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Transportation

**Federal Railroad
Administration**

Law Enforcement Strategies for Mitigating Highway-Rail Grade Crossing Risk Factors

Office of Research,
Development
and Technology
Washington, DC 20590



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13. ABSTRACT (Maximum 200 words) There has been heightened awareness of and re-commitment to highway-rail grade crossing safety. Both the U.S. Department of Transportation and the Federal Railroad Administration have pledged to show a greater presence at grade crossings and to adopt a new, multi-faceted campaign aimed at strengthening enforcement and safety awareness at grade crossings. The Law Enforcement Strategies for Improving Highway Rail Grade Crossing Safety Working Group convened with the goal to engage representatives from law enforcement agencies to solicit examples of innovative strategies, success stories, challenges, and lessons learned. Successful law enforcement initiatives shared certain themes: coordination in and among various organizations, alignment with major events, judiciary commitment, and officer education.				
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- 1 inch (in) = 2.5 centimeters (cm)
- 1 foot (ft) = 30 centimeters (cm)
- 1 yard (yd) = 0.9 meter (m)
- 1 mile (mi) = 1.6 kilometers (km)

AREA (APPROXIMATE)

- 1 square inch (sq in, in²) = 6.5 square centimeters (cm²)
- 1 square foot (sq ft, ft²) = 0.09 square meter (m²)
- 1 square yard (sq yd, yd²) = 0.8 square meter (m²)
- 1 square mile (sq mi, mi²) = 2.6 square kilometers (km²)
- 1 acre = 0.4 hectare (he) = 4,000 square meters (m²)

MASS - WEIGHT (APPROXIMATE)

- 1 ounce (oz) = 28 grams (gm)
- 1 pound (lb) = 0.45 kilogram (kg)
- 1 short ton = 2,000 pounds (lb) = 0.9 tonne (t)

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- 1 teaspoon (tsp) = 5 milliliters (ml)
- 1 tablespoon (tbsp) = 15 milliliters (ml)
- 1 fluid ounce (fl oz) = 30 milliliters (ml)
- 1 cup (c) = 0.24 liter (l)
- 1 pint (pt) = 0.47 liter (l)
- 1 quart (qt) = 0.96 liter (l)
- 1 gallon (gal) = 3.8 liters (l)
- 1 cubic foot (cu ft, ft³) = 0.03 cubic meter (m³)
- 1 cubic yard (cu yd, yd³) = 0.76 cubic meter (m³)

TEMPERATURE (EXACT)

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METRIC TO ENGLISH

LENGTH (APPROXIMATE)

- 1 millimeter (mm) = 0.04 inch (in)
- 1 centimeter (cm) = 0.4 inch (in)
- 1 meter (m) = 3.3 feet (ft)
- 1 meter (m) = 1.1 yards (yd)
- 1 kilometer (km) = 0.6 mile (mi)

AREA (APPROXIMATE)

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- 1 square meter (m²) = 1.2 square yards (sq yd, yd²)
- 1 square kilometer (km²) = 0.4 square mile (sq mi, mi²)
- 10,000 square meters (m²) = 1 hectare (ha) = 2.5 acres

MASS - WEIGHT (APPROXIMATE)

- 1 gram (gm) = 0.036 ounce (oz)
- 1 kilogram (kg) = 2.2 pounds (lb)
- 1 tonne (t) = 1,000 kilograms (kg) = 1.1 short tons

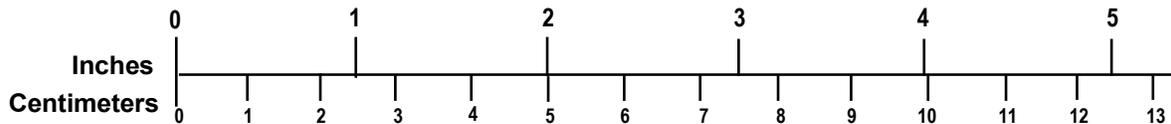
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- 1 liter (l) = 2.1 pints (pt)
- 1 liter (l) = 1.06 quarts (qt)
- 1 liter (l) = 0.26 gallon (gal)
- 1 cubic meter (m³) = 36 cubic feet (cu ft, ft³)
- 1 cubic meter (m³) = 1.3 cubic yards (cu yd, yd³)

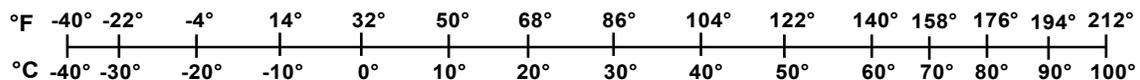
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- Pamela Church, Chief, Western Springs Illinois Police Department
- Robert Hanson, Detective, Amtrak Police Department
- Louis Jogmen, Chief, Park Ridge Illinois Police Department
- Cort LaBlank, District Special Agent, Kansas City Southern Railroad
- Jocelyn Latulippe, Deputy Chief, Canadian National Railroad
- Ken Marchant, Chief, Canadian Pacific Police Service
- Andrew Matthews, Esq., President, Connecticut State Police Union
- George McManus, Senior Special Agent, Union Pacific Police Department
- James Metzger, Deputy Chief of Emergency Management, Amtrak
- Wayne Moore, Deputy Chief, Amtrak Police Department
- Elizabeth Weber, San Diego Police Department

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Executive Summary

The Volpe Center was tasked by the Federal Railroad Administration Office of Research, Development and Technology in 2015 to identify and document successful initiatives focused on the enforcement of traffic safety laws and precautions at highway-rail grade crossings. The research team convened a working group that included members of law enforcement and rail safety stakeholders. The group, named Law Enforcement Strategies for Improving Highway-Rail Grade Crossing Safety Working Group, was formed to engage law enforcement agencies and find examples of innovative strategies used to enforce and educate the public on highway-rail grade crossing safety laws. The research consisted of working group members' first-hand experience, law enforcement and railroad industry community outreach, and outreach to other entities with an interest in highway-rail grade crossing safety. The research showed that successful highway-rail grade crossing law enforcement initiatives shared at least one of four themes: coordination in and among various organizations, alignment with major events, judiciary commitment, and officer education.

Many of the initiatives showed promise for successful and expanded application in the future. One example was an educational, non-punitive photo enforcement trial being conducted in Orlando, Florida. Another was taking a safety management system (SMS) approach toward highway-railroad safety. This report documents those and numerous other innovative strategies, as well as success stories, challenges, and lessons learned. This report identifies and evaluates types of law enforcement initiatives as well as themes for successful initiatives and their effectiveness and benefits. The initiatives identified are used to increase the safety of highway rail grade crossings in the United States.

The research also showed that State, local, and railroad law enforcement agencies would benefit from ongoing officer education and education initiatives targeting those who do not comply with highway-rail grade crossing laws. Judiciary commitment is a vital facet of law enforcement, and outreach to educate the judiciary on the risks and tragedies of not obeying highway-rail grade crossing laws should continue. It is important for the various railroad and law enforcement agencies and organizations to coordinate information and activities, and to cooperate in law enforcement. An effective way to reach many people to educate them on highway-rail grade crossing laws is to align law enforcement education blitzes with existing major events.

The research culminates in a document that contains existing grade crossing enforcement strategies and provides a description of initiatives, outcomes, and lessons learned, along with contact information for the applicable agency.

Introduction

The U.S. Department of Transportation (DOT) urges local law enforcement agencies "to show a greater presence at grade crossings, issue citations to drivers that violate rules of the road at crossings and consider rapid implementation of best practices for grade crossing safety." [1]

As part of this effort to improve safety at railroad grade crossings, in February of 2015 the Federal Railroad Administration (FRA) announced a campaign to strengthen enforcement and safety awareness at highway-rail grade crossings. The first phase of this effort called upon local law enforcement agencies to show a greater presence at grade crossings, issue citations to drivers who violate rules of the road at crossings, and consider rapid implementation of best practices for grade crossing safety. [2]

To further these safety efforts, the John A. Volpe National Transportation Systems Center (Volpe Center) was tasked by the FRA Office of Research, Development and Technology (RD&T) to identify and document successful initiatives focused on the enforcement of traffic safety laws and precautions at highway-rail grade crossings. To gain law enforcement's acceptance, the research team also convened a working group that included members of law enforcement and rail safety stakeholders. The group, named the Law Enforcement Strategies for Improving Highway-Rail Grade Crossing Safety Working Group, was formed to engage law enforcement agencies and find examples of innovative strategies used to enforce and educate the public on highway-rail grade crossing safety laws. This report documents those innovative strategies as well as success stories, challenges, and lessons learned. This report identifies and evaluates types of law enforcement initiatives as well as themes for successful initiatives and their effectiveness and benefits. The initiatives identified are to be used to increase the safety of highway rail grade crossings in the U.S.

1.1 Background

The Volpe Center provides support to RD&T on technical issues on railroad safety, including trespass prevention and highway-rail grade crossing safety.

The February 2015, an MTA Metro-North Railroad accident at a crossing in Valhalla, NY, played a part in the decision, among other efforts, to create the working group and begin this study. The incident was unusual because it also resulted in fatalities aboard the train. It prompted a renewed FRA focus toward highway-rail grade crossing safety. [3]

1.2 Objectives

This research identifies law enforcement initiatives used by various agencies and organizations tasked with preventing the incidence of highway-rail grade crossing safety. This guidance documents references and sources for initiatives employed throughout the U.S. It also documents success stories, lessons learned, and challenges to developing and deploying successful law enforcement initiatives.

1.3 Overall Approach

Research for this document was performed by the Law Enforcement Strategies for Improving Highway-Rail Grade Crossing Safety Working Group. The research consisted of working group members' first-hand experience, law enforcement and railroad industry community outreach, and

outreach to other entities with an interest in highway-rail grade crossing safety. The working group also performed a literature review. The research culminates in a document that contains existing grade crossing enforcement strategies and provides a description of initiatives, outcomes, and lessons learned, along with contact information for the applicable agency.

1.4 Scope

This study reviews available information on law enforcement's efforts at a variety of levels to reduce the frequency of incidents at highway-rail grade crossings. The primary focus is on efforts that have seen positive results, and the end product is a source of information on the successful strategies, challenges, and best practices implemented by a sample of law enforcement agencies to mitigate incidents at highway-rail grade crossings.

1.5 Organization of the Report

This report is organized into the following areas:

Section 2 – Working Group and Outreach

Section 3 – Literature Review

Section 4 – Challenges, Opportunities, Lessons Learned, and Recommendations

Section 5 – Conclusion

2. Working Group and Outreach

2.1 Working Group

The research commenced by identifying organizations and potential participants who would be willing to assist with the research, reaching out to those organizations, and convening a working group. The organizations considered for participation were primarily law enforcement organizations and railroads. The law enforcement groups identified were the National Sherriff's Association, the National Fraternal Order of Police, the International Association of Chiefs of Police, the American Association of State Troopers, and the National Troopers Coalition. The railroads were the Burlington Northern Santa Fe (BNSF) Corporation, Canadian National Railway (CN), Canadian Pacific Railway (CP), CSX Transportation, Kansas City Southern Railway (KC Southern), Norfolk Southern Corporation, and Union Pacific (UP). The National Railroad Passenger Corporation was also invited to participate.

In early 2016, the FRA Administrator sent an invitation to the identified law enforcement agencies and railroads, seeking their participation in research into the best practices and innovative strategies used to achieve safety at highway-rail grade crossings. The Law Enforcement Strategies for Improving Highway-Rail Grade Crossing Safety Working Group first convened in April 2016. The members of the working group were:

- Pamela Church, Chief, Western Springs Illinois Police Department
- Robert Hanson, Detective, Amtrak Police Department (APD)
- Louis Jogmen, Chief, Park Ridge Illinois Police Department
- Cort LaBlank, District Special Agent, KC Southern
- Jocelyn Latulippe, Deputy Chief, CN
- Ken Marchant, Chief, CP Police Service
- Andrew Matthews, Esq., President, Connecticut State Police Union
- George McManus, Senior Special Agent, Union Pacific Police Department
- James Metzger, Deputy Chief of Emergency Management, Amtrak
- Wayne Moore, Deputy Chief, APD
- Elizabeth Weber, San Diego Police Department

Working group members met periodically via teleconference to actively share information they collected on current strategies from communities and agencies. The working group goal was to engage representatives from law enforcement agencies to solicit examples of innovative strategies, success stories, challenges, and lessons learned.

2.2 Outreach

The working group members reached out individually to other agencies to gather information on innovative approaches to improving highway grade crossing safety. They provided information on initiatives of their own organizations as well. Descriptions of 18 initiatives were provided as a result of the outreach. A description of each initiative that was submitted appears in [Appendix A](#) and includes:

- Lead Agency/Organization and Contact Information
- Participating Organizations

- Initiative Day and/or Duration
- Target Audience
- Initiative Type
- Cost Information
- Short Description
- Results, Web Links.

Four follow-up interviews were held to clarify questions and obtain further detailed information. The follow-up interviews were held with CN Police, the Illinois Association of Chiefs of Police, Amtrak, and KC Southern.

The successful initiatives identified by the working group shared at least one of the four themes for success. The themes were:

- **Coordination within/among agencies and organizations:** Many successful initiatives involved partnerships and cooperation among railroads, railroad police, local law enforcement, community leaders, and other stakeholders.
- **Alignment with high-profile events:** Law enforcement initiatives received additional support and attention when they corresponded with larger safety events, such as International Level Crossing Awareness Day.
- **Judicial system commitment and understanding of offenses and penalties:** Law enforcement initiatives were most successful, and most likely to continue, when the citations were upheld by the justice system, and the courts were understanding of the dangers of violating highway-rail grade crossing safety laws.
- **Educate law enforcement on their state crossing safety laws:** Provide local law enforcement with knowledge of the State and local crossing safety laws, and encourage them to enforce the laws in their community.

2.3 Strategy – Coordination

Law enforcement requires the coordination of any variety of organizational, municipal, State, or Federal entities to achieve law enforcement goals of reducing incidents, injuries, and fatalities at highway-rail grade crossings and along rail rights-of-way.

Some examples of strategies that require coordination are photo enforcement, coordination between government agencies, and stakeholders and the public. Sometimes coordination is required but not readily apparent, such as the coordination of new or additional internal processes, or maintaining enduring professional relationships.

The National Association of Chiefs of Police (NACP) encourages participation in National Rail Safety Week. Since 2014, the Illinois Safety Week Rail Safety Campaign, using a \$10,000 grant and personal outreach to ensure the participation of over 400 agencies, promotes rail safety awareness during National Rail Safety Week every September. According to the Illinois Association of Chiefs of Police, the goal of the program is to conduct a comprehensive and coordinated rail safety awareness campaign through the organization and delivery of previously established rail safety programs. Initiatives can be tailored to an individual agency, depending on their issues and resources. Distribution of materials is kept simple by the providing agencies with

a standardized “welcome package,” including posters and a thumb drive pre-loaded with education materials, press releases, etc. In 2016, Statewide effort included 158 OL presentations, 16,000 safety handouts distributed, 1,745 warnings, and 1,210 citations issued during Safety Week. One challenge identified was that this type of effort was a “harder sell” with local law enforcement agencies when there was no accompanying funding. However, the NACP also noted that using personal outreach, as well as “keeping it simple” for law enforcement agencies, had a good effect on encouraging their participation.

Coordination played a major factor in the efforts of the San Diego Police Department’s enforcement details. San Diego P.D. officials met with and coordinated the efforts of at least 12 organizations, including BNSF, Operation Lifesaver (OL) representatives, California Public Utilities Commission (CPUC) officials, and State and local police departments to conduct 16 major enforcement details over a 5-year period. [4]

2.4 Strategy – Alignment with Major Events

The alignment of safety enforcement and education activities with major events takes advantage of an existing public interest, event, audience or other synergy to provide a conduit for law enforcement to reach its target audience.

Coordinated coalitions of local and railroad police conduct rail safety law enforcement blitzes during events like Illinois Rail Safety Week or during soccer games or concerts at Columbus, Ohio’s Mapfire Stadium. During these events thousands of people receive a warning or citation for disobeying rail crossing signals or trespassing on railroad property. Every state OL program partners with State and local law enforcement agencies and railroad police to promote effective enforcement and safety awareness at railroad crossings. [5]

The San Diego P.D. timed their 15th detail to run concurrently with International Grade Crossing Awareness Day. The enforcement detail became the focus of the media and an event itself when a local NBC affiliate broadcast a piece on train safety to coincide with the department’s 15th detail. [6]

The Arts Beats and Eats festival held in Royal Oak, Michigan provides an opportunity for the Royal Oak P.D., CN Police, and OL to conduct an enforcement and education campaign. Officers participate in the law enforcement detail while OL representatives conduct an education blitz in the downtown area. The downtown district is further covered by the Royal Oak Sheriff’s Department. The department conducts a downtown railroad safety enforcement operation during the Woodward Dream Cruise, an annual August car club event.

Not all major events are external and calendar-based. Some events are akin to a rite of passage, such as taking driver’s education and obtaining one’s first drivers’ license or attending prom. For example, Amtrak has a program where officers teach the grade crossing safety section of the driver’s education program.

The Plainfield, IL police department’s Road to Reality program is a safe driving program that is scheduled around prom events. Students and parents are required to attend, presumably as a condition for students to attend the prom. During a series of walk-through vignettes, attendees witness the fallout from drunk driving, including an underage drinking party, a car versus train crash (using a life-sized model engine façade and tracks), a trip to a morgue, and a courtroom sentencing.

There is potential to take the coordination of rites of passage events even further. Targeting readily identifiable groups, such as new parents or pre-teens taking drug awareness education as part of the school curriculum, provides a potentially receptive audience at a teachable moment. Once interventions at rites of passage events are established, they can be easily maintained.

2.5 Strategy – Judicial Understanding and Commitment

Law enforcement efforts can be easily thwarted by a lack of judicial understanding and commitment. A law enforcement officer can eventually be discouraged from writing tickets for grade crossing violations if those citations are repeatedly excused by a judge. A violator may be emboldened to maintain unsafe behavior if that behavior is repeatedly excused in court.

In gaining judicial understanding and commitment one must assume that any member of the judiciary knows the law. Judges often take umbrage when being informed of the laws within their jurisdiction. Some successful safety initiatives engaged the judiciary by educating them to the practical dangers and consequences of violating grade crossing laws and seeking their buy-in on discouraging unsafe behavior at highway-rail grade crossings. This involvement can sometimes be achieved within the community. For example, the previously described Road to Reality, an immersive theater event presented to pre-prom students and their families, involves local judges in the productions' development and execution.

The judicial system is also involved in *Michigan's Enforcement Guide for Law Enforcement's Response to Railroad Incidents*. This document was created by a joint effort between railroads, state agencies, and police departments, and OL, and includes input from Michigan prosecutors. The guide contains the types of violations (e.g., civil, misdemeanor, felony), pertinent Michigan laws such as alcohol/drug laws, traffic crash reporting, a grade crossing collision checklist, hazmat information, other notes of interest, and railroad company emergency phone numbers. [7]

Often judges are reluctant to uphold citations they feel may be excessively punitive. While this can be addressed by judicial education, it can also be achieved through better targeting violators. The city of Wood Dale achieved a greater than 10 percentage point increase in their judicial success rate by altering the targeting of motorists violating a grade crossing. This was done by issuing citations only to motorists entering a crossing area more than 5 seconds after warning devices had been activated. [8] Previously, motorists were cited for entering a crossing area immediately after the warning devices had been activated.

Court diversion programs are another method for involving the judiciary in the enforcement of railroad safety laws and prosecuting violators. Court diversion is a restorative alternative for individuals charged with a crime. After police issue a citation for violating the law, the state's attorney decides whether to refer the person out of the court system to a community-based court diversion program. Amtrak participates in a court diversion program and officers teach railroad grade crossing safety to those who have been cited by Amtrak officers.

2.6 Strategy – Officer Education

Law enforcement officers must be fully informed of railroad laws and their duty to enforce them. The initiatives described in this document make clear that there is great effort and cooperation between many railroads and law enforcement organizations in enforcing and educating the public on railroad law. However, many State and local law enforcement organizations are not well versed in railroad law or safety issues. One law enforcement official observed that municipal law

enforcement agencies have many responsibilities and may believe that railroad police were the driving factor in rail safety.

Therefore, providing education to State and local law enforcement agencies is of great importance. There are currently a variety of initiatives that provide education about railroad laws and State and local law enforcement's authority to enforce it.

The CN Police Service approaches rail safety with a comprehensive risk management method, much like that of an SMS. CN uses a mix of four pillars—education, enforcement, engineering, and stakeholder engagement—to assess risk and provide a more comprehensive approach to rail safety. Program effectiveness is determined by tracking activities, citations, and warnings on a regular basis and making adjustments to the overall approach as the data is analyzed. A benefit to this comprehensive approach is the continual reassessment of the effectiveness of the law enforcement effort.

Amtrak employs a wide variety of tactics for officer education. Regular roll call briefings with law enforcement agencies, to reinforce grade crossing and trespassing laws, keeps the issue of crossing safety more to the front of the minds of the officers. They also conduct RAILS SAFE regional conferences to educate Federal, State, and local law enforcement agencies about railroad safety, counterterrorism, and enforcement. The Grade Crossing Investigation Pocket Card is a checklist for police responding to a railroad incident, outlining the laws and what police should look for during a grade crossing or trespassing incident. It contains emergency contact information, such as ENS and DOT telephone numbers. Amtrak has also developed two mobile platform applications to look up local laws, which is very useful to empower local law enforcement officers.

FRA has also published the *Compilation of State Laws and Regulations Affecting Highway-Rail Grade Crossings, 6th Edition*, which is also accessible on a mobile platform application. [\[9\]](#)

The Texas DOT, as part of its 2011 comprehensive grade crossing safety action plan, provided pocket-sized railroad law education materials to law enforcement agencies, with the intention that officers would educate themselves and be encouraged to enforce railroad laws at grade crossings. [\[10\]](#) Louisiana OL and CN railroad police developed an inexpensive, adhesive-backed, ticket-book-sized handout containing all pertinent railroad laws. Because the handout can be adhered to an officer's ticket book, it is easy to carry and refer to, increasing the officer's knowledge of railroad law. The handout was popular with Louisiana law enforcement officers, and demand exceeded supply.

Through a Texas DOT grant, Texas OL funded Rail Safety Awareness: Train the Trainer railroad safety training. The vigorous 3-day course included resources and strategies for railroad safety enforcement and training other officers and two field exercises. The initial training in May 2016 saw 18 police officers and railroad agents brought to trainer level. Representatives from the Houston Police Department, BNSF, Texas OL, and FRA were the trainers for this class.

2.7 Additional Strategies

Union Station in Washington, DC was having trouble with passengers crossing live tracks to reach a less-crowded escalator heading into the station. By painting "DO NOT CROSS TRACKS" on the lower-level platform tracks with yellow reflective stenciling, Amtrak reduced the number of passengers committing the violation. The large yellow letters on platform tracks

serve as a constant reminder to passengers that they should not cross the live tracks, even in the absence of any law enforcement activity.

3. Literature Review

The research team performed a literature review to understand the current state of law enforcement's existing approaches. The review was primarily a web search, using terms such as *law enforcement grade crossing*, *railroad grade crossing safety*, and *Operation Lifesaver* to discover applicable news articles, press releases, and published reports and papers. Relevant news articles and other pieces of information discovered by the working group are also included.

The review reinforced the strategic themes of aligning with major events, law enforcement officer education, and judicial commitment. It also revealed that law enforcement initiatives revolved around five key law enforcement approaches:

- Photo Enforcement
- Officer on a Train
- Enforcement and Enforcement Blitzes
- Positive Reinforcement
- Educational Outreach

3.1 Photo Enforcement

Experience has shown that visible, high-profile law enforcement programs, like photo enforcement, reduce the number of highway-rail crossing violations. Photo enforcement at six highway-rail crossings across the United States showed positive results, reducing violations from 34 percent to 92 percent. [\[11\]](#)

In 2011, Texas DOT sought to expand photo enforcement programs to mitigate incidents at crossings where multiple collisions had occurred by monitoring the success of the Grand Prairie pilot project and by developing a list of candidate crossings for photo enforcement. [\[12\]](#)

FRA learned through its research that there are a number of reasons why automated enforcement of traffic laws at highway rail grade crossings is not more widely used. One is the high cost associated with the system itself. Another reason is the state of the laws surrounding the use of photo enforcement technology throughout the country. There are 27 states that have laws allowing the use of technology to enforce compliance with traffic laws; 8 specifically mention highway-rail grade crossings. The rest of the states have either no laws allowing photo enforcement or laws restricting its use. Another reason is negative public and judicial perception regarding photo enforcement. Over the past 10 years cameras at grade crossings have only been used in six locations. There are only two railroad photo enforcement systems currently active—in Grand Prairie, Texas and Wooddale, Illinois.

Building on the legacy application of photo enforcement at highway-rail grade crossings, the Photo Enforcement at Grade Crossing project, conducted by FRA and the Volpe Center, was implemented in Orlando, Florida. The project demonstrated a promising use of the technology. Using existing organizational and judicial red light photo enforcement infrastructure, the registered owners of vehicles who violated grade crossing laws were sent educational materials instead of a citation. The materials included a picture, a link to a video, educational materials, and a questionnaire. This approach used law enforcement technology and techniques in a non-punitive manner. The violator feedback from this photo enforcement approach was positive. A before-and-after study was conducted to evaluate the effectiveness of the system on improving

grade crossing safety. Twenty months after the cameras were implemented there was 17.2 percent decrease in violations of the crossing warning devices when compared to before the cameras were in place. [\[13\]](#)

3.2 Targeted Enforcement Campaigns

Much enforcement activity vis-a-vis highway-rail grade crossing or railroad trespassing takes place in the form of a targeted enforcement campaign at a crossing. This is probably because of the large amount of jurisdictional and other coordination required to conduct railroad law enforcement. A typical enforcement campaign involves numerous organizations. For example, the OL Railroad Enforcement Detail, which conducted 16 enforcement campaigns in San Diego from December 2011 to June 2016, required the cooperation of BNSF Police Department (BNSFPD,) Carrizo Gorge Police Department, San Diego County Sherriff's Department Railroad Enforcement Unit, APD, San Diego Harbor Police Department, Metropolitan Transit Security, San Diego Community College Police Department, San Diego State University, CPUC, U.S. Department of Homeland Security, BNSF and OL. During the 16 campaigns, a total of 1,719 citations were issued along with 429 traffic warnings and 2,025 train safety flyers.

Below are examples of other targeted enforcement campaigns and, if the information was available, the resulting citations or warnings issued:

- In 2011 UP partnered with OL and local law enforcement to issue citations to motorists and pedestrians who did not heed the railroad lights and gates at designated crossings or who trespassed on railroad tracks. During the 5-day event, 225 violations were witnessed. [\[14\]](#)
- In conjunction with the CN Railway Police, BNSF Railroad Police, and UP Railroad Police, the Plainfield (Illinois) Police Department conducted enforcement details at the railroad grade crossing in March and August 2012. [\[15\]](#) [\[16\]](#)
- A series of crashes involving trains and passenger vehicles prompted police to ramp up ticket enforcement at railroad crossings. Police from the Metropolitan Transit Authority (MTA) in New York issued six times as many summonses in 2015 than the previous year. From January 1 through March 22, 2015, 249 tickets were issued, including 47 citations by the Idaho State Police and 51 citations within 5 hours in Oxnard, California. [\[17\]](#)

3.3 Officer on a Train

The purpose of an Officer on a Train (OOT) is twofold. Primarily, an officer rides aboard the lead engine of the train to radio the description of violators to officers in nearby squad cars, who then stop the offending motorists and pedestrians. OOT operations generally require a moderate amount of coordination between agencies and are usually part of an enforcement blitz. The literature review was rich with examples of successful OOT operations.

Louisiana OL, the Louisiana State Police, and KC Southern participated in a number of OOT operations resulting in multiple citations. [\[18\]](#) [\[19\]](#)

The Hinsdale, Illinois Police Department joined State, county, other local police departments, and BNSF during OOT operations and issued citations and education materials during the morning commute hours along the METRA Aurora to Chicago commuter line. [\[20\]](#) [\[21\]](#)

The UP Crossing Accident Reduction Enforcement (CARE) task force teamed up with law enforcement entities from Oklahoma (Craig County Sheriff's Department, Oklahoma Highway Patrol), Texas (Texas Department of Public Safety, Montgomery County Sheriff's Office, Magnolia Police Department), Iowa (Sheriff's Department and Iowa DOT Police), and Nebraska to conduct OOT operations. [22] [23] [24] The Nebraska operation also included members of the media in the locomotive. [25] The OOT activities allow officers and members of the media on the train to gain first-hand knowledge of what train personnel experience when confronted with trespassers and grade-crossing violators.

3.4 Judicial System Commitment and Understanding of Offenses and Penalties

A detailed study in response to the Locomotive Horn Rule in Illinois found that a person violating grade crossing signs and signals has a 0.05 percent chance of being cited *and* having that citation upheld in court. [8]

Judicial commitment to upholding highway-rail grade crossing safety laws is a critical part of any approach increasing safety. A law enforcement officer will quickly be discouraged from ticketing motorists who disobey the traffic laws governing highway-rail crossings if those citations are repeatedly dismissed in court. Law enforcement and judges can receive training and education from existing OL materials to enforce the traffic laws at highway-rail grade crossings and impose appropriate penalties.

The State of Texas has included improving the understanding of laws into their traffic safety strategy. Texas educates law enforcement on highway-rail grade crossing laws, as a strategy to reduce the crashes at highway-rail grade crossings. [26]

In 2016, the State of Illinois doubled fines for drivers who disregard railroad crossing signs to \$500. The fine for subsequent violations will be \$1,000. The new law does not increase fines for pedestrians who ignore the warnings. [27]

The North County Transit District (NCTD) in California has similar penalties; \$500 and/or 6 months in jail. NCTD views the risk of trespassing (and other violations) as a risk not only to the violator but also to passengers and employees each time a train comes to an emergency stop. NCTD takes a holistic view of the true cost of a highway-rail grade crossing incident and also considers as a cost the economic burden to rail passengers unable to get to work and taxpayers for having to pay for having track re-inspected after an emergency stop. [28]

The above-mentioned projects added the judicial community to the focus since issuing citations only works if commensurate punishment is also issued. Thus, the relationship between the law enforcement and judicial communities for this topic is critical to improving safety at grade crossings. However, from a judge's point of view, all manner of crimes and violations are translated along a linear path of fines and/or incarceration. Some judges in the Chicago area reportedly resented being asked to impose fines as large as those used to punish motorists driving without insurance (which is also \$500). [8]

4. Challenges, Opportunities, Lessons Learned, and Recommendations

As with the research and outreach findings, the challenges, opportunities, lessons learned, and recommendations voiced by the proponents of successful law enforcement initiatives fell into key areas and themes.

4.1 Funding and Staffing

Funding and staffing continue to be a challenge for the enforcement of highway-rail grade crossing safety laws. Enforcement of grade crossing laws may be de-prioritized when there is limited staffing and no accompanying funding. Limited staffing may also result in less participation in outside initiatives even if they are offered at no cost.

As discussed in Section 2.3, funding for National Rail Safety Week was key to law enforcement involvement and the success of associated initiatives.

Adequate levels of staffing was also identified as a challenge for law enforcement at highway-rail grade crossings. The ongoing effort to form and maintain the relationships necessary to keep initiatives moving forward is often jettisoned when adequate staffing becomes a challenge. Reduced local law enforcement staffing can also limit participation in any safety initiatives offered from outside the organization.

In addition, the research team observed that many organizations are struggling with reduced staffing and funding with an increasing volume of calls and are not capable of maintaining a partnership to address railroad safety within their jurisdiction.

Employee turnover can be problematic when attempting to maintain a coordinated activity. For example, the CP Canada/Soo Line coordinates train crews, dispatchers, and railroad police activities for their Near Collision program. Crews call dispatchers to report near collisions at grade crossings, who in turn report the incident to CP police. Due to employee turnover, not all CP subsidiaries were aware of the program. The initiative is being re-invigorated.

4.2 Education

Officer education was also identified a challenge. Many law enforcement agencies are not familiar with railroad law and some agencies believe they do not have jurisdictional authority to enter railroad property, such as grade crossings, to enforce laws. Ongoing officer education is a necessary part of a safety approach so that local law enforcement is not only well aware of railroad laws within their jurisdiction but also of their authority to enforce those laws.

Educating the public of the pertinent laws of highway-rail grade crossings is an important part of an enforcement strategy. Having an educated public requires an educated law enforcement team. It is important to continue both officer and public education.

4.3 Culture

Some challenges can best be described as cultural. Among these cultural challenges are a misperception of the railroad, a poor local relationship with a railroad due to grade-crossing closures, a reluctance to enforce railroad laws, and a belief that it is the railroad's responsibility

to enforce grade-crossing laws at all grade crossings. Some law enforcement organizations are seen as not “railroad friendly,” and there is limited interaction with them.

Keeping track of management changes within organizations where there is currently no relationship offers the opportunity to re-invigorate a relationship when a new management team moves in.

Most cultural differences could be surmounted by maintaining open and ongoing communications between railroads, State and local law enforcement agencies, and other stakeholders. Communication within and between cognizant parties is important, not only in surmounting cultural differences and conducting successful initiatives, but in creating an environment where everyone is moving toward a common goal.

4.4 Judicial Understanding and Commitment

Most violators of highway-rail grade crossing laws are never cited. It is hoped that if the judiciary were aware that the cases they see are only the most egregious that more citations would be upheld. One study found that by only citing drivers who entered a grade crossing more than 5 seconds after the warning devices activated they were able to achieve a higher conviction rate for cited violators. [8]

The judiciary benefits from informational outreach activities. Such activities could be similar to law enforcement education activities, such as local outreach and printed information regarding railroad safety laws. Local outreach can take the form of seeking judicial input in the development of railroad safety materials, inviting judges and attorneys to participate in local events, such as a pre-prom safety event, and perhaps even adapting Officer on a Train initiatives. Witnessing close calls from a locomotive cab would help the judiciary understand the importance of their roles in helping save lives through the enforcement of highway-rail grade crossing laws.

4.5 Jurisdictional Issues

The research team identified jurisdictional issues as a challenge to enforcing crossing laws because laws can vary from State to State and county to county. In addition, each State identifies railroad police and their lawful authority. Some States give railroad police the same enforcement authority as state police, other states only give enforcement authority on railroad property. A few States do not recognize railroad police at all.

One interviewee suggested a resolution for this inconsistency would be to give railroad police Federal authority similar to U.S. Marshalls. This study recommends that the standardization and differences in the jurisdiction and authority for railroad police throughout the U.S. be explored and documented, with an eye toward standardizing railroad police authority.

5. Conclusion

There has been heightened awareness of and re-commitment to highway-rail grade crossing safety. Both DOT and FRA have pledged to show a greater presence at grade crossings and to adopt a new, multi-faceted campaign aimed at strengthening enforcement and safety awareness at grade crossings.

The Law Enforcement Strategies for Improving Highway Rail Grade Crossing Safety Working Group convened to engage representatives from law enforcement agencies to solicit examples of innovative strategies, success stories, challenges, and lessons learned.

A literature review revealed five key approaches to improving law enforcement at highway-rail grade crossings:

- Photo Enforcement
- Officer on a Train
- Enforcement and Enforcement Blitzes
- Positive Reinforcement
- Educational Outreach.

The literature review suggested, and outreach confirmed, that successful law enforcement initiatives shared certain themes: coordination in and among various organizations, alignment with major events, judiciary commitment, and officer education. All initiatives described in this report share at least one but generally two or more themes.

Many of the initiatives show promise for successful and expanded application in the future. One example is a non-punitive photo enforcement trial being conducted in Orlando, Florida. Another is taking an SMS approach toward highway-railroad safety. There are numerous examples of successful initiatives described within this report.

State, local, and railroad law enforcement agencies would benefit from ongoing officer education and education initiatives targeting those who do not comply with highway-rail grade crossing laws. Judiciary commitment should continue; it is a vital facet of law enforcement and outreach to educate the judiciary on the risks and tragedies of not obeying highway-rail grade crossing laws.

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Appendix A. Law Enforcement Outreach Results

Automated Enforcement of Traffic Laws	
Enforcement Photo Enforcement Citations/Warnings	Themes Coordination Judicial Understanding & Commitment
Target Audience Highway Users	Cost Information Not provided
Description In 2001 the Illinois Commerce Commission concluded that photo enforcement of traffic laws at grade crossings was an effective tool in reducing violations and collisions, resulting in fewer injuries and fatalities. Currently 27 states have laws allowing the use of technology to enforce compliance with traffic laws; 8 of those specifically mentioning highway-rail grade crossings. In the past 10 years six devices have been installed at grade crossings; one is still in use.	
Outcomes/Lessons Learned The remaining camera still in use averages 60 violations per month. Devices are expensive to install and operate.	
Source Federal Railroad Administration	

Safety Management System	
Enforcement Officer on Train Enforcement Blitz Citations/Warnings Education Outreach OL Classroom Media	Themes Coordination Alignment with Major Event Judicial Understanding & Commitment Officer Education
Target Audience Rail Commuters Highway Users School Children Novice Drivers General Public	Cost Information Not provided

Description	
A SMS-like approach to grade crossing safety and trespassing by using a cycle of goal setting, internal assessment and implementing improvements via all facets of rail grade crossing safety (the four pillars of education, enforcement, engineering, and stakeholder engagement.) Each year CN Police officers select three high-risk areas, focusing on grade crossing or trespassing issues. A scoring systems helps determine an action plan that will be addressed via the four pillars. Quarterly follow-ups determine any risk level reduction. Produce, publish and distribute <i>Michigan's Enforcement Guide for Law Enforcement's Response to Railroad Incidents</i> , a model enforcement guide to help officers enforce railroad violations.	
Outcomes/Lessons Learned	
New approach is evolving. Too soon to provide data.	
Lead Agency/ Organization	https://www.michigan.gov/documents/MI_Model_Enforcement_154678_7.pdf
CN Police Service D/C Jocelyn Latulippe 514.399.6229	

National	
Enforcement Officer on Train Enforcement Blitz Citations/Warnings	Themes Coordination Judicial Understanding & Commitment Officer Education
Education Outreach Social Media	
Target Audience Rail Commuters Highway Users School Children Novice Drivers General Public	Cost Information CN Railroad Grant
Description	
Dedicated Amtrak staff serves as chair for the Northern California Rail Safety Team. Provide officer education by participating in roll call briefings and Officer on the Train partnerships. Developed a grade crossing investigation pocket card for officers; also distribute to drivers during blitzes. Develop or participate in educational programs; "Get Real Behind the Wheel" for new distracted drivers, driver remediation classes, public and private driver's education schools and programs. Regional RAILS SAFE conference train local, state, and federal law enforcement about railroad safety, enforcement, and counterterrorism. An hour of each RAILS SAFE session dedicated to particular state grade crossing and trespassing laws. Also engineering solutions, such as "DO NOT CROSS TRACKS" on platform tracks where passengers are likely to take shortcut.	
Outcomes/Lessons Learned	

<p>Lead Agency/Organization Amtrak Deputy Chief of Emergency Management James Metzger Amtrak Police Department Deputy Chief Wayne Moore Detective Robert Hanson</p>	
<p>Officer on Train Enforcement Blitz Citations/Warnings Education Media</p>	<p>Coordination Alignment with Major Event International Grade Crossing Awareness Day Judicial Understanding & Commitment Officer Education</p>
<p>Target Audience Rail Commuters Highway Users General Public</p>	<p>Cost Information Not provided</p>
<p>Description Established in November 2011, the OL Railroad Enforcement Task force’s goal was to educate the public and provide traffic enforcement to reduce fatalities and injuries resulting from train collisions through railroad enforcement details. Each detail is a coordinated effort to bring the efforts of a sergeant, law enforcement officers, and OL representatives for a day of targeted enforcement and education. Careful planning allows all manner of grade crossing users to be contacted during the detail. On September 2, 2015, NBC Nightly News broadcast a special on train safety on the same day as the 15th detail. To date, 16 details have been conducted.</p>	
<p>Outcomes/Lessons Learned Between December 2011 and June 2016, issued 1,719 citations, 429 traffic warnings, and distributed 2,025 train safety flyers.</p>	
<p>Lead Agency/Organization San Diego Police Department-Traffic Division – Motors Officer Liz Weber eweber@pd.sandiego.gov</p>	

Rail Safety Week	
Enforcement Officer on Train Enforcement Blitz Citations/Warnings Education Outreach Social Media	Themes Coordination Alignment with Major Event National Rail Safety Month (September)
Target Audience Rail Commuters Highway Users School Children Novice Drivers General Public	Cost Information CN Railroad Grant
Description Illinois Rail Safety Week is a statewide (over 400 participating organizations) rail safety awareness campaign through the organization and delivery of new and established rail safety programs to promote education, conduct enforcement, promote engineering advances, and enhance public awareness to prevent railroad collisions, injuries, and deaths. Activities include news releases, providing no-cost education materials, issuing citations and warnings, conducting OL programs, and having officers on trains.	
Outcomes / Lessons Learned 1,752 citations issued, 1,210 warnings issued, 158 OL presentations given.	
Lead Agency / Organization Illinois Association of Chiefs of Police – Traffic Safety Committee Plainfield Police – Sgt. Eric Munson 815.474.8399 Park Ridge PD – Deputy Chief Lou Jogmen 847.318.5267	http://www.Illinoisrailsafetyweek.org

Enforcement Blitz	
Enforcement	Themes

Officer on Train Enforcement Blitz Citations/Warnings Education Media	Coordination Alignment with Major Event International Grade Crossing Awareness Day Judicial Understanding & Commitment Officer Education
Target Audience Rail Commuters Highway Users General Public	Cost Information Not provided
Description Established in November 2011, the OL Railroad Enforcement Task force's goal was to educate the public and provide traffic enforcement to reduce fatalities and injuries resulting from train collisions through railroad enforcement details. Each detail is a coordinated effort to bring the efforts of a sergeant, law enforcement officers, and OL representatives for a day of targeted enforcement and education. Careful planning allows all manner of grade crossing users to be contacted during the detail. On September 2, 2015, NBC Nightly News broadcast a special on train safety on the same day as the 15 th detail. To date, 16 details have been conducted.	
Outcomes/Lessons Learned Between December 2011 and June 2016, issued 1,719 citations, 429 traffic warnings, and distributed 2,025 train safety flyers.	
Lead Agency/Organization San Diego Police Department-Traffic Division – Motors Officer Liz Weber eweber@pd.sandiego.gov	

Enforcement and Education Blitz	
Enforcement Enforcement Blitz Citations/Warnings Education Outreach	Themes Coordination Alignment with Major Event Ford Arts Beats Eats Labor Day Festival
Target Audience General Public	Cost Information \$10,000 (approximate)
Description An education and enforcement blitz involving CN police, who patrol ROWs to enforce trespassing rules during major downtown event, and community service officers, who conduct OL educational activities in the downtown district of Royal Oak.	
Outcomes / Lessons Learned Contacts made – 500 pedestrian (OL), 39 trespassing (LE), 3 trespass by vehicle (LE)	
Lead Agency / Organization	www.artsbeatseats.com

City of Royal Oak Michigan Police Department 221 East 3 rd St. Royal Oak, MI 48067 248.246.3500	
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Officer on a Train	
Enforcement Officer on Train Enforcement Blitz Citations/Warnings	Themes Coordination Officer Education
Target Audience Highway Users Grade Crossing Users – Motorists and Pedestrians	Cost Information Not provided
Description Joint Officer on a Train event conducted by two Class I railroads between Wisconsin and Minnesota.	
Outcomes / Lessons Learned 8 citations issued, 3 drivers and 1 pedestrian warned	
Lead Agency / Organization CP Commander Todd Law 11306 Franklin Ave Franklin Park, IL 60131 630.860.4887 (desk) 612.751.5999 (mobile) Todd_Law@cppoliceservice.com	www.duluthnewtribune.com/news/crime/3999234-police-crack-down-drivers-ignoring

Citations	
Enforcement Citations/Warnings	Themes Coordination Judicial Understanding & Commitment Officer Education
Target Audience Highway Users Grade Crossing Users – Motorist and Pedestrians	Cost Information None provided
Description An ongoing approach of issuing citations to violators, both motorist and pedestrian. Uses a Near Collision program where train crews report near collisions at grade crossings to dispatchers, who relay report to CP police. Initiative could benefit from more robust communication/coordination.	

Outcomes/Lessons Learned	
Lead Agency / Organization CP Canada/Soo Line U.S. CP Commander Todd Law Franklin Park, IL 60131 630.860.4887 (desk) 612.751.5999 (mobile) Todd_Law@cppoliceservice.com	

Enforcement Blitz	
Enforcement Enforcement Blitz Citations/Warnings	Themes Coordination Alignment with Major Event Annual Car Club Event
Target Audience General Public	Cost Information \$10,000 (approximate)
Description An enforcement blitz involving CN police, who patrol ROWs to enforce trespassing rules during major downtown event, and community service officers, who conduct OL educational activities in the city of Pontiac.	
Outcomes/Lessons Learned 56 trespassing contacts made by the city of Pontiac	
Lead Agency/Organization Oakland County Sheriff's Office, Pontiac MI 1200 North Telegraph Road Pontiac, MI 48341 248.858.4951	www.woodwarddreamcruise.com

Court Diversion Program	
Enforcement Citations/Warnings Education Classroom	Themes Judicial Understanding & Commitment Court Diversion Program
Target Audience Highway Users	Cost Information Not provided
Description Officers teach railroad grade crossing safety to those who have been cited by Amtrak Police. This is part of a court alternative disposition program.	
Outcomes/Lessons Learned	
Lead Agency/Organization Amtrak Police Department	

Rail Safety Awareness Train the Trainer	
Education Classroom	Themes Officer Education
Target Audience Law Enforcement Officers	Cost Information Not provided
Description A 3-day Rail Safety Awareness course intended to bring attendees to the trainer level. Topics include rail safety awareness, review of Texas laws regarding highway-rail grade crossings, officer safety working around the railroad, grade crossing collision investigation, OL-authorized volunteer training, resources and strategies for enforcement and training other officers, field exercises, and a trainer competency check for officers as trainers.	
Outcomes/Lessons Learned A total of 15 officers from Houston and San Antonio were trained during the May 24-26, 2016 event.	
Lead Agency/Organization Houston TX Police Department Officer Jack Hanagriff	

Supplement Driver's Education	
Education Classroom	Themes Coordination Alignment with Major Event
Target Audience Novice Drivers	Cost Information Not provided
Description Officers teach the railroad grade crossing safety section of the driver's education program.	
Outcomes/Lessons Learned	
Lead Agency/Organization Amtrak Police Department	

The Road to Reality	
Education Outreach	Themes Coordination Alignment with Major Event Held in conjunction with prom season. Students and parents required to attend. Judicial Commitment
Target Audience	Cost Information

School Children Novice Drivers	CN Sponsorship, no cost to school district where event held.
Description Road to Reality highlights the dangers of drinking and driving, and is scheduled around prom events. Attendees move through multiple scenes illustrating the fallout from drunk driving, including an underage drinking party, a car vs. train crash, a tragic trip to the hospital, a trip to the morgue, and a sentencing in a courtroom. Officials from local coroner, judge's association, fire and police departments, emergency management agency, and hospital doctors and nurses play key roles to help send message.	
Outcomes/Lessons Learned Over 1,000 students and parents have attended this event.	
Lead Agency/Organization Plainfield School District – Tami Curry 815.609.8506 Plainfield Police Dept. – Eric Munson 815.267.7238 Plainfield Fire Dept. – Jon Stratton 815.405.8301 CN Railroad – Eric Graf 708.259.8875	http://www.psd202.org

Driver's Education	
Education Outreach	Theme Coordination
Target Audience Novice Drivers	Cost Information CN Railroad Building Stronger Communities grant program
Description Seven hours of OL railroad safety training given to each driver's education student who attends this annual event.	
Outcomes/Lessons Learned Event covers 26 schools in 10 counties; over 300 students have attended.	
Lead Agency/Organization Williamson County Sheriff's Office Deputy Brian Murrah 618.997.6541	

Law Enforcement Education	
Education Outreach Print Media	Theme Officer Education
Target Audience Law Enforcement Officers	Cost Information OL paid for stickers
Description	

<p>CN designed and printed a sticker that featured state laws pertinent to railroads and railroad emergency contact information. They were sized to fit on the back of a ticket book, and were distributed to law enforcement officers. They were popular, and demand exceeded supply.</p>	
<p>Outcomes/Lessons Learned</p>	
<p>Lead Agency/Organization CN Railway Police Josh Fletcher 225.382.2266</p>	

<p>Education Blitz</p>	
<p>Education Outreach</p>	<p>Themes Coordination Officer Education</p>
<p>Target Audience Highway Users</p>	<p>Cost Information No cost to law enforcement</p>
<p>Description Officers are deployed strategically with local partners to pass out safety material at grade crossings. Officers reinforce safety and emergency notification procedures at the crossing. They will further address any violations evident at the time of the stop and take discretionary action.</p>	
<p>Outcomes/Lessons Learned</p>	
<p>Lead Agency/Organization Amtrak Police Department</p>	

<p>Positive Reinforcement Campaign</p>	
<p>Education Outreach Positive Reinforcement Campaign</p>	
<p>Target Audience Highway Users</p>	<p>Cost Information None provided</p>
<p>Description Positive reinforcement campaign contacted hazmat trucks that properly stopped at grade crossing outside a refinery and provided small reward.</p>	
<p>Outcomes/Lessons Learned</p>	
<p>Lead Agency/Organization Louisiana Operation Lifesaver/KCS Railway State Director, Claude Maher 225.921.8381</p>	

Abbreviations and Acronyms

Abbreviation or Acronym	Name
BN	Burlington Northern
CN	Canadian National
CP	Canadian Pacific
DOT	U.S. Department of Transportation
FRA	Federal Railroad Administration
IGCAD	International Grade Crossing Awareness Day
KC Southern	Kansas City Southern
LE	Law Enforcement
NCTD	North County Transit District
OOT	Officer on Train
OL	Operation Lifesaver
RD&T	Research, Development, and Technology
SMS	Safety Management System
VOLPE	John A. Volpe National Transportation Systems Center