serve upon the railroad corporation a request in writing for more than one private crossing, or for an overhead or underground crossing, accompanied by a plat of the owner's land designating the location and character of crossing desired. If the railroad corporation refuses or neglects to comply within thirty days of a written request, the owner of the land may make written application to the department to determine the owner's rights. The department of inspections and appeals, after notice to the railroad corporation, shall hear the application and all objections to the

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application, and make an order which is reasonable and just, and if it requires the railroad company to construct any crossing or roadway, fix the time for compliance with the order and apportion the costs as appropriate. The order of the department of inspections and appeals is subject to review by the state department of transportation. The decision of the state department of transportation is the final agency action.

Iowa Code § 327G.12 (2016)

Kansas

Provision of farm crossings and cattle guards by railroad upon request of farm owner.

See Kan. Stat. Ann. § 66-230 (2011)

Louisiana

Railroad grade crossing improvement and elimination; notification

H. (1) A railroad corporation owning or operating a railway in this state, which is constructed across the land of any person leaving a portion of the land of such person on either side of its right-of-way, shall, when ordered to by the commissioner of the Department of Agriculture and Forestry, allow said crossing to remain open at a private rural residence or agricultural crossing or other means of access over its right-of-way.

(2) The Department of Agriculture and Forestry shall promulgate rules and regulations for the implementation of this Subsection no later than January 1, 2009.

La. Rev. Stat. Ann. § 48:390(H) (2017)

A. (1) Any railroad company operating in this state which desires to close or remove a private crossing shall, no less than one hundred eighty days prior to the proposed closing or removal, provide a written request by registered or certified mail to the Louisiana Public Service Commission and to the owner or owners of record of the private crossing traversed by the rail line. The written request shall state the manner in which such private railroad crossing unreasonably burdens or substantially interferes with rail transportation.

(2) The Louisiana Public Service Commission shall publish the written request from the railroad company in the commission's official bulletin for no less than twenty-five days.

B. No private crossing shall be closed or removed by any railroad company until after a public hearing by the Louisiana Public Service Commission at which parties in interest have had an opportunity to be heard. Notice of the time and place of the hearing shall be published in the official journal of the parish and the commission's official bulletin and at least fifteen days shall elapse between the publication and the date of the hearing. In addition to notice by publication, and at least ten days prior to the hearing, a good faith attempt to notify the owner or owners of record of the property where the private crossing is located shall be made by the commission by sending an official notice by registered or certified mail of the time and place of the hearing to the address or addresses indicated in the mortgage and conveyance records of the parish. The public hearing shall be held not less than sixty days after receipt of request of the railroad company as provided in Subsection A of this Section.

C. If, after such public hearing, the commission determines that the private railroad crossing unreasonably burdens or substantially interferes with rail transportation, the commission shall publish in the official journal of the parish where such crossing is located and in the commission's official bulletin a notice stating the manner in which such closure or removal shall be made and the date of such.

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D. The provisions of this Section shall not apply when a private landowner or landowners and a railroad company enter into a consensual or negotiated written agreement or agreements to close a private railroad crossing.

La. Rev. Stat. Ann. § 48:394 (2017)

Maine

Maintenance charges for private crossings

In a municipality in which a private way is crossed by a railroad crossing, the municipal officers may act as agents for a railroad corporation in collecting maintenance and insurance charges from those persons using that crossing. Nothing in this section may authorize a municipality to assess or levy these charges nor to use its taxing power to collect these charges.

Me. Rev. Stat. Ann. tit. 23, § 7229 (2017)

Maryland

The power of a railroad company to condemn land and other property under this subtitle includes the power to condemn, for railroad purposes, private crossings or ways and land and other property to provide substitute outlets.

Md. Code Ann., Pub. Util. § 5-408 (2013)

Massachusetts

Separation of private land; order of commissioners relative to crossing

If a railroad lawfully laid out through land without the consent of the owner thereof separates a portion of such land from another or from a public way, and the owner, having a right to cross the railroad, cannot agree with the corporation as to the place or manner in which he shall cross, or if a crossing is inconvenient, either party, in a case which does not involve the abolition of a crossing at grade, may apply to the county commissioners, who, after taking a recognizance from the applicant to the county, with sureties to their satisfaction, for the payment of costs and expenses according to their order, and after notice to the other party and a hearing, may make an order relative to such crossing and to the costs of the application; but they shall not order the corporation to construct or maintain a crossing without its consent, unless it is liable by law or by agreement to construct a crossing for the owner of the land, or is the applicant.

Mass. Gen. Laws Ch. 160, § 109 (2017)

Michigan

Farm crossings; other private crossings

(1) A farm crossing shall be constructed and maintained by the railroad at the expense of the party requesting the crossing.

(2) Farm crossings shall be of such width and condition as shall permit expeditious and safe passage of large farm machinery.

(3) A railroad may permit the establishment and use of other private crossings on such terms as may be negotiated between the requesting party and the railroad.

Mich. Comp. Laws Serv. § 462.323 (2006)

Minnesota

A railroad company constructing a railroad so as to leave parts of a farm on different sides of the road shall construct a proper farm crossing at some place convenient for that farm.

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Minn. Stat. § 219.13 (2017)

By December 31, 1992, the commissioner shall adopt rules establishing minimum safety standards at all private railroad grade crossings in the state.

Minn. Stat. § 219.165 (2017)

Missouri

Railroad crossings construction and maintenance, highways and transportation commission to have exclusive power to regulate and provide standards — apportionment of cost

Upon application of any person, firm or corporation, the state highways and transportation commission shall determine if an existing private crossing has become or a proposed private crossing will become utilized by the public to the extent that it is necessary to protect or promote the public safety. The state highways and transportation commission shall consider all relevant factors including but not limited to volume, speed, and type of vehicular traffic, and volume, speed, and type of train traffic. If it be determined that it is necessary to protect and promote the public safety, the state highways and transportation commission shall prescribe the nature and type of crossing protection or warning device for such crossing, the cost of which shall be apportioned by the state highways and transportation commission among the parties according to the benefits accruing to each. In the event such crossing protection or warning device as prescribed by the state highways and transportation commission is not installed, maintained or operated, the crossing shall be closed to the public.

Mo. Rev. Stat. § 389.610.8 (2017)

Nebraska

Whenever any person owns land on both sides of the right-of-way of any railroad, such railroad shall provide and keep in repair at least one adequate means for such landowner to cross the right-of-way. Any interested landowner with land on both sides of the right-of-way of any railroad may file written complaint with the Department of Transportation against any such railroad that the crossing is not adequate or is unsafe and dangerous to the life and property of those who use it, and the department thereupon shall make such investigation, hold such hearing, and issue such orders as it deems necessary, proper, and adequate. If circumstances warrant, the department may require overhead, underground, or grade crossings and wing fences at underground crossings or may require existing crossings to be relocated so as to be safe to those who use them, but when a special crossing involves an expenditure of more than one thousand five hundred dollars, the landowner shall bear one-half the expenses in excess of one thousand five hundred dollars.

Neb. Rev. Stat. Ann. § 74-1335 (2017)

New Hampshire

Service of Orders.

In the case of a private crossing, such order shall be served upon the railroad and the landowner affected, or his legal representative. In the case of public crossings, service shall be made upon the railroad, the clerk or clerks of the towns directly served by such crossing, and, in addition, the order shall be published in a newspaper having general circulation throughout the county where such crossing is located.

N.H. Rev. Stat. Ann. § 373:24 (2017)

New Jersey

Bridges and passages at street and road crossings; private ways and cattle guards

Where the railroad intersects the land of an individual the company shall provide and keep in repair suitable and convenient passageways over, under and across the railroad and construct and maintain suitable and proper cattle guards at all road crossings.

N.J. Rev. Stat. Ann. § 48:12-49 (2017)

New York

§ 97. Intercity rail passenger service

1. As used in this section, unless a different meaning clearly appears from the context, the term:
 - a. “Intercity rail passenger service” shall mean any intercity rail passenger transportation operation where rail passenger trains operate on a regular scheduled basis.
 - b. “Intercity rail passenger service corridor” shall mean a continuous railroad route which contains one or more segments of railroad track or tracks where intercity rail passenger service is in operation by the national rail passenger corporation.
 - c. “Public rail crossing” shall mean a crossing where a highway, roadway or similar facility, which is owned by a government, either federal, state or local, a public authority or a public agency, crosses a railroad track or tracks, is open to the public and has been designated as such by order of the commissioner, or recognized as having been a public at-grade crossing prior to eighteen hundred ninety-seven.
 - d. “Private rail crossing” shall mean a crossing which traverses a railroad track or tracks and may be used by the owner of the right-of-way, the owner's invitees and others, including the public, but has not been declared or recognized as a public rail crossing by the commissioner.
 - e. “Railroad” shall mean a private or public railroad operating in the state of New York carrying either freight or passengers or freight and passengers including, but not limited to, those operated by the metropolitan transportation authority and its subsidiaries, including the Long Island Rail Road or operated by any other public authority or local government.
2. No new private rail crossings shall be established in an intercity rail passenger service corridor until an application has been made to and approved by the commissioner. Whenever an application is made, the commissioner shall conduct a hearing to determine if a private rail crossing is justified or if an existing public or private crossing could be used to avoid the creation of a new crossing. If the commissioner determines that a crossing is justified and is in the best interest of the people of the state of New York, the commissioner shall determine the manner of the crossing, whether it is to be at-grade or grade-separated, the location, the manner of protection and the apportionment of responsibility for the maintenance of any such crossing, including any warning devices.
3. In order to insure public safety, the commissioner may, if he or she determines it appropriate, require alterations in an existing private rail crossing, including a farm crossing, which is located in an intercity rail passenger service corridor and is hereby authorized to participate in the cost of such alterations. In the event that an agreement on such alterations cannot be reached between the railroad owning the crossing, property owners who are directly impacted by the crossing and the department, the commissioner shall conduct a hearing on the need for such alterations and whether any other alternatives are available, including the use of an alternate route or the closure of the crossing and shall, where applicable, determine the apportionment of responsibility for the alteration and maintenance of any such crossing, including any warning devices. Public comment shall be sought on any proposed alteration or closure which will impact public access to lands open to the public for recreational use. Comments received from the public shall be considered in any decision to alter or

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close such a crossing. No crossing which provides direct access to public state recreational lands shall be closed unless the commissioner, in consultation with the state agency with jurisdiction over such lands, finds that there is a reasonable alternate route to such lands that maintains public access to and the public recreational value of such lands.

4. The commissioner shall prepare and promulgate standards and specifications for the design and protection of private rail crossings in an intercity rail passenger service corridor and is authorized to adopt and promulgate such rules and regulations to accomplish this as shall be deemed necessary.

5. The commissioner shall have the power to acquire any real property, easements, rights-of-way or similar rights necessary for the purposes of this article in the same manner as property is acquired for state highway purposes pursuant to the provisions of section thirty of the highway law.

N.Y. R.R. Law § 97 (2015)

§ 97-a. Commuter rail service

1. As used in this section, unless a different meaning clearly appears from the context, the term:

a. “Commuter rail service” shall mean any rail passenger transportation operation where heavy rail passenger trains provide scheduled passenger service for weekday commuters between a city or cities and adjacent areas.

b. “Commuter rail service corridor” shall mean a railroad route which contains one or more segments of railroad track where commuter rail service is in operation.

c. “Private rail crossing” shall have the same meaning as such term is defined in section ninety-seven of this article.

d. “Railroad” shall have the same meaning as such term is defined in section ninety-seven of this article.

2. No new private rail crossings shall be established in a commuter rail service corridor until an application has been made to and approved by the commissioner. Whenever an application is made, the commissioner shall conduct a hearing to determine if a private rail crossing is justified or if an existing public or private crossing could be used to avoid the creation of a new private rail crossing. If the commissioner determines that a new private rail crossing is justified and is in the best interest of the people of the state of New York, the commissioner shall determine the manner of the crossing, whether it is to be at-grade or grade-separated, the location, the manner of protection and the apportionment of responsibilities and costs for the construction, inspection and maintenance of any such private rail crossing, including any warning devices.

3. a. In order to insure public safety, the commissioner may, if he or she determines it appropriate, require alterations in an existing private rail crossing, including a farm crossing, which is located in a commuter rail service. In the event that an agreement on such alterations cannot be reached between the railroad owning the crossing, property owners who are directly impacted by the existing private rail crossing and the department, the commissioner shall conduct a hearing on the need for such alterations and whether any other alternatives are available, including the use of an alternate route or the closure of the private rail crossing and shall, where applicable, determine the apportionment of responsibilities and costs for the alteration, construction, inspection and maintenance of any such private rail crossing, including any warning devices.

b. Public comment shall be sought on any proposed alteration or closure which will impact public access to lands open to the public for recreational use. Comments received from the public shall be considered in any decision to alter or close a private rail crossing. No private rail crossing which provides direct access to public state recreational lands shall be closed unless the commissioner, in consultation with the state agency with jurisdiction over such lands, finds that there is a reasonable

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alternate route to such lands that maintains public access to and the public recreational value of such lands.

4. The commissioner shall prepare and promulgate standards and specifications for the design and protection of private rail crossings in a commuter rail service corridor and, in consultation with the metropolitan transportation authority, is authorized to adopt and promulgate such rules and regulations as may be necessary to implement the provisions of this section. Except as otherwise provided by law, said rules and regulations shall include guidelines for the allocation of responsibility for the costs associated with establishment of any new private crossings pursuant to subdivision two of this section or the closing or improvement of existing private crossings pursuant to subdivision three of this section and shall recognize that the private interests seeking or using a crossing shall be generally responsible for such costs as well as all costs associated with the inspection and maintenance of such improvements; and, that the arrangement between the railroad and the owners or occupants of the adjoining properties shall be formalized in an agreement.

5. The commissioner shall have the power to acquire any real property, easements, rights-of-way or similar rights necessary for the purposes of this article in the same manner as property is acquired for state highway purposes pursuant to the provisions of section thirty of the highway law.

N.Y. R.R. Law § 97-a (2017)

North Dakota

49-10.1-21. Railroad crossing determination.

If a dispute arises as to whether a railroad grade crossing should be classified as public or private as defined in section 49-11-00.1, the railroad corporation, governmental entity, or private property owner may file with the commission a petition and the commission shall determine whether the crossing is public or private.

N.D. Cent. Code § 49-10.1-21 (2017)

49-11-17. Railroad crossing over land owned on both sides by one person – Penalty for failure to provide.

When any person owns land on both sides of any railroad and contiguous to the railway, the corporation or individual owning or operating such railway shall make and keep in good repair a proper cattle guard and causeway or other adequate means of crossing such railway at such reasonable place as may be designated by the landowner or the landowner's agent, upon at least ten days' written notice by the commission to the railroad corporation provided an adequate crossing is not otherwise accessible. The type of all cattle guards required by law to be constructed in this state before being installed shall be approved by the commission. The owner or person in possession of the land through which the railroad passes may recover twenty-five dollars for every thirty days of default on the part of the person or corporation operating the railroad after at least a ten-day notice served on an officer, roadmaster, or section foreman of the operating company has designated the place for the erection of the cattle-guarded crossings or the road crossing, requested and a like penalty for failure to keep such cattle guards or road crossings in good repair after at least a ten-day written notice has been served upon the operating company that such repairs are necessary.

N.D. Cent. Code § 49-11-17 (2017)

49-11-28. Swinging gates – When railroad required to maintain.

Upon the written request of the owner or lessee of land abutting the railroad's right of way, the owners or operators of a railroad shall construct and maintain suitable and safe swinging gates on any side of a private crossing enclosed by the railroad under section 49-11-24. The request must be made at the same time a request is made under subsection 1 of section 49-11-24.

Ohio

§ 4955.27. Private crossing

When a person owns fifteen or more acres of land in one body through which a railroad passes, which land is so situated that he cannot use a crossing in a public street, lane, road or other highway in going from his land on one side of the railroad to that on the other side without great inconvenience, at his request the company or person operating such railroad, at the expense of such company or person shall, within four months after such request, construct a good and sufficient private crossing across such railroad and the lands occupied by the company, between the two pieces of land to enable such landowner to pass with a loaded team and over which he may go at all times when such railroad is not being used at the crossing, or so near to it as to render passing thereat dangerous.

Ohio Rev. Code Ann. § 4955.27 (2017)

§ 4955.28. Expense of private crossing – right of entry

If, for four months after the request by a landowner for that purpose, the company or person neglects to construct a good and sufficient private crossing as provided in section 4955.27 of the Revised Code, after reasonable notice to the agent of the company for receiving and shipping freight at the station on the railroad nearest to the land where it is proposed to construct such crossing by the landowner of the time when he will proceed to construct it, such landowner may enter upon the lands of the company at any point he wishes between the two pieces of his land and construct such crossing. Such company or person is liable to such landowner for all reasonable expense of such construction, not exceeding fifty dollars, which he may recover in an action against such company or person.

Ohio Rev. Code Ann. § 4955.28 (2017)

Oregon

§ 824.224 When stop signs are to be installed by railroad; exemption; grade crossing alteration, relocation or closure.

(1) At every farm or private grade crossing of a railroad where no automatic grade crossing protective device is installed, the railroad shall cause to be installed and maintained, as a means of protecting the crossing, one or more stop signs.

(2) The Department of Transportation shall, after hearing, unless hearing is not required under ORS 824.214, prescribe the number, type and location of the stop signs and may exempt a farm or private grade crossing if the department finds that the installation of such sign or signs at the crossing would create a hazard or dangerous condition that would not otherwise exist.

(3) After notice to any affected landowner and opportunity for a hearing, unless a hearing is not required under ORS 824.214, the Department of Transportation may alter, relocate or close any farm or private grade crossing on any line designated as a high speed rail system.

(4) If the department decides to alter, relocate or close a farm or private grade crossing in such a manner as to constitute a taking of private property, the department shall exercise its power of eminent domain to acquire such property as is necessary to carry out the decision. A department order under this subsection shall constitute a resolution of necessity for exercise of the department's power of eminent domain.

(5) If the department exercises its power of eminent domain under subsection (4) of this section, the department shall use any combination of state or federal funds allocated for high speed rail systems to pay any settlement with or judgment in favor of an owner of a farm or private grade crossing. The

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department shall have discretion to determine whether to reach a settlement with an owner of a farm or private grade crossing.

(6) The costs of implementing a department order issued under subsection (3) of this section shall be apportioned to any combination of state or federal funds specifically allocated for high speed rail systems as the department determines appropriate in order to eliminate farm or private grade crossings or to enhance safety at such crossings. [Formerly 763.130; 1997 c.249 §255; 1997 c.275 §20]

Oregon Rev. Statute § 824.224 (2017)

OAR 741-115-0060 – Stop Signs at Private Crossings

(1) Unless otherwise ordered by the Department under ORS 824.224, the railroad shall cause to be installed one vehicle stop sign (24-inch minimum) on each side of any private or farm crossing at grade that is not equipped with automatic protective devices.

(2) The railroad shall also cause to be installed an auxiliary sign identifying the crossing as a private crossing by stating the words “PRIVATE CROSSING” in letters at least two inches high. The color of the sign shall be black letters on a white background (see Figure 15). Optional information such as the words “NO TRESPASSING,” the name of the railroad from which permission must be secured for use of the crossing and permit number may be included on the auxiliary sign.

Oregon Administrative Rule (OAR) 741-115-0060 (2013)

OAR 741-115-0080 – Vegetation Control at Grade Crossings

(1) The railroad shall control vegetation on its right-of-way for a distance of 250 feet in each direction from the edge of the crossing surface and for a distance of 50 feet in each direction from the centerline of the nearest track or to the edge of the railroad's right-of-way, whichever is less, so that the vegetation does not obstruct motorists' view of approaching trains.

(2) The public authority shall control vegetation on its right-of-way within the SSD and within its right-of-way.

Oregon Administrative Rule (OAR) 741-115-0080 (2003)

Washington

WAC 480-62-270 Safety standards at private crossings.

(1) For the purposes of this section, the term “private crossings” has the same meaning as in RCW 81.53.010(8).

(2) At every private crossing through which any amount of crude oil is transported, the railroad must ensure that the following are installed on each side of the crossing within one hundred twenty days after this rule becomes effective:

(a) A thirty-inch or larger R1-1 stop sign, defined as a standard R1-1 in the *Manual on Uniform Traffic Control Devices*;

(b) An emergency notification system (ENS) sign that:

(i) Displays the necessary information for the dispatching railroad to receive reports of unsafe conditions at the crossing including, at a minimum:

(A) The toll-free telephone number of the railroad company established to receive reports;

(B) An explanation of the purpose of the sign (e.g., “Report emergency or problem to ___”); and

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(C) The United States Department of Transportation (USDOT) National Crossing Inventory number assigned to that crossing.

(ii) Measures at least twelve inches wide by nine inches high;

(iii) Is retroreflective;

(iv) Has legible text (i.e., letters and numerals) with a minimum character height of one inch; and

(v) Has white text set on a blue background with a white border, except that the USDOT National Crossing Inventory number may be black text set on a white rectangular background.

(c) A rectangular sign, at least three hundred square inches (twenty thousand square centimeters) in size, with the legend "Private Crossing" and the crossbuck symbol.

(3) All signs must have retroreflective tape applied to the sign posts.

(4) If the commission finds, after investigation, that a restricted sight distance, unfavorable roadway or crossing configuration, or other hazard exists at a private crossing, the commission will notify the railroad and to the extent the commission has contact information, the landowner. The railroad must ensure that additional safety measures are installed at the crossing including, but not necessarily limited to, signs authorized in the *Manual on Uniform Traffic Control Devices*, within one hundred twenty days of receiving notification of the hazard from commission staff.

(5) At private crossings where crude oil is transported, the commission will conduct inspections giving priority to private crossings with a high frequency of oil trains, in industrial areas, and high population centers.

(6) Nothing in this section modifies existing agreements between the railroad company and the landowner governing liability or cost allocation at the private crossing.

Washington Administrative Code 480-62-270 (2016)