

**U.S. DOT  
NATIONAL HIGHWAY-RAIL CROSSING INVENTORY**

**Policy, Procedures and Instructions  
For States and Railroads**

**Federal Railroad Administration  
Office of Safety  
August 2007**

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# U.S. DOT NATIONAL HIGHWAY-RAIL CROSSING INVENTORY

## Policy, Procedures and Instructions for States and Railroads

### I. BACKGROUND AND GENERAL INFORMATION:

#### 1. Purpose:

The purpose of the U.S. DOT National Highway-Rail Crossing Inventory Program is to provide for the existence of a uniform national inventory database that can be merged with accident files and used to analyze information for planning and implementation of crossing improvement programs by public and private agencies responsible for highway-rail crossing safety. The National Inventory provides information to Federal, State, and local governments, as well as to the rail industry, for the improvement of safety at highway-rail intersections. The Federal-Aid Highway Act of 1973 (Section 203) requires that each State highway agency maintain an inventory of all public crossings, and accordingly, for the U.S. Department of Transportation (DOT) to establish and maintain a National Inventory of all public, private and pedestrian crossings.

#### 2. National Database Custodian:

From 1972 to 1974, three DOT agencies (the Federal Railroad Administration, the Federal Highway Administration, and the National Highway Traffic Safety Administration), the Association of American Railroads, the American Short Line Railroad Association, and the State highway departments formed a voluntary cooperative effort to develop a comprehensive National Highway-Rail Crossing Information and Numbering System. The rail industry was identified as being responsible for making an on-site inventory of each highway-rail crossing and for forwarding this information to the States and FRA for input into the National Inventory File. The railroads were also responsible for installing a small sign with a unique identifying number on each crossing.

The railroads were identified as being responsible for periodic updates of certain rail oriented inventory data while the state and local highway departments were responsible for the highway related data. In 1975, the National File was completed and officially came into existence. FRA became the custodian for this database for DOT.

#### 3. The Process:

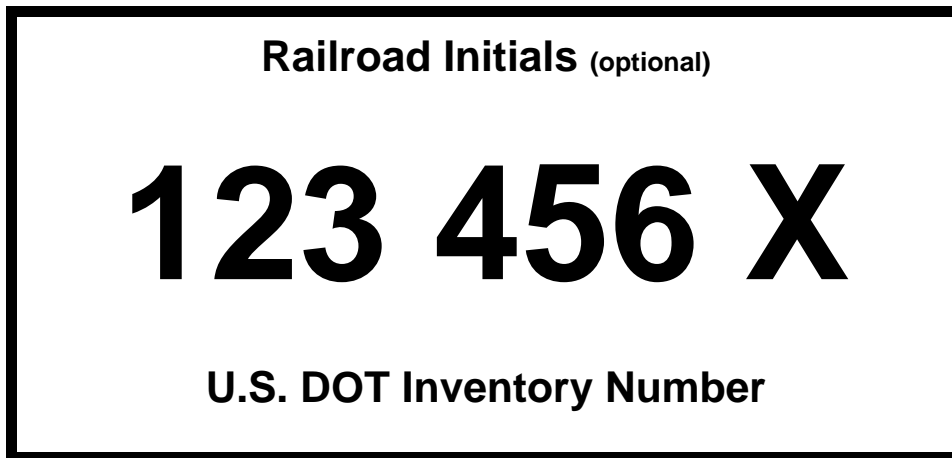
The 1973 Federal-Aid Highway Act (Section 203) requires each State highway agency to maintain an inventory of public highway-rail crossings. The Act also required the railroads to gather that information and provide the States with related railroad information. (States and railroads are herein referred to as agencies) Thus, each State and many railroads maintain a highway-rail crossing inventory that includes all *public* highway-rail crossings, including pedestrian crossings both at-grade and grade-separated (underpasses and overpasses) in the State and almost every railroad maintains an inventory of public, private, and pedestrian crossings both at-grade and grade-separated

thru which the railroad operates in the United States. Additionally, the State and Railroad may desire to maintain a more expanded database for its own use including additional information that is not especially of interest at the national level. Each crossing is to be assigned a US DOT Crossing Inventory Number. This Number is to be posted, preferably, on both sides of the crossing on a signal mast, signpost, pole, or stenciled on nearby equipment.

4. The Crossing Inventory Number:

The US DOT Crossing Inventory Number contains six digits followed by an alpha check character (example: 123 456X). The alpha character is a check to ensure that the number is valid and provides a unique identifying number which was designed to prevent the possibility of error by ensuring that the crossing information is recorded for the correct location. FRA uses a special algorithm to generate the valid crossing number for assignment. (See the “Highway-Rail Crossing Inventory Instructions and Procedures Manual,” December 1996, for details.)

The number is like a “street-name sign” and is to be posted, preferably, on both sides of the crossing on a signal mast, crossbuck post, sign post, or pole, or stenciled on a bungalow. Responsibility for procuring or making the number board signs is that of the railroad. The signs are usually made of aluminum, about motorcycle license plate size (4" x 9") with 1½ inch size numbers/letters, and can be commercially purchased from Keyes-Davis in Battle Creek, Michigan, phone 616-962-7505, for an estimated cost between \$10.00 to \$25.00, depending on the quantity purchased.



Sample Inventory Number Sign Posted at Highway-rail Crossings:  
Specifications: Light-gauge (.032") aluminum, 4" x 9" size, embossed with 1½" numeric-alpha characters, with 4 side slots on each side for mounting. Railroad Initials and U.S. DOT Inventory Number embossed with ½" characters.

The responsibility for assigning the crossing number and for filing the inventory report is that of the “Operating Railroad,” that is, the railroad entity that actually operates a train

or other on-track rolling equipment through the crossing. This is often the case for crossings that are on private property such as in a plant area or rail yard owned by a private corporation or railroad. If multiple railroads operate through the same crossing, then the responsibility for inventorying the crossing falls to the operating entity that owns and/or maintains the trackage and signal equipment. Once a crossing number is assigned to a specific crossing at a specific location, it stays with that location and in the National File permanently and may never be reused at another crossing location.

5. Crossings on Private Company or Railroad Property:

Where there are numerous crossings in a yard area belonging to a private company, a port, or a dock area, one number may be assigned to include all crossings within the private property limits. It is suggested that the Railroad clearly post the number where railroad operations enter the private property, e.g., "All Crossings in this Complex are Assigned Crossing No. 123 456X."

Likewise, one crossing number may be assigned to all crossings in a railroad yard, or each crossing may be assigned an individual number. The purpose of this is to have a crossing number to assign to an accident report if an accident should occur in a railroad yard on railroad property.

6. Assignment of Crossing Numbers:

Valid crossing numbers can be obtained from the Federal Railroad Administration (FRA), Highway-Rail Crossing Division, Washington DC, 20590 by contacting FRA at 202-493-6290 or 202-493-6299. Such numbers are used for newly installed crossings and for any crossing that has been identified as not having an assigned number (A careful detailed search should be made before such assignment and before requesting valid numbers.)

The actual assignment of a number to a crossing occurs when the number is placed on a completed Inventory Form and the Form is returned to FRA for processing into the National File (This processing takes about three months.) It is important that this occur as quickly as possible for any existing crossings that do not have a number. The current U.S. DOT Crossing Inventory Form can be obtained from FRA's Office of Safety Website or by contacting the FRA Highway-Rail Crossing Division at 202-493-6290.

7. The Inventory Form:

The "U.S. DOT Crossing Inventory Form" (Form), is a two-page, single-sheet, five-part form that provides for easy photocopying for distribution to appropriate parties. See Appendix A to this Section I for a copy of the "U.S. DOT Crossing Inventory Form" and Appendix B to this Section I for a sample of the Inventory record printout from FRA's Website of crossing inventory data.

The five parts of the Form include the following categories:

Part I.	Location and Classification Information
Part II.	Railroad Information
Part III.	Traffic Control Device Information
Part IV.	Physical Characteristics
Part V.	Highway Information

For new public at-grade crossings, the Railroad is to complete Parts I, II, III and IV and then send the original of the completed Form to the appropriate "State Inventory Contact" for completion of Part V, "Highway Information," and any other State required data. The Railroad should send a copy of the transmittal correspondence to FRA. The State will complete Part V, send a copy back to the Railroad, and forward the original to FRA for processing into the National Inventory File.

For private, grade-separated (including public) highway rail crossings and pedestrian crossings, only Part I information is required, although any additional information that the Railroad desires to provide will be accepted and input into the File. For private, grade-separated, and pedestrian crossings, the Railroad may send the original Form directly to FRA and send the State a copy for information purposes. This simplifies the process for assigning numbers to private crossings.

#### 8. Instructions and Procedures Manual

General instructions for properly inventorying crossings are found in the "Highway-Rail Crossing Inventory Instructions and Procedures Manual," December 1996, published by FRA, Office of Safety. The purpose of the Manual is to set forth the instructions and procedures to provide a uniform, useful, up-to-date, and accurate database for the National Highway-Rail Crossing Inventory Data File and Data Maintenance Program for the States, Railroads and Transit Agencies. This Manual will be updated as changes in procedures occur.

#### 9. Data Fields and Responsibility for Updating:

The Inventory Form has 152 data fields of information. A minimum number of data fields must be supplied before the inventory record will be accepted for input into the National File. The agency (State or Railroad) responsible for submission of specific information is identified in Section III, Updating Responsibility. Procedures have been developed for submission of data on the hardcopy Form or electronically in several different formats. Additionally, FRA can supply a computer program ("GX32") at no cost which allows for establishment and updating of Crossing Inventory data.

#### 10. Additional Data that a Railroad or State Agency may desire to Collect:

In the establishment of a State, Railroad or Transit Agency's inventory database, it may be desirable to collect additional supplemental information about a crossing that is not identified on the US DOT Crossing Inventory Form, and not contained in the National

File. Examples of some of the data fields collected by some States and Railroads are provided below:

- \*Manufacturer of Installed Warning Devices
- \*Installation Date of Installed Warning Devices
- \*Does Crossing have Pedestrian Gates?

#### 11. Need for Assistance

Appendix C contains a listing of many useful Website addresses for the Crossing Inventory Program. This includes how to obtain data, the Inventory Form, State and Railroad Contacts, various related crossing safety program publications, instructions, format for data field structure, railroad names and codes, and more.

For more information, answers to questions, or other assistance regarding the Crossing Inventory Program, the “GX32” computer software program for updating inventory data, or the PCAPS software, contact Thomas Woll at (202) 493-6290, or via the Internet at [tom.woll@dot.gov](mailto:tom.woll@dot.gov).

# APPENDIX A

## 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)	
<b>Part I: Location and Classification Information</b>							
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.) (nnnn.nm)	
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"/> Near one)			13. Street or Road Name (max. 17 char.)			<b>STATE SUPPLIED INFORMATION</b>	
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"/> Partial <input type="checkbox"/> 24 hr <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.nnnnnnn)	
						24. Longitude (max. 11 char., nnn.nnnnnnn)	
						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)							
<b>27. PRIVATE CROSSING INFORMATION</b>							
27.A. Category (check one) <input type="checkbox"/> Farm <input type="checkbox"/> Residential <input type="checkbox"/> Recreational <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    Specify (max. 15 char.) _____ <input type="checkbox"/> Signs    Specify (max. 15 char.) _____ <input type="checkbox"/> Signals    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.)	
<b>MUST COMPLETE REMAINDER OF FORM FOR PUBLIC VEHICLE CROSSINGS AT GRADE</b>							
<b>Part II: Railroad Information</b>							
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			



**U.S. DOT CROSSING INVENTORY FORM**

B. Crossing Number (max. 7 char.)	<b>PAGE 2</b>	D. Effective Date (MM/DD/YYYY)
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<b>Part III: Traffic Control Device Information</b>						
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"/> 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	

<b>Part IV: Physical Characteristics</b>					
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	

<b>Part V: Highway Information</b>				
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.

# APPENDIX B

## Sample Website Printout of Crossing Inventory Data for One Crossing

### U.S. DOT CROSSING INVENTORY INFORMATION AS OF 11/5/02

Crossing #: **000107C** Update Reason: **New Crossing** Effective Date: **01/01/70**  
 Railroad: **Ann Arbor RR [AA ]** Type & Position: **Public at-Grade** End Date:  
 Initiating Agency: **Original**

#### Part I: Location and Classification Information

Railroad Operating Co.: **Ann Arbor RR** State: **OH**  
 2<sup>nd</sup> Railroad Oper Co.:  
 Division: **Northern Ohio** County: **LUCAS**  
 Subdivision: **Toledo Sub** City: In / Near **Toledo**  
 Branch or Line Name: **GALENA ST.BR. 0001.66** Street or Road Name: **MANHATTAN**  
 Railroad Milepost: **1.66** Highway Type & No.: **US 42**  
 Railroad I.D. No.: **2155** HSR Corridor ID:  
 Nearest RR Timetable Stn: **TOLEDO** County Map Ref. No.: **48**  
 Parent Railroad: **Ann Arbor RR** FRA RR Network Linc:  
 Crossing Owner: **Ann Arbor RR** Latitude:  
 ENS Sign Installed: **No** Longitude:  
 Passenger Service: **Amtrak & Commuter** Lat/Long Source:  
 Avg Passenger Train Count: **24** Quiet Zone:

#### Private Crossing Information:

Category: **Industrial** Public Access: **Yes**  
 Signs Specify: Signals Specify:  
 Railroad Use: A. B. C. D.  
 State Use: A. B. C. D.  
 Narrative:

Emergency Contact: Railroad Contact: State Contact:

#### Part II: Railroad Information

Number of Daily Train Movements: Less Than One Movement Per Day: **No**  
 Total Trains: **24** Total Switching: **10** Day Thru: **12** Year of Data: **1998**  
 Typical Speed Range Over Crossing: From **40** to **60** mph Maximum Time Table Speed **80**  
 Type and Number of Tracks: Main: **2** Other: **2** Specify: **Industry Spur**  
 Does Another RR Operate a Separate Track at Crossing? **Yes: PC, NS, ATK**  
 Does Another RR Operate Over Your Track at Crossing? **Yes: GTW**  
 Adjacent Crossing with Separate Number? **Yes: 002345X**

#### Part III: Traffic Control Device Information

There are No Signs or Signals: **No**  
 Signs: Crossbucks: **2** Highway Stop Signs: **2**  
 Advanced Warning: **2** Hump crossing Sign: **Yes**  
 Other Stop Signs: Other Signs:  
 Pavement Markings: Other: Specify:  
 Train Activated Devices: 4 Quad or Full Barrier: **2**  
 Gates: **2** Total Number FL Pairs: **6**  
 Mast Mounted FL: **2**  
 Cantilevered FL Over: Cantilevered FL Not Over:  
 Other Flashing Lights: **2** Specify Type:  
 Highway Traffic Signals: Wigwags: Bells:  
 Other Warning Devices Not Train Activated:  
 Type of Train Detection: Track Equipped with Train Signals:  
 Traffic Light Interconnection/Preemption: Channelization:

#### Part IV: Physical Characteristics

Type of Development: **Commercial** Smallest Crossing Angle: **90 Deg**  
 Number of Traffic Lanes Crossing Railroad: **4** Are Truck Pullout Lanes Present? **Yes**  
 Is Highway Paved? **Yes** Crossing Surface: **Concrete**  
 Nearby Intersecting Highway: Is it Signalized? **Yes**  
 Does Track Run Down Street? **No** Is Crossing Illuminated? **Yes** Is Commercial Power Available? **Yes**

#### Part V: Highway Information

Highway System: **Fed-Aid** Functional Classification: **19** State Highway System: **Yes**  
 Annual Average daily Traffic (AADT): **1500** Year: **2000** Posted Highway Speed: **45 mph**  
 Estimated Percent Trucks: **20 %** Avg. No of School Buses per Day: **12**

## APPENDIX C

# Crossing Inventory Website Addresses

FRA Safety Data Website (Current Crossing Inventory Record, Data, WBAPS):

<http://safetydata.fra.dot.gov/officeofsafety/>

DOT National Crossing Inventory Information - Exploring New Ways to Improve (Outreach):

<http://www.fra.dot.gov/us/content/801>

Highway-Rail Grade Crossing and Trespass Prevention Issues and Publications:

<http://www.fra.dot.gov/us/content/338>

Publications, Studies and Reports on Crossing Safety

<http://www.fra.dot.gov/us/content/20>

DOT Crossing Inventory Form (FRA-F-6180.71):

<http://safetydata.fra.dot.gov/officeofsafety/Forms/Default.asp>

State Inventory Contacts:

<http://www.fra.dot.gov/downloads/safety/stcont100104.pdf>

Railroad Inventory Contacts (partial list):

<http://www.fra.dot.gov/downloads/safety/rrcont091004.pdf>

Inventory Form Instructions (Nov 1999 Draft for current Form):

<http://www.fra.dot.gov/downloads/safety/Outreach/newfor2.PDF>

Highway-Rail Crossing Inventory Instructions and Procedures Manual (December 1996):

<http://www.fra.dot.gov/us/content/1499>

Assignment of Crossing Inventory Numbers:

<http://www.fra.dot.gov/downloads/safety/Outreach/Numbers.PDF>

Format and Description of Crossing Inventory Data Fields:

<http://www.fra.dot.gov/downloads/safety/Outreach/datbyfld22802.PDF>

<http://safetydata.fra.dot.gov/officeofsafety/Downloads/Default.asp>

Procedure for Updating the DOT Crossing Inventory File for Public Authorities (Horn Rule):

[http://www.fra.dot.gov/downloads/safety/update\\_inventory\\_rev2.pdf](http://www.fra.dot.gov/downloads/safety/update_inventory_rev2.pdf)

FRA Auxiliary Tables (List of all Railroad Names and Codes):

<http://safetydata.fra.dot.gov/officeofsafety/Downloads/Default.asp>

Help for Accessing Crossing Inventory Data (how to do it):

<http://safetydata.fra.dot.gov/officeofsafety/NewCrossing/howtoac2.pdf>

Accident Prediction and Resource Allocation Procedure

<http://www.fra.dot.gov/us/content/1507>

<http://www.fra.dot.gov/us/content/1465>

User Guide, Third Edition  
Summary Report

Section 130 US Code Statue "Highway-Rail Crossing Improvement Funding"

<http://www4.law.cornell.edu/uscode/23/130.html>

Section 406 US Code Statue "Reports can not be Admitted as Evidence"

<http://www4.law.cornell.edu/uscode/23/409.html>

*Questions or need assistance: Contact Tom Woll at 202-493-6290 or via tom.woll@dot.gov*

## **II. INSTRUCTIONS FOR COMPLETING U.S. DOT CROSSING INVENTORY FORM**

### **CONTENTS:**

1. Recording Instructions
2. Heading Information
3. Part I: Location and Classification Information
4. Part II: Railroad Information
5. Part III: Traffic Control Device Information
6. Part IV: Physical Characteristic
7. Part V: Highway Information

### **1. RECORDING INSTRUCTIONS**

The U.S. DOT Crossing Inventory Form FRA F 6180.71 is one of several methods that can be used to submit crossing inventory updates or changes. The Form consists of two pages, normally printed back-to-back on white paper. The appropriate copies can be made by using photocopy reproduction on standard white paper. The following sections explain the process for completing the U.S. DOT Crossing Inventory Form.

For the National Crossing Inventory, a highway-rail crossing is the intersection (at grade or grade separated) of a roadway, including associated sidewalks and pathways, or a pedestrian walkway with one or more railroad tracks. Paths created by trespassers are not crossings.

DEFINITION: A "*Highway-rail grade crossing* means a location where a public highway, road, street, or private roadway, including associated sidewalks and pathways, crosses one or more railroad tracks at grade."  
– 49 CFR Section 234.5

A crossing on a multi-lane roadway is reported as a single crossing. Also, a crossing includes those tracks that lie between a single set of signs or warning devices. Only one US DOT Crossing Inventory number should be assigned even if the individual tracks belong to more than one railroad company or track owner. There should only be one number assigned even if a railroad track moves diagonally across a highway/highway intersection.

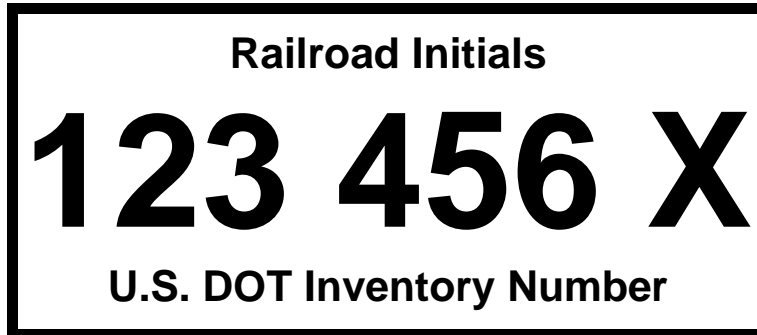
### **2. HEADING INFORMATION:**

#### **A. Initiating Agency**

Enter a check mark in the appropriate box (for either Railroad or State) to indicate the type of entity that began completing the form to make this the initiator of the update of an existing record in the crossing inventory or the establishment of a new crossing.

#### **B. Crossing Number**

Enter a valid crossing inventory number (6-digits followed by an alpha character). For instructions regarding the acquisition and assignment of crossing numbers, see FRA's Office of Safety Data Website, Safety Data, Crossings, "DOT Crossing Inventory Information".



For the National Crossing Inventory, a highway-rail crossing is defined as the intersection (either at-grade or grade-separated) of a roadway, including associated sidewalks and pathways, or a pedestrian walkway with one or more railroad tracks. Paths created by trespassers are not crossings.

REFERENCE DEFINITION: A "*Highway-rail grade crossing* means a location where a public highway, road, street, or private roadway, including associated sidewalks and pathways, crosses one or more railroad tracks at grade."  
– 49 CFR Section 234.5

A crossing on a multi-lane roadway is reported as a single crossing. Also, by definition for the Crossing Inventory Program, a crossing includes only those tracks that lie between a single set of passive warning signs or active warning devices. (Note: This prevents assignment of a collision to a crossing with mixed types of warning devices.)

Additionally, only one US DOT Crossing Inventory number should be assigned if the individual tracks belong to more than one railroad company or track owner. Also, only one number should be assigned even if the railroad track moves diagonally across the highway/highway intersection.

### **C. Reason for Update**

Enter a check mark in the appropriate box to indicate the reason for submittal of the Form:

- (1) Changes in Existing Data,
- (2) Add a New Crossing
- (3) Closed Crossing or Abandoned

A crossing (or rail line) is officially abandoned after the abandonment action has been approved by the Surface Transportation Board (STB) and then when the railroad confirms to the STB that the abandonment is completed.

### **D. Effective Date**

If a change is being reported, enter the date (MM/DD/YYYY) of the change, when it was completed or put into effect. Ideally, all public, private and pedestrian crossings, including grade-separated, should be updated at least once every three years to at least verify that the crossing still exists. A current effective date should be indicated. If there are no changes in the data and the crossing still exists, an effective date of January 1 of the current year (e.g., 01/01/2006) should be indicated, in lieu of the actual current date.

### 3. **PART I: LOCATION AND CLASSIFICATION INFORMATION**

#### **Part I-Item 1. Railroad Operating Company**

Enter the valid railroad code for the "operating" railroad company, i.e., the railroad that operates train movements through the crossing. The operating railroad may or may not own and maintain the roadbed, tracks, and signal system controlling the crossing. If the operating railroad company is not the owner of the track, it is suggested that the owner's name be entered in Item 11, *Crossing Owner*. Valid railroad codes can be obtained from, or will be assigned by, FRA. The operating railroad is also responsible for initiating the Inventory record for a new or unnumbered crossing and for submitting Railroad inventory data.

NOTE: Crossings are assigned to the operating railroad, that is, the railroad company that operates over the trackage where the crossing is located and not necessarily to the owner of the track or property itself, unless it is also the operating railroad. Thus, private company designations such as "XYZ Corporation" should be changed to the name of the railroad that is actually operating on the specific line since it is the operating railroad.

This field allows for a maximum of 4 characters. If the valid Railroad or Company Code is not known, the initiator should contact FRA to obtain the correct code, or to have a new code assigned for a new Railroad or Company. In the latter case, the complete railroad company name, address, telephone number, and a contact person are required.

#### **Part I-Item 2. State**

Enter the abbreviation for the State where the crossing is located. If the crossing is located on a State boundary so that parts of the crossing lie in two or more States, agreement must be made between the two States as to which shall claim the crossing for inventory record purposes. When a crossing is located on a State line, it is suggested that the crossing be inventoried by and in the State that is geographically south or east of the crossing.

#### **Part I-Item 3. County**

Enter the name of the county where the crossing is located. If the crossing is on a county line so that parts of the crossing lie in two or more counties, a decision must be made to place it in one county only. When a crossing is located on a county line, it is suggested that the crossing be inventoried in the county that is geographically south or east of the crossing.

**Part I-Item 4. Railroad Division or Region**

Enter the name of the division, region, or major district, if the railroad system is divided into such groups.

**Part I-Item 5. Railroad Subdivision or District**

Enter the name of the subdivision or other classification, if the railroad system is divided into such groups.

**Part I-Item 6. Branch or Line Name**

Enter the name of the line or branch as used by the railroad to describe this segment of track. If the track is, for example, an industry lead, industry spur, yard lead, or wye, enter the name of the track or the industry lead.

**Part I-Item 7. Railroad Milepost**

Enter the railroad milepost number in miles and hundredths of miles (53 feet is approximately 1/100 mile). Enter the number with the decimal point in the following format: (nnnn.nn).

**Part I-Item 8. RR I.D. No.**

Enter the railroad identification number for the crossing or the track line segment number if the railroad has such a system. If the crossing has an identification number other than the DOT number, such as a State agency number (e.g., a Public Utility Commission (PUC) assigned number), that number may be entered here or in one of the "State Use" fields (Items 29. A - D).

**Part I-Item 9. Nearest RR Timetable Station**

This is an optional field. Enter the name of the nearest timetable station for the operating railroad company.

**Part I-Item 10. Parent RR**

If applicable, enter the code for the parent railroad or the company that is parent to the operating railroad entered in Part I, Item 1, *Railroad Operating Company*. The entry must be a valid railroad or company code, which can be obtained from FRA, if unknown.

### **Part I-Item 11. Crossing Owner (Railroad or Company name)**

If applicable, enter the code for the crossing owner, that is, the name of the entity that actually owns the property. The entry must be a valid railroad, company, or agency code (a maximum of 4 characters), and if unknown, can be obtained from FRA.

This field allows for a maximum of 4 characters. If the valid Railroad or Company Code is not known, the initiator should contact FRA to obtain the correct code, or to have a new code assigned for a new Railroad or Company. In the latter case, the complete name of the railroad or other company and its company address, telephone number, and the name of its contact person are required.

### **Part I-Item 12. City**

Enter a check mark to indicate if the crossing is located "In" or "Near" the specified city. If the crossing is not within the boundaries of a city, town, or village, enter a check mark in the box for "Near."

Enter the name of the city, town, or village where the crossing is located (maximum of 16 characters), which must be a valid location within the State. If "In" is checked, the entered city name must be located in the county specified in Part I, Item 3, *County*. If the crossing is on a city line so that parts of the crossing lie in two or more cities, identify only one city. When a crossing is located on a City line, it is suggested that the crossing be inventoried by and in the City that is geographically south or east of the crossing.

NOTE: FRA uses the GSA (General Services Administration) Worldwide Geographic Location Codes known as the FIPS (Federal Information Processing Standards) Codes for city, county, and State names. These codes list the standard numeric and alpha codes that Federal agencies use in designating locations in automatic data processing programs.

The codes for the States, counties, and cities are based on two publications (FIPS 5-1 and FIPS 6-1) issued by the National Bureau of Standards in accordance with the provisions of Public Law 89-306 (the Brooks Act) and the Office of Management and Budget, Circular A-86. Copies of this publication are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. The codes are also available on diskette or magnetic tape for \$50.00 from the General Services Administration (GSA), Washington, D.C., 20405, telephone: (202) 501-1426.

Government departments and agencies using these codes may request corrections and/or the assignment of new codes for new populated areas having recognized boundaries. Such requests should be submitted in writing to the Public Building Service (PGG), General Services Administration, Washington, D.C., 20405, telephone 202-501-1426. The criteria for assigning additional codes are established by the above-named office.

### **Part I-Item 13. Street or Road Name**

Enter the name of the street or roadway if it has a name. If the roadway is private and it has a name, enter the name of the road or the owner's name, otherwise just enter "private."



#### **Part I-Item 14. Highway Type and No.**

Enter the type and number of highway or roadway, such as Interstate (I), U.S. numbered routes (US), State roadways (ST or SH), county roads ( C) or CR), local city streets (L or LS), local roads (LR), toll roads (TL), state loop/spur (SL), etc., and the number. Please abbreviate, as I-95, US-1, ST-234, C-2096, etc. The number of the highway should be posted on the highway or found on State or county maps. If there is more than one number, enter the most important route, or all the numbers.

#### **Part I-Item 15. ENS Sign Installed (1-800)**

If there is an Emergency Notification System (ENS) sign installed at the crossing, check the box preceding "Yes." Otherwise, check the box preceding "No." The ENS sign may be any sign posted at the crossing that displays a phone number (e.g., a 1-800 number) that the public, State Highway employees, Law Enforcement, and others can use to call to report problems, signal malfunctions, or emergencies at a highway-rail crossing. This sign will also usually display the Crossing Number for the crossing.

#### **Part I-Item 16. Quiet Zone**

FRA will populate this field with information from records for existing Quiet Zones. This item will indicate whether or not a quiet zone is in effect for the crossing. If a quiet zone is in effect, this item will indicate if it is for 24 hours per day or only a partial day (usually 10 p.m. to 7 a.m.) This item is for public, private, and pedestrian crossings.

#### **Part I-Item 17. Crossing Type**

Enter a check in the appropriate box to indicate the type of crossing. Valid choices are (1) Public, (2) Private, or (3) Pedestrian.

#### **Part I-Item 18. Crossing Position**

Enter a check in the appropriate box for the position of the railroad track relative to the roadway. Valid choices are (1) At Grade, (2) Railroad Under, or (3) Railroad Over.

#### **Part I-Item 19. Type of Passenger Service**

If there is passenger service over the crossing, enter a check in the appropriate box to indicate the type(s) of passenger trains using this crossing. Valid values are:

- **AMTRAK** only
- **AMTRAK and Other** (commuter, tourist, etc.)
- **Other**, including commuter, tourist, etc.
- **None** (no passenger service)

#### **Part I-Item 20. Average Passenger Train Count Per Day**

Enter the average number of passenger trains using this crossing, per day, on a typical operating day. The value may not exceed the total train count in Part II, Item 1, [*Typical Average*] Number of Daily Train Movements, 1.A. Total Trains. If the passenger type in

Part I, Item 19, *Type of Passenger Service* is “None,” then the passenger train count should be 0.

### **Part I-Item 21. HSR Corridor ID**

This field is used to identify the "Section 1010" or “Section 1103" high-speed rail corridor on which the crossing is located. If the crossing is located on such a corridor, enter the High Speed Rail (HSR) Corridor Identifying Code, a four character code (ABC#) as defined in Appendix A. The corridor may be divided into logical sections by including a numeric number (1 - 9) for the "#" character. If a numeric number is not used, replace "#" with "X". FRA will assign an HSR ID Code for any corridor, or portion thereof, that is not currently defined in the Appendix.

NOTE: Currently, this field only accepts two characters. It will be expanded to four characters when the Form is modified, sometime in the future. Until then, insert this information in Item 29.D, or if inserted in Item 21, FRA will temporarily insert it in Item 29.D.

### **Part I-Item 22. County Map. Ref. No.**

Enter the county map identification or other reference number provided by the highway agency to specifically identify the crossing on the street and roadway system. If it is not available, leave this entry blank.

### **Part I-Item 23. Latitude**

Enter the latitudinal coordinate as measured at the center of the crossing. This field, along with Longitude, is used to identify the crossing location using a standardized GPS (Global Positioning System) location point. The desired measurement values are in "degrees.decimal degrees" and Latitude should be entered in decimal form as (nn.nnnnnn). At least five decimal places are required, which translates to an accuracy of within four feet. The acceptability or unacceptability of decimal measurements can be summarized as follows:

- Four Decimal places are marginal and not acceptable
- Five Decimal places are minimum and acceptable
- Six Decimal places are preferred
- Seven Decimal places are ideal if available

Use of Degrees/Minutes/Seconds is not acceptable. The equation to convert latitude from degrees, minutes, seconds to decimal form is as follows:

$$\text{Latitude in Decimal Format} = \text{Degrees} + (\text{Minutes divided by } 60) + (\text{Seconds divided by } 3600)$$

NOTE: The FRA Office of Safety is using the WGS-84 (World Geodetic System 1984) datum standard. (A datum is the measurement [shape] of the earth's ellipsoid.) The WGS-84 is the international version of the NAD-83 Standard (North American Datum 1983). The standard datum for the United States National Grid (USNG) is the North

American Datum 1983 (NAD-83) or its international equivalent, the World Geodetic System 1984 (WGS-84).

Federal government mapping agencies have adopted the NAD-83 as the US National Standard. However, many existing maps are still referenced to the North American Datum 1927 (NAD-27). When it is necessary to identify a point on NAD-27 Standard, the coordinates of a point are designated by "(NAD 27)" after the coordinate. Coordinates in NAD-83 have nothing behind them - NAD-83 is implied. The USNG is identical to the Military Grid Reference System (MGRS) and is designed for use with the WGS-84 over U.S. areas and with NAD-83.

Latitude/Longitude Coordinate Ranges within the continental United States:

Latitude values range from 24 to 49 degrees.

Longitude values range from -65 to -124 degrees.

Alaska Latitude values range from 50 to 71 and Longitude from -129 to -168.

#### **Part I-Item 24. Longitude**

Enter the longitudinal coordinate as measured at the center of the crossing. This field, along with Latitude, is used to identify the crossing location using a standardized GPS location point. The desired measurement values are in "degrees.decimal degrees" and Longitude should be entered in decimal format (nnn.nnnnnn). However, it will be processed as a negative value. At least 5 decimal places is required which translates to an accuracy of within 4 feet. Acceptance of decimal measurements can be summarized as follows:

Four Decimal places are marginal and not acceptable

Five Decimal places are minimum and acceptable

Six Decimal places are preferred

Seven Decimal places are ideal if available

Use of Degrees/Minutes/Seconds is not acceptable. The equation to convert latitude from degrees, minutes, seconds to decimal form is:

$$\text{Latitude in Decimal Format} = \text{Degrees} + (\text{Minutes divided by } 60) + (\text{Seconds divided by } 3600)$$

#### **Part I-Item 25. Lat/Long Source**

Enter a check in the appropriate box to indicate the Source, "Actual" or "Estimated," of the Latitude and Longitude coordinate values being provided. Actual values are those where GPS measurements are taken at the crossing or determined by a positive identification method. Otherwise, the values are indicated as "Estimated." Latitude and Longitude values, in general, should be measured at the center of the highway-rail crossing.

Currently, the Lat/Long Source (LLSOURCE) field is coded as:

- 1 = Agency Actual
- 2 = Agency Estimated
- 3 = Federal Actual
- 4 = Federal Derived
- Blank=Neither

Note: In 1997, FRA hired a contractor to determine (by interpolation) the latitude and longitude of about 80% of the crossings in the Nation. In January 1999, these values were inserted into the National file and are shown as "Estimated." Since then, several States and Railroads have updated these values with actual measured data.

**Part I-Item 26. Is There a [Parallel] Adjacent Crossing With a Separate Number?**

Enter a check in the appropriate box to indicate whether or not there is an adjacent crossing with a separate number. If there is, enter the valid crossing number (6-digits followed by an alpha character).

An "Adjacent Crossing With a Separate Number" is a crossing that is basically parallel to the tracks of the crossing listed in Item B. and where one might consider all tracks in this vicinity as part of one crossing. See definition of crossing under "B. Crossing Number."

Note: There should only be one crossing number assigned to a crossing (defined as the tracks that lie between the same pair of warning devices), regardless of how many railroads may own tracks that traverse the crossing. There may be cases where two mainline tracks, owned and maintained by two different railroads, traverse a crossing, with each of these railroads having assigned a separate crossing number for the crossing. If this situation exists, one of the numbers should be deleted (closed) and one of the railroads involved should claim the crossing and list the other railroad(s) as "operating across the same crossing."

**Part I-Item 27. PRIVATE CROSSING INFORMATION**

When the type of crossing is **Private**, this item must be completed. Paths created by trespassers are not crossings with private ownership.

**Part I-Item 27.A. [Private Crossing] Category**

Enter a check in the box that best describes the usage of the private crossing based on the following categories:

## Category Descriptions:

**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).

### Part I-Item 27.B. [Private Crossing] 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.

### Part I-Item 27.C. [Private Crossing] Signs/Signals

Enter a check in the appropriate box(s) for the type(s) of crossing warning device(s). If signs and/or signals exist, enter a brief description in the space provided.

### Part I-Items 28.A., 28.B., 28.C., and 28.D. Railroad Use

The railroad may enter any text or data of its choice in these fields. No editing will be performed on these fields.

### Part I-Items 29.A., 29.B., 29.C., and 29.D. State Use

The State may enter any text or data of its choice in these fields. No editing will be performed on these fields. It is suggested that a State that has a separate PUC number for a crossing may wish to use one of these fields for this purpose. (For those States that have used the RR I.D. field for this in the past, FRA will move that data to Item 29 if requested.)

### Part I-Item 30. Narrative

Enter any narrative comments desired in this field. No editing will be performed on this field.

**Part I-Item 31. Emergency Contact (Telephone No.)**

Enter the telephone number (area code and phone number) for the Emergency Notification System Contact (e.g., usually Railroad Police, Dispatch Center, or other Railroad Emergency Contact) associated with the crossing. This should be a 24-hour number for an Emergency Notification Center which can send emergency responder(s) to the crossing in the event of problems, signal malfunctions, or other emergencies which are reported at the crossing. Normally, this will be the ENS telephone number used by the railroad and posted at the crossing. (This field can be updated in mass by contacting FRA.)

**Part I-Item 32. Railroad Contact (Telephone No.)**

Enter the telephone number (area code and phone number) of the railroad contact associated with the crossing. This would normally be the Railroad Inventory Contact or Public Projects Engineering Coordinator. (This can be performed as a mass update by contacting FRA.)

**Part I-Item 33. State Contact (Telephone No.)**

Enter the telephone number (area code and phone number) of the State highway contact associated with the crossing. This would normally be the State Inventory Contact or the DOT Engineering Contact (such as the Section 130 State Contact) responsible for crossing improvement projects. (This can be performed as a mass update by contacting FRA.)

**4. PART II: RAILROAD INFORMATION**

NOTE: If the crossing is Public at-Grade, Parts I, II, III, IV, and V **must** be completed before the data can be entered into the file. For Private at-Grade crossings, only Part I information is required. However, if additional data for Parts II-IV are provided, that data will be entered into the file.

**Part II-Item 1. [Typical Average] Number of Daily Train Movements**

Enter the typical average number of train movements through the crossing and the number of switching movements through the crossing on a normal operating day. The Typical Average Number of Daily Train Movements means the normal or average number of daily trains moving across the crossing. Include the total number of the train movements for both the reporting "operating" railroad and any other railroad operating over the crossing. "Through Trains" are trains whose primary responsibility is to operate over a route with defined beginning and end points.

**Part II-Item 1.A. Total Trains**

Total Trains are the total of the number of through trains and switching trains per day (daylight [6 am - 6 pm] and night [6 pm - 6 am]) through the crossing during normal

railroad operating periods. Include the total number of the train movements for both the reporting "operating" railroad and any other railroad operating over the crossing.

### **Part II-Item 1.B. Total Switching Trains**

Total Switching Trains are the number of switching trains through the crossing per day during normal railroad operating periods. "Switching Trains" are those trains whose movements are to provide services (pickup and set-out of cars) for various industries and/or rail yards, and where such back and forth movements exist at the crossing. Each movement in one direction counts as one train movement. All locals, industrial runs and switch engines would be classified as switching movements. However, do not include such trains when they travel over the crossing like a through train to get to their destination to perform their switching operations.

### **Part II-Item 1.C. Total Daylight Thru Trains (6 A.M. to 6 P.M.)**

Total Daylight Thru Trains are the number of through trains through the crossing between the hours of 6 AM and 6 PM. "Through Trains" are trains whose primary responsibility is to operate over a route with defined beginning and end points.

Note: For data integrity purposes, it is recommended that when entering the above counts, that a quick check be made to be sure that the Total Trains is greater than, or equal to, the sum of the Total Switching Trains and the Total Daylight Thru Trains.

### **Part II-Item 1.D. Check if Less Than One Movement Per Day**

Enter a check in the box if train frequency is less than one train per day.

## **Part II-Item 2. Speed of Train at Crossing**

### **Part II-Item 2.A. Maximum Timetable Speed**

Enter the maximum timetable speed in miles per hour (mph). This field must be greater than or equal to the maximum value in Item 2.B, *Typical Speed Range Over Crossing*.

### **Part II-Item 2.B. Typical Speed Range Over Crossing**

Enter the typical minimum speed ("from") through the crossing in miles per hour (mph). This must be equal to or less than the maximum timetable speed in Item 2.A.

Enter the typical maximum speed ("to") through the crossing. This must not be greater than the maximum timetable speed in Item 2.A. and must not be less than the typical minimum speed range.

## **Part II-Item 3. Type and Number of Tracks**

Enter the number of "Main" line tracks, and enter the number of any "Other" tracks. If there are "Other" tracks, the type of other tracks should be specified. A track is considered "Main" if through trains operate on the track.

**Part II-Item 4. Does Another RR Operate a Separate Track at Crossing?**

Enter a check mark in the appropriate box to indicate if another railroad operates a separate track at the crossing. If “Yes,” enter the FRA railroad code for all railroads that operate a separate track within the same pair of warning devices at the crossing. Up to four railroad codes, with up to four characters each may be entered in this field.

**Part II-Item 5. Does Another RR Operate Over Your Track at Crossing?**

Enter a check mark in the appropriate box to indicate if another railroad operates over the reporting railroad’s track at the crossing. If “Yes,” enter the FRA railroad code for all railroads that operate trains over the track at the crossing. Up to four railroad codes, with up to four characters each may be entered in this field.

**5. PART III: TRAFFIC CONTROL DEVICE INFORMATION**

All appropriate warning devices may be indicated, but as a minimum, the highest level of warning device must be provided.

FRA classifies warning devices for Public at-Grade crossings in “Warning Device Categories,” referred to as the “WD CODE.” These Warning Device Categories **ONLY** apply to Public at-Grade crossings and have an assigned hierarchy based on their level of warning. The WD Codes are as follows:

- 9 - Four Quad (or full barrier) Gates
- 8 - Gates (normally Two Quadrant)
- 7 - Flashing Lights (Standard and Cantilever type units)
- 6 - Highway Traffic Signals, Wigwags, Bells, or other activated devices
- 5 - Special Active Warning Devices (usually flagman)
- 4 - Stop Signs
- 3 - Crossbucks
- 2 - Other Signs or signals
- 1 - No signs or signals

**Part III-Item 1. No Signs or Signals**

Enter a check to indicate if no signs or signals are present. If no signs or signals are present, there is no need to complete Items 2 or 3.

NOTE: While there may be some rare exceptions, normally as a minimum, crossbucks are required at all public at-grade crossings.



**Part III-Item 2. Type of Warning Device at Crossing - Signs (specify number of each)**

NOTE: If more than one type of warning device is present, indicate all applicable types of warning device(s). Enter a "9" where the number is 9 or greater. Provide short descriptions of "Other" devices in the appropriate spaces.

**Part III-Item 2. A. Crossbucks (R15-1)**

Enter a count of the number of masts or posts with mounted crossbucks, not a count of the number of crossbuck signs. Two or more crossbucks mounted on a single post are counted as one unit. Include all masts with crossbucks without distinction as to the reflectivity type. If the crossing has a train activated warning device (flashing lights [cantilevered or mast mounted] and/or gates), do not count the individual number of crossbucks mounted on these devices. Note: The number-of-tracks sign is Manual on Uniform Traffic Control Devices (MUTCD) R15-2.

**Part III-Item 2. B. Highway Stop Signs (R1-1)**

A Standard Highway Stop Sign (R1-1) is red with white letters and has eight sides as defined in the Manual on Uniform Traffic Control Devices (MUTCD). Stop Signs must be in compliance with the MUTCD R1-1 to be counted. Enter the number of separate posts or masts with stop signs, regardless of any other type of warning devices. YIELD signs (MUTCD R1-2) should be indicated in Item 2.F.

**Part III-Item 2. C. RR Advance Warning Signs (W10-1)**

Enter a check in the appropriate box to indicate the existence of advance warning sign(s) along the highway approaches that are in compliance with the MUTCD (W10-1). Normally, this will be on both sides of a crossing.

**Part III-Item 2. D. Hump Crossing Sign (W10-5)**

Enter a check in the appropriate box to indicate whether or not high profile hump surface signs are present at the crossing, or such are scheduled for installation in the immediate future. The standard Advance Warning Signs for High-Profile Crossings is identified in the MUTCD as W10-5. Non-standard warning signs or advisories should be listed in "Other Signs."

**Part III-Item 2. E. Pavement Markings**

Enter a check in the appropriate box for each type of pavement marking present that conforms to the MUTCD. If both Stop Lines and RR crossing symbols are present, check both boxes. If neither Stoplines nor RR crossing symbols are present, check "None."

### **Part III-Item 2. F. Other Signs**

Enter the number and specify the type of any other passive signs at the crossing. This includes YIELD signs (R1-2) and any W10-2, 3, or 4 signs installed on a highway that is parallel to the railroad tracks. Specify the MUTCD Type.

### **Part III-Item 3. Type of Warning Device at Crossing - Train Activated Devices (specify number of each)**

#### **Part III-Item 3. A. Gates**

Enter the number of gates. Include in the count all gates without making a distinction as to the color or reflectivity of the gate arms. Do not include Pedestrian Gates.

A gate mechanism includes flashing light units and the standard crossbuck sign as part of the warning device. Therefore, when gates are present, flashing light units and crossbucks should not be counted unless there are additional such devices in place.

NOTE: Refer to Appendix B for definitions of the various types of Gated Crossings (Two, Three and Four Quadrant) and Full Barrier, and how to report them in the Inventory.

#### **Part III-Item 3. B. Four-quadrant (or full barrier) Gates**

Enter a check in the appropriate box to indicate whether or not four-quadrant (or full barrier) gates are present at the crossing. Full barrier gates apply in the case of one-way streets or where the gate arms reach across the entire roadway. See Appendix B for definitions.

#### **Part III-Item 3. C. Cantilevered (or Bridged) Flashing Lights**

If the flashing light system consists of a vertical structure that has a cantilevered beam over the roadway (may be bridged construction), then count the number of such structures. Enter the number of cantilevered (or bridged) flashing light structures in the appropriate block. Separate cantilevered structures into those over traffic lanes and those not reaching the roadway (over only parking lanes, turnout lanes, or shoulders). Count individual cantilever structures only. Do not count the number of lights nor the number of crossbucks mounted on these structures, unless there are separate devices installed on separate masts or posts. (Cantilevered structures are not to be counted as mast mounted flashing light systems. There is provision for counting the number of light pairs in Item 3.E.)

#### **Part III-Item 3. D. Mast Mounted Flashing Lights (number of masts)**

Count only the number of masts with flashing light units, not the number of lights. Count all lamp unit assemblies on a single mast as one unit. There is provision for counting the number of light pairs in Item 3.E.

A flashing light mechanism includes the standard crossbuck sign as part of the warning device. Therefore, when Flashing Lights are indicated, do not count the number of

crossbucks unless there are additional units mounted on separate poles or posts (e.g., facing a side road).

**Part III-Item 3. E. Number of Flashing Light Pairs**

Enter the total number of pairs of flashing lights mounted on signal masts and on cantilever (or bridge) structures and/or on other masts or poles.

**Part III-Item 3. F. Other Flashing Lights**

Enter the number of any other flashing lights not in accordance with the MUTCD and specify the type.

**Part III-Item 3. G. Highway Traffic Signals (number)**

Count and enter only the number of highway traffic signals (red-yellow-green) that are train activated and which directly control highway/street traffic over the crossing. Do not count highway traffic signals controlling a nearby intersection even if they are interconnected with the railroad warning system control circuitry.

**Part III-Item 3. H. Wigwags (number)**

Enter the number of wigwag signals. Count all wigwags individually.

**Part III-Item 3. J. Bells (number)**

If present, count and enter the number of all bells that are either alone or are a part of other train activated warning device systems.

**Part III-Item 3. K. Other Train Activated Warning Devices**

List any train activated devices not otherwise specified, such as an arrester net or other technology.

**Part III-Item 4. Specify Special Warning Device NOT Train Activated**

Enter the type of any special warning device which is not train activated. Examples of special warning devices not train activated are:

- a. Manually operated signals and/or gates
- b. Train crew flagging the crossing (flag-man)
- c. Watchman
- d. Floodlights that are train activated

For watchman and for manually operated gates, the number of hours daily in effect should also be indicated. For floodlighting, the number of masts with lights should be reported. Only floodlighting which is distinctive from ordinary street lighting in intensity, light distribution, focus or color is to be reported.

### **Part III-Item 5. Channelization Devices With Gates**

Enter a check in the appropriate box to indicate whether or not there are highway channelization devices (or median barriers) with gates at the crossing. If channelization devices are present, indicate if they are on all approaches or just one approach. It is suggested that the length of the channelization devices be indicated in the *Narrative* field, Part I, Item 30.

### **Part III-Item 6. Train Detection**

Enter a check to indicate the type of train detection used at the crossing. This applies to active crossings only. An “Active Crossing” is one where the warning devices are activated by the arrival of the train and include such devices defined by WD CODE 5-9 in the beginning of Part III. If the crossing is not active (WD = 1-4), “None” should be checked. The choices are:

- Constant Warning Time (or Predictors)
- Motion Detectors
- DC/AFO
- Other
- None

### **Part III-Item 7. Signaling for Train Operation: Is Track Equipped with Train Signals?**

Enter a check to indicate whether the track has train operation or interlocking signals to control train operations.

### **Part III-Item 8. Traffic Light Interconnection/Preemption**

Enter a check in the appropriate box to indicate the type of crossing interconnection/preemption.

#### **DEFINITIONS:**

The following are definitions for highway and rail signal interconnections. The definitions that are in italics are those established by the Technical Working Group (TWG) for Rail-Highway Intersections:

1. ***Interconnection:*** *The electrical connection between the railroad active warning system and the traffic signal controller assembly for the purpose of preemption.*

Interconnection consists of an electrically connected control circuit at a highway-rail intersection which has railroad active warning devices utilizing a supervised closed-circuit principle activated by the approach or presence of a train and which is used to preempt the normal operation of a highway traffic signal.

2. ***Preemption:*** *The transfer of the normal operation of traffic signals to a special control mode.*

Preemption is the activity when, as a result of a signal received from the railroad active warning device system, the normal operation of a highway traffic signal is interrupted and transferred to a specific programmed sequence.

3. ***Simultaneous Preemption:*** *The notification of an approaching train is forwarded to the highway traffic controller unit or assembly and the railroad active warning devices at the same time.*

Simultaneous Preemption is the activity when the highway traffic signal controller receives notice from the interconnection control circuitry and is activated at the same time as the railroad active warning system. Usually, this will be used to prohibit highway vehicular traffic from traversing through the crossing intersection.

4. ***Advanced Preemption:*** *The notification of an approaching train is forwarded to the highway traffic controller unit or assembly by the railroad equipment for a period of time prior to activating the railroad active warning devices.*

Advance Preemption is the activity when the highway traffic signal controller receives notice from the interconnection control circuit before the railroad active warning system is activated (usually 20-25 seconds before train arrival) to interrupt the signal's normal operation to begin its specific programmed sequence. Usually, this will be used to move the highway vehicular traffic through a storage area between the highway-rail intersection and the highway-highway intersection well before the railroad active warning devices start to operate to clear the crossing and eliminate the potential of vehicular entrapment on the crossing.

### **Part III-Items 9-12. Reserved for Future Use**

These items are reserved for future use. No input is required.

## **6. PART IV: PHYSICAL CHARACTERISTICS**

### **Part IV-Item 1. Type of Development**

Enter a check in the appropriate box which best describes the predominant type of development in the vicinity (up to 1000 feet) of the crossing based on the following categories:

- |                          |  |
|--------------------------|--|
| 1. <b>Open Space.</b>    | Sparsely developed, lightly populated, and/or agricultural.                |
| 2. <b>Residential.</b>   | Built-up residential area.   |
| 3. <b>Commercial.</b>    | Retail stores and businesses, offices, and/or personal services.           |
| 4. <b>Industrial.</b>    | Manufacturing, construction, heavy products, factories, and/or warehouses. |
| 5. <b>Institutional.</b> | Schools, churches, hospitals, parks, and/or other community facilities.    |

#### **Part IV-Item 2. Smallest Crossing Angle**

Enter a check in the appropriate box that most closely describes the smallest angle between the highway and the track. (The angle may be estimated by eye or with a simple device, such as a protractor.)

#### **Part IV-Item 3. Number of Traffic Lanes Crossing Railroad**

Enter the total number of through traffic lanes crossing the railroad track. Include all traffic lanes for the entire roadway width. Do not include shoulders or lanes that may be used for parking.

#### **Part IV-Item 4. Are Truck Pullout Lanes Present?**

Enter a check in the appropriate box for special added lanes provided to accommodate commercial vehicles (trucks, buses, etc.) that are required to stop at the crossing.

#### **Part IV-Item 5. Is Highway Paved?**

Enter a check in the "Yes" box if the highway is paved with material on which pavement markings can be effectively maintained. Enter a check in the box preceding "No" if the highway surface is gravel, dirt, or has a surface treatment on which markings cannot be maintained.

NOTE: It is recommended that a review be made to coordinate this item with Part III-Item 2.E, "Pavement Markings." Specifically, if there are "Pavement Markings," then this Item can not be "No".

#### **Part IV-Item 6. Crossing Surface (on main line)**

Enter a check in the appropriate box that most closely fits one of the following descriptions. If there are multiple tracks that have different types of surfaces, indicate the lower grade surface material on the Inventory Form.

1. **Timber.** Includes Sectional Treated Timber and Full Wood Plank:

**Sectional Treated Timber** is prefabricated units, of treated timber, approximately 8 feet in length, individually installed and removable for maintenance and replacement purposes. **Full Wood Plank** is a timber surface that covers the entire crossing area above the crossties and made of ties, boards, bridge ties, etc.

2. **Asphalt.** Asphalt surface over the entire crossing area.
3. **Asphalt and Flange.** Asphalt surface in the area between flange timber planks or other material forming flange-way openings which may include the use of rubber.
4. **Concrete.** Includes Concrete Slab and Concrete Pavement.

**Concrete Slab** is precast concrete sections that are usually individually installed and removable for maintenance and replacement purposes. **Concrete Pavement** is a concrete surface that is continuous over the track area and is not removable except by destruction of the surface.

5. **Concrete and Rubber.** An installed crossing surface that consists of both concrete and rubber materials.
6. **Rubber.** Preformed rubber sections that are usually individually installed and removable for maintenance and replacement purposes.
7. **Metal.** Includes Metal Sections and Other Metal.

**Metal Sections** are unit pieces of steel or other metal that are usually individually installed and removable for maintenance and replacement purposes. **Other Metal** includes other metal materials that are usually not removable in sectional units and that provide complete coverage of the crossing area within the track.

8. **Unconsolidated.** Ballast or other unconsolidated material placed over crossties, with or without planks, on one or both sides of the running rails.
9. **Other (Specify).** Surfaces other than the previously described surfaces and would include structural foam, plastic, "high-tech," etc.

#### **Part IV-Item 7. Does Track Run Down a Street?**

Enter a check in the appropriate box for whether or not the crossing involves a railroad track that is parallel to and within a street or highway.

#### **Part IV-Item 8. Nearby Intersecting Highway?**

Enter a check in the appropriate box for the condition where the street or highway at this crossing is intersected by another street or highway and at what approximate distance from the crossing. Valid values are:

**Yes, within 500 feet** = Less than 75 feet; 75 to 200 feet; 200 to 500 feet  
**No, or greater than 500 feet** = N/A

#### **Is it Signalized?**

Enter a check mark in the "Yes" or "No" to indicate if the nearby intersecting highway contains traffic signals.

#### **Part IV-Item 9. Is Crossing Illuminated? (street lights within approximately 50 feet of rail)**

An Illuminated Crossing is defined as when overhead street lighting provides reasonable illumination of trains present at the crossing and is within approximately 50 feet of the crossing. If street lights are present within 50 feet of the nearest rail, the "Yes" box should be checked. Since street lamp light-intensity can vary, sufficient lighting may be present for street lights located up to 100 feet from the crossing.

**Part IV-Item 10. Is Commercial Power Available?**

Enter a check to indicate if there is commercial electric power available within 500 feet of the crossing.

**Part IV-Item 11. Space Reserved for Future Use**

This item is reserved for future use. No input is required.

**7. PART V: HIGHWAY INFORMATION**

**Part V-Item 1. Highway System**

Enter a check for the correct Highway System Code.

The Highway System Codes for the National Highway-Rail Crossing Inventory File were revised as a result of the 1991 Intermodal Surface Transportation Efficiency Act, (ISTEA) Section 1006. ISTEA required the redefinition of the National Highway System (NHS) that is included in the total Federal-Aid Highway (FAH) program. The three classifications are: (1) National Highway System, (2) Other Federal-Aid Highway, and (3) Non-Federal-Aid. The National Crossing Inventory File uses this classification, but subdivides the National Highway System into "Interstate National Highway System" and "Other NHS."

The Highway System Codes are listed in the following table.

**Table: Highway System Codes**

<b>Code</b>	<b>Definition</b>	<b>Included</b>
1	Interstate National Highway System	Interstate, rural, and urban
2	Other National Highway System	Other urban and rural principal arterial, Non Interstate
3	Other Federal-Aid Highway, Not National Highway System	Rural major collector and higher category, or urban collector and higher category, not part of NHS
8	Non Federal Aid	Local rural roads, rural minor collectors, and local urban city streets or any other non-Federal-Aid roadway

NOTE: According to FHWA system mileage staff, Interstate frontage roads should not be designated as part of the Interstate National Highway System, but as a local street or road.



**Part V-Item 2. Is Crossing on State Highway System?**

Enter a check in the appropriate box to indicate whether (or not) the crossing is on a State Highway System.

If “Yes” is indicated, be sure that the *Highway Type and Number* are entered in Part I, Item 14.

**Part V-Item 3. Functional Classification of Road at Crossing**

Functional Classification is the grouping of highways, roads and streets by the character of service they provide and can be applied in planning highway system development. It defines the part that any particular route should play in serving the flow of traffic through a highway network. There are separate classifications for both urban and rural functional systems because they have fundamentally different characteristics. The details and definitions for classifying systems can be found on FHWA's Website at [www.fhwa.dot.gov](http://www.fhwa.dot.gov) under "Guidelines for Functional Highway Classification System."

Enter the appropriate highway Functional Classification Code that the State has determined in accordance with Federal-Aid Highway Program Definitions. The current Functional Classification Codes are listed in the following table:

**Table: Functional Classification Codes**

Category	Codes	Functional Classification
Rural	01	Interstate
Rural	02	Other principal arterial
Rural	06	Minor arterial
Rural	07	Major collector
Rural	08	Minor collector
Rural	09	Local
Urban	11	Interstate
Urban	12	Other freeway and expressway
Urban	14	Other principal arterial
Urban	16	Minor arterial
Urban	17	Collector
Urban	19	Local

NOTE: The tens digit must be "0" for Rural Codes and it must be "1" for Urban Codes. This field is also used to identify if a crossing is in a Rural or Urban area.

**Part V-Item 4. Posted Highway Speed**

Enter the Posted Speed Limit for the highway/roadway at the crossing. Where no speed signage exists, the State's statutory speed limit applies.

**Part V-Item 5. [Estimated] Annual Average Daily Traffic (AADT)**

Enter the estimated average for the calendar year for the daily highway traffic through the crossing (total both directions) based on available traffic information. A reasonable estimate of the AADT is acceptable if actual traffic counts are not readily available. In "year," enter the year that matches the AADT for the data supplied.

**Part V-Item 6. Estimate Percent Trucks**

Enter the estimated percentage of trucks in the traffic stream.

**Part V-Item 7. Average Number of School Buses Through Crossing per School Day**

Enter the average total number of times that a school bus went through a crossing, empty or full, on a normal school day. Back and forth movements count as two passes through the crossing.

## APPENDIX A

### Code Designations for High-Speed Rail Corridors

**Key:** Character “#” - Either use for Corridor Section Identifier (numeric 1 - 9), or use “X”.

<u>Code</u>	<u>Corridor</u>	<u>Route</u>
PNW#	Pacific Northwest	Vancouver - Seattle - Portland - Eugene
CAV# CAC#	California	San Diego - Los Angeles - Stockton - Sacramento/Bay Area Los Angeles - Bay Area - Sacramento
CMM# CSK# CIC# CKD# CTC# CIL#	Chicago Hub	Chicago - Milwaukee - Minneapolis Chicago - Springfield - St. Louis - Kansas City Chicago - Indianapolis - Cincinnati Chicago - Kalamazoo - Detroit Chicago - Toledo - Cleveland Indiana Extension: Indianapolis - Louisville
CCC#	Ohio 3 C's	Cleveland - Columbus - Cincinnati
KEY#	Keystone	Philadelphia - Harrisburg - Pittsburgh
EMP#	Empire	New York - Albany - Buffalo
NEP# NEM#	Northern New England	Boston - Portland Boston - Montreal
NEC#	Northeast Corridor	Washington - Baltimore - Philadelphia - New York - New Haven - Boston
SER# SES# SEC# SEV# SEG#	Southeast	Washington - Richmond - Raleigh Raleigh - Columbia - Savannah - Jesup - Jacksonville Raleigh - Durham - Greensboro - Charlotte - Greenville - Atlanta - Macon Virginia Extension: Richmond - Hampton Roads Georgia Connection: Macon - Jesup
FLX#	Florida	Miami - Orlando - Tampa
GCA# GCB#	Gulf Coast	Atlanta - Birmingham - Meridian - New Orleans Mobile - Biloxi - New Orleans - Houston
SCA# SCT# SCO#	South Central	Dallas/Ft Worth - Austin - San Antonio Dallas/Ft Worth - Texarkana - Little Rock Dallas/Ft Worth - Oklahoma City - Tulsa

*Contact FRA if other code designations are needed.*

## APPENDIX B

### GATED CROSSING DEFINITIONS FOR NATIONAL CROSSING INVENTORY REPORTING

**GATES:** Definition: Highway-Rail Intersections with **Gates** are those that have one or more automatic gate installations depending on the nature and layout of the roadway. Pedestrian gates are not to be included.

Inventory Reporting: Enter the total number of gate arms in Part III. Item 3.A. Include in the count all gates without distinction as to color or reflectivity. Do not include pedestrian gates.

WDCODE: The computer generated Warning Device Code (WDCODE) for crossings with this characteristic is 8.

#### TWO QUADRANT GATES:

Definition: Highway-Rail Intersections with **Two (2) Quadrant Gates** are those that have at least two automatic gate installations whereby the gate arms are designed to block the approaching highway traffic from driving around the gate arms without crossing the roadway centerline. They are positioned on the two crossing entrance approach sides of a two lane highway. When there is a four lane or greater divided highway exists, additional Mast Mounted Flashing Light & Gate (FLG) assemblies may be installed in the median island on the approach side of the highway (these are known as Dual Entrance Gates). The medians may be raised or they may be just islands with guardrails.

Inventory Reporting: Enter the total number of gate arms in Part III. Item 3.A. Include in the count all gates without distinction for color or reflectivity. Do not include pedestrian gates.

WDCODE: The computer generated Warning Device Code (WDCODE) for crossings with this characteristic is 8.

#### THREE QUADRANT GATES:

Definition: Highway-Rail Intersections with **Three (3) Quadrant Gates** are those that have three gate arms that extend individually across both approach lanes and one exit lane of a two directional highway. These gates, due to roadway design, block highway traffic from traversing the crossing when in the down position. One of the roadways intersecting the railroad tracks may utilize a median barrier, traffic channelization, or island preventing highway traffic from crossing into the exit lane of the side that does not have the exit gates, making the crossing fully blocked in a manner that would be equivalent to that of a four quadrant gate designs. (Refer to MUTCD Section 8.D. for appropriate design and operation.)

Inventory Reporting: Enter the total number of gate arms in Part III. Item 3.A. Include in the count all gates without distinction as to color or reflectivity. Do not include pedestrian gates.

Also, Enter a check in the appropriate box in Part III. Item 3.B to indicate that **Three-Quadrant Gates** are present at the crossing. This Item is to be checked only if the entrance and exit lanes are fully blocked when the gates are in the down position in a manner equivalent to that of a traditional four-quadrant gate installation.

WDCODE: The computer generated Warning Device Code (WDCODE) for crossings with this characteristic is 9. For the Accident Prediction Model (PCAPS and WBAPS) calculations, the formula for Gates utilizes WDCODE = 8 and 9.

#### **FOUR QUADRANT GATES:**

Definition: Highway-Rail Intersections with **Four (4) Quadrant Gates** are those which have four gate arms that extend individually across the approach and exit lanes of a two directional highway and that totally block highway traffic from traversing the crossing when in the down position. Roadways intersecting the railroad tracks at an angle may utilize median islands between the gates. (Refer to MUTCD Section 8.D. for appropriate design and operation.)

Inventory Reporting: Enter the total number of gate arms in Part III. Item 3.A. Include in the count all gates without distinction as to color or reflectivity. Do not include pedestrian gates.

Also, enter a check in the appropriate box in Part III. Item 3.B to indicate that **Four-Quadrant Gates** are present at the crossing. This Item is to be checked only if the traditional four-quadrant gate installation is present, consisting of four gates, blocking both the entrance and exit lanes when in the down position.

WDCODE: The computer generated Warning Device Code (WDCODE) for crossings with this characteristic is 9. For the Accident Prediction Model (PCAPS and WBAPS) calculations, the formula for Gates utilizes WDCODE = 8 and 9.

#### **FULL BARRIER GATES:**

Definition: Highway-Rail Intersections with **Full Barrier Gates** are those that have at least one gate arm or other barrier arm mechanism that fully extends across the roadway to block all approaching highway traffic from traversing the crossing and normally only block the on-coming traffic. Such systems would be used on one-way streets or divided roadways.

Inventory Reporting: Enter the total number of gate arms in Part III. Item 3.A. Include in the count all gates without distinction as to color or reflectivity. Do not include pedestrian gates.

Also, Enter a check in the appropriate box in Part III. Item 3.B to indicate that **Full Barrier Gates** are present at the crossing. This Item is to be checked only if the roadway traffic is fully blocked when the mechanisms are in the down position.

WDCODE: The computer generated Warning Device Code (WDCODE) for crossings with this characteristic is 9. For the Accident Prediction Model (PCAPS and WBAPS) calculations, the formula for Gates utilizes WDCODE = 8 and 9.

### **MEDIANS WITH GATES (Dual Entrance Gates):**

Definition: Highway-Rail Intersections with **Medians With Gates**, or Mast Mounted Dual Entrance Gates, are those that have gate arms that fully extend across the roadway to block all approaching highway traffic from traversing the crossing. The gate assembly is installed on the highway shoulder side and in the median of the approach lanes. Such systems are often used on multi-lane divided highways with raised medians. Normally, these systems are considered to be equivalent to Two-Quadrant Gate systems, even though there may be four gate arms.

For **Medians With Gates** to qualify for full blockage of the roadway, the medians must extend a minimum of 100 feet and be of a design that is high enough (at least 8 inches) to prevent highway traffic from crossing into the opposite traffic lane.

Inventory Reporting: Enter the total number of gate arms in Part III. Item 3.A. Include in the count all gates without distinction as to color or reflectivity. Do not include pedestrian gates.

Also, enter a check in the appropriate box in Part III. Item 3.B to indicate that **Medians With Gates** are present at the crossing. This Item is to be checked only if the approaching highway traffic is fully blocked in accordance with the described design when the gates are in the down position and where the medians are considered un-mountable and extend at least the minimum length.

WDCODE: The computer generated Warning Device Code (WDCODE) for crossings with this characteristic is 9. For the Accident Prediction Model (PCAPS and WBAPS) calculations, the formula for Gates utilizes WDCODE = 8 and 9.

### III. UPDATING RESPONSIBILITY

The following Table identifies the designated agency (State or Railroad) that is responsible for updating specific data element fields in the National Crossing Inventory File. An “X” in the respective column for State or Railroad indicates which agency is normally responsible for providing the updated information. However, in some cases, both the State and Railroad can supply the other agency’s information. A blank does not necessarily preclude an agency from providing the information if it is correctly known and explained and documented when transmitting the data.

A checkmark (√) in the “Required” column indicates that this information is important and is a required data field for the National Inventory. If data is not submitted for a “Required” data item, the record may be held in suspense until the data is provided.

<b><u>UPDATING RESPONSIBILITY</u></b>				
<b>Agency Normally Responsible for Updating Crossing Inventory Data Elements, and Required Data Fields</b>				
<b>Item No.</b>	<b>Element Name</b>	<b>State</b>	<b>Railroad</b>	<b>Required</b>
<b>MUST PROVIDE THE FOLLOWING DATA FOR ALL CROSSINGS</b>				
A.	Initiating Agency	X	X	√
B.	Crossing Number		X	√
C.	Reason for Update	X	X	√
D.	Effective Date	X	X	√
<b>Part I: Location and Classification Information</b>				
I-1.	Railroad Operating Company		X	√
I-2.	State	X		√
I-3.	County	X		√
I-4.	Railroad Division or Region		X	
I-5.	Railroad Subdivision or District		X	
I-6.	Branch or Line Name		X	
I-7.	Railroad Milepost		X	√
I-8.	Railroad I.D. Number		X	
I-9.	Nearest RR Timetable Station		X	
I-10.	Parent RR		X	
I-11.	Crossing Owner		X	

## UPDATING RESPONSIBILITY

### Agency Normally Responsible for Updating Crossing Inventory Data Elements, and Required Data Fields

Item No.	Element Name	State	Railroad	Required
I-12.	City (In or Near)	X		√
I-13.	Street or Road Name	X		√
I-14.	Highway Type & Number	X		
I-15.	ENS Sign Installed (1-800)	X (for <u>Public</u> Crossings)	X (for <u>Private</u> Crossings)	
I-16.	Quiet Zone (if one exists)	NA	NA	FRA will populate
I-17.	Crossing Type		X	√
I-18.	Crossing Position		X	√
I-19.	Type of Passenger Service		X	√
I-20.	Average Passenger Train Count Per Day		X	√
I-21.	HSR Corridor ID (High Speed Rail Corridor)	X		FRA will provide Code
I-22.	County Map Reference Number	X		
I-23.	Latitude (Degrees, Decimal Degrees)	X (for <u>Public</u> Crossings)	X (for <u>Private</u> Crossings)	√
I-24.	Longitude (Degrees, Decimal Degrees)	X (for <u>Public</u> Crossings)	X (for <u>Private</u> Crossings)	√
I-25.	Lat/Long Source (Actual or Estimated)	X (for <u>Public</u> Crossings)	X (for <u>Private</u> Crossings)	√
I-26.	Is there an Adjacent Crossing with a Separate Number?	X		
I-27.	<b>PRIVATE CROSSING INFORMATION</b>			
I-27.A.	Category		X	√
I-27.B.	Public Access		X	√
I-27.C.	Signs/Signals		X	√
I-28.A--D.	Railroad Use		X	
I-29.A--D.	State Use	X		
I-30.	Narrative	X	X	
I-31.	Emergency Contact (Telephone No.)		X	√



## UPDATING RESPONSIBILITY

### Agency Normally Responsible for Updating Crossing Inventory Data Elements, and Required Data Fields

Item No.	Element Name	State	Railroad	Required
I-32.	Railroad Contact (Telephone No.)		X	√
I-33.	State Contact (Telephone No.)	X		√
<b>MUST PROVIDE PARTS II-V FOR PUBLIC VEHICLE AT-GRADE CROSSINGS</b>				
<b>Part II: Railroad Information</b>				
II-1.	<b>Typical No. of Daily Train Movements</b>			
II-1.A.	Total Trains		X	√
II-1.B.	Total Switching Trains		X	√
II-1.C.	Total Daylight Thru Trains (6 AM to 6 PM)		X	√
II.1.D.	Check if Less Than One Movement Per Day		X	√
II-2.	<b>Speed of Train at Crossing</b>			
II-2.A.	Maximum Time Table Speed		X	√
II.2.B.	Typical Speed Range Over Crossing		X	√
II-3.	Type and Number Tracks		X	√
II-4.	Does Another RR Operate a Separate Track at Crossing?		X	√
II-5.	Does Another RR Operate Over Your Track at Crossing?		X	√
<b>Part III: Traffic Control Device Information</b>				
III-1.	No Signs or Signals	X		√
III-2.	<b>Type of Warning Devices at Crossing - Passive Signs</b>			
III-2.A.	Crossbucks	X		√
III-2.B.	Highway Stop Signs (R1-1)	X		√
III-2.C.	RR Advance Warning Signs (W10-1)	X		√

## UPDATING RESPONSIBILITY

### Agency Normally Responsible for Updating Crossing Inventory Data Elements, and Required Data Fields

Item No.	Element Name	State	Railroad	Required
III-2.D.	Hump Crossing Sign (W10-5)	X		√
III-2.E.	Pavement Markings	X		√
III-2.F.	Other Signs	X		
III-3.	<b>Type of Warning Device at Crossing - Train Activated Devices</b>			
III-3.A.	Gates	X		√
III-3.B.	Four-quadrant (or full barrier) Gates	X		√
III-3.C.	Cantilevered (or Bridged) Flashing Lights	X		√
III-3.D.	Mast Mounted Flashing Lights	X		√
III-3.E.	Number of Flashing Light Pairs	X		
III-3.F.	Other Flashing Lights	X		
III-3.G.	Highway Traffic Signals	X		√
III-3.H.	Wigwags	X		√
III-3.J.	Bells	X		√
III-3.K.	Other Train Activated Warning Devices	X		√
III-4.	Specify Special Warning Device NOT Train Activated	X		
III-5.	Channelization Devices With Gates	X		√
III-6.	Train Detection		X	√
III-7.	Signaling for Train Operation: Is Track Equipped with Train Signals?		X	√
III-8.	Traffic Light Interconnection/Preemption	X		√
III-9.-12.	Reserved for Future Use			

## UPDATING RESPONSIBILITY

### Agency Normally Responsible for Updating Crossing Inventory Data Elements, and Required Data Fields

Item No.	Element Name	State	Railroad	Required
<b>Part IV: Physical Characteristics</b>				
IV-1.	Type of Development	X		√
IV-2.	Smallest Crossing Angle	X		√
IV-3.	Number of Traffic Lanes Crossing Railroad	X		√
IV-4.	Are Truck Pullout Lanes Present?	X		√
IV-5.	Is Highway Paved?	X		√
IV-6.	Crossing Surface (on main line)	X		√
IV-7.	Does Track Run Down a Street?	X		√
IV-8.	Nearby Intersecting Highway?	X		√
IV.8.	Is it Signalized?	X		√
IV-9.	Is Crossing Illuminated?	X		
IV-10.	Is Commercial Power Available?	X		
IV-11.	Space Reserved for Future Use			
<b>Part V: Highway Information</b>				
V-1.	Highway System	X		√
V-2.	Is Crossing on State Highway System?	X		√
V-3.	Functional Classification of Road at Crossing	X		√
V-4.	Posted Highway Speed	X		√
V-5.	Annual Average Daily Traffic (AADT)	X		√
V-6.	Estimated Percent Trucks	X		√
V-7.	Average Number of School Buses Over Crossing per School Day	X		√

#### **IV. POLICY AND PROCEDURES FOR SUBMITTING UPDATES**

The following policy and procedures shall apply for data submitted to update the National Crossing Inventory File. When submitting updates, the submitting Railroads and States (both referred to as Agencies herein) need to include a transmittal letter explaining the information being provided and the action to be taken. This “letter” may be hardcopy or an electronic email which includes the submitter’s name and contact information, with a copy to any other agencies whose data is affected providing complete notification to all involved parties. Good communication is the key to successful updating.

Many discrepancies in the Inventory are due to one Agency updating fields and not sharing the information with the other affected Agencies. Additionally, FRA receives updates from numerous States and Railroads in many different forms and formats. Quite often, these submittals contain errors or include questionable data or processing techniques. FRA needs to be able to contact the person submitting the data and to understand exactly what information is being submitted for proper processing.

**Requirement: All crossings in the United States, public, private and pedestrian, both at-grade and grade separated (underpasses and overpasses) shall have a DOT Crossing Inventory Number assigned.** The only exception is for a crossing that is to serve temporary construction activities and will not be in place for longer than six months. For Crossing Inventory purposes, an at-grade signalized crossing will include only those tracks that lie between the same pair of warning devices.

The responsibility for numbering the crossing and for filing the initial inventory report is that of the “Operating Railroad,” meaning the railroad that actually operates over the crossing. This is also the case for crossings that are on private property such as in a plant area owned by a private corporation or in the rail yard of the Operating Railroad. If multiple railroads operate over the crossing, then the responsibility falls to the operating railroad who owns and/or maintains the trackage.

- 1. For a new crossing, the Railroad normally has the responsibility for initiating the process, obtaining a valid crossing inventory number, completing a hard copy of the Inventory Form (or an electronic file) for the new crossing data, and submitting it to FRA for processing. For a public at-grade crossing, the completed Form (or electronic file) is normally submitted by the Railroad to the State for completion of Part V, “Highway Information.” The State is then responsible for forwarding the completed Form (or electronic file) to the FRA and for sending a copy back to the Railroad.**

**The State may assume this responsibility for Railroads that convey their permission to do so or for Railroads that do not have sufficient resources (such as small shortline, museum and tourist railroads) or those that do not respond in a timely manner.**

**For a new crossing, all required fields must have data provided. The processing software, by design, will not permit just partial data for a new crossing to be input into the File.**

Discussion: It is suggested, for expediency and efficiency, that the Railroad obtain the highway information for a public crossing from the State for inclusion on the Form. This provides the railroad control over the submittal process and assures that the information is forwarded to FRA and is not waiting for the State to complete their part. The transmittal letter should show that the State is being provided a copy, which will be considered confirmation by the State that the data is correct, or the State can provide the correct information.

In situations where a railroad fails to respond in a timely manner by assigning a crossing inventory number to a new or un-numbered crossing, or in the case of smaller railroads that don't have the knowledge or resources to respond promptly, the State may proceed by assigning a crossing inventory number.

- 2. In general, for existing crossings where updates are submitted electronically in mass or individually on hardcopy, only those data fields for which the initiating Agency has responsibility will be processed. Only one agency, State or Railroad, has responsibility for a specific data field. These responsibilities are defined in the attached "Updating Responsibility" Table.**

Discussion: In general, when providing electronic updates, the Railroad will only update the railroad-responsible data fields and the State will only update the state-responsible data fields. Further, the submitting agency should only submit the data for processing for which it is responsible. Exceptions to this policy are explained for situations when one agency is not prevented from updating the other agency's data fields.

- 3. States may determine that they will maintain and control the complete Inventory File for all crossings in their State, whereupon, they will submit all updates for both the State and Railroads to the FRA.**

Discussion: In such cases, the State takes full responsibility for submitting all data fields for both the Railroads and the State. The State must notify the FRA and railroads that they intend to implement this policy and guarantee that the State will submit updates at least every three months to the FRA. Railroads, operating within these States, should then send their updates only to the State and not to the FRA. If the State fails to provide such updates within a six month period, they may lose this special status and FRA may return to accepting updated data from the Railroad. The FRA will maintain a record of the States with this status and will not process data received from the Railroad for these States.

- 4. For States (or Railroads) that have performed an on-site inventory, the data for all re-inventoried fields may be submitted for updating which may include both State and Railroad data fields.**

Discussion: If an on-site inventory is performed, all the data obtained from the on-site inventory will be accepted for updating. The transmittal letter must explain that an on-site inventory has occurred, and a copy of the letter and data must be provided to all entities for which data is being updated. Any updates obtained during an on-

site inventory, that are updates to fields which are not the submitting agency's responsibility, must be submitted separately from any other submitted data.

- 5. When a Railroad upgrades a warning device or crossing surface (usually as part of, but not solely, a Section 130 project), it is the responsibility of the Railroad to notify the State and FRA of the upgrade or change in the warning device and/or surface.**

Discussion: In such situations, the Railroad usually will notify the State that the project work is complete and ready for inspection. Such letters need to have a copy of the Inventory Form (which can be obtained from FRA's Website) attached with the changes indicated and circled. Copies of this letter should be sent to the FRA and to the State Inventory Contact. This will usually apply to a single crossing or small group of crossings and be performed by hardcopy. Electronically submitted letters (e.g., pdf files) are acceptable. States are encouraged to include this requirement in contracts with the Railroads. Railroads that regularly submit updates electronically may use this method for providing updated information. However, the transmittal letter will need to state that such updates are being submitted.

- 6. It is the responsibility of the Railroad to submit a change in the "Operating Railroad" when a segment or entire railroad transfers ownership. This responsibility usually falls to the current Railroad that is transferring ownership to the new Railroad. However, it is also the responsibility of the new Operating Railroad to ensure that all of their crossings are updated to show the new change in ownership.**

**States may perform such a change when conditions exist where the previous railroad is no longer in existence or where the Railroad has not performed its responsibility to submit changes within a reasonable amount of time. In such cases, the new "Operating Railroad" must be notified of the changes.**

Discussion: FRA may request the submitting agency to confirm that the information is correct and that the change is to be performed. Copies of the transmittal letter explaining the update shall be provided to all affected parties that are still in existence. If the submitting agency is the State, then the updates to the Operating Railroad field must be sent in a separate file.

- 7. States and/or Railroads may be requested to confirm that the submitting agency is providing the correct information (change in data) when the current FRA Inventory File differs from the updated submission for certain data fields, such as "Reason (open or closed)," "Type/Position (private or public)," "Operating Railroad" and "State (location)."**

Discussion: There is often a conflict in the National File with these fields when updates are submitted. When such conflicts exist, FRA may request the submitting agency to confirm that the updated information is correct. This confirmation can be provided by submitting a simple letter (or email) directing the FRA (or its Contractor) to effect the changes and that the data is correct. The submitting agency is taking responsibility for the accuracy of the information provided. For such cases, the

submitting agency should check with the opposing agency to confirm and resolve any conflicts before directing FRA to make the change.

Crossing Type (public or private) is usually obvious. However, in certain situations where it is not clear, resolution of the conflict will require discussions and agreement by both the Railroad and the State. Since determination of this status has a great effect on the Railroad, it is the Railroad's responsibility to submit the updates for this data field. The State needs to implement procedures to determine and designate which crossings are public in their State and so notify the affected Railroad.

**8. When a crossing is being changed from Private to Public, data for all required data fields must be provided by the submitting agency.**

Discussion: The data processing software, by design, will not accept a “new” or “change to” a Public crossing unless all information for all required data fields is provided. Legal implications of changing Crossing Type (private to public or vice versa) may deserve using hardcopy, or an electronic version thereof, so that a paper trail exists and complete notification of all involved parties is documented.

**9. If there are no changes to a crossing record and all data is to remain the same, the submitting agency may indicate that the current data is correct and current by changing only the “Effective Date” to January 1<sup>st</sup> of the current year. This procedure should not be used more than once every three years.**

Discussion: The Inventory Program requires that updates be provided to the National File when changes occur which are different from the current record in the File. Thus, if no changes occur, no updates are required. However, for some crossings, there may never be any changes and the records will retain a very old effective date which will make it look like the data in the File is outdated, when in fact it is not. In such cases, when the submitting agency verifies that the current data is correct by an on-site inventory or another method, a more this procedure can be used to verify that the current data is correct and provide a more current “Effective Date,” can be provided indicating that the File is current and not outdated.

**10. In some circumstances, a State (or Railroad) may request or allow the other agency to provide updates on its behalf. This will usually happen when a State is providing updated information on behalf of a small shortline railroad. In such cases, updated data will be accepted for both agencies upon confirmation with the non-submitting agency. This confirmation can be provided by the update transmittal letter to FRA, or by letters of instruction or notification to and/or between the Railroad and State agencies.**

Discussion: States that may not have the resources to frequently update the File, may agree to allow the Railroad to provide updates for state-responsible fields, such as warning devices and physical characteristics. Likewise, a Railroad may request or allow a State to make changes or corrections on its behalf because it does not have the resources at the moment to effect the changes. Also, in some cases it may be more efficient and easier for the State to submit updates for a crossing (or a new

crossing) on behalf of a shortline railroad, or other owner, which does not have the resources or may lack the knowledge to effect such updates. When these situations occur, FRA will process the data provided assurances are received that it is acceptable to the other agency and that the other agency has been notified of the changes being made. This process can be accomplished by including this information in the transmittal letter with a copy to all affected parties. Such data must be provided to FRA separate from other updates.