Grade Crossing Safety and Trespass Prevention Programs

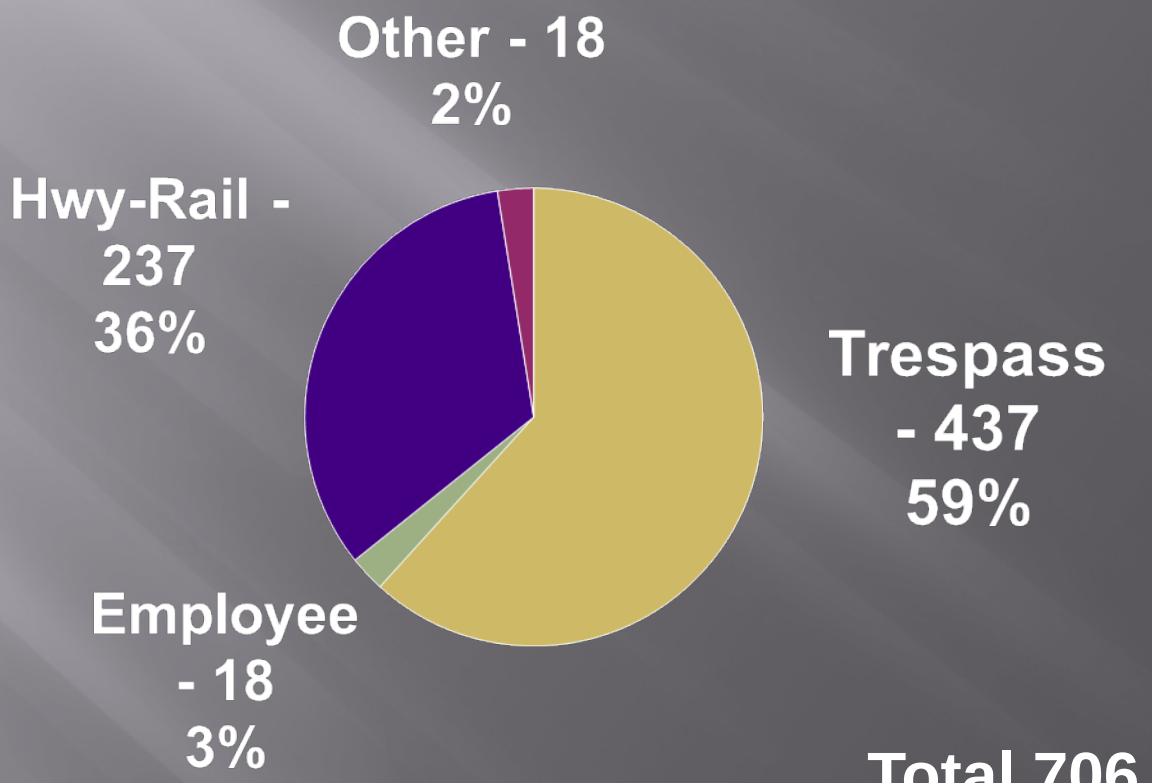
Annual Meeting

Association of State Rail Safety Program Managers

San Antonio, TX

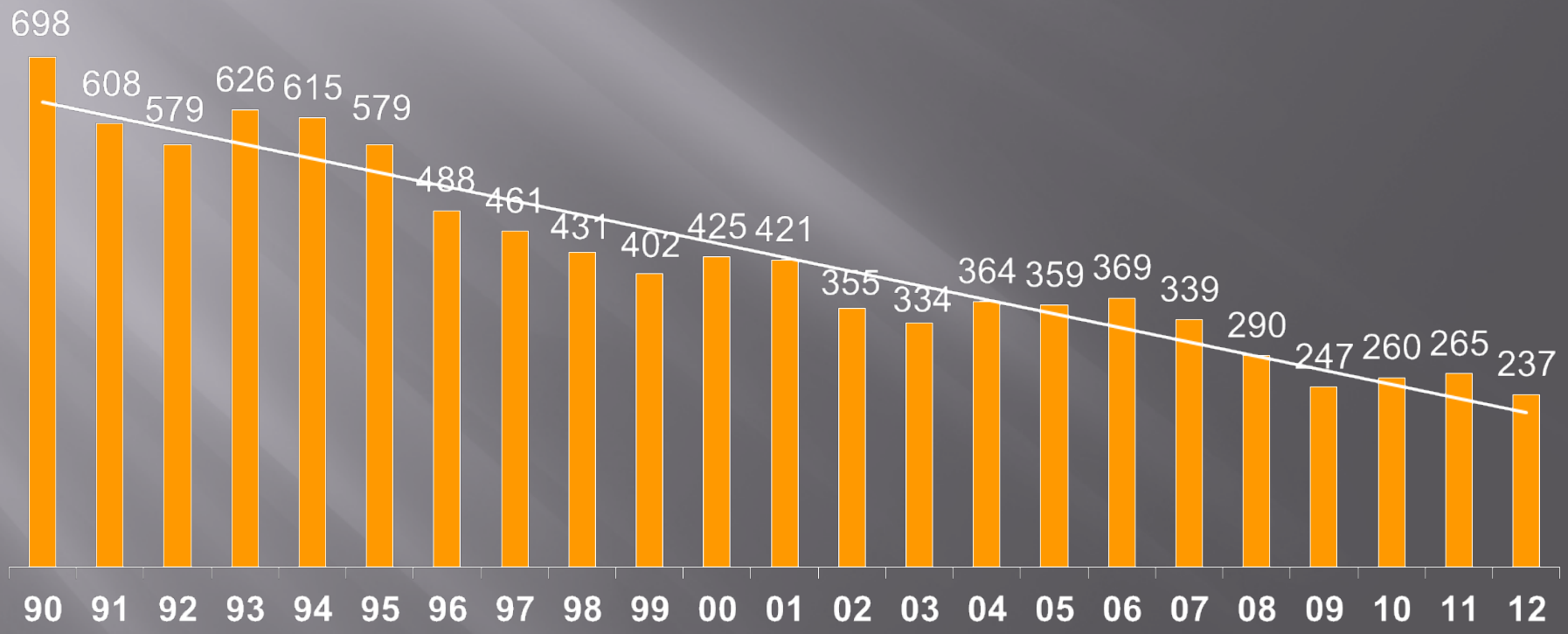
August 28, 2013

Rail Fatalities in 2012

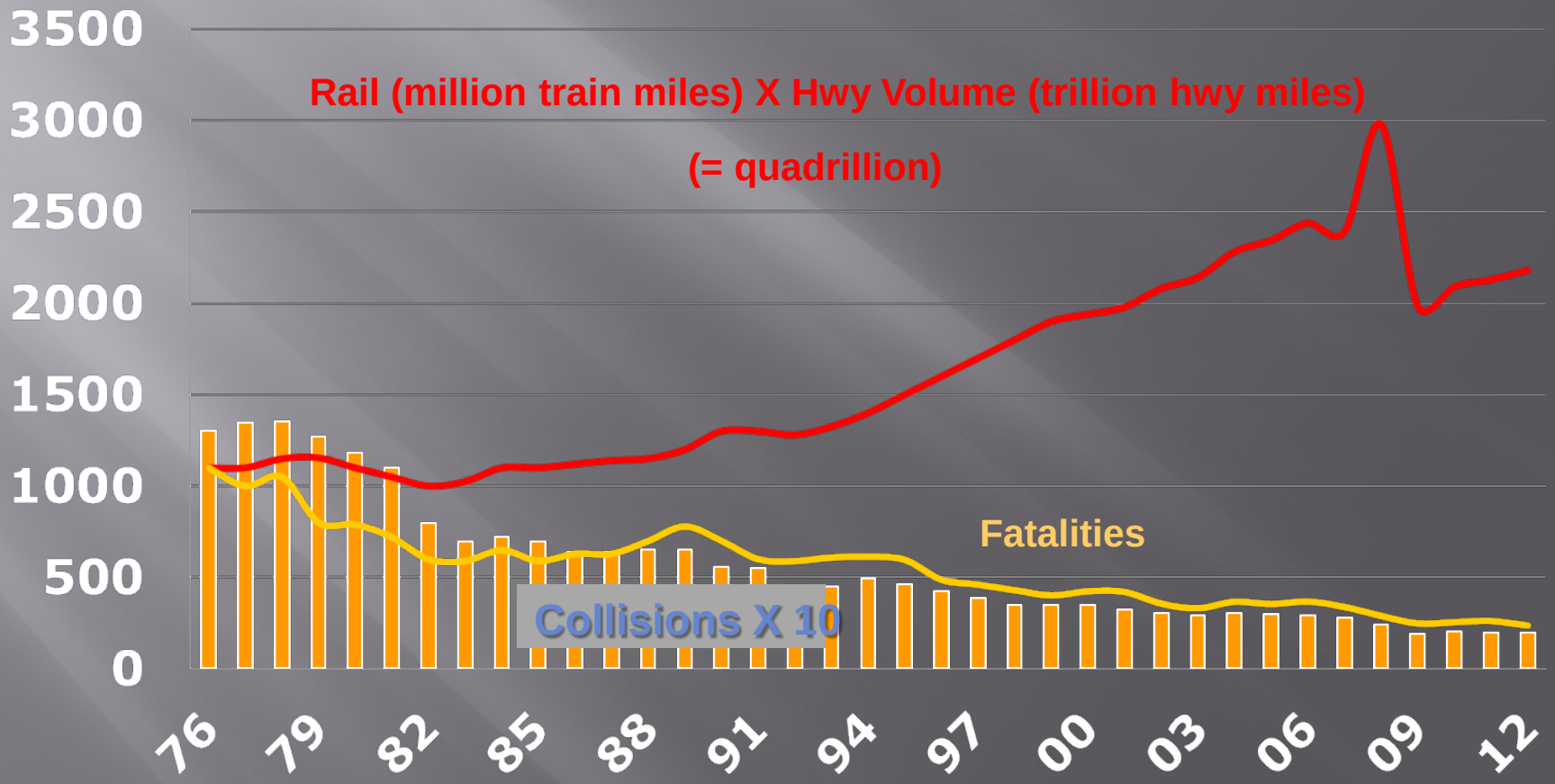


Total 706

Highway-Rail Fatalities Trends



Collisions, Fatalities and Exposure



2013 vs. 2012 thru May

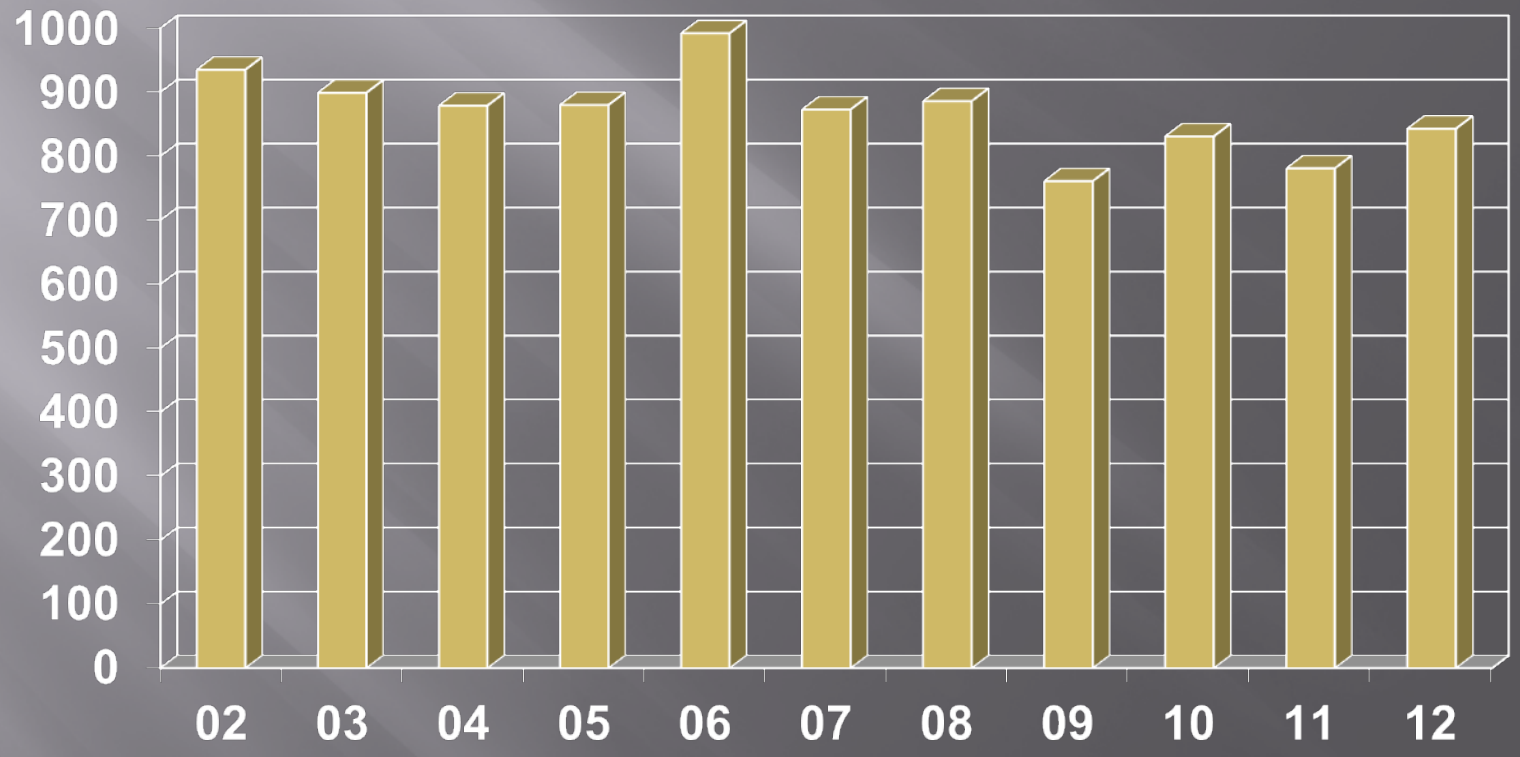
- Trespass fatalities up 25.9% (41 more)
- Crossing collisions up 4.5% (36 more)
- Crossing fatalities down 1.6% (2 less)

Where Collisions Occur
2012 (Public)

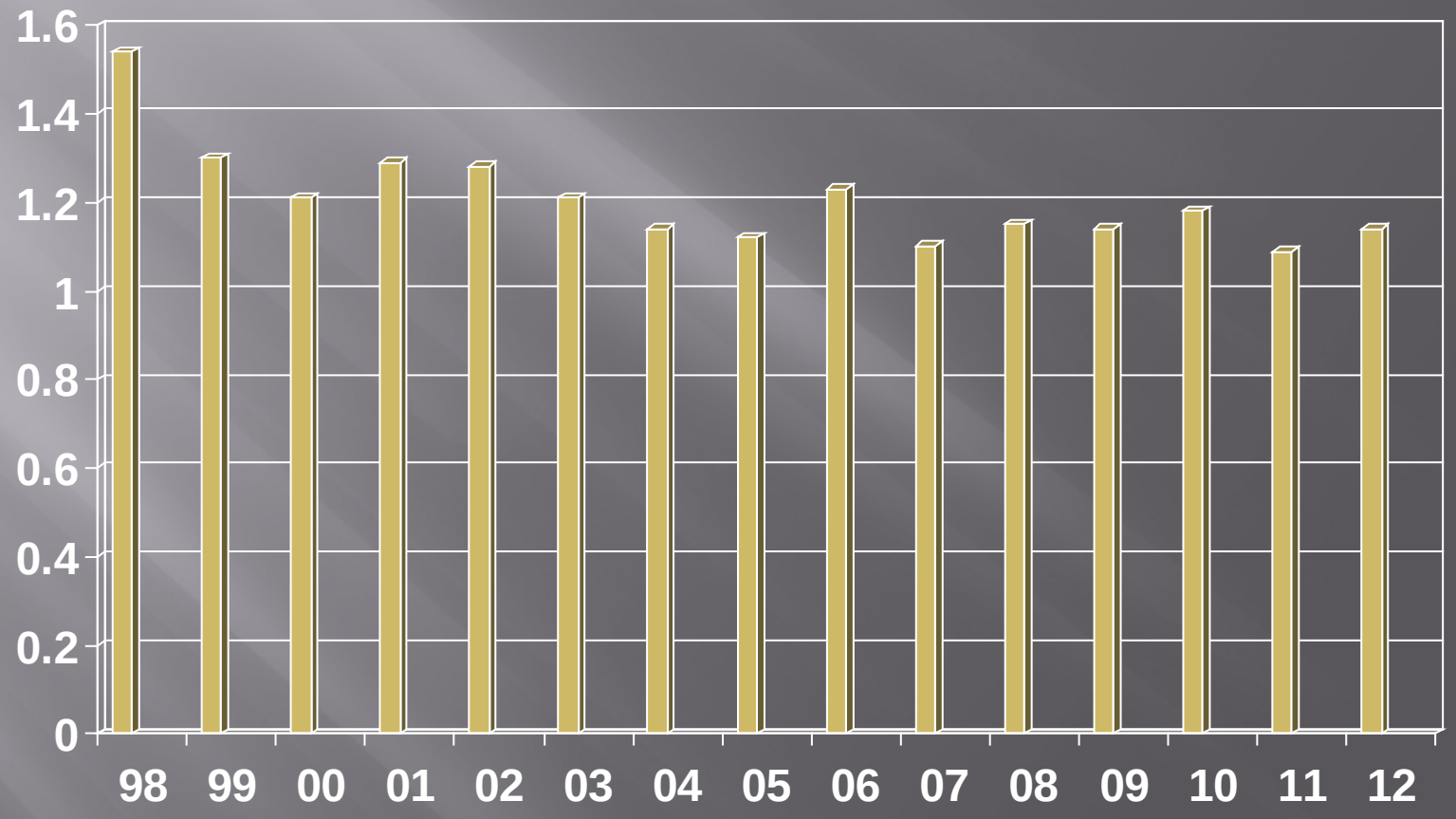
Device	% Collisions	% Xings (07)
Gates	44.4%	34.4%
Flashing Lights	15.9%	15.5%
STOP Signs	11.9%	9.0%
Crossbucks	24.6%	35.7%
Other	3.2%	5.4%

Trespassing Issues

Trespass Casualties By Year



Trespass Casualty Rate (per 1M train mile)



Activities

- Part 225 now requires geo-locating incidents
  - Also requires suicides to be reported
- FRA is geo-locating incidents – trying to locate hotspots
- Pilot project in FL to study the effectiveness of CARE process (Community, Analysis, Response, Evaluation) about completed.

Quiet Zones

Number of QZs – 556 (308*)

- New QZ – 380 (160)
- New Partial QZ – 7 (14)
- Pre-Rule QZ – 169 (162)
- Pre-Rule Partial QZ – 20 (22)
- Notices of Intent – 118 (63) Note: FRA not required to receive a NOI

* Number from 2009

Number of QZ

- 556 – QZs (358)
- 45 States (38)

Number of New QZ

- 380 New QZ have been established (163) [includes partial qzs]
- 42 States (33)
- States with the most New QZ
  - TX – 93 (29)
  - IL – 40 (19)
  - MN – 38 (17)
  - CA – 35 (13)
  - WI – 15
  - NM – 13 (10)

How are New QZs Established

- SSM at every crossing – 176 (84)
- QZRI <= NSRT – no improvements - 40 (14)
- QZRI <= NSRT – with improvements - 20 (19)
- QZRI <= RIWH – w/improvements - 101 (33)

Remember

- No QZ consisting of only private and/or pedestrian crossings.
  - Must have at least one public crossing.
- Private and pedestrian crossings that are more than ¼ mile from the outermost public crossings cannot be in QZ
- Each rail line must be a separate QZ

Assistance

- CWT – "reasonably practical"
  - If CWT will operate properly
  - Absent the QZ, would CWT be installed if the warning devices were being updated
- How to determine "reasonably practical"
  - Diagnostic review
  - State agency with responsibility for selecting/ordering warning devices improvements
  - FRA determination – Public authority ask FRA to make a determination. No longer a waiver.

Realize that Horn May Still Sound

- Horn may still be used for:
  - Emergencies
  - Roadway worker protection
  - Malfunctioning warning devices (Part 234)
  - Operating rules – e.g., approaching stations
- Bleed-over from non-QZ crossings
  - Crossings outside of QZ
  - Adjacent crossings on other tracks not in QZ

Rule Activity

- Recalculated NSRT with new APF normalizing constants
  - Slightly higher – published soon
  - New constants are to calculate both NSRT and QZRI – should be no relative change.
- FRA will probably review Part 222 in the next year for possible revision

Private Crossings

Status

- FRA remains concerned about safety at private crossings.
- ENS rule requires that private crossings be included in the system (e.g., signs)
- Expect NTSB recommendations as a result of the collision and derailment in MD

Rail Safety Improvement Act of 2008

Crossing Safety & Trespass Prevention: Impacts and Required Action

(Public Law 110-432)

Pedestrian Crossing Safety

Section 201

Pedestrian Crossing Safety
Section 201

Provide guidance to railroads on strategies and methods to prevent pedestrian accidents, incidents, injuries, and fatalities at or near passenger stations

Done

State Action Plans
Section 202

State Action Plans
Section 202

- Identify the 10 States with the most collisions over the past 3 years
- Require those States to develop a State grade crossing action plan within a reasonable period of time

State Action Plans
Section 202

- 10 States– TX, CA, IL, IN, GA, LA, OH, AL, FL, IA
- 9 out of 10 States have submitted plans that have been approved.
- Working with the 10th

Improvements to Sight Distance at Highway-rail Grade Crossings

Sec. 203

Sight Distance at Crossings Sec. 203

- Develop model State legislation for improving safety by addressing sight obstructions at passive crossings (no active warning devices such as flashing lights and gates)
- Including
  - vegetation growth
  - topographic features
  - structures
  - standing railroad equipment
- Completed

National Crossing Inventory
Sec. 204

Background – Inventory File

- Original Inventory started January 1, 1975
- Contains both current and historical records
- Currently, almost 2.7 million records in the file
- 1975 had 365,000 at-grade crossings
- 212,033 at-grade crossings as of 11/30/12
- Process 90K to 120K updates per year
- Submittals received from 50 states and 750 railroads

National Crossing Inventory Database

- Established in 1972-1974 by the AAR, ASLRRA, States, FHWA, NHTSA & FRA, they defined:
  - the DOT Crossing Inventory Numbering System
  - the Operating Procedures and Database
- FRA is the Custodian of the National Inventory data file for the states and railroads
- FRA only updates it with the data it is provided

Purpose & Goals

- 1973 Federal-Aid Highway Act (Section 203) required each State to maintain an inventory of all crossings
- And also maintain a Priority List for crossing improvements
- Purpose was to provide information to FRA, states, and railroads for crossing safety improvements
- To merge data with accident files to plan safety improvements using the Accident Prediction Model
- The Inventory is critical for supporting *ENS* that is required by RSIA 2008

Outreach Efforts for Revised Form

- Beginning in 2001, FRA held a series of outreach meetings to receive input from stakeholders on revising the Inventory Form
- Draft versions were posted on FRA web site and comments were solicited
- Proposed revised form is the 7th revision produced by this process

RSIA 2008

- Rail Safety Improvement Act of 2008 (Public Law 110-432) required a number of actions by FRA
- Mandatory reporting and updating the National Inventory was one of them

National Crossing Inventory Sec. 204

- New Crossings - railroads and states must report any new or previously unreported crossings:
  - Within 6 months that it becomes operational, or
  - By 10/16/09, whichever is later

National Crossing Inventory Sec. 204

- Updating Inventory – railroads and states must:
  - Update the inventory no later than 10/16/10 (2 years from RSIA) and then
  - Update every year by Sept. 30
  - Secretary can change the reporting interval
- Railroads must report sold crossings on or after 10/16/08 by 4/16/10 or within 3 months of sale (whichever is later)

National Crossing Inventory Sec. 204

- Grants rulemaking authority to implement
- Enforce the existing policies and guides until rules are issued

National Crossing Inventory Sec. 204

- Crossing includes:
  - Public highway, road, or street, or a private roadway, including associated sidewalks and pathways at grade or grade separated
  - Pathway authorized by a public authority or a railroad for the use of non-vehicular traffic, including pedestrians, bicyclists, and others, that is not associated with a public highway, road, or street, or a private roadway, crosses one or more railroad tracks either at grade or grade-separated

National Crossing Inventory Sec. 204

- Section 130 statute is revised to require states to comply
- MAP-21 removed the requirement to promulgate regulations to the states

Notice of Proposed Rulemaking

- Published in *Federal Register* on 10/18/12
- NPRM Docket (FRA-2011-0007) includes:
  - Proposed rule
  - Proposed revised form
  - Proposed revised guide
  - Draft instructions for electronic updating

Technical Symposiums

- Announced in *Federal Register* on 11/16/12
- 1st was held on 12/13/12 in Washington, DC
- Purpose - to give interested parties the opportunity to discuss issues associated with the electronic submission of data to the U.S. DOT National Highway-Rail Crossing Inventory
- 55 participated – railroads & states
- 2nd was held on 4/10/13 in Washington, DC and via GoToMeeting and conference calls
- Additional meetings are expected

Comments to the NPRM

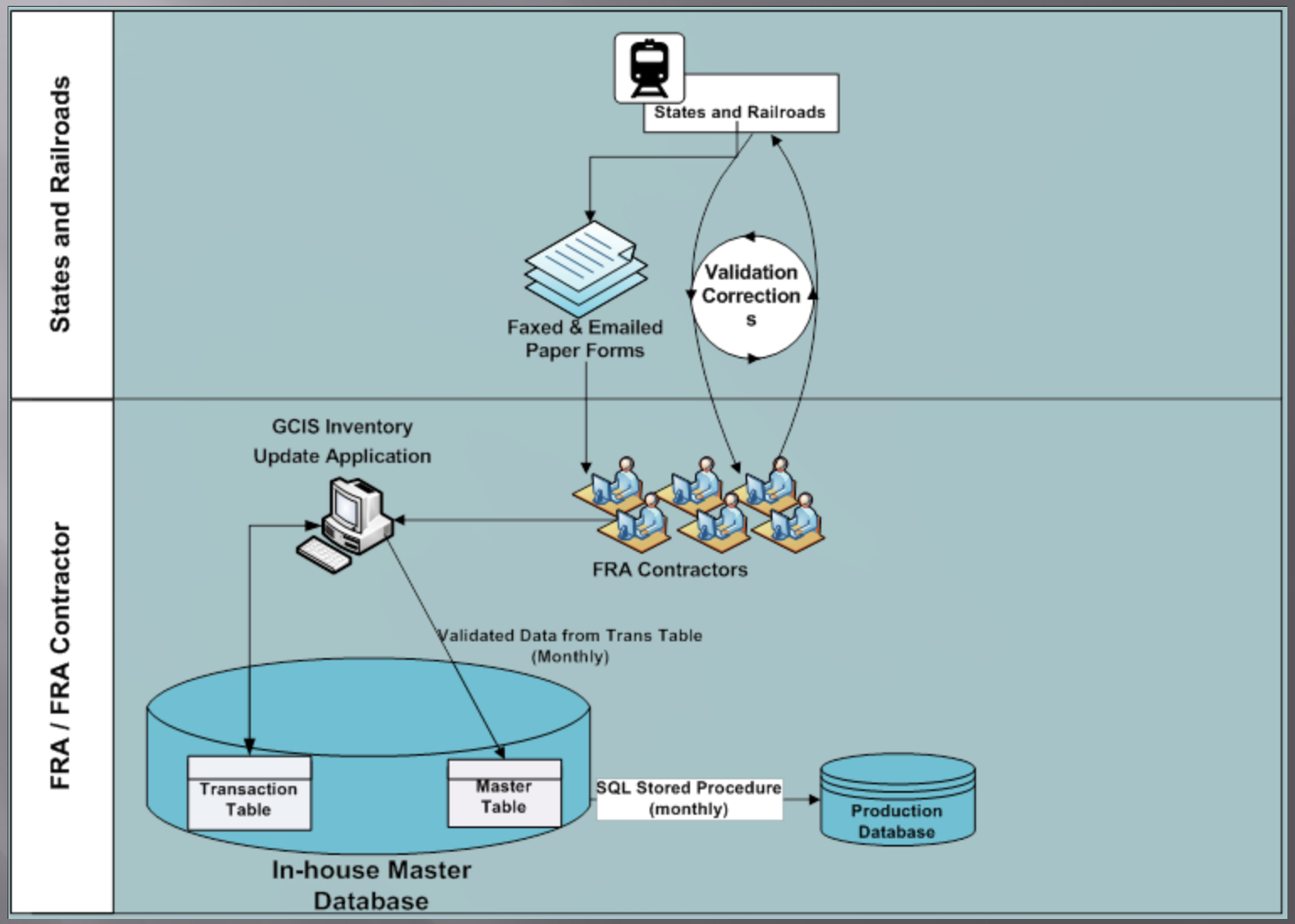
- Public hearing was held on Feb. 19, 2013
- Comments on the proposed rule, form, guide and electronic instructions closed on March 29, 2013
  - Comments submitted after 3/29 will be to the extent possible without additional expense or delay
- Comments can be made electronically at www.regulations.gov to FRA-2011-0007
- Also can view and comment on other comments that have been submitted

Crossing Inventory Update Methods

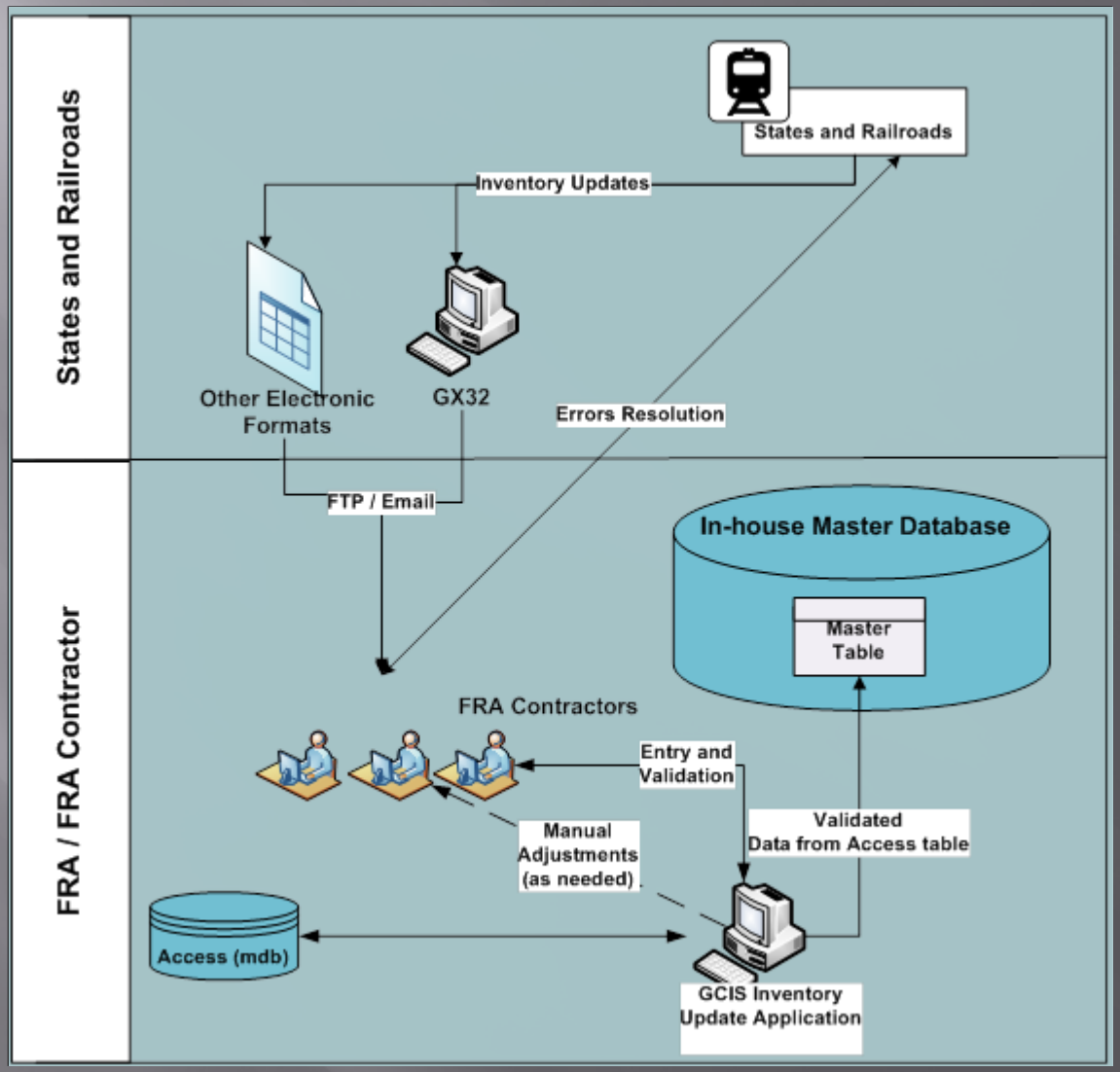
Currently – FRA receives updates from these sources:

- Paper Submissions
  1. Crossing Inventory Form FRA F 6180.71 (Rev. 11/99)
  2. Letter/Table printed from PDF
- Electronic Submissions
  1. GX32 Application submissions
  2. E-Files (emailed, uploaded or submitted via CD/DVD)

Paper Submission Process



Electronic Submission Process



Electronic Submission Acceptable Data Formats

1. GX32 Format
2. ASCII Fixed Width Format
3. ASCII Comma and Tab Delimited Formats
4. Access Database Format
5. Excel Format

Processing Times

- GX32 Submissions: One to three days
- E-Files: one to two weeks
- Paper Submissions: one to four weeks
- Times include follow-up and wait for submitter to address issues
- Published to the National Inventory on last business day of the month

Data Issues – In General

1. Backlog due to a spike in submissions received since the introduction of RSIA in 2008
2. Incomplete paper and electronic submissions (missing or incorrect data)
3. Update to railroad type (private/public) without providing now-required information
4. Electronic submissions (non-GX32) with improperly ordered data, incorrect fields, or invalid codes

Data Issues – For Paper Submissions

1. Changes or updates are not identified on the Form
2. Missing effective date
3. Missing initiating agency
4. Inaccurate latitude and longitude values
5. Missing telephone numbers
6. Inaccurate train counts for current year
7. Inaccurate highway traffic counts

Access to the current National Inventory Data

- National and state-level crossing Inventory data is updated monthly and is available through:
  - FRA's Office of Safety public website
    - http://safetydata.fra.dot.gov
      - Crossing inventory data available for download (.dbf format)
  - FRA's Data Services (Web Services)
    - Users can register with FRA by submitting a request to support@frasafety.net
    - Data provided in XML format by State or by Railroad
  - FRA's GX32 Software Package

GX32 Software Package

Highway-Rail Crossing Data Maintenance System - [539618F - Edit Crossing]

File View Tools Help

A. Initiating Agency: (•) Railroad ( ) State

B. Crossing Number: 539618F

C. Reason for Update: (•) Changes in Existing Crossing Data ( ) Closed Crossing or Abandoned

D. Effective Date: 12/07/2012

Part I: Location and Classification Information

1. Railroad Oper. Co: NS NORFOLK SOUTHERN CORPORATION

2. State: IN

3. County: GRANT

4. Railroad Division or Region: LAKE

5. Railroad Subdivision or District: MARION BRANCH

6. Branch or Line Name:

7. RR Milepost: 0083.60

8. RR I.D. No:

9. Nearest RR Timetable Station:

10. Parent RR (if applicable):

11. Crossing Owner (RR or Company name)(if applicable): NS

12. City (check one): (•) In ( ) Near JONESBORO

13. Street or Road Name: E JONESBORO B/P

STATE SUPPLIED INFORMATION

21. HSR Corridor ID:

14. Highway Type and No: US #35

15. ENS Sign Installed(1-800): (•) Yes ( ) No

16. Quiet Zone: (•) No ( ) Partial ( ) 24 Hr ( ) Unknown

22. County Map Ref. No: 27

23. Latitude: 40.4892400

24. Longitude: -085.6347600

25. Lat/Long Source: (•) Actual ( ) Estimated

17. Crossing Type (choose one): (•) Public ( ) Private ( ) Pedestrian

18. Crossing Position: (•) At Grade ( ) RR Under ( ) RR Over

19. Type of Passenger Service: ( ) AMTRAK ( ) AMTRAK and Other ( ) Other (•) None

20. Average Passenger Train Count Per Day: 0

26. Is there an Adjacent Crossing With a Separate Number? ( ) Yes (•) No If Yes, Provide Number:

27. PRIVATE CROSSING INFORMATION

27.A. Category (check one): ( ) Farm ( ) Residential ( ) Recreational ( ) Industrial ( ) Commercial

27.B. Public Access: ( ) Yes ( ) No ( ) Unknown

27.C. Signs/Signals: [ ] Signs Specify: [ ] None [ ] Signals Specify:

28.A. Railroad Use:

29.A. State Use: 2

4:39 PM 1/7/2013

start Inbox - Microsoft Out... Highway-Rail Crossin... 4:39 PM

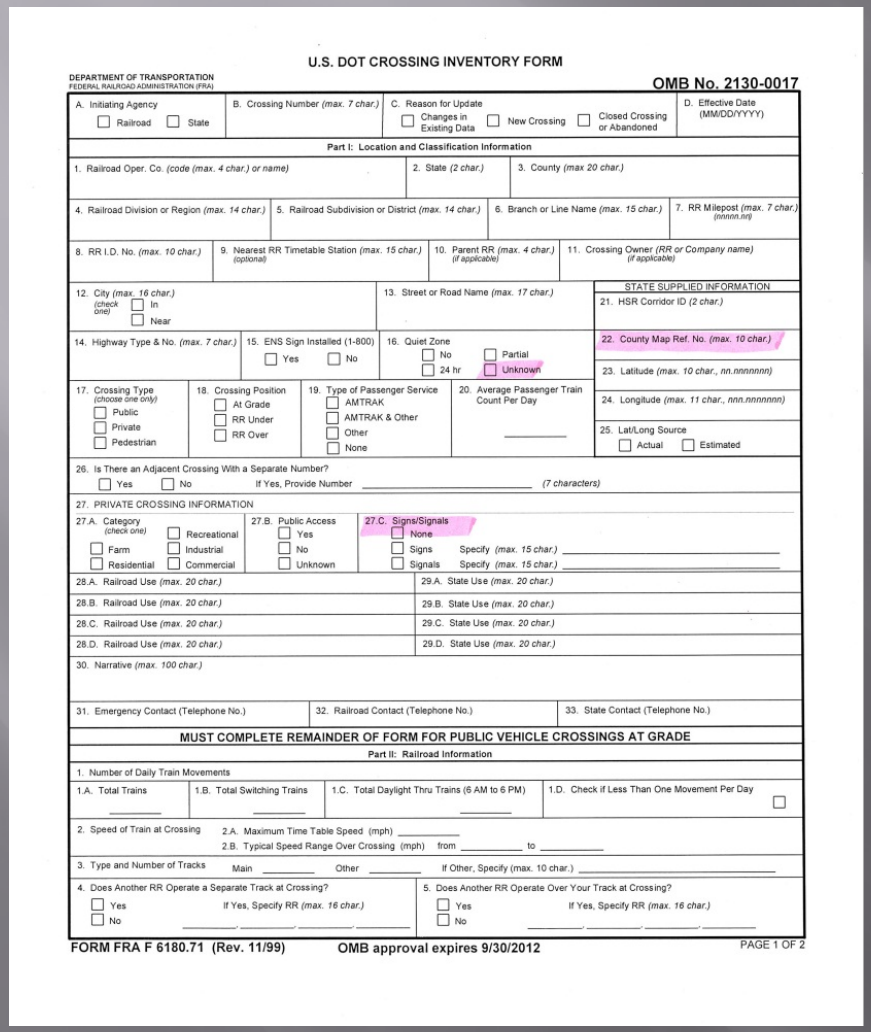
What is coming?

Proposed Changes:

- Inventory Form 71, Pages 1 and 2
- Submission Instructions and Methods
- Granting Access to Proposed System
- XML Format and System to System Operations
- File Structure (Additional Data Elements)
- Data Validation Rules

Proposed DOT Crossing Inventory Form

Current Form 71, Page



U.S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

OMB No. 2130-0017

A. Initiating Agency ☐ Railroad ☐ State
B. Crossing Number (max. 7 char.)
C. Reason for Update ☐ Changes in Existing Data ☐ New Crossing ☐ Closed Crossing or Abandoned
D. Effective Date (MM/DD/YYYY)

Part I: Location and Classification Information

1. Railroad Oper. Co. (code (max. 4 char.) or name)
2. State (2 char.)
3. County (max 20 char.)
4. Railroad Division or Region (max. 14 char.)
5. Railroad Subdivision or District (max. 14 char.)
6. Branch or Line Name (max. 15 char.)
7. RR Milepost (max. 7 char.) (nnnnn.nn)
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 one) ☐ In ☐ Near
13. Street or Road Name (max. 17 char.)
14. Highway Type & No. (max. 7 char.)
15. ENS Sign Installed (1-800) ☐ Yes ☐ No
16. Quiet Zone ☐ No ☐ Partial ☐ 24 hr ☐ Unknown
17. Crossing Type (choose one only) ☐ Public ☐ Private ☐ Pedestrian
18. Crossing Position ☐ At Grade ☐ RR Under ☐ RR Over
19. Type of Passenger Service ☐ AMTRAK ☐ AMTRAK & Other ☐ Other ☐ None
20. Average Passenger Train Count Per Day _____

STATE SUPPLIED INFORMATION
21. HSR Corridor ID (2 char.)
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 ☐ Actual ☐ Estimated

26. Is There an Adjacent Crossing With a Separate Number? ☐ Yes ☐ No If Yes, Provide Number _____ (7 characters)

27. PRIVATE CROSSING INFORMATION
27.A. Category (check one) ☐ Recreational ☐ Farm ☐ Industrial ☐ Residential ☐ Commercial
27.B. Public Access ☐ Yes ☐ No ☐ Unknown
27.C. Signs/Signals ☐ None ☐ Signs Specify (max. 15 char.) _____ ☐ 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.)

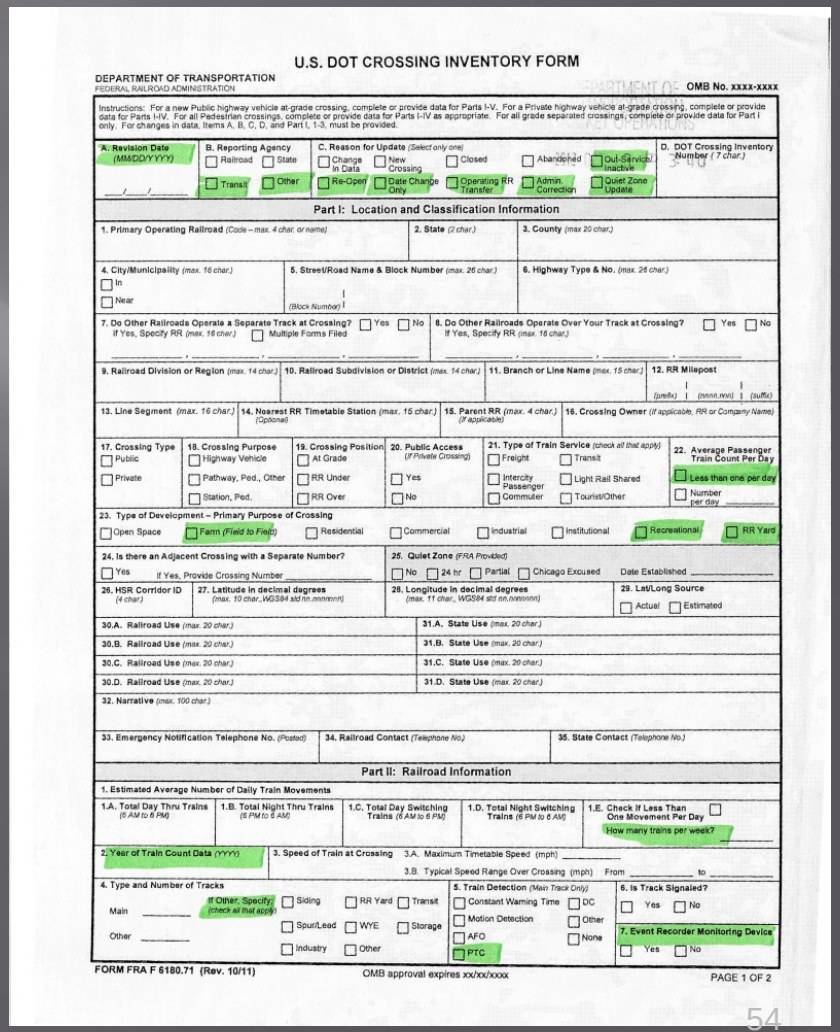
MUST COMPLETE REMAINDER OF FORM FOR PUBLIC VEHICLE CROSSINGS AT GRADE

Part II: Railroad Information

1. Number of Daily Train Movements
1.A. Total Trains _____
1.B. Total Switching Trains _____
1.C. Total Daylight Thru Trains (6 AM to 6 PM) _____
1.D. Check if Less Than One Movement Per Day ☐
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? ☐ Yes ☐ No If Yes, Specify RR (max. 16 char.) _____
5. Does Another RR Operate Over Your Track at Crossing? ☐ Yes ☐ No If Yes, Specify RR (max. 16 char.) _____

FORM FRA F 6180.71 (Rev. 11/99) OMB approval expires 9/30/2012 PAGE 1 OF 2

Draft Form 71, Page 1



U.S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. xxxx-xxxx

Instructions: For a new Public highway vehicle at-grade crossing, complete or provide data for Parts I-V. For a Private highway vehicle at-grade crossing, complete or provide data for Parts I-IV. For all Pedestrian crossings, complete or provide data for Parts I-IV as appropriate. For all grade separated crossings, complete or provide data for Part I only. For changes in data, items A, B, C, D, and Part I, 1-3, must be provided.

A. Revision Date (MM/DD/YYYY) ___/___/___
B. Reporting Agency ☐ Railroad ☐ State ☐ Transit ☐ Other
C. Reason for Update (Select only one) ☐ Change in Data ☐ New Crossing ☐ Closed ☐ Abandoned ☐ Out-Service/Inactive ☐ Re-Open ☐ Date Change Only ☐ Operating RR Transfer ☐ Admin. Correction ☐ Quiet Zone Update
D. DOT Crossing Inventory Number (7 char.)

Part I: Location and Classification Information

1. Primary Operating Railroad (Code – max. 4 char. or name)
2. State (2 char.)
3. County (max 20 char.)
4. City/Municipality (max. 16 char.) ☐ In ☐ Near
5. Street/Road Name & Block Number (max. 26 char.) (Block Number)
6. Highway Type & No. (max. 26 char.)
7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☐ No If Yes, Specify RR (max. 16 char.) ☐ Multiple Forms Filed
8. Do Other Railroads Operate Over Your Track at Crossing? ☐ Yes ☐ No If Yes, Specify RR (max. 16 char.)
9. Railroad Division or Region (max. 14 char.)
10. Railroad Subdivision or District (max. 14 char.)
11. Branch or Line Name (max. 15 char.)
12. RR Milepost (prefix) | (nnnn.nn) | (suffix)
13. Line Segment (max. 16 char.)
14. Nearest RR Timetable Station (max. 15 char.) (Optional)
15. Parent RR (max. 4 char.) (if applicable)
16. Crossing Owner (if applicable, RR or Company Name)
17. Crossing Type ☐ Public ☐ Private
18. Crossing Purpose ☐ Highway Vehicle ☐ Pathway, Ped., Other ☐ Station, Ped.
19. Crossing Position ☐ At Grade ☐ RR Under ☐ RR Over
20. Public Access (If Private Crossing) ☐ Yes ☐ No
21. Type of Train Service (check all that apply) ☐ Freight ☐ Transit ☐ Intercity Passenger ☐ Light Rail Shared ☐ Commuter ☐ Tourist/Other
22. Average Passenger Train Count Per Day ☐ Less than one per day ☐ Number per day _____
23. Type of Development – Primary Purpose of Crossing ☐ Open Space ☐ Farm (Field to Field) ☐ Residential ☐ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard
24. Is there an Adjacent Crossing with a Separate Number? ☐ Yes If Yes, Provide Crossing Number _____
25. Quiet Zone (FRA Provided) ☐ No ☐ 24 hr ☐ Partial ☐ Chicago Excused Date Established _____
26. HSR Corridor ID (4 char.)
27. Latitude in decimal degrees (max. 10 char., WGS84 std nn.nnnnnn)
28. Longitude in decimal degrees (max. 11 char., WGS84 std nn.nnnnnn)
29. Lat/Long Source ☐ Actual ☐ Estimated
30.A. Railroad Use (max. 20 char.)
31.A. State Use (max. 20 char.)
30.B. Railroad Use (max. 20 char.)
31.B. State Use (max. 20 char.)
30.C. Railroad Use (max. 20 char.)
31.C. State Use (max. 20 char.)
30.D. Railroad Use (max. 20 char.)
31.D. State Use (max. 20 char.)
32. Narrative (max. 100 char.)
33. Emergency Notification Telephone No. (Posted)
34. Railroad Contact (Telephone No.)
35. State Contact (Telephone No.)

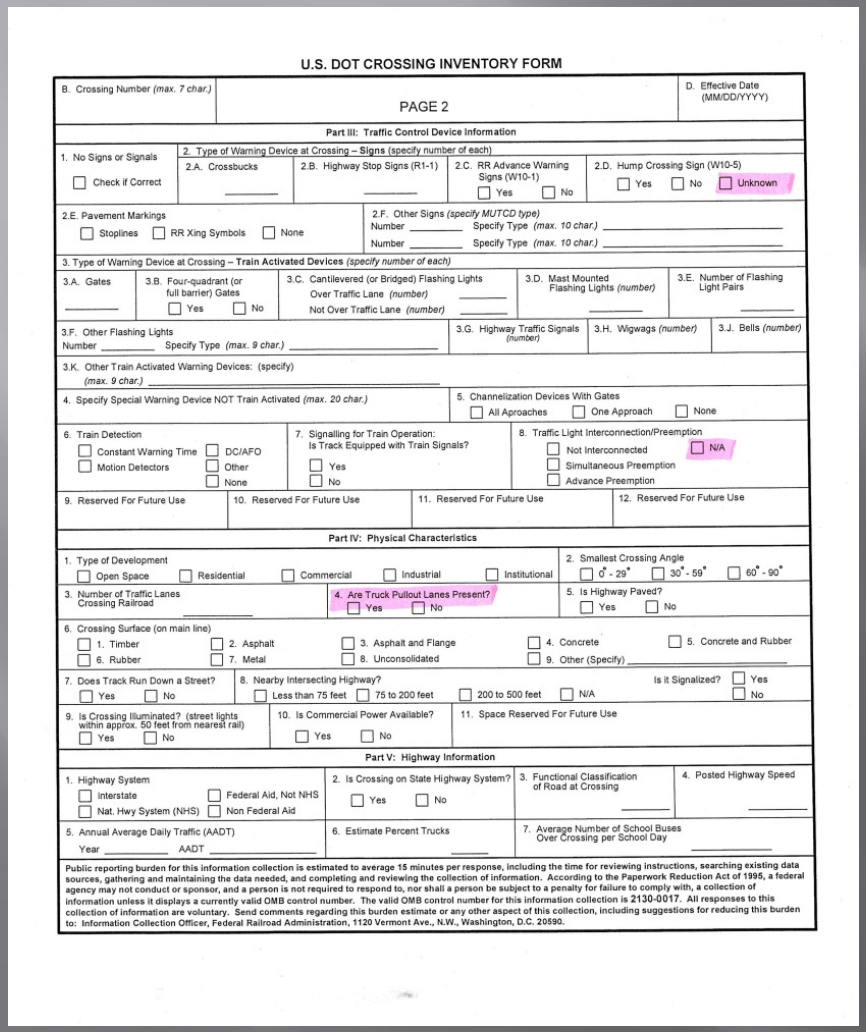
Part II: Railroad Information

1. Estimated Average Number of Daily Train Movements
1.A. Total Day Thru Trains (6 AM to 6 PM)
1.B. Total Night Thru Trains (6 PM to 6 AM)
1.C. Total Day Switching Trains (6 AM to 6 PM)
1.D. Total Night Switching Trains (6 PM to 6 AM)
1.E. Check If Less Than One Movement Per Day ☐ How many trains per week? _____
2. Year of Train Count Data (YYYY)
3. Speed of Train at Crossing 3.A. Maximum Timetable Speed (mph) _____ 3.B. Typical Speed Range Over Crossing (mph) From _____ to _____
4. Type and Number of Tracks Main _____ Other _____ If Other, Specify: (check all that apply) ☐ Siding ☐ RR Yard ☐ Transit ☐ Spur/Lead ☐ WYE ☐ Storage ☐ Industry ☐ Other
5. Train Detection (Main Track Only) ☐ Constant Warning Time ☐ DC ☐ Motion Detection ☐ Other ☐ AFO ☐ None ☐ PTC
6. Is Track Signaled? ☐ Yes ☐ No
7. Event Recorder Monitoring Device ☐ Yes ☐ No

FORM FRA F 6180.71 (Rev. 10/11) OMB approval expires xx/xx/xxxx PAGE 1 OF 2

Proposed DOT Crossing Inventory Form

Current Form 71, Page 2



U.S. DOT CROSSING INVENTORY FORM

B. Crossing Number *(max. 7 char.)* | PAGE 2 | D. Effective Date (MM/DD/YYYY)

Part III: Traffic Control Device Information

1. No Signs or Signals ☐ 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) ☐ Yes ☐ No 2.D. Hump Crossing Sign (W10-5) ☐ Yes ☐ No ☐ Unknown
2.E. Pavement Markings ☐ Stoplines ☐ RR Xing Symbols ☐ 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 ☐ Yes ☐ 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 ☐ All Approaches ☐ One Approach ☐ None
6. Train Detection ☐ Constant Warning Time ☐ DC/AFO ☐ Motion Detectors ☐ Other ☐ None
7. Signalling for Train Operation: Is Track Equipped with Train Signals? ☐ Yes ☐ No
8. Traffic Light Interconnection/Preemption ☐ Not Interconnected ☐ Simultaneous Preemption ☐ Advance Preemption ☐ N/A
9. Reserved For Future Use 10. Reserved For Future Use 11. Reserved For Future Use 12. Reserved For Future Use

Part IV: Physical Characteristics

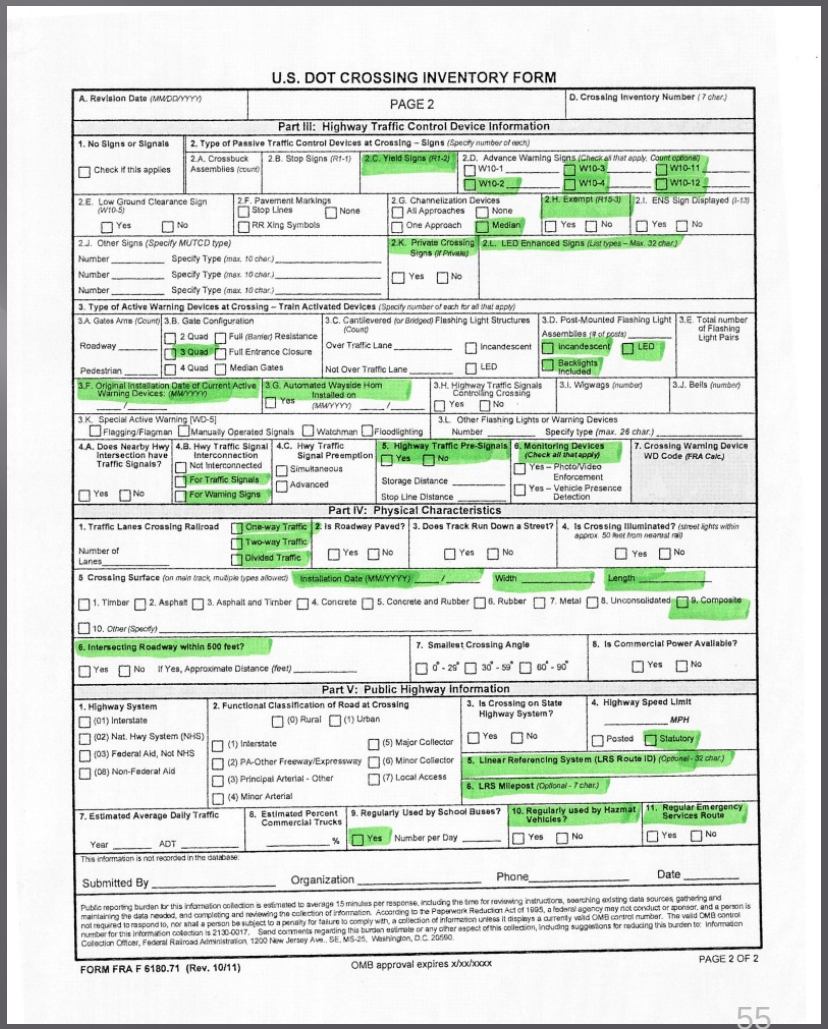
1. Type of Development ☐ Open Space ☐ Residential ☐ Commercial ☐ Industrial ☐ Institutional
2. Smallest Crossing Angle ☐ 0° - 29° ☐ 30° - 59° ☐ 60° - 90°
3. Number of Traffic Lanes Crossing Railroad ____
4. Are Truck Pullout Lanes Present? ☐ Yes ☐ No
5. Is Highway Paved? ☐ Yes ☐ No
6. Crossing Surface (on main line) ☐ 1. Timber ☐ 2. Asphalt ☐ 3. Asphalt and Flange ☐ 4. Concrete ☐ 5. Concrete and Rubber ☐ 6. Rubber ☐ 7. Metal ☐ 8. Unconsolidated ☐ 9. Other (Specify) ____
7. Does Track Run Down a Street? ☐ Yes ☐ No
8. Nearby Intersecting Highway? ☐ Less than 75 feet ☐ 75 to 200 feet ☐ 200 to 500 feet ☐ N/A Is it Signalized? ☐ Yes ☐ No
9. Is Crossing Illuminated? (street lights within approx. 50 feet from nearest rail) ☐ Yes ☐ No
10. Is Commercial Power Available? ☐ Yes ☐ No
11. Space Reserved For Future Use

Part V: Highway Information

1. Highway System ☐ Interstate ☐ Federal Aid, Not NHS ☐ Nat. Hwy System (NHS) ☐ Non Federal Aid
2. Is Crossing on State Highway System? ☐ Yes ☐ 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 ____

Public reporting burden 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, a federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for this information collection is 2130-0017. All responses to this collection of information are voluntary. Send comments regarding this burden estimate or any other aspect of this collection, including suggestions for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1120 Vermont Ave., N.W., Washington, D.C. 20590.

Draft Form 71, Page 2



U.S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)* | PAGE 2 | D. Crossing Inventory Number *(7 char.)*

Part III: Highway Traffic Control Device Information

1. No Signs or Signals ☐ Check if this applies
2. Type of Passive Traffic Control Devices at Crossing – **Signs** *(Specify number of each)*
2.A. Crossbuck Assemblies *(count)* 2.B. Stop Signs *(R1-1)* 2.C. Yield Signs *(R1-2)* 2.D. Advance Warning Signs *(Check all that apply. Count optional)* ☐ W10-1 ____ ☐ W10-3 ____ ☐ W10-11 ____ ☐ W10-2 ____ ☐ W10-4 ____ ☐ W10-12 ____
2.E. Low Ground Clearance Sign *(W10-5)* ☐ Yes ☐ No 2.F. Pavement Markings ☐ Stop Lines ☐ RR Xing Symbols ☐ None 2.G. Channelization Devices ☐ All Approaches ☐ One Approach ☐ None ☐ Median 2.H. Exempt *(R15-3)* ☐ Yes ☐ No 2.I. ENS Sign Displayed *(I-13)* ☐ Yes ☐ No
2.J. Other Signs *(Specify MUTCD type)* Number ____ Specify Type *(max. 10 char.)* ____ Number ____ Specify Type *(max. 10 char.)* ____ Number ____ Specify Type *(max. 10 char.)* ____ 2.K. Private Crossing Signs *(if Private)* ☐ Yes ☐ No 2.L. LED Enhanced Signs *(List types – Max. 32 char.)*
3. Type of Active Warning Devices at Crossing – Train Activated Devices *(Specify number of each for all that apply)*
3.A. Gates Arms *(Count)* Roadway ____ Pedestrian ____ 3.B. Gate Configuration ☐ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ Full Entrance Closure ☐ 4 Quad ☐ Median Gates 3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(Count)* Over Traffic Lane ____ Not Over Traffic Lane ____ ☐ Incandescent ☐ LED 3.D. Post-Mounted Flashing Light Assemblies *(# of posts)* ____ ☐ Incandescent ☐ LED ☐ Backlights Included 3.E. Total number of Flashing Light Pairs
3.F. Original Installation Date of Current Active Warning Devices: *(MM/YYYY)* ____/____ 3.G. Automated Wayside Horn Installed on *(MM/YYYY)* ____/____ ☐ Yes 3.H. Highway Traffic Signals Controlling Crossing ☐ Yes ☐ No 3.I. Wigwags *(number)* 3.J. Bells *(number)*
3.K. Special Active Warning [WD-5] ☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting 3.L. Other Flashing Lights or Warning Devices Number ____ Specify type *(max. 26 char.)* ____
4.A. Does Nearby Hwy Intersection have Traffic Signals? ☐ Yes ☐ No 4.B. Hwy Traffic Signal Interconnection ☐ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs 4.C. Hwy Traffic Signal Preemption ☐ Simultaneous ☐ Advanced 5. Highway Traffic Pre-Signals ☐ Yes ☐ No Storage Distance ____ Stop Line Distance ____ 6. Monitoring Devices *(Check all that apply)* ☐ Yes – Photo/Video Enforcement ☐ Yes – Vehicle Presence Detection 7. Crossing Warning Device WD Code *(FRA Calc)*

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad Number of Lanes ____ ☐ One-way Traffic ☐ Two-way Traffic ☐ Divided Traffic
2. Is Roadway Paved? ☐ Yes ☐ No
3. Does Track Run Down a Street? ☐ Yes ☐ No
4. Is Crossing Illuminated? *(street lights within approx. 50 feet from nearest rail)* ☐ Yes ☐ No
5. Crossing Surface *(on main track, multiple types allowed)* Installation Date (MM/YYYY) ____/____ Width ____ Length ____ ☐ 1. Timber ☐ 2. Asphalt ☐ 3. Asphalt and Timber ☐ 4. Concrete ☐ 5. Concrete and Rubber ☐ 6. Rubber ☐ 7. Metal ☐ 8. Unconsolidated ☐ 9. Composite ☐ 10. *Other (Specify)* ____
6. Intersecting Roadway within 500 feet? ☐ Yes ☐ No If Yes, Approximate Distance *(feet)* ____
7. Smallest Crossing Angle ☐ 0° - 29° ☐ 30° - 59° ☐ 60° - 90°
8. Is Commercial Power Available? ☐ Yes ☐ No

Part V: Public Highway Information

1. Highway System ☐ (01) Interstate ☐ (02) Nat. Hwy System (NHS) ☐ (03) Federal Aid, Not NHS ☐ (08) Non-Federal Aid
2. Functional Classification of Road at Crossing ☐ (0) Rural ☐ (1) Urban ☐ (1) Interstate ☐ (2) PA-Other Freeway/Expressway ☐ (3) Principal Arterial - Other ☐ (4) Minor Arterial ☐ (5) Major Collector ☐ (6) Minor Collector ☐ (7) Local Access
3. Is Crossing on State Highway System? ☐ Yes ☐ No
4. Highway Speed Limit ____ *MPH* ☐ Posted ☐ Statutory
5. Linear Referencing System (LRS Route ID) *(Optional - 32 char.)*
6. LRS Milepost *(Optional - 7 char.)*
7. Estimated Average Daily Traffic Year ____ ADT ____
8. Estimated Percent Commercial Trucks ____ %
9. Regularly Used by School Buses? ☐ Yes Number per Day ____
10. Regularly used by Hazmat Vehicles? ☐ Yes ☐ No
11. Regular Emergency Services Route ☐ Yes ☐ No

This information is not recorded in the database.

Submitted By ____ Organization ____ Phone ____ Date ____

Public reporting burden 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, a federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for this information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including suggestions for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave., SE, MS-25, Washington, D.C. 20590.

FORM FRA F 6180.71 (Rev. 10/11) OMB approval expires x/xx/xxxx PAGE 2 OF 2

Proposed FRA Electronic Submission Instructions

Draft – Subject to Revision

FRA INSTRUCTIONS FOR ELECTRONIC SUBMISSION OF U.S. DOT CROSSING INVENTORY DATA
(FORM FRA F 6180.71)

ELECTRONIC FILE FORMATS AND VALID DATA SPECIFICATIONS

DRAFT: THE FORMATS AND SCHEMAS SHOWN ARE SUBJECT TO REVISION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
OFFICE OF SAFETY

DRAFT DATE: **SEPTEMBER 2012**
UPDATED: **NOVEMBER 23, 2012**

Proposed FRA Modernization of the Grade Crossing Inventory System

- New web-based application to support
  - On-line submissions, which will replace the GX32 software
    - Single Form Submission
    - Upload of Electronic Files
  - System to System submissions
    - Enhance FRA's Data Services
    - Provide a communication mechanism for Railroads and States to submit their data in a secure manner using Industry Standardized methodologies

Granting Access to the Proposed System

- FRA will establish a primary user account for all requesting agencies (States and Railroads)
- Beyond the primary user account, each agency will manage and administer their own GCIS users and their level of access
- FRA highly discourages the sharing of user accounts within an agency

Proposed XML Format

Draft – Subject to Revision

Appendix B: GCIS XML Schema

FRA's Web service can be found at the URL below along with a description of the Web service.

URL: https://safetydata.fra.dot.gov/masterwebservice/default.aspx

Once the system becomes available a new service called [GCIS Data Services] will be listed for the railroad and States to use.

Also note that the revised XML schema will be available using the [GetF71Schema] operation. Valid values for any particular field must follow the valid values provided in the Inventory Data Field File Specification Table (Appendix A).

[XML Sample File]

GCIS XML Schema

```
    <?xml version="1.0" ?>
- <xs:schema id="root" xmlns="" xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:msdata="urn:schemas-microsoft-com:xml-msdata">
  - <!--
   Definition of XML data types: Type "xs:short" denotes a numeric data; "xs:string"
    denotes a character data.   -->
- <xs:element name="root" msdata:IsDataSet="true" msdata:MainDataTable="CrossingData"
    msdata:UseCurrentLocale="true">
- <xs:complexType>
- <xs:choice minOccurs="0" maxOccurs="unbounded">
- <xs:element name="CrossingData">
- <xs:complexType>
- <xs:sequence>
  <xs:element name="REVISIONDATE" type="xs:dateTime" minOccurs="0" />
  - <!--
   In XML data field name "INIT" is a keyword, therefore this field name has been
    replaced to "INITAGY".   -->
- <xs:element name="INIT" minOccurs="0">
- <xs:simpleType>
- <xs:restriction base="xs:string">
  <xs:maxLength value="1" />
    </xs:restriction>
    </xs:simpleType>
    </xs:element>
- <xs:element name="REASON" minOccurs="0">
- <xs:simpleType>
- <xs:restriction base="xs:string">
  <xs:maxLength value="1" />
    </xs:restriction>
    </xs:simpleType>
    </xs:element>
- <xs:element name="CROSSING">
```

Proposed System to System Operations

Operation	Description
GetCrossingData	Get all crossings inventory by State (All or code) and returns XML document
GetCrossingDataByRailroad	Get all crossings inventory by railroad, where Type of Crossing = [1 for Pedestrian, 2 for Private, 3 for Public] and returns XML document
GetCrossingDataByState	Get all crossings inventory by State, where Type of Crossing = [1 for Pedestrian, 2 for Private, 3 for Public] and returns XMLdocument
GetCrossingDataWithErrors	Returns the Crossing Data as an XML document that has not passed the validation rules
GetCrossingDataWithErrorsSchema	Get XML schema of crossing data with errors
GetErrorDefinition	Get Error Definition for the crossing data
GetF71Schema	Get XML schema of crossing data
UploadCrossingData	Accept crossing data on XML document and returns the number of records received

Proposed File Structure

Draft – Subject to Revision

Appendix A: GCIS Inventory Data Field File Specification

Data submitted using the Inventory Data Field File Specifications should use the latest FRA code values (City, County and State codes) provided in FRA's Auxiliary (Reference) Tables with download versions available at: http://safetydata.fra.dot.gov/OfficeofSafety/publicsite/downloads/Auxilary.aspx

Upon submission, all electronic files will undergo:

1) Single field validations identified in Appendix C and
2) Cross field validations also identified in Appendix C.

Field No.	Box No. on Form 6180.71	Field Name	Description	Field Size	Type	Definitions, Valid Values, Ranges, & Comments	Agency Updating Responsibility
1	A.	REVISIONDATE	Crossing Revision Date (Update Submission)		Date	American Date Format - MM/DD/YYYY	State & Railroad
2	B.	INIT	Reporting Agency	1	C	1=Railroad 2=State 3=Transit 4=Other 5=FRA Internal Use	State & Railroad
3	C.	REASON	Reason for Update	1	C	1 = Change in Data 2 = New Crossing 3 = Closed 4 = Abandoned 5 = Out-Service/Inactive 6 = Re-Open 7 = Date Change Only 8 = Operating RR Transfer 9 = Admin. Correction 0= Quiet Zone Update	State & Railroad
4	D.	CROSSING	Crossing No.	7	C	Valid Crossing I.D. No. Must be 6 numeric characters followed by 1 alphabetic character.	State & Railroad
5	I.1.	RAILROAD	Primary Operating Railroad	4	C	Valid Railroad Code For valid railroad codes, refer to current list of railroad codes provided by FRA Office of Safety	Railroad
6	I.2.	STATE_AB	State Abbreviation	2	C	Standard State Abbreviation (USPS)	State
7		STATE	State Numeric Code	2	C	Valid State FIPS Code	State
8	I.3	CNTYNAM	County Name	25	C	Valid County Name - Must be in FRA Location Reference Table	State
9		CNTYCD	County Numeric Code	4	C	Valid County FIPS Code preceded by "C" (It denotes county)	State
10	I.4	CITYNAM	City/Municipality Name	25	C	Valid City Name - Must be on FRA Location Reference Table	State
11	I.4	NEAREST	In or Near City Indicator	1	C	0=In City; 1=Near City	State
12		CITYCD	City/Municipality Numeric Code	4	C	Valid City FIPS Code (Valid City = STATE CODE +	State

Proposed Data Validation Rules

Draft – Subject to Revision

Appendix C: GCIS Data Validation Rules

GCIS Data Validation Rules

Box No. on Form 6180.71	Field Name	Description	Single-Field Data Validation Rules	Cross-Field Data Validation Rules (Relationship of Two or More Data Items)
A.	REVISIONDATE	Date of Crossing Update Submission (Revision Date)	American Date Format - MM/DD/YYYY	
B.	INIT	Reporting Agency	Valid values: 1 to 4 1=Railroad 2=State 3=Transit 4=Other 5=FRA Internal Use	
C.	REASON	Reason for Update	Valid values be 0 - 9 1 = Change in Data 2 = New Crossing 3 = Closed 4 = Abandoned 5 = Out-Service/Inactive 6 = Re-Open 7 = Date Change Only 8 = Operating RR Transfer 9 = Admin. Correction 0= Quiet Zone Update	
D.	CROSSING	Crossing No.	First 6 characters must be numeric followed by an alphabetic character. It must be checked against formula - will supply later	
I.1.	RAILROAD	Primary Operating Railroad	Must be a valid Railroad Code. It must be in FRA Railroad Reference Table	
I.2.	STATE_AB	State Abbreviation	Must be an Standard State Abbreviation and it must be in FRA Location Reference Table	
	STATE	State Numeric Code	State FIPS code must be in FRA Location Reference Table	

Rulemaking Process Disclaimer

All of the information presented in the “What is Coming” portion of this presentation is subject to change based on the acceptance of the draft revised U.S. DOT Crossing Inventory Form (Form FRA F 6180.71) and based on the final rule.

Telephone Number to Report Grade Crossing Problems (ENS) Sec. 205

Final Rule

Remember
Important Disclaimer:

This presentation provides only an overview of the rule and should not be relied upon as the sole source.

Please refer directly to the regulation to ensure you are in full compliance.

Sec. 205 of RSIA: "Telephone Number to Report Grade Crossing Problems"

Require each railroad carrier to establish and maintain a toll-free telephone service for ROWs over which it dispatches trains [through highway-rail grade crossings *and* pathway grade crossings]

Emergency Notification System
Definitions

- Answering machine: device or voicemail system; messages can be retrieved either remotely or on-site
- Automated answering system: directs a caller to a single menu of options; caller has choice to select one, and is immediately transferred to a live telephone operator
- Third-party telephone service: a service that receives calls on behalf of dispatching RR, and then transmits report to dispatching railroad

Emergency Notification System
Definitions

- Dispatching railroad: a railroad that dispatches or otherwise provides authority for movement of trains through the crossing
- Maintaining railroad: the entity responsible for maintenance of the crossing (track owner, lessee, contractor)

Emergency Notification System Definitions

- Credible report of warning system malfunction: contains specific information supplied by a railroad employee, law enforcement officer, highway traffic official, or other employee of public agency acting in official capacity
- Public report of warning system malfunction: report supplied by a member of the public who does not belong to one of the categories listed above

Emergency Notification System
Reportable Unsafe Conditions

To receive calls reporting 4 unsafe conditions at highway-rail or pathway grade crossings:

1. A warning system malfunction;
2. disabled vehicles or other obstructions blocking railroad tracks;
3. obstructions to the view of a pedestrian or a vehicle operator for a reasonable distance in either direction of a train's approach; or
4. Any information relating to other unsafe conditions at the crossing

Emergency Notification System
Remedial Actions

Upon receiving report of signal malfunction, disabled vehicle, or other obstruction railroad must:

- Immediately contact trains
- Contact appropriate law enforcement agency so they can assist as necessary
- Investigate the report
- Correct the malfunction or unsafe condition

Emergency Notification System
Remedial Actions

Upon receiving a report of sight obstructions or other unsafe conditions railroad must:

- Timely investigate the report
- and remove the obstruction if possible, or correct the safety condition if lawful and feasible

Emergency Notification System Credible report vs. Public report of warning system malfunction

Credible report for highway-rail grade crossings automatic warning systems:

- If dispatching railroad also has maintenance responsibility, must follow existing 234 subpart C regulations
- If dispatching RR does not have maintenance responsibility, must contact trains & maintaining RR.
- Maintaining RR then must follow subpart C

Emergency Notification System Credible report vs. Public report of warning system malfunction

Public report for highway-rail grade crossings: follow new subpart E

- New term
- Dispatching railroad contacts trains
- Contacts law enforcement
- Contacts maintaining railroad (if applicable)
- Maintaining railroad corrects malfunction

Emergency Notification System Credible report vs. Public report of warning system malfunction

For pathway grade crossings:

- Credible & Public reports treated the same
- Dispatching railroad takes required actions per subpart E (this rule)
- Is not referred to subpart C because existing subpart C does not address pathway grade crossings

Emergency Notification System

Special rule on contacting trains not required to have communication equipment:

- If a railroad is not required by § 220.9 to have a working radio or working wireless communications equipment the railroad shall promptly contact the trains by the quickest means available consistent with § 220.13(a)

Emergency Notification System Dispatching railroad vs. Maintaining railroad

- Responsibilities may differ
- Dispatching & maintaining RR may, or may not be the same
- Emergency number on sign is dispatching railroad's
- Dispatching RR notifies trains, LE
- Maintaining RR corrects unsafe condition

Emergency Notification System Multiple Dispatching Railroads

At crossings where more than one railroad may dispatch trains through the same crossing:

- Railroads shall appoint one railroad to serve as "primary dispatching railroad"
- Primary railroad will receive calls, contact trains and other dispatching railroads
- Carry out all duties of dispatching railroad
- Must keep a written record of appointment

Emergency Notification System
Multiple Maintaining Railroads

At crossings where more than one railroad may maintain track through the same crossing:

- shall appoint one railroad to place and maintain the ENS sign
- must keep a written record of the appointment
- each railroad will be responsible for carrying out the duties of the maintaining railroad when applicable to its own track

Emergency Notification System
Methods to receive calls

A railroad has several options for receiving ENS calls:

- Live person
- Third Party Telephone Service
- Automated Answering System
- Answering machine (certain restrictions apply)

Emergency Notification System Third-party Telephone Service

- A railroad, or multiple railroads may use a third-party service to receive calls
- Service must be reached directly from tel. # on sign
- Will contact dispatching railroad
- Railroad must have live person answer calls from 3rd Party Service or
- May use automated answering system to receive call (if it qualifies under the rule)

Emergency Notification System Third-party Telephone Service

Must provide the following info to railroad:

- Nature of the unsafe condition
- Location, including U.S. DOT Crossing #
- If the person was acting in an official capacity (i.e. Credible report)
- Date and time of call
- Any other information that may be useful to restore the crossing to a safe condition

Emergency Notification System

Automated Answering System

- Directs a telephone caller to a single menu of options
- Caller selects one of the available options depending on the nature of the unsafe condition
- Immediately after selecting an option the caller is directed to a live telephone operator

Emergency Notification System
Answering Machine

A railroad may use an answering machine to receive calls under the following conditions:

- If the railroad operates at speeds not greater than 20 mph through the crossing
- Must check messages immediately prior to the start of operations

Emergency Notification System
Answering Machine

For speeds greater than 20 MPH if the railroad operates seasonally or on an intermittent basis

- May use answering machine during non-operating hours
  - Must check messages daily, and immediately prior to start of operations
- During operating hours must either:
  - Use live person or
  - Automated answering system or
  - Third-party answering service

Emergency Notification System Methods for Maintaining RR to receive calls from *Dispatching* Railroad

- Live person answer calls directly or
- Automated answering system or
- Third-party telephone service or (restrictions apply) or
- Answering machine (restrictions apply)

Emergency Notification System Methods for Maintaining RR to receive calls from *Dispatching* Railroad

- For speeds not greater than 20 mph (through the crossing)
  - May use third-party service or
  - Answering machine
    - Must retrieve messages immediately prior to starting service

Emergency Notification System Methods for Maintaining RR to receive calls from *Dispatching* Railroad

- For speeds greater than 20 MPH if the railroad operates seasonally or on an intermittent basis
  - May use third-party service or
  - Answering machine (during non-operating hours)
    - Must retrieve messages daily and immediately prior to starting operations
  - During operating hours must use either live person or automated answering system

Emergency Notification System
Signs in General

- Install appropriately placed signs at each crossing that contain, at a minimum, the following:
  - ✓Toll-free number (of dispatching railroad)
  - ✓Explanation of the purpose of the toll-free number (e.g., Report emergency to)
  - ✓DOT Inventory Number
- May waive the toll-free requirement for Class II and Class III railroads

Emergency Notification System
Signs in General

Design must:

- Measure at least 12 inches x 9 inches
- Be retroreflective
- Text at least one inch in height
- White text on blue background with a white border
- DOT # may be black on white background

Emergency Notification Signs

Emergency Notification System

Sign Placement

- One sign on each approach
- Conspicuous to roadway user
- Does not limit the view of approaching trains
- Minimizes mud splatter
- Does not obscure other signs at crossing
- Signs placed on bungalows are deemed not to comply

Emergency Notification System
Sign Placement

Exceptions:

- One sign at farm crossings
- At a rail yard, port or dock facilities place one sign at each vehicular entrance so that it is clearly visible to drivers

Railroads have 30 days to replace a damaged or missing sign

Emergency Notification System
Record Keeping

- Records retained for one year
- Must contain:
  - ✓Nature, location of unsafe condition
  - ✓Time/date of call, type person reporting
  - ✓Time/date maintaining RR contacted
  - ✓Actions taken by railroad
  - ✓Time/date unsafe condition corrected

Emergency Notification System
Compliance Dates

- If no system whatsoever in place must have full system in place by September 1, 2015
- Railroads with non-conforming telephone service must conform by March 1, 2014

Emergency Notification System
Compliance Dates
(Signs)

- Signs at least 60 sq. in. with lettering at least ¾" may be kept for useful life

- Signs at least 60 sq. in but lettering of the *purpose of the sign* (e.g. "report emergency or problem to") is at least 3/8" may be kept for useful life.
  - (All other lettering must be at least ¾")

Emergency Notification System
Compliance Dates
(Signs)

- Signs at least 60 sq. in that do not meet the lettering requirements must conform by September 1, 2017
  Signs less than 60 sq. in. must conform by September 1, 2015
- Any signs replaced before conformance dates must comply with Final Rule standards

Emergency Notification System

Compliance Dates

- If the placement does not currently conform it shall conform by September 1, 2017
- If a sign is replaced before the conformance date it must be placed in a manner that meets the requirements of the Final Rule
- Record keeping must conform by March 1, 2014

Operation Lifesaver Sec. 206

OPERATION LIFESAVER®

Operation Lifesaver Sec. 206

- FRA shall make a grant or grants to OL for a public information and education program to help prevent and reduce pedestrian, motor vehicle, and other accidents, incidents, injuries, and fatalities, and to improve awareness along railroad rights-of- way and at highway-rail grade crossings.

Operation Lifesaver Sec. 206

- May implement a pilot program, to be known as the Railroad Safety Public Awareness Program, that addresses the need for targeted and sustained community outreach
- Established in 1or more States identified under Section 202 (Top 10).

Operation Lifesaver Sec. 206

- Authorization of appropriations to FRA
  - $2M for FY 2010 and 2011
  - $1.5M for FY 2012 and 2013

Operation Lifesaver Sec. 206

- FRA Office of Railroad Policy and Development's Office of Research will be providing funds for the development of training materials in conjunction with OLI.

Federal Grants to States for Highway-Rail Grade Crossing Safety

Sec. 207

Federal Grants to States for Highway-Rail Grade Crossing Safety Sec. 207

- Provides for two new grant programs for crossing safety
  - Enhanced public education and enforcement programs (e.g., PEERS) to reduce violations of traffic laws at crossings and reduce casualties along ROWs. Includes measurement.
  - Provide priority crossing safety improvements (signals, gates, 4 quad, medians, traffic signals, lighting, signs, crossing surfaces)
- No funds have been appropriated.

Trespasser Prevention and Highway-Rail Grade Crossing Safety

Sec. 208

Trespasser Prevention and Highway-Rail Grade Crossing Safety Sec. 208

- EVALUATION OF EXISTING LAWS
  - Evaluate laws regarding trespassing, vandalism, and violations of crossing traffic control devices
  - Develop model prevention strategies and enforcement laws
  - Completed - 10/16/09. - revise the model prevention strategies and enforcement codes periodically.

Trespasser Prevention and Highway-Rail Grade Crossing Safety Sec. 208

- Traffic Laws
  - Consult with State and local governments and railroad carriers
  - Develop model State legislation providing for civil or criminal penalties, or both, for violations of crossing traffic control devices
  - Completed - 4/16/10

Rail Trespasser Fatalities Demographic and Behavioral Profiles

U.S. Department of Transportation,
Federal Railroad Administration

April 10, 2013

Introduction

- FRA purpose to identify the types of persons who are killed while trespassing on railroad rights of way
- Contracted with North American Management in September of 2011 to conduct a demographic and market analysis of decedents in railroad-trespasser incidents
- Follow-up to prior research which utilized data from 2002 through 2004

Project Milestones

- Project Kickoff October 2011
- Identified and Improved accuracy of decedent addresses – March 2012
- Received OMB Clearance, April 2012
- Data collected by mail-in survey, May thru 0ctober 2012.
- Data Analysis, November 2012
- Prepared and submitted Report Drafts 1 and 2, December 2012
- Report Draft - Final submitted, March 2013
- Presentation of Findings, April 2013

Goals of Study

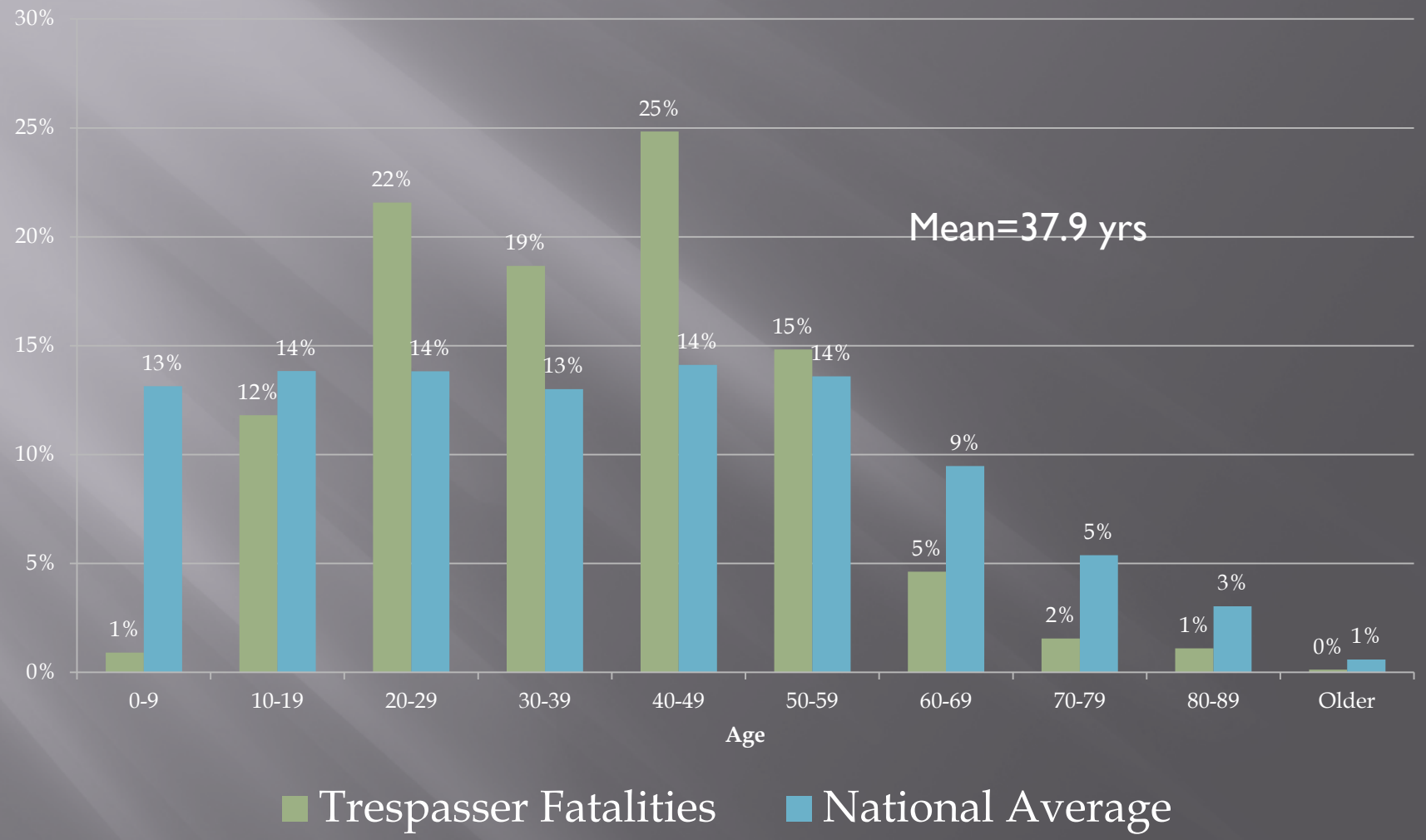
- To develop demographic and behavioral profiles on rail trespasser fatalities based on survey research and market data
- To update the 2008 Report, which used 2002-2004 fatalities data, with an even larger data set, 2005-2010
- Study data and profiles can be used by FRA to develop public outreach programs focused on eliminating fatalities among at risk individuals, groups, and neighborhoods

Methodology

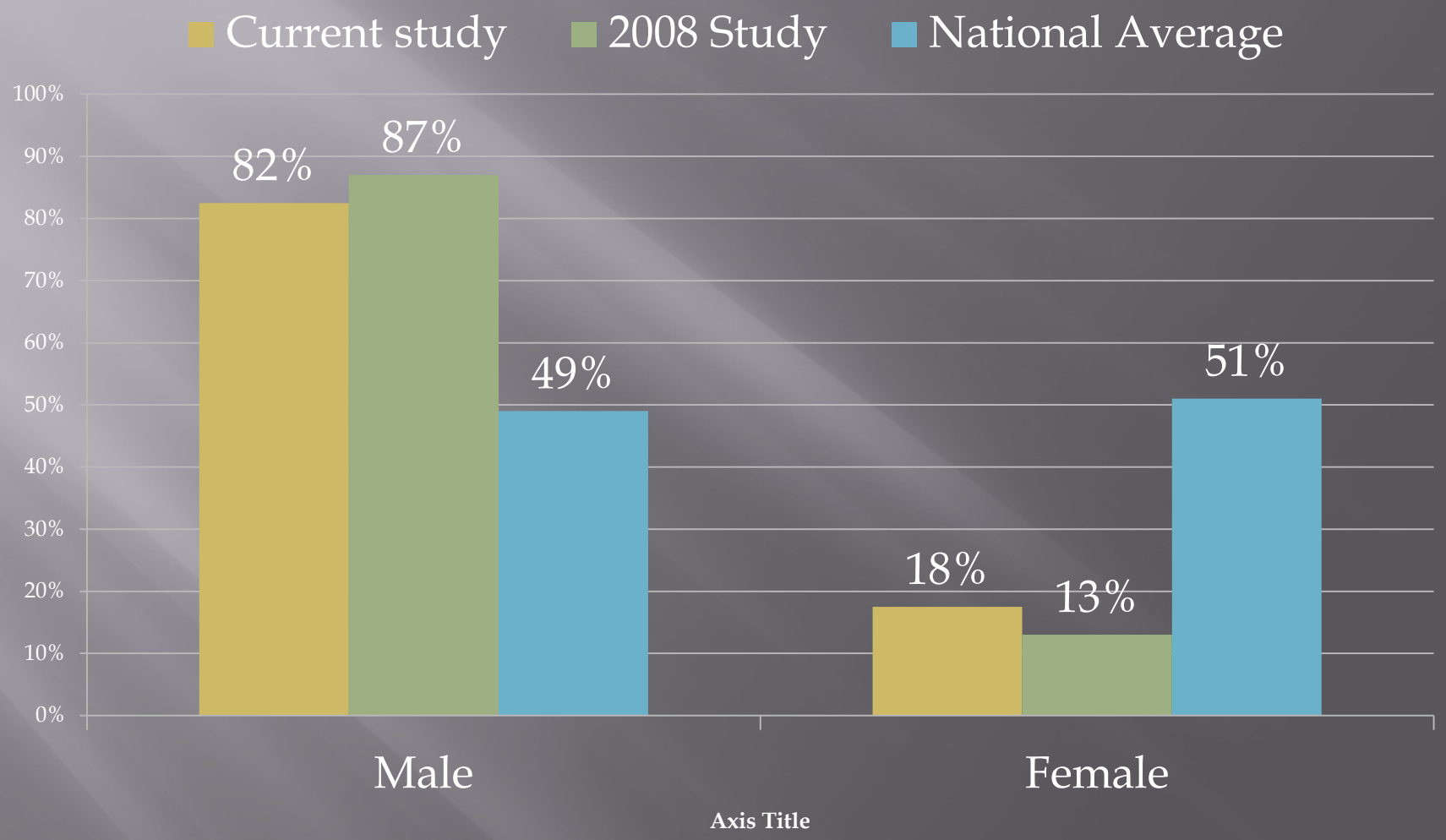
- Survey of Coroners/Medical Examiners (ME)
  - Began with identification of respective jurisdictions
  - 2,662 fatalities from 564 jurisdictions surveyed
- Format based on 2008 survey
  - Mail-based survey
  - Follow-up via telephone, email, mail
- 54% response rate
  - Very high for mail-based surveys (30% for internal surveys traditionally expected)

Railroad Trespasser Fatalities by State

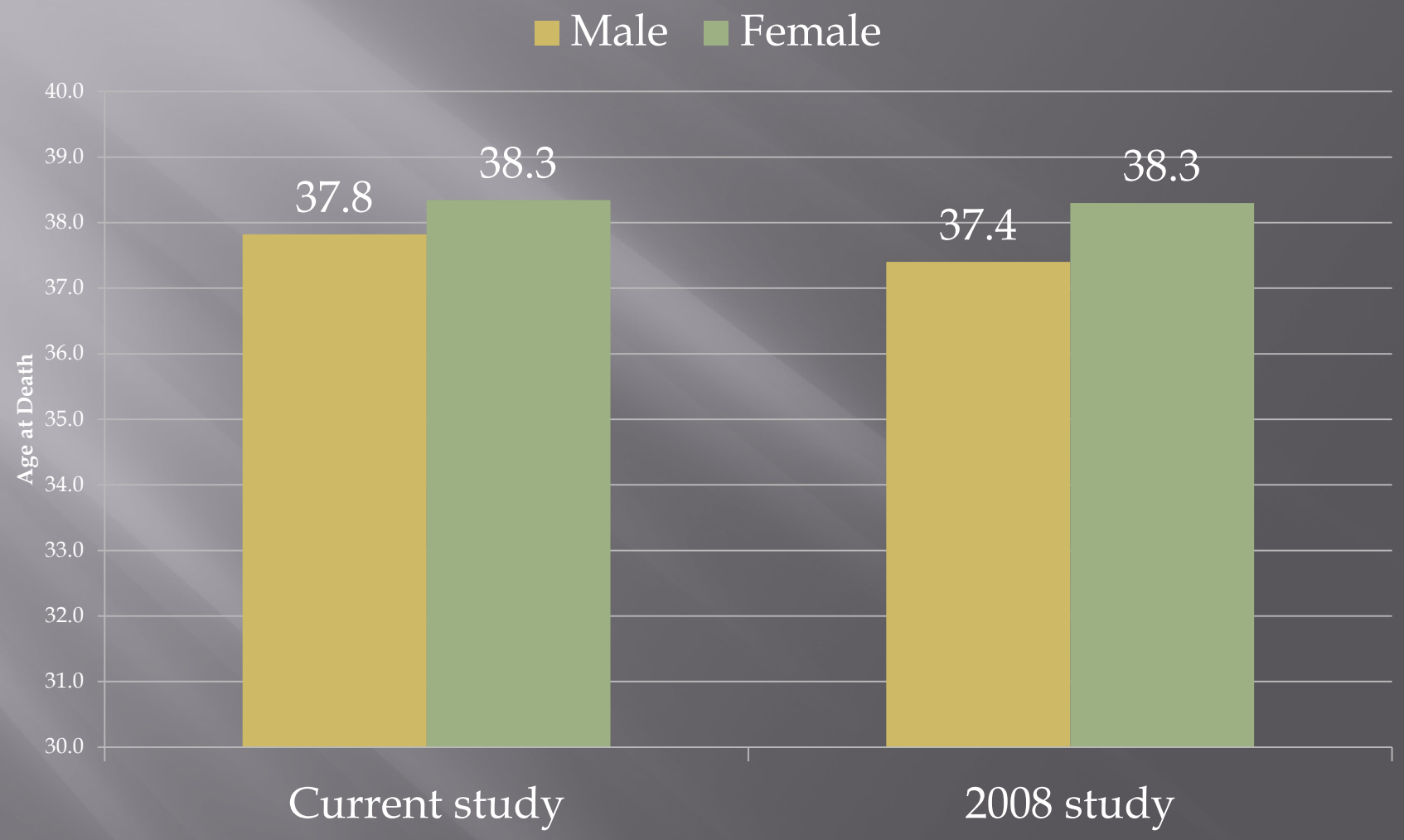
Age at Death


30%
25%
20%
15%
10%
5%
0%
Mean=37.9 yrs
1%
13%
12%
14%
22%
14%
19%
13%
25%
14%
15%
14%
5%
9%
2%
5%
1%
3%
0%
1%
0-9
10-19
20-29
30-39
40-49
50-59
60-69
70-79
80-89
Older
Age
Trespasser Fatalities
National Average

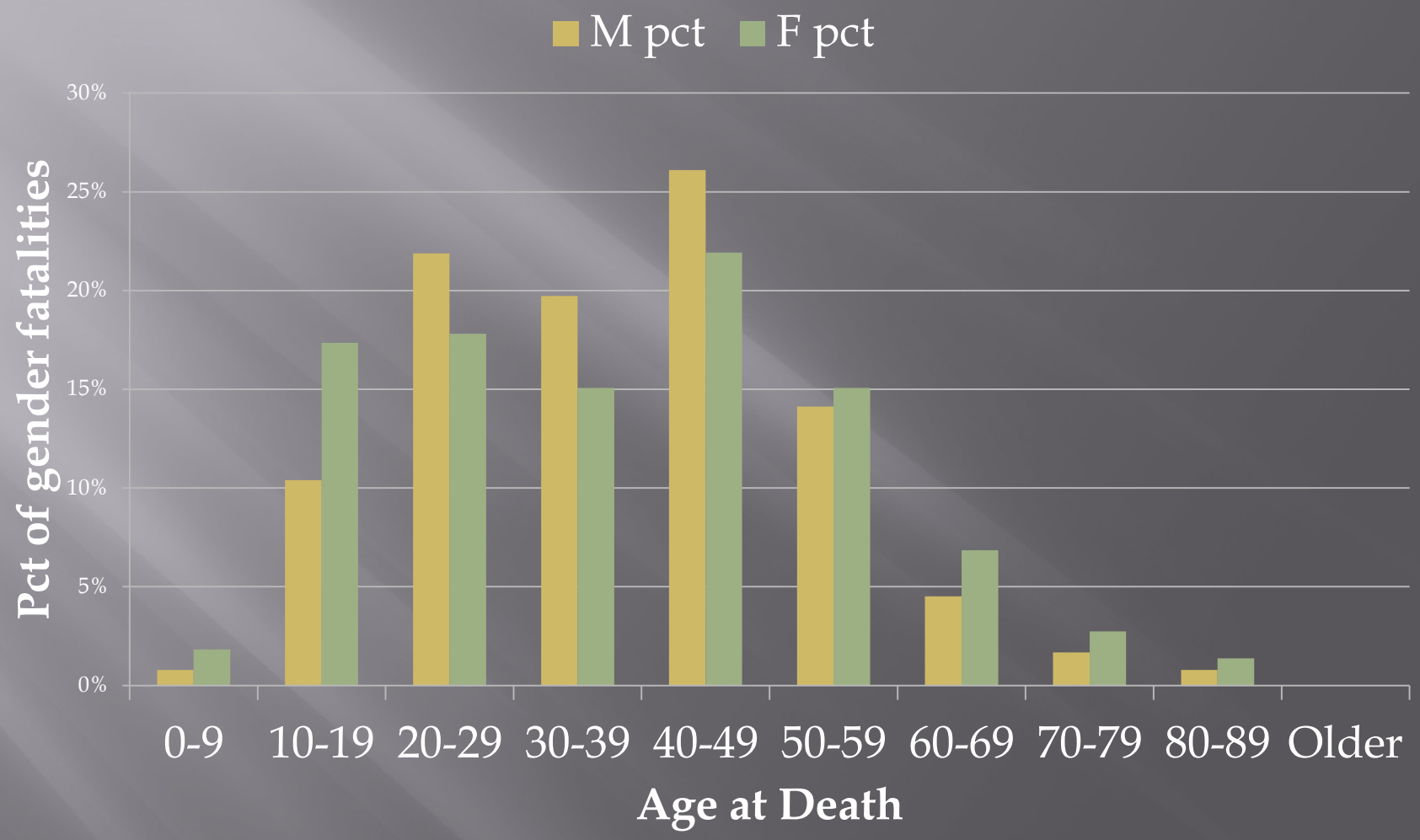
Gender


Current study
2008 Study
National Average
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
82%
87%
49%
18%
13%
51%
Male
Female
Axis Title

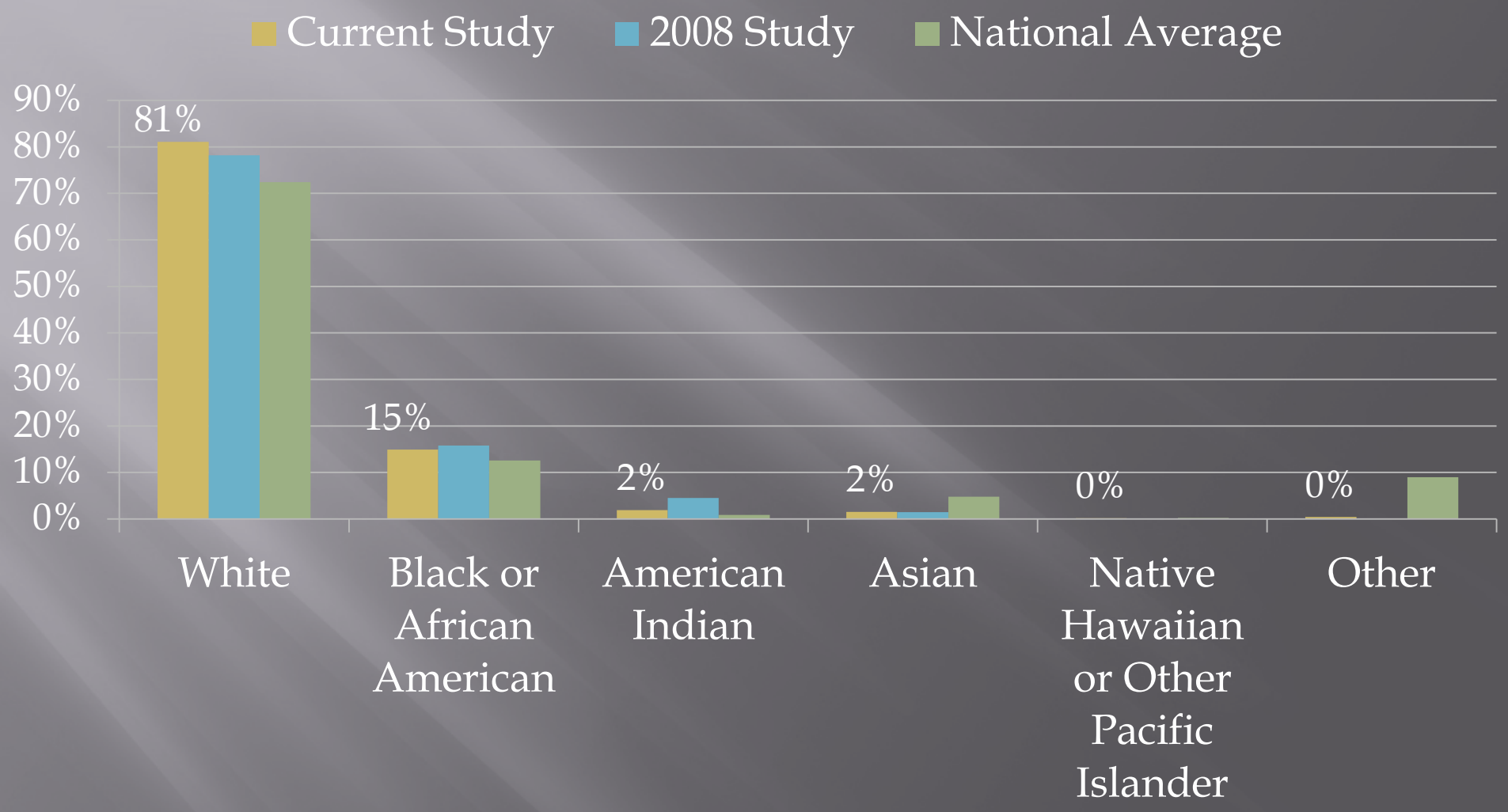
Gender by Age



Gender by Age



Race


Current Study
2008 Study
National Average
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
81%
15%
2%
2%
0%
0%
White
Black or African American
American Indian
Asian
Native Hawaiian or Other Pacific Islander
Other

Drugs and Alcohol

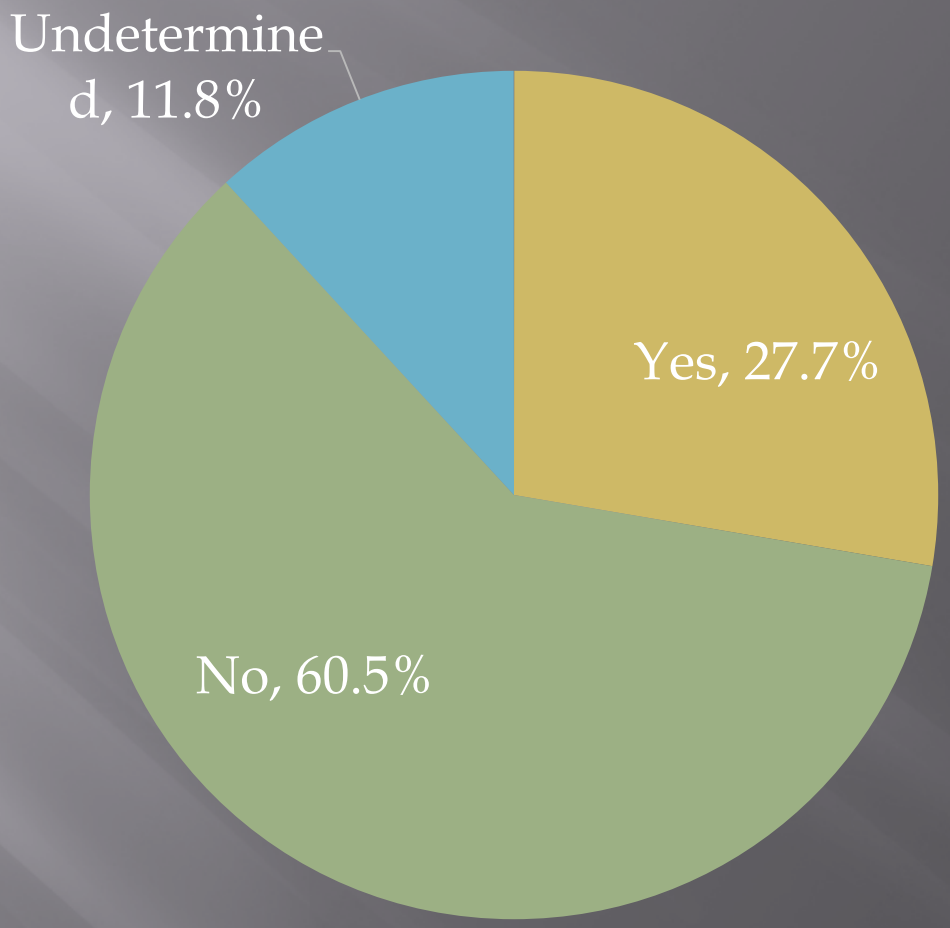
	Conservative Approach		More Liberal Approach	
	Yes	No	Yes	No
Drugs and/or Alcohol	52.4%	34.2%	59.4%	40.5%
Alcohol only	44.0%	43.7%	50.1%	49.8%
Drugs only	19.1%	64.0%	22.9%	76.8%
Both	10.7%	71.9%	12.9%	86.8%

Conservative Approach: Non-responses assumed to be "unknown"
Liberal Approach: Non-responses excluded from analysis

Type of Incident

Category	Explanation	2012 count	2008 count	2012 pct	2008 pct
Across	Walking or running across track(s)	93	62	8.5%	6.6%
ATV	ATV, dirt bike, snowmobile, etc.	16	18	1.5%	1.9%
Bridge	Involved a bridge or trestle	21	13	1.9%	1.4%
Foul Play	Foul play suspected	3	4	0.3%	0.4%
Other	Insufficient information to categorize	174	128	15.9%	13.7%
Outside	Appeared to be walking or standing outside track gauge	41	20	3.8%	2.1%
Riding	Riding or getting on or off train	31	46	2.8%	4.9%
Sleeping	Sleeping, lying, reclining, lounging, sitting on track or in gauge	234	186	21.5%	19.9%
Suicide*	Coroner/CME used the word "suicide" or "intentional" in describing incident	88	167	8.1%*	17.9%
Probable*	Probable suicide, but not so indicated by Coroner/CME	100	49	9.2%*	5.2%
Vehicle	Involved a truck or automobile	40	24	3.7%	2.6%
Walking	Walking, standing on track	250	218	22.8%	23.3%
Total		1091	935		

Suicide*



*It is important to note that for the years covered by the current study, FRA was not required to collect information on suicides. Therefore, descriptions and statistics regarding suicides in the current study represent only a portion of all railroad suicides and should be interpreted cautiously.

Market Analysis

- The goal of the market analysis was to develop a behavioral profile of decedents to be used in targeted outreach efforts
  - Behavioral profiles are descriptions of expected behavior or personality characteristics that can be used to assist in targeting marketing or outreach efforts.
  - Demographic data include more "objective" measures of age, gender, marital status, etc.
  - Consumer data include patterns of shopping and purchase behavior.
  - Psychographic data include personality characteristics such as values, motivations, and goals.

Market Analysis Approach

- Consumer and psychographic data were appended to demographic data from coroners/CMEs
- Matches to decedents were made at the Zip+4 and generic zip code level for 958 of the 1,429 returned forms
- Used Acxiom, industry-leading data provider, and the Personicx cluster segmentation solution

Example of Appended Data

Demographic data from CMEs

Consumer/demographic data appended from Acxiom

Psychographic data appended from Acxiom

Name	Age	Gender	Marital status	Est. house hold income	Dwellin g type	Education	Online purchaser	Outdoors enthusiast	Polit. leaning	Personicx Cluster
John Doe	33	M	Married	$34000	Apt.	H.S.	No	Yes	Conserv.	Great Outdoors

Market Analysis Results

- Personicx Clusters are statistically-identified groupings representative of segments of the US population
  - Employed by marketers to define target audiences for marketing campaigns
  - Decedents mapped into 64 of the 70 clusters

Key Themes from Market Analysis

- Likely to be renters
- Single- or multi-unit dwellings in second-tier cities
- Lower income and educational levels
- If children in the households, parents likely to be in 20's or 30's
- Subset of decedents from more rural areas and likely less socially engaged

Findings

- Decedents are much younger than national norms, with two-thirds of decedents being below the age of 40 and an average age at death of approximately 38.

- Railroad fatalities are highly likely to be male (82 percent of the time). Relatively higher proportion of fatalities at younger (under age 19) and older (over age 50) ages are female, and a relatively higher proportion of fatalities in ages 20–49 are male.

Findings (cont.)

- Whites and African Americans are overrepresented. Though males remain predominant among fatalities, the male to female ratios for Whites and African Americans has decreased somewhat from the 2008 Report.
- Drugs and/or alcohol are associated with approximately half of all railroad fatalities.
- The types of incidents associated with railroad fatalities included walking along or across railroad lines, sleeping or sitting on the tracks, and suicide.

Findings (cont.)

- Just over one quarter (27.7 percent) of all deaths were considered suicides. Fatalities for males ages 20–29 were disproportionately more likely to be suicides. For females, the proportion of suicides steadily increases through ages 50–59, with older female fatalities being much less likely to be suicides.
- Drugs and alcohol are disproportionately less common among suicides than other railroad fatalities.

Findings (cont.)

- Railroad-trespasser fatalities are likely to be renters in second-tier cities. Decedents are also more likely to come from lower income and educational levels. Those decedents who have children are likely to be younger, typically in their twenties. A subset of decedents is from more rural or isolated areas. These individuals are likely less socially engaged and may enjoy being removed from urban areas.

Recommendations

- Focus marketing efforts on one or both of two market segments:
  - Younger, lower income, urban renters in second-tier cities with railroads.
  - Lower income, rural home owners who are likely to be empty-nesters or couples with no children

Recommendations

- Focus educational programs in areas that are close to railroad lines. Given the frequency of incidents in which decedents were on foot, it is assumed that the majority of incidents occurred near areas where potential decedents may actually spend their time on a frequent basis.

Recommendations

- Partner with organizations that already address drug and/or alcohol issues to create a targeted campaign focused on appropriate market segments and related specifically to trespassing on railroad rights-of-way. Potential partner organizations include Alcoholics Anonymous (and associated groups), Narcotics Anonymous, brewers and distillers, law enforcement, bar and restaurant associations, the Brotherhood of Locomotive Engineers (BofLE) or other railroad labor unions, treatment and rehab centers, and Operation Lifesaver, Inc.

FRA/Volpe Center Trespass Prevention Research Study

- Overview
- Current Status
- Trespass Issues
- Next Steps

Sponsored by the FRA Office of Research and Development - Signal, Train Control and Communications Division (RDV-33)

Trespass Prevention Research Study

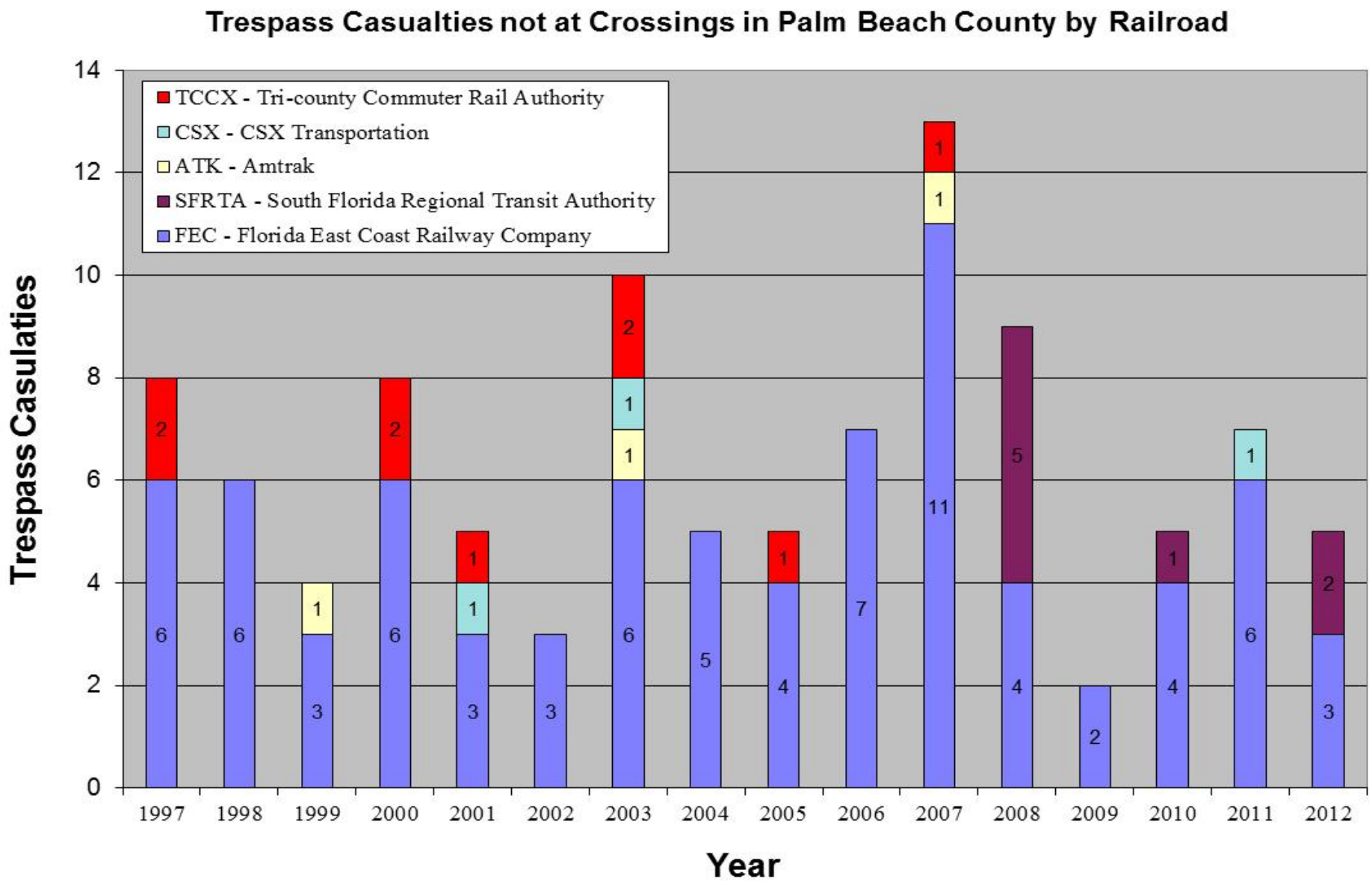
Project initiated August 2009

Objective

- Eliminate trespasser incidents and fatalities
  - ➢ Engineering, Education, Enforcement
- Provide national guidance on trespass mitigation

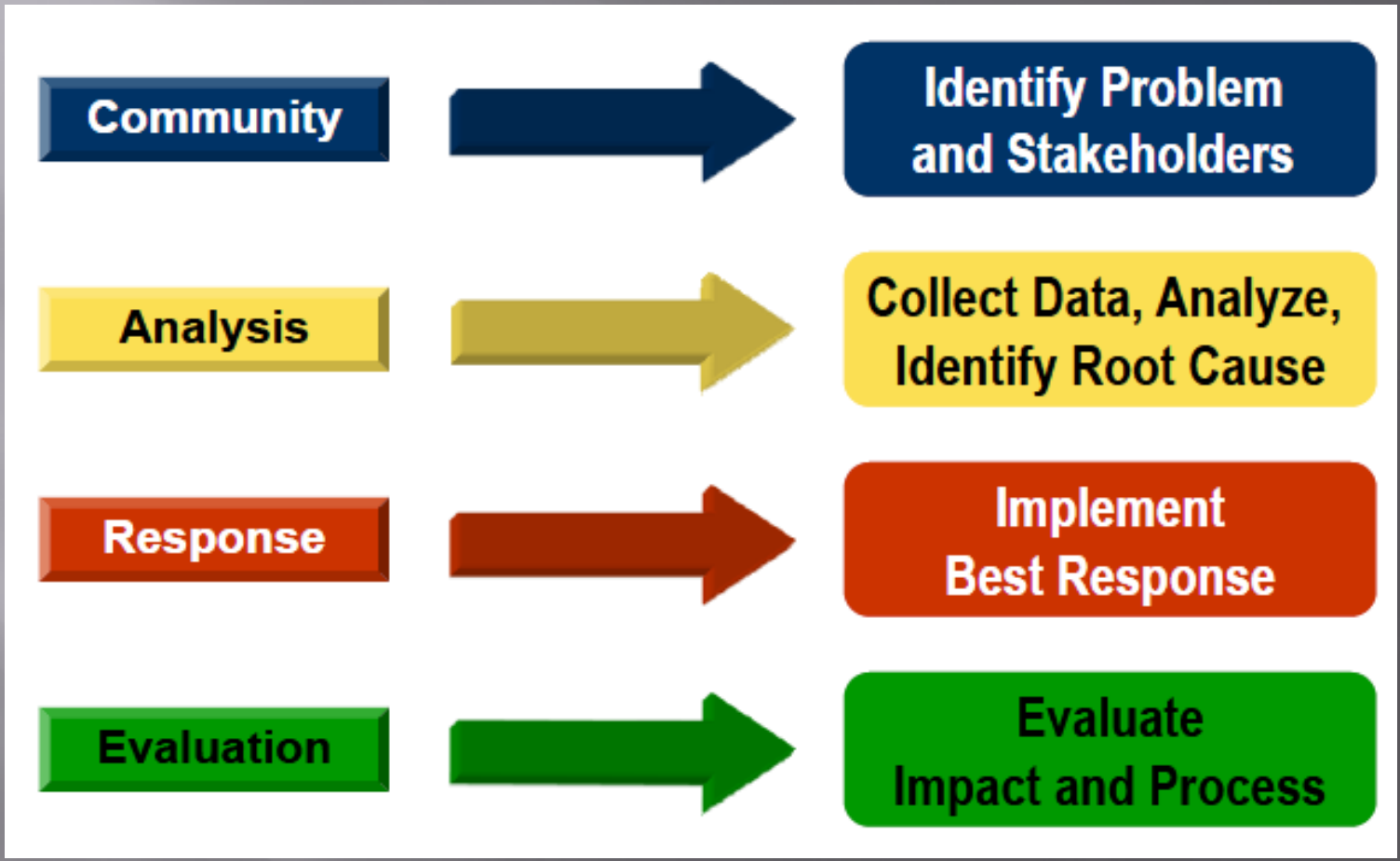
Study Area

- City of West Palm Beach, FL
  - – SFRTA (TriRail)/CSX/Amtrak (milepost 966-973)
  - – FEC (milepost 296-301)



*2012 data through June 2012; Both 2012 SFRTA casualties outside City limits
Excludes SFRTA trespass strikes at crossings – ‘08 (2), ’09 (3), ‘10 (0), ‘11 (1), ‘12 (0)

Trespass Prevention Research Study



Source: Canadian Pacific Police Service, Managing Risk; A model for Deterring Trespassers, Operation Lifesaver 16th International Symposium, August 31, 2010.

Stakeholders

U.S. Department of Transportation
Federal Railroad Administration

TRI RAIL

Florida East Coast Railway, L.L.C.

VEOLIA TRANSPORTATION

G4S

CSX How tomorrow moves

City of West Palm Beach Florida

Operation Lifesaver Florida

AMTRAK

Palm Beach County Florida

The School District Palm Beach County Reach for Excellence

West Palm Beach Police Dept.

State of Florida Department of Transportation

Palm Beach County Sheriff's Office

West Palm Beach Neighborhood Associations

Activities

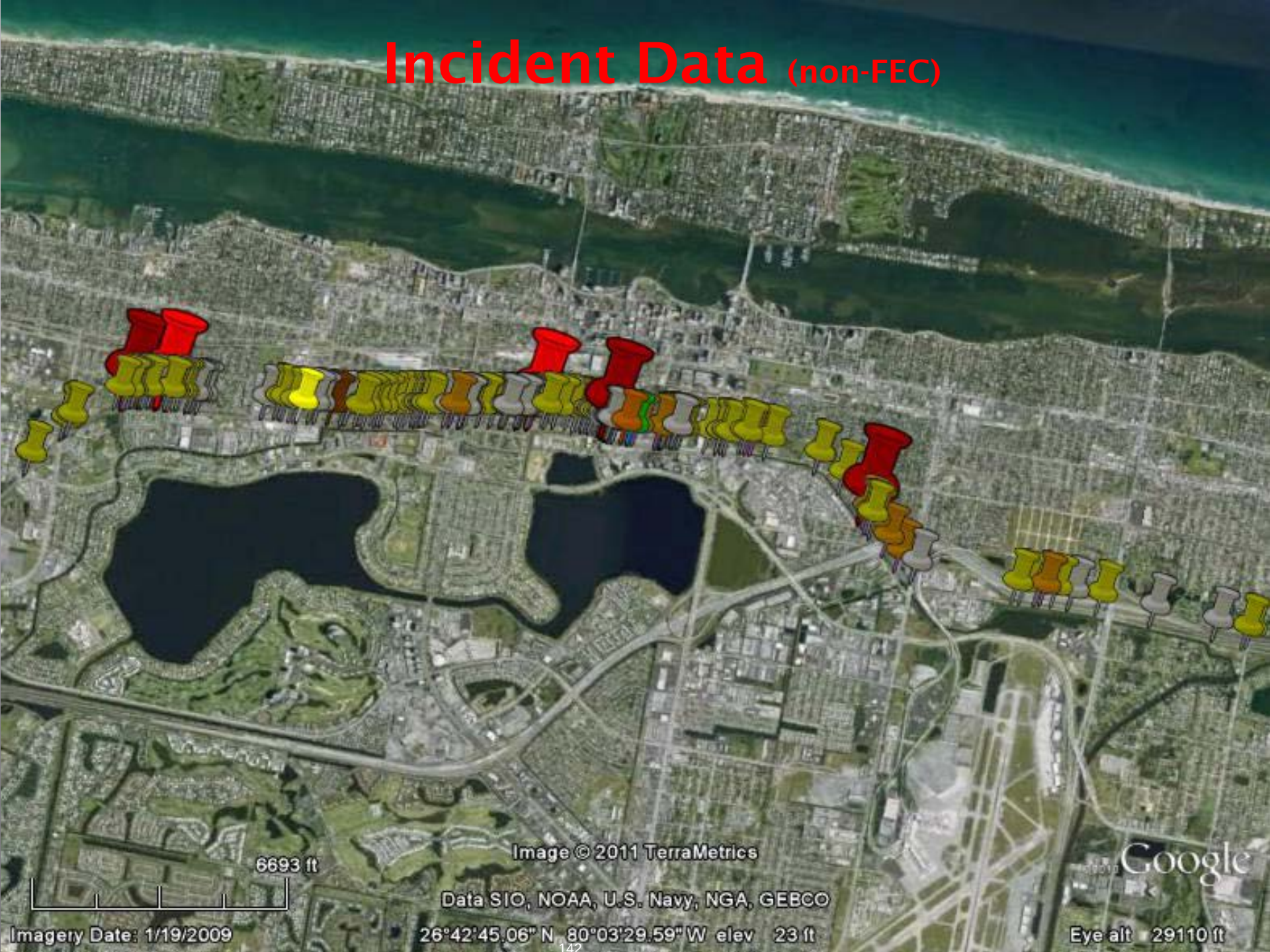
- **Stakeholder Meetings**
  - Oct 09, - May 13 – 12 meetings May 2013 (completed)
  - Field Review (7/ 20/12 & 5/13)
  - Sept/Oct 2013 (upcoming)

- **Data collection**
  - Interviews
  - TriRail ROW site inspection
  - FEC right-of-way site inspection (completed)
  - TriRail locomotive video analysis (completed)

Activities

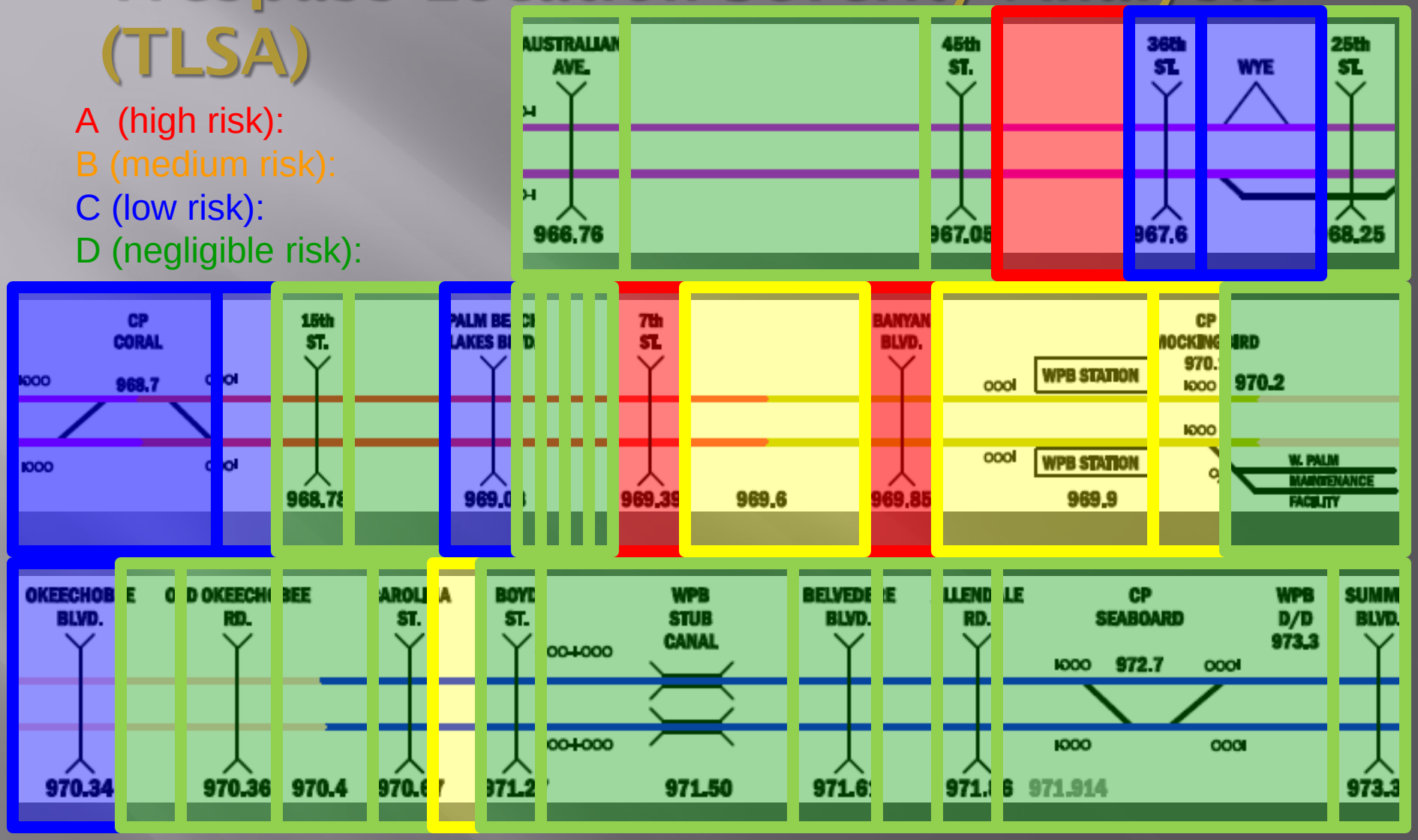
- **Education/outreach participation**
  - Oct 2009 - Safety Blitz (completed)
  - Apr 2010, June 2011, June 2012 - Train Safety Awareness Week (completed)

Incident Data (non-FEC)



Trespass Location Severity Analysis (TLSA)

A (high risk):
B (medium risk):
C (low risk):
D (negligible risk):



20 mph	60 mph
30 mph	65 mph
40 mph	70 mph
45 mph	75 mph
55 mph	79 mph

Right of Way between 45th and 36th

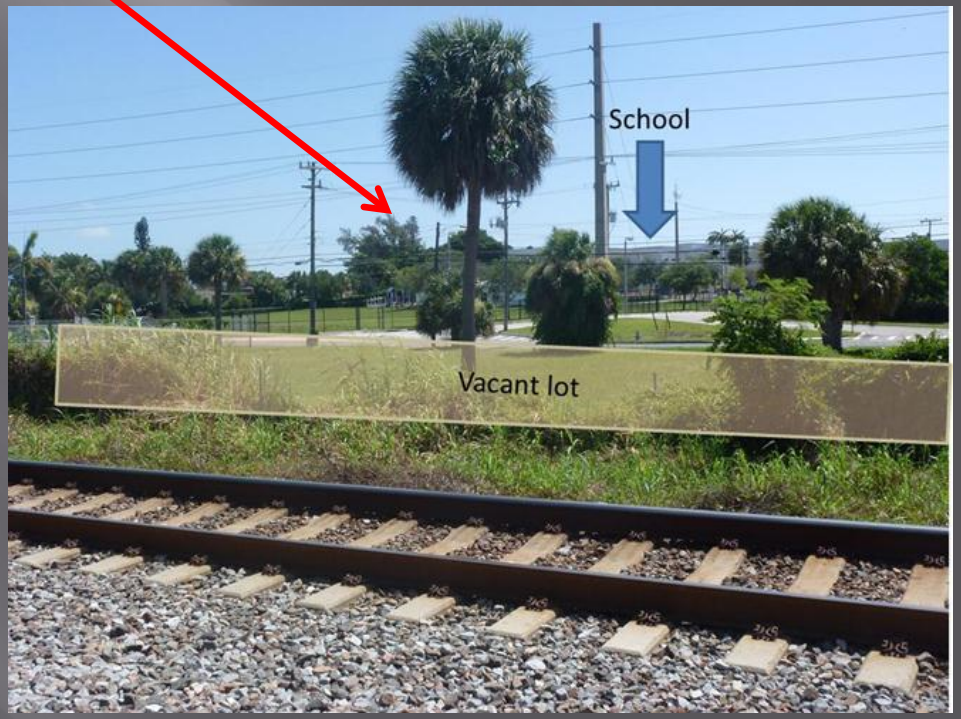
Right of Way between 45th and 36th

2 fatalities

14 trespass events

- 7 within 100 ft of end of canal
- All 7 between 2:14 PM and 6:03 PM
- Northmore Elementary School (and playground) on East side

Risk Class A (high risk)



Recommended Mitigation Strategies (March 9, 2012)

Location ID: A3
Description: ROW between 45th and 36th Streets

Priority Score: 24
Risk Class: A (High Risk)

Trespass History:
- 2 fatalities (02/07/08, 04/21/08)
- 14 trespass events recorded via Tri-Rail locomotive video (03/05/10-07/05/10)
- 8 trespass events noted via Veolia reports (04/07/10-04/19/10)

Trespass Characteristics

Most events involve young trespassers crossing the ROW near the northeast corner of the Sunset Place Apartments on the west side of the ROW.

Potential Mitigation Strategies

Engineering

- Reinforcing the existing Channelization by eliminating the gaps between the concrete wall and the canal or by introducing landscaping, could help to alleviate trespass concerns along the ROW.
- Consistent Fencing along the east side of the track could also serve as an effective barrier to trespass activity.
- The introduction of a new Pedestrian Crossing such as an at-grade crossing or an overpass could provide pedestrians with a new, safer crossing point.

Education

- Given the high instance of young trespassers along the corridor, an Education and Outreach Campaign focusing on Northmore Elementary School could serve as a low-cost, effective trespass mitigation strategy.
- An Officer on the Train (OOT) program could help identify trespass activity while providing law enforcement with a better understanding of the risks.

Enforcement

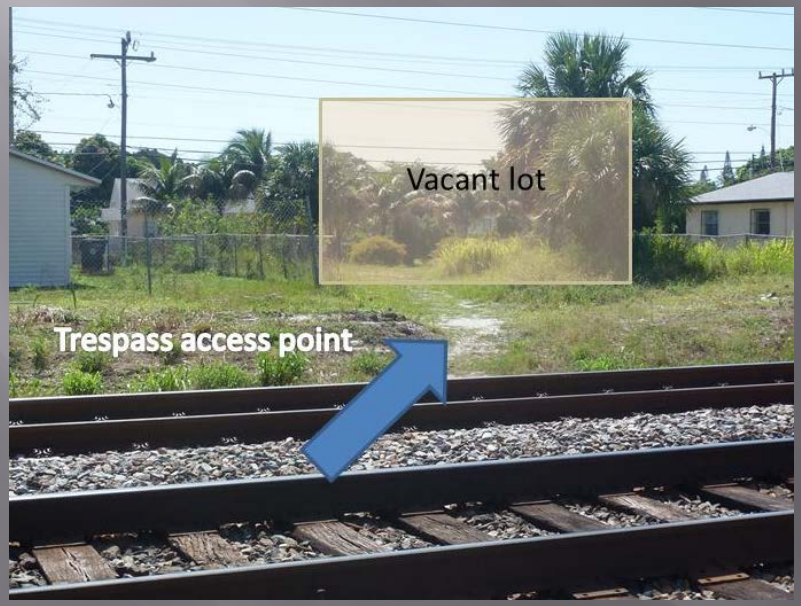
- A Targeted Enforcement Campaign along the corridor could support an education campaign while gaining further publicity for safe crossing practices.
- Better Display of Penalties, including posted signs with signal-violation penalties, can also serve as an effective deterrent.

SUG Recommended Risk Control Measures

The SUG observed that the high presence of trespass incidents at the center of the corridor between the Sunset Place Apartments and Northmore Elementary School was a direct result of the long distance required to access safe crossing points. The SUG came to the consensus that the trespass issues along the ROW between 36th and 45th Streets were attributed to the absence of a suitable pedestrian grade crossing. Cognizant of the costs associated with the installation of an overpass, the SUG group recommended minor engineering treatments to modify existing control measures and restrict access to the ROW. The SUG advocated for an intensive Education campaign focused on the surrounding community and the students of Northmore Elementary School. Given the young age of many of the trespassers, an enforcement campaign was ill-advised.

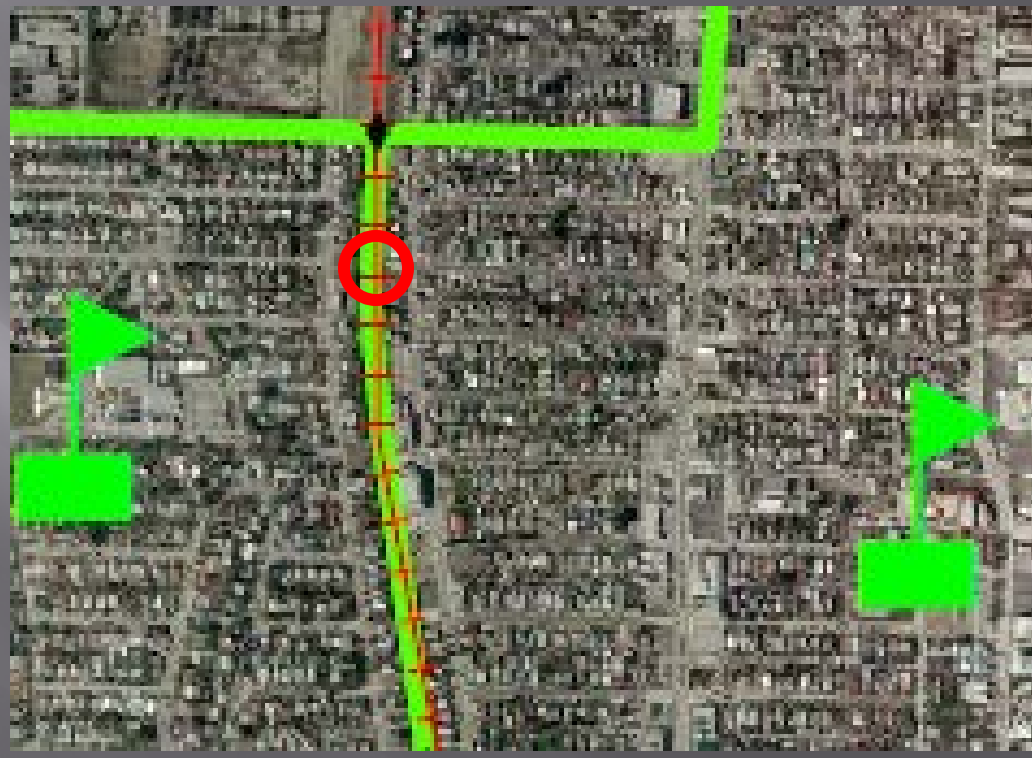
John A. Volpe National Transportation Systems Center

Field Review



FEC Railroad Field Observations

Location: FEC line south of 45th Street HRGC



Source: Palm Beach County School District, http://gis.palmbeach.k12.fl.us/cms/Download_Shapefiles.html

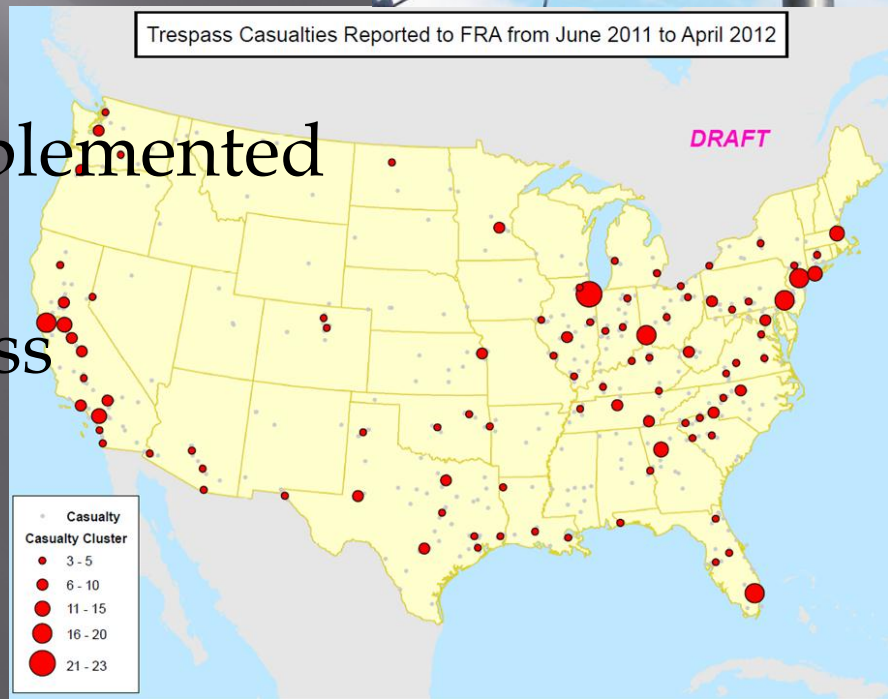
Field Observation – Boys & Girl Club

Field Observations – 3rd St.

FEC Railroad Field Observations
54th St (closed crossing) and Greenwood Ave

Next Steps

- Support Implementation
- Evaluation
  - Install surveillance equip. at select locations for further trespass data collection
  - Assess effectiveness of implemented treatments
- Roll-out to other high trespass areas
- Guidance/best practices



Accident and Incident Reporting
Sec. 209

Accident and Incident Reporting Sec. 209

- FRA shall:
  - conduct an audit of each Class I railroad at least once every 2 years
  - conduct an audit of each non-Class I railroad at least once every 5 years
- To ensure that all crossing collisions and fatalities are reported to any Federal national accident database.

Fostering Introduction of New Technology to Improve Safety at Grade Crossings

Sec. 210

Fostering Introduction of New Technology to Improve Safety at Grade Crossings
Sec. 210

POLICY.—It is the policy of the United States to encourage the development of new technology that can prevent loss of life and injuries at highway-rail grade crossings. The Secretary of Transportation is designated to carry out this policy in consultation with States and necessary public and private entities.

Fostering Introduction of New Technology to Improve Safety at Grade Crossings Sec. 210

- New technology
  - Reviewed in accordance with FRA's standards for processor-based signal and train control systems
  - Shall consider the effects of safety.
- Preempts State laws concerning adequacy of the warning
  - If approved and installed in accordance with the approval

To Get a Copy of RSIA

- Posted of FRA's web site
  - www.fra.dot.gov/us/content/2172
- Thomas – http://thomas.loc.gov
  - Search Multiple, Previous Congresses
  - Enter "hr 2095" and check 110
  - Click on "H.R.2095.EAH"

Questions????

Ron Ries
202-493-6285
Ron.Ries@DOT.GOV