FRA Grade Crossing Safety Research

Howard Gillespie
Highway-Rail Grade Crossing & Trespass Prevention
Office of Railroad Safety Region 6

RAIL
Moving America Forward

April 11, 2018

U.S. Department of Transportation
Federal Railroad Administration

Where We Are Today

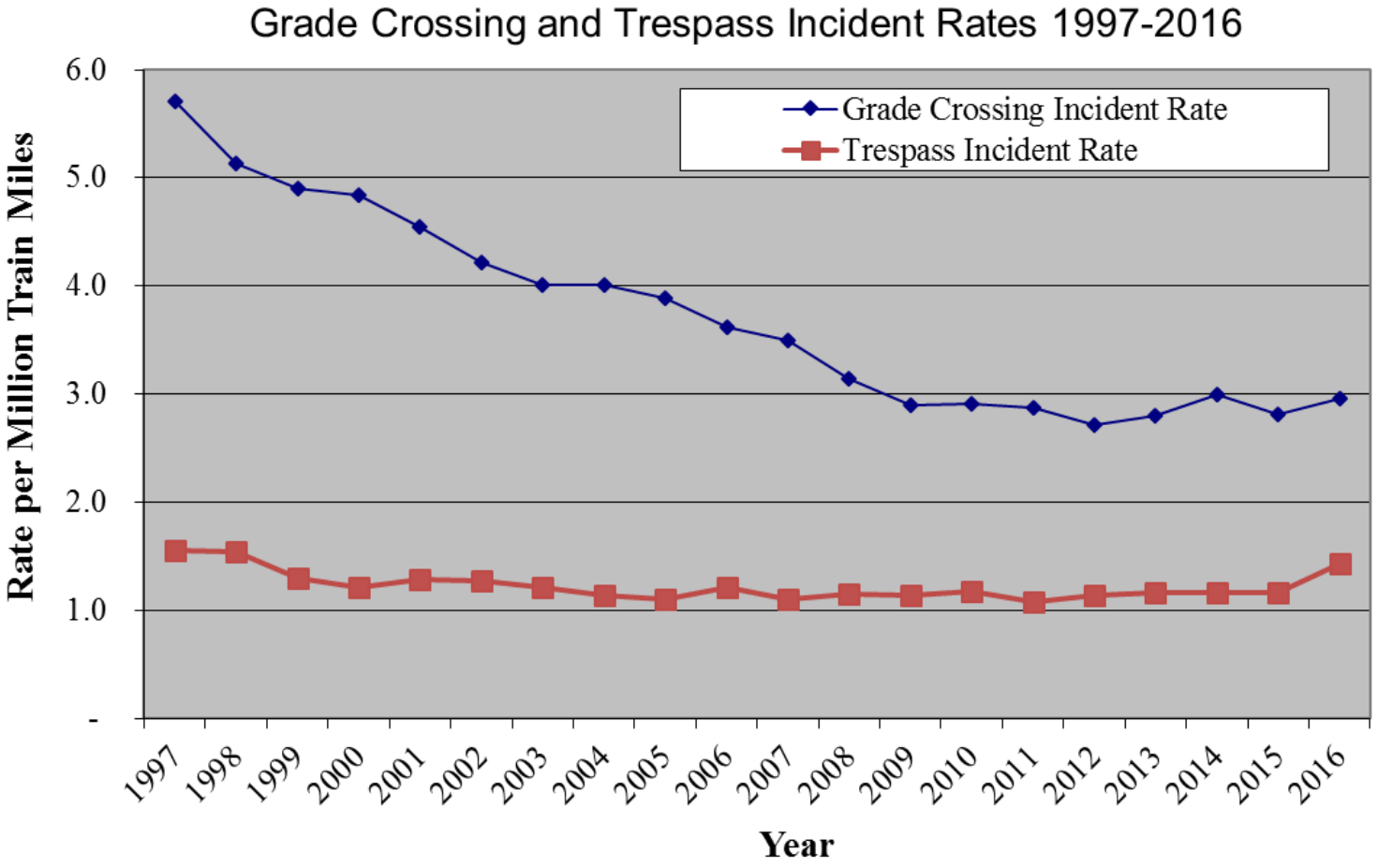
July 14-16, 2009: The Volpe Center hosted FRA's 3rd Research Needs Workshop on Highway-Rail Grade Crossing Safety and Trespass Prevention Workshop.

FRA conducted research in 10 of the 33 research topics identified in the 2009 workshop. Examples of topics include:

- *FRA/Volpe research on LED-enhanced signs*
- *FRA/Volpe research on photo enforcement practices*
- *FRA/Volpe research on gate skirts and other pedestrian safety treatments at crossings*
- *FRA/AAR/Volpe research on law enforcement strategies and suicide media reporting*
- *FRA/ENSCO/Volpe research on identifying and classifying humped crossings*

Current FRA Research Partners

20-Year Trends



Research Needs Focus Areas

- Engineering/ Technologies
- Human Factors
- Community Outreach/ Education
- Enforcement
- Hazard Management

Research Needs Results

- 152 Industrial partners, law enforcement, federal, state, local officials, and members of the public attended
- Groups generated numerous ideas ranging from expanded initiatives to new research projects.
- 22 high priority recommended actions were generated.

Engineering / Technologies

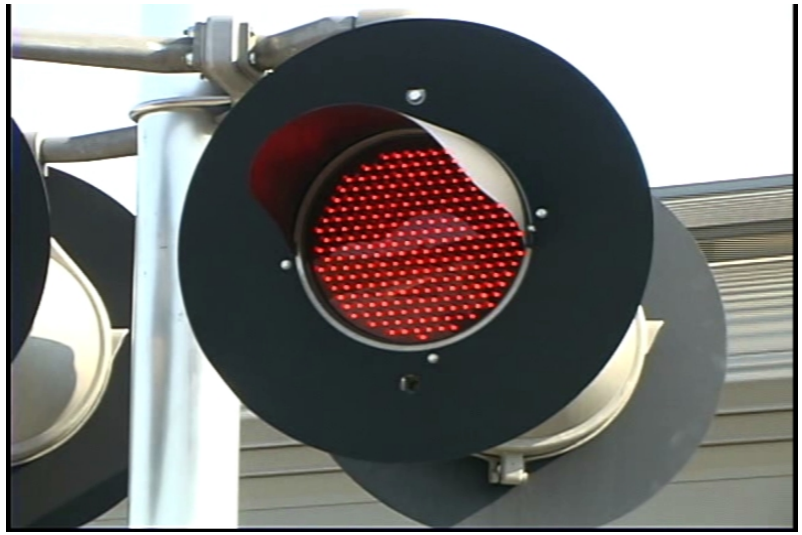
Objective: *Provide up-to-date engineering standards and best practices for safety improvements at grade crossings.*

- Wireless Technology for Crossing Activation.
- Vehicle to Vehicle and Vehicle to Interface to Inform.
- Alternative Warning Devices.

Engineering / Technologies

Objective: *Provide up-to-date engineering standards and best practices for safety improvements at grade crossings.*

- Intelligent Traffic System Application for Motor Vehicles.
- Vehicle Activated Enhanced Advanced Warning Sign.



Human Factors

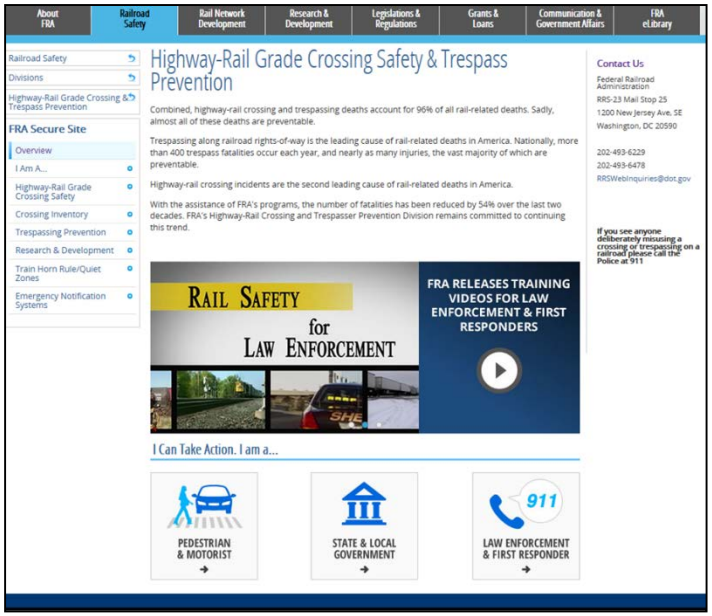
Objective: *Better understand grade crossing accidents, fatalities, and injuries to develop countermeasures and focus future research.*

- Improve Close Call/Near Miss Reporting
- Integration of Rail Safety Measures into Driver Education and Licensing
- Incorporate Rail safety Professionals into Development/Planning Process
- Educate Youth to Educate Adults

Community Outreach / Education

Objective: *Educate partners, stakeholders, and the public about grade crossing safety to improve awareness, understanding, and safe behavior.*

- Trespasser Identification, Motivation and Messaging
- Research efficiencies of Social Media Platforms and Messaging
- Driver's Education



RAIL
Moving America Forward

U.S. Department of Transportation
Federal Railroad Administration

Enforcement

Objective: *Develop enforcement strategies for improving grade crossing safety through enhanced law enforcement and regulatory compliance.*

- Technology Opportunities for Law Enforcement
- Funding Opportunities

Enforcement

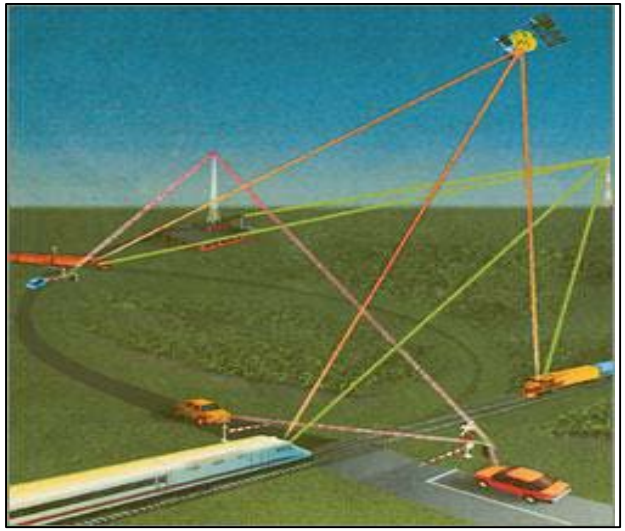
Objective: *Develop enforcement strategies for improving grade crossing safety through enhanced law enforcement and regulatory compliance.*

- Uniformity of Highway-Railroad Grade Crossing Laws
- Development of National Grade Crossing Law Enforcement Campaign

Hazard Management

Objective: *Develop mitigating strategies and/or programs related to hazard identification, risk assessment, and risk control.*

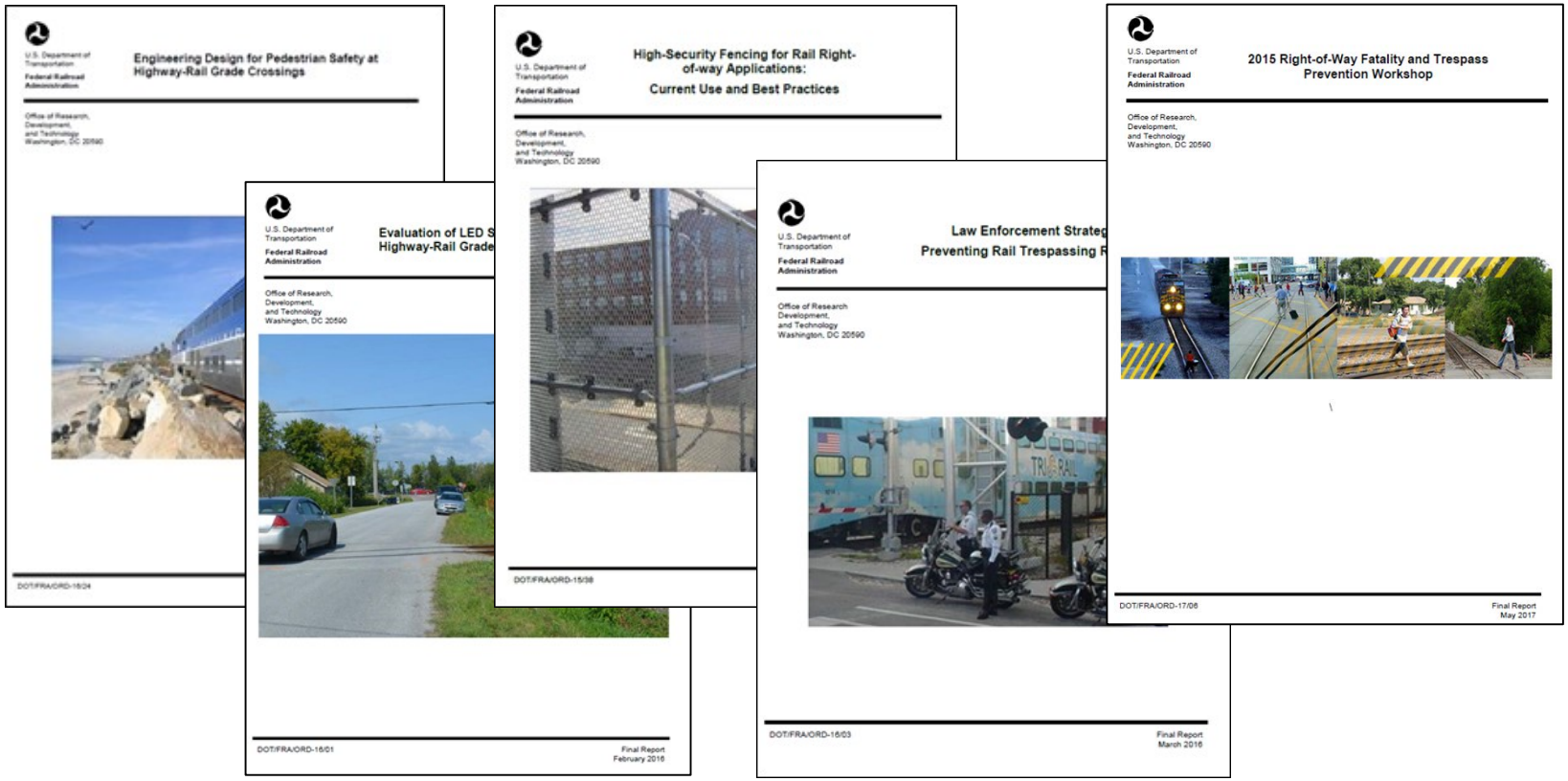
- Model Communication Process
- Enhanced Data Exchange Between Vehicle Control Systems and Train Control Systems
- Updating Evaluation Tools for Rail/Highway Grade Crossing Improvements



Conclusions

- Conference was a Success!
- Participants identified and shared existing industry best practices.
- Explored new abatement and mitigation strategies.
- Workshop provided FRA with future research topics.
- Gave leverage to increase research in this area.

Published Reports (2016-2017)



…and 6 Final Reports Under FRA Review

RAIL
Moving America Forward

U.S. Department of Transportation
Federal Railroad Administration

RAIL– *Moving America Forward.*

Visit us at:
www.fra.dot.gov

Connect with us **USDOTFRA**

Moving America Forward

U.S. Department of Transportation
Federal Railroad Administration