Thursday, September 30, 2010

Ms. Jo Strang  
Associate Administrator for Railroad Safety/Chief Safety Officer  
U.S. Department of Transportation  
Federal Railroad Administration  
1200 New Jersey Ave. SE.  
Washington, DC 20590

Administrator Strang:

With regard to your letter of August 4, 2010, I am pleased to present for your review and approval, Indiana’s Highway-Rail Grade Crossing Action Plan (HRGCAP). This plan presents strategies to improve highway rail grade crossing safety by drawing upon infrastructure engineering, driver education and law enforcement resources. The Indiana Department of Transportation (INDOT) Rail Office and Office of Traffic Safety collaborated in its preparation. It was vetted with our state law enforcement and highway safety agencies as well as with our Operation Lifesaver partners and its member railroads.

Indiana is very grateful for the assistance of Ms. Tammy Wagner and Mr. Ron Ries, who commented and offered advice during preparation of our plan. Their comments were addressed in preparing the final document for submittal.

If you have any questions regarding the preparation of the action plan, please contact Mr. Roger Manning, Strategic Highway Safety Plan Manager at (317) 232-5204 or email rmanning@indot.in.gov

I look forward to your approval or your direction for improvement.

Kind Regards,

Michael B. Cline,  
Commissioner

MBC/rm
The Rail Safety Improvement Act of 2008 directed the Secretary of Transportation to identify the ten States that have had the most highway-rail grade crossing collisions, on average, over the past three years. The Federal Railroad Administration (FRA) identified the ten States with the most reported highway-rail grade crossing incidents during the years 2006, 2007, and 2008, to be: Alabama, California, Florida, Georgia, Illinois, Indiana, Iowa, Louisiana, Ohio, and Texas. Consequently, Indiana is required to create this action plan to identify specific solutions for improving safety at crossings.

Unless superseded by federal code or regulatory action this document remains in effect for a period of five years from the date of FRA approval.

Indiana Department of Transportation
10/1/2010
Table of Contents

INTRODUCTION .................................................................................................................. 3
PLAN SUMMARY .................................................................................................................. 6
PROBLEM IDENTIFICATION ............................................................................................... 8
ENGINEERING ................................................................................................................... 9
  Public Highway-Rail Grade Crossing Control/Closure ..................................................... 9
  Grade Separation ............................................................................................................ 9
  Crossing Safety Improvements ....................................................................................... 9
    Train-Activated Warning Enhancements ...................................................................... 9
    Passive Warning Enhancements .................................................................................. 10
  Crossings with multiple crashes .................................................................................... 11
EDUCATION ....................................................................................................................... 13
  Review Indiana’s Driver Manual ................................................................................... 13
  Communications Outreach ............................................................................................ 13
ENFORCEMENT ................................................................................................................ 14
  Evaluate Emerging Technologies & Tactics ................................................................... 14
  Publish a Law Enforcement and First Responders Guide ............................................... 14
  Establish Accredited Law Enforcement Crossing Training ............................................ 14
DATA AND ADMINISTRATION ........................................................................................ 15
  Compile and Analyze Crossing Crash Data ................................................................... 15
  Identify Rail Corridors for Programmatic Crossing Improvement ................................... 15
  Improve Railroad Data .................................................................................................. 15
  Seek Innovative Countermeasures ................................................................................ 16
  Statewide Coordination ................................................................................................. 16

Table 1 Key Action Items .................................................................................................. 7
Table 2 Recent Crash Performance .................................................................................. 8
Table 3 Crash Performance by Warning Device ............................................................... 8
Table 4 Potential Engineering Countermeasure Options ................................................. 12
Table 5 Crashes by Major Contributor and warning device ............................................. 16
INTRODUCTION

Indiana officially adopted the state motto of “The Crossroads of America” in 1937. However, it was in the 19th century, 100 years before the Interstate Highway System came into being that the term first became associated with Indiana, because of the many canals, railroads and roadways that crossed our state. States and communities typically built the highway system of the 20th century at grade across the rail systems of the 19th century that today leaves thousands of grade crossings in the 21st century that would not be built today.

Many of the nation’s busiest rail lines continue to travel across Indiana to and from the nation’s largest rail freight hub located in Chicago, Illinois. In the 21st century, this convergence of railroads and highways means that Indiana has about 6,000 public pedestrian and highway railroad grade crossings, which is more than all but four other states.

Statewide, forty-three railroads operate over more than 5,300 miles of track. Freight lines carry in excess of 311-million tons of freight annually, serving ports and intermodal terminals across Indiana. Several freight railroads have recently upgraded major corridors for high-speed freight traffic. Changes in the operating strategies of freight railroads have resulted in more and longer trains concentrated on fewer route miles. Additionally, there is frequent service on AMTRAK routes in the northwest corridor counties and the Cardinal/Hoosier State Amtrak passenger route crosses the state from the northwest to southeast several times a week. In addition, tourist excursion trains operate on variable schedules at different times of the year.

As illustrated on the Indiana Rail System Map, only Switzerland and Ohio counties have no crossings. The 12 counties highlighted in red each contribute more than 2% of the total number of crossings in the state. Together, they comprise roughly one third of all Indiana crossings. The 27 counties highlighted in orange each contribute 1% to 2% of the total crossings in the state. Together, they comprise roughly the second third of total crossings. The 51 counties highlighted in yellow encompass the remaining third of the state’s crossings, each contributing less than 1% of the state’s total crossings.

The rail and highway system in Indiana is busy with the greatest concentration of conflicting railroad and highway traffic concentrated in the five northwest counties of Lake, Porter, La Porte, St. Joseph and Elkhart. Together, these counties account for 15% of all crossings in the state. This corridor is subject to heavy freight traffic, high-speed Amtrak passenger service along with frequent Northern Indiana Commuter Transportation District electric commuter train service operating between Chicago and South Bend. The great numbers of highway-rail conflict points across Indiana often produce a volume of crashes that rank it among the states with the most grade crossing crashes.
Note:

In its methodology to identify the states required to produce a grade crossing action plan the FRA looked at all crashes including public and private crossings. This plan is limited in its scope to address only grade crossings located on highways, roads and streets maintained by a public authority. Privately owned roads or driveways leading into factories or onto farm fields are private crossings and operate under agreements between individual landowners and railroad companies. Presently, Indiana has no authority to regulate such crossings nor can it spend state or federal funds on their improvement. Consequently, throughout this document any reference to a “crossing” means a public highway-rail grade crossing.

From a safety perspective, the current treatment of private crossings is becoming increasingly problematic. This may be best illustrated by the challenges presented by High Speed Rail (HSR) corridors. Currently under evaluation by the FRA are proposed safety principles such as:

Eliminating redundant crossings and those that can’t be made safe

Installing state of the art traffic control/warning devices compatible with the location for train speeds between 80 and 110 mph

Protecting rail movements with full width highway barriers or grade separation where train speeds are above 110 mph

Private crossings on high-speed rail corridors will also require these treatments before high-speed service can be initiated. The FRA is expected to provide guidance to supplement existing regulations with respect to highway-rail grade crossings for use in funding HSR projects.
The intent of this safety action plan is to help ensure safe and efficient travel for all highway users and railroads. It serves as an annually reviewed implementation component of the Indiana Strategic Highway Safety Plan and provides for the ongoing analysis and identification of issues affecting safety at crossings across the state.

The plan draws upon engineering, enforcement and educational components to devise means to prevent crashes at crossings. Shared duty and partnerships are important elements in reducing highway fatalities in Indiana. Better communication, coordination and cooperation between state, federal, regional and local agencies as well as with railroads, rail safety organizations are vital to successful implementation and deployment of strategies intended to keep the public highway-rail grade crossing portion of Indiana’s transportation network operating safely and efficiently.

This plan seeks to include input from roadway users, railroad companies, local law enforcement agencies, local highway agencies and other stakeholders. Central to a multi-disciplinary approach to identifying and addressing problem areas are the INDOT Office of Traffic Safety and Rail Office, the Indiana Criminal Justice Institute, Indiana State Police, Indiana Operation Lifesaver, the Federal Railroad and Highway Administrations. Collectively, these organizations will review current practice while exploring emerging concepts to continually improve safety and reduce collisions at crossings across Indiana, broadly employing three disciplines.

- Engineering activities that design, construct and maintain cost-effective crossings safety treatments is fundamental to reducing crashes.
- Education of drivers, pedestrians, law enforcement and emergency response personnel about the dangers at crossings is vital to improve user behavior at crossings.
- Enforcement of traffic laws is fundamental to ensuring compliance by drivers and pedestrians to existing laws and traffic control devices at crossings.

The goal of this plan is to continue and accelerate if possible the downward trend in the occurrence of crossing crashes regardless of causation. Sadly, any safety action plan is not likely to eliminate all crashes, injuries and deaths at crossings because crashes usually involve multiple contributing factors. Despite the combined best efforts of federal and state agencies, railroad companies and private organizations, we recognize that risky behaviors on the part of drivers or pedestrians cannot be entirely eliminated or mitigated.
Table 1 Key Action Items

<table>
<thead>
<tr>
<th>#</th>
<th>Item</th>
<th>1 Year</th>
<th>&gt; 1 Year</th>
<th>Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Participate in OLI Public Awareness &amp; Media Plan</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Review Drivers Manual With Bureau of Motor Vehicles</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Evaluate Emerging Enforcement Technologies and Tactics</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Evaluate Emerging Innovative Countermeasures</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Improve ARIES-FRA Database Compatibility</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Expedite passive crossing MUTCD compliance upgrades</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Publish Law Enforcement Crossing Guide</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>8</td>
<td>Create Training With Indiana Law Enforcement Academy</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Define and Identify Corridor Improvement Priorities</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Conduct Regular Statewide Coordination</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
PROBLEM IDENTIFICATION

To ensure consistency in crash evaluation, the data used to analyze crossings comes from the FRA grade crossing collision reports (FRA - Form 6180.57) and the FRA National Grade Crossing Inventory. The INDOT Office of Traffic Safety extracted highway-rail grade crossing data for the years of 2000 through 2009 to examine in preparation of this action plan.

Table 2 Recent Crash Performance

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Crashes</td>
<td>1,459</td>
<td>665</td>
<td>365</td>
</tr>
<tr>
<td>Crossings</td>
<td>1001</td>
<td>518</td>
<td>312</td>
</tr>
<tr>
<td>Multiple Crash Crossings</td>
<td>283</td>
<td>106</td>
<td>43</td>
</tr>
<tr>
<td>Counties with at least one crash</td>
<td>80</td>
<td>73</td>
<td>60</td>
</tr>
</tbody>
</table>

County ranking by number of crashes (% of State total)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LAKE</td>
<td>(16.0%)</td>
<td>(17.7%)</td>
<td>(17.5%)</td>
</tr>
<tr>
<td>2</td>
<td>MARION</td>
<td>(6.4%)</td>
<td>(5.7%)</td>
<td>(6.6%)</td>
</tr>
<tr>
<td>3</td>
<td>ST JOSEPH</td>
<td>(5.0%)</td>
<td>(5.4%)</td>
<td>(6.3%)</td>
</tr>
<tr>
<td>4</td>
<td>LA PORTE</td>
<td>(4.7%)</td>
<td>(5.0%)</td>
<td>(4.7%)</td>
</tr>
<tr>
<td>5</td>
<td>ELKHART</td>
<td>(4.2%)</td>
<td>(4.8%)</td>
<td>(4.4%)</td>
</tr>
<tr>
<td>6</td>
<td>DELAWARE</td>
<td>(3.9%)</td>
<td>(4.7%)</td>
<td>(3.8%)</td>
</tr>
<tr>
<td>7</td>
<td>VIGO</td>
<td>(3.6%)</td>
<td>(3.6%)</td>
<td>(3.6%)</td>
</tr>
<tr>
<td>8</td>
<td>ALLEN</td>
<td>(3.4%)</td>
<td>(3.5%)</td>
<td>(3.3%)</td>
</tr>
<tr>
<td>9</td>
<td>MADISON</td>
<td>(3.3%)</td>
<td>(2.9%)</td>
<td>(3.0%)</td>
</tr>
<tr>
<td>10</td>
<td>GIBSON</td>
<td>(2.9%)</td>
<td>(2.6%)</td>
<td>(2.7%)</td>
</tr>
</tbody>
</table>

Data indicates that two out of three crashes occurred at crossings with train-activated warning devices already in place.

Table 3 Crash Performance by Warning Device

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashing Lights &amp; Gates</td>
<td>507</td>
<td>248</td>
<td>128</td>
</tr>
<tr>
<td>Flashing Lights</td>
<td>371</td>
<td>159</td>
<td>73</td>
</tr>
<tr>
<td>WW,HTS, Bells, Other</td>
<td>10</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Cross Bucks</td>
<td>264</td>
<td>87</td>
<td>39</td>
</tr>
<tr>
<td>Stop Signs</td>
<td>219</td>
<td>81</td>
<td>37</td>
</tr>
</tbody>
</table>
ENGINEERING

Public Highway–Rail Grade Crossing Control/Closure

The safest public highway-rail grade crossing is no crossing at all. That is why INDOT seeks to curtail the construction of new crossings, and actively seeks the consolidation of crossings where it is feasible and reasonable to do so. INDOT will evaluate nearby crossings for closing whenever it invests in a project to upgrade warning devices or that involves an existing or new grade separation.

The INDOT Rail Office applies a portion of the Railroad Grade Crossing Fund to an ongoing program to encourage permanent closing of redundant crossings. The Rail Office manages this program as a lump sum payment to communities upon the closing of a public highway-rail grade crossing. The municipality is permitted to use the funds for any public purpose. The award amount is determined by the predicted crash rate for the closed crossings and typically ranges from $20,000 to $60,000.

Grade Separation

Short of closing, grade separation, constitutes the only perfect solution to eliminate the hazards inherent in grade crossings. However, due to the high costs of construction, right of way and environmental mitigation, INDOT only considers grade separation in instances where high volumes or high speeds of both roadway and rail traffic make grade crossings of any warning level undesirable. This plan seeks to identify crossings that may benefit from grade separation.

Crossing Safety Improvements

Train-Activated Warning Enhancements

The INDOT Office of Traffic Safety administers the federal aid highway-rail crossing program under United States Code Title 23, Section 130. The goal of this safety fund, commonly referred to as ‘Section 130’, is to improve the safety of the most hazardous crossings in the State of Indiana.

INDOT typically uses Section 130 funds to install train-activated warning device improvements and does not require matching funds for projects from local government authorities. With the current level of federal funding, the number of Section 130 crossing upgrades achievable annually in Indiana is about 25-30 projects per year to provide upgrade from passive to active warning or improvements to existing active devices including installation of constant warning time circuitry. It also funds the replacement of obsolete equipment such as constant flashing red
lights or warning bells only. In selected cases, upgrade to four quadrant gate warning or installation of median barrier will be pursued.

INDOT maintains documentation of the hazard analysis and project selection process for Section 130. This plan will influence future modifications of that process.

Passive Warning Enhancements

The primary INDOT program assisting with funding of passive warning improvements is the Railroad Grade Crossing Fund administered by the INDOT Rail Office as a cost reimbursement. Towns, cities and counties are eligible to apply and local matching funds are not required. Class II and III railroads and port authorities operating a railroad also may apply, however some items may require a matching contribution. This program provides upgrades such as advance signage, pavement markings, night-time illumination, upgrading flashing lights from incandescent to LED devices as well as surface improvements.

While 23 CFR 646.206 permits use of Section 130 funds for the installations of standard signs and pavement markings, Indiana has traditionally reserved section 130 funds for projects that add or improve train activated warning devices. However, the 2009 Manual of Uniform Traffic Control Devices (MUTCD) requires changes in signage at all public passive crossings. MUTCD section 8B.04 directs that all cross buck assemblies also carry YIELD or STOP Signs by December 31, 2019. To accelerate these improvements, INDOT will explore using contributions of section 130 funds on a 50-50 cost sharing basis toward a railroad company’s upgrade of passive crossing signage to meet the new requirement.

INDOT will enter into an agreement with CSX Transportation Corporation to upgrade all of the passive public crossings on its Indiana trackage (~660 crossings). This project will develop the necessary implementation process as well as evaluate the benefits of such agreements with the intent of offering them programmatically to all railroads operating in Indiana with the goal of exceeding the deadline requirements of the 2009 MUTCD for deploying the new standard passive warning devices.

In addition, in INDOT’s Local Highway Safety Improvement Program Project Selection Guidance for projects submitted for calls after July 1, 2010, local public agencies may apply for funding of projects to install (after agreement with the railroad owner) new cross buck assemblies in compliance with the 2009 MUTCD at grade crossings currently equipped with only passive warning devices. Improvements are preferable at crossings of short lines and regional railroads. Installing improvements on a rail corridor rather than at ‘spot’ locations is also preferred.
Crossings with multiple crashes

Indiana has elected to define a “multiple collision crossing” as a public crossing that has experienced two or more FRA reportable crashes within five years. As part of the INDOT Office of Traffic Safety ongoing monitoring of highway-rail crashes, the Section 130 program manager and the INDOT Rail Office quickly review all grade crossing crash police reports (at public or private crossings) and the corresponding inventory record and crash history for the crossing involved as soon as a crash is reported. INDOT takes additional steps in cases where the crossing is on a public roadway and has a crash on record during the previous sixty months.

As soon as the police crash report is available, the findings of the investigating officer(s) as to the contributing factors in the crash will be the first consideration as to the scope and schedule of engineering or regulatory activities.

Where the findings of the investigating officer indicate inappropriate driver behavior such as driving around road closed barriers, suicide, flight from law enforcement, or the abandonment of a vehicle that is not disabled results in a FRA reportable crash; INDOT has the option of not pursuing any engineering or regulatory action. This applies regardless of the protective devices in place at the highway rail crossing.

Where a police crash report indicates a vehicle became stuck in the driving lanes of a crossing equipped with train-activated warning devices that were functioning at the time of the crash regardless of other behavioral contributors, at minimum INDOT will conduct a regulatory inspection of the crossing.
In other cases, INDOT will conduct an on-site inspection as soon as practicable to determine if there are traffic control devices, railroad warning devices or environmental conditions that should be quickly added, enhanced or modified.

### Table 4 Potential Engineering Countermeasure Options

<table>
<thead>
<tr>
<th>Existing Condition</th>
<th>Possible enhancements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive</td>
<td>Add 2009 MUTCD compliant devices</td>
</tr>
<tr>
<td></td>
<td>Change to “Stop&quot; condition - (only after completion of an engineering study)</td>
</tr>
<tr>
<td></td>
<td>Pavement markings, advance signage, illumination</td>
</tr>
<tr>
<td></td>
<td>Code enforcement (Clear brush, etc)</td>
</tr>
<tr>
<td></td>
<td>Sec. 130 Add Flashing Lights and Gates, Overhead Cantilever, Bell, Constant Warning Time circuitry</td>
</tr>
<tr>
<td></td>
<td>Road Safety Audit</td>
</tr>
<tr>
<td>Flashing Lights only</td>
<td>Pavement markings, advance signage</td>
</tr>
<tr>
<td></td>
<td>Code enforcement (Clear brush, etc)</td>
</tr>
<tr>
<td></td>
<td>Sec. 130 Add gates, Overhead Cantilever, Constant Warning Time circuitry</td>
</tr>
<tr>
<td></td>
<td>Road Safety Audit</td>
</tr>
<tr>
<td>Flashing lights plus gates</td>
<td>Pavement markings, advance signage</td>
</tr>
<tr>
<td></td>
<td>Code enforcement (Clear brush, etc)</td>
</tr>
<tr>
<td></td>
<td>Sec. 130 Add Overhead Cantilever, Constant Warning Time circuitry, upgrade old equipment, approach median barrier, Four-Quadrant gates</td>
</tr>
<tr>
<td></td>
<td>Grade Separation</td>
</tr>
<tr>
<td></td>
<td>Road Safety Audit</td>
</tr>
</tbody>
</table>

At any point in the evaluation, the INDOT Traffic Safety Office may opt to conduct a full Road Safety Audit to aid in determining a comprehensive response of engineering, education and enforcement activities to address the crash problem.

The final documentation for the investigations consists of internal INDOT documents such as:

1. Field check minutes -or-
2. E-mail correspondence regarding the police crash report

No formal engineering report is anticipated or required for multiple collision crossing investigations and there is no requirement to report findings to the FRA. In all cases, INDOT will communicate with the railroad involved, local law enforcement, the roadway owner and Operation Lifesaver Indiana regarding the status of actions at multiple collision crossings.
EDUCATION

Review Indiana’s Driver Manual

INDOT will collaborate with the Indiana Bureau of Motor Vehicles regularly to evaluate the Indiana driver manual and driving test with the intent of improving crossing safety education. For example, add text on four-quadrant gate installations, what is expected of drivers at crossings protected only by flashing lights, information on reporting crashes at crossings, malfunctioning signals or hazardous spills and what to do if your car stalls on RR tracks. Discussion will include adding questions on any new information to the driver written test.

Communications Outreach

Improve state agency involvement in Operation Lifesaver activities by training state employees as OLI presenters and provide in-kind support to OLI activities such as coordinating statewide safety messages with OLI and participation in “Rail Safety Week” activities.

Target media messages to address high crash corridors or to groups over-represented in crash data.

The team will assist in preparation of articles concerning highway-rail safety programs for publication in the Local Technology Assistance Program (LTAP) newsletter to reach more local officials. In cooperation with Operation Lifesaver and the Indiana Broadcasters Association, the state will participate in public service campaigns, along with identification of regional “hot spots” focusing safety information targeted to influence local motorists and pedestrians most at risk for crossing crashes.

Outreach through communication vehicles such as the LTAP newsletter is one way that INDOT encourages local agencies to engage in highway-rail grade crossing safety improvements independent of state assistance. INDOT can only advance 25-30 Section 130 projects a year at the current level of funding. With just over 4,000 ungated crossings across the state, local agencies should not wait for INDOT funding involvement. Nothing in Indiana law prevents counties, cities and towns from entering into agreements with railroads for the placement of train-activated warning devices at crossings on roads under their jurisdiction if the municipal entity agrees to pay the installation cost.
ENFORCEMENT

Evaluate Emerging Technologies & Tactics

The state will seek involvement from the Indiana State Police and local law enforcement agencies to explore tactics that will increase motorist and pedestrian compliance with applicable traffic safety laws through targeted enforcement. Additionally, the team will evaluate the use of railroad supplied “close-call” reports and/or detection devices at crossings with a history of driver violations and risky behavior to aid in targeted enforcement activities.

Publish a Law Enforcement and First Responders Guide

In cooperation with Operation Lifesaver, the Indiana Criminal Justice Institute and the Indiana Law Enforcement Training Board, compile, publish and regularly update information to educate Indiana law enforcement officers and first responders about safely and effectively conducting enforcement or emergency response activities at crossings and on railroad right of way. The guide will summarize state laws pertaining to crossings and railroad right of way to help in effective law enforcement activities. It will also provide a checklist of specific information to collect at the scene of crossing crashes to aid the preparation of Indiana Traffic Crash Reports and to conduct a crash investigation effectively. It will provide a listing of emergency contact information for all railroads operating in Indiana.

Establish Accredited Law Enforcement Crossing Training

In cooperation with the Indiana Law Enforcement Training Board, establish a regular schedule of in-service training courses to provide accredited law enforcement continuing education hours for grade crossing collision investigation courses at the basic (4-hour), intermediate (8-hour) and advanced (16-hour) levels as developed by Operation Lifesaver and the International Association of Chiefs of Police.
DATA AND ADMINISTRATION

Compile and Analyze Crossing Crash Data

INDOT will conduct regular analysis of crossing crash reports to identify trends and to evaluate the effectiveness of countermeasures. Since 2003, the Automated Reporting Information Exchange System (ARIES) has hosted Indiana’s database of all motor vehicle crash reports transmitted to the Indiana State Police. The Federal Railroad Administration (FRA) Office of Safety Analysis rail-highway grade crossing crash data provides a more complete picture of crossing incidents than ARIES because non-motor vehicle crashes involving trains (pedestrians, bicyclists, etc.) are not reported on Indiana traffic crash reports. Even so, ARIES data provides valuable information regarding contributing factors that are not captured by FRA incident reports. Where information from both databases is available, analysts will pay particular attention to identifying contributing factors in various types of crashes, including:

- Contributing factors
- Driver profile
- Types of vehicles
- Types of trains
- Highway and Rail speeds
- Mainline or yard tracks
- Multiple vehicle or train collisions
- Proximity to highway traffic signal

Identify Rail Corridors for Programmatic Crossing Improvement

Crashes are random events; however, the conditions that contribute to the likelihood of crash occurrence are measurable. So in addition to monitoring the incidence of crossing crashes, INDOT seeks to identify rail corridors where train traffic and/or speeds justify safety enhancements at all crossings along its length. In such a corridor approach, consolidation and closures of existing crossings are an important component.

Improve Railroad Data

Crossing Inventory

Reconcile differences in crossing inventory data between the FRA, the state and the railroads. Incorporate new inventory data being collected that includes aerial and ground photographs and attributes that are not part of the current FRA grade crossing inventory database. Public access to the enriched crossing inventory is available on the INDOT Web site at:

http://dotmaps.indot.in.gov/apps/RailCrossings/
Maintain annual update of track ownership transfers, corridor additions and abandonment while working toward a system that will dynamically update data in a Geographic Information System as trackage status and ownership changes occur.

**Crossing Crash Data**

All motor vehicle involved FRA crossing incident reports should be matched to Indiana police crash reports. An examination of the two databases show that during the six years from 2003 to 2008, the FRA database shows 859 crashes at public crossings, which includes 38 pedestrian crashes. The ARIES database of Indiana motor vehicle crash reports shows 815 motor vehicle collisions with trains. ARIES crash reports do not consistently identify crossings by their unique grade crossing number. Therefore, analysts must manually examine each report’s narrative to determine if the crash involves a public or private crossing, or, if no crossing was involved such as when a vehicle leaves the roadway and strikes a train, or when sideswiping a train where roadways and train tracks run concurrently. The team will work with the Traffic Records Coordinating Committee to establish a standard procedure for reporting crashes at grade crossings.

Of the Public Grade Crossing Crashes in Indiana reported to the FRA between January 1, 2003 and December 31, 2008, about 64% (564) were matched to police crash reports and summarized for development of this plan. The primary contributor involved in these crashes was predominantly driver error (87%).

**Table 5 Crashes by Major Contributor and warning device**

<table>
<thead>
<tr>
<th></th>
<th>Gates</th>
<th>Flashing lights</th>
<th>Cross bucks</th>
<th>Stop signs</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRIVER</td>
<td>184</td>
<td>136</td>
<td>80</td>
<td>84</td>
<td>5</td>
<td>489</td>
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<td>ENVIRONMENT</td>
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<td>7</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td>33</td>
</tr>
<tr>
<td>VEHICLE</td>
<td>31</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>42</td>
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Seek Innovative Countermeasures

Identify promising safety technologies with potential for application in Indiana. As an example the Joint Transportation Research Program is studying interconnects between train-activated warning devices and adjacent highway traffic signals. Results of that study should produce a standardized approach to signal preemption that realizes performance that is more reliable.

Statewide Coordination

Seek funding sources and venues to establish a regular conference of some form to engage with railroad crossing stakeholders to evaluate safety, explore new strategies and plan future activities. The conference can be a venue to discuss:
- Status reports on the rail system
- Crash analysis identifying emerging issues
- Changes in roles or responsibilities among stakeholders
- Public Communication Activities
- Needs for State or Federal action on laws and regulations