

## Trend Analysis: Railroad Safety and Security Trends

### Trend Statement

Railroad safety and security initiatives are focusing on safer train operations, crash avoidance, and crashworthiness of equipment. Key safety strategies include new grade separations on high-volume routes in urban areas, implementation of Positive Train Control (PTC), and Quiet Zones (Federal Railroad Administration regulations on duration of sound train horns in advance of all public grade crossings), consolidated routing of hazardous materials, new operator rules, safety-related tanker and passenger car design improvements, and aggressive law enforcement, and educational programs to reduce illegal vehicular crossing and pedestrian trespassing on railroad rights-of-way. Post 9/11 security measures continue to evolve and expand. Railroad owners are being challenged to balance the need for investments in safety and security with investments to improve efficiency, growth, and global competitiveness during a recessionary economy.

### Background

Union Pacific Railroad, BNSF Railway, and passenger railroads operate over more than of 5,300 miles of track in California as part of their combined 64,000-mile North American rail networks. In addition, regional and short-line railroads operate over 1,500 miles of their own railroad tracks in California and 30,000 miles of their own railroad tracks across the nation.

Railroads have made significant safety progress over the past 20 years. The Association of American Railroads reports for America's railroads from 1980 to 2013, the train accident rate fell from 79 percent and the employee injury rate fell 84 percent. The grade crossing collision rate fell 81 percent across the nation. As a result, railroads are one of the safest forms of transportation with a fatality rate of 0.2 per 100 million passenger miles. However, with 11,000 public grade crossings in California, railroad crossing safety improvements historically have been inadequately funded in this State.

Railroad safety and security are shared responsibilities of the private and public railroads, and federal, state, and local public agencies. At the federal level, the Federal Railroad Administration (FRA), one of the ten agencies within the United States (U.S) Department of Transportation (DOT), administers federal grant and loan programs authorized by Congress, promulgates and enforces federal rail safety regulations and conducts research and development of improved railroad safety and national rail transportation policy. The Federal Highway Administration (FHWA) provides limited federal funding to the State for the elimination of hazards at existing at-grade highway-rail crossings. The National Transportation Safety Board (NTSB), an independent agency created by Congress, has the responsibility for railroad accident investigations involving freight railroads and that involve passenger rail transit systems that share tracks. The Department of Homeland Security, Department of Justice, Federal Bureau of Investigation, Coast Guard, Customs and Border Protection, and Military Transport Management Command are also deeply involved in developing and funding security programs, policy and regulatory guidance, and training assistance to railroads.

The California Public Utilities Commission (CPUC) is the largest state agency in the nation responsible for ensuring that railroads comply with federal railroad safety regulations. CPUC investigates railroad accidents, advises on safety-related design issues such as grade crossing improvements and prioritizes Section 130 grade separation projects in the state. The California Emergency Management Agency also provides grants. Numerous local law enforcement agencies, railroads, trucking companies, and volunteers are involved in California Operation Lifesaver, a grade crossing awareness training program.

### Freight System Implications

The railroads have historically funded their safety capital programs from railroad revenues and debt. However, recent safety and security regulations are requiring significant discretionary capital investments and operating costs for railroads that are already struggling with reduced revenue growth and public investment. The American Association of State Highway Transportation Officials (AASHTO) has projected domestic freight tonnage to increase by 57 percent by 2020 and import-export tonnage to increase by nearly 100 percent; and although the recession may have slowed growth, it also reduced private railroad access to discretionary capital (AASHTO, 2009).

Recent regulations, including federal limits on hours of service and environmental compliance, have also increased operating costs and overstretched investment capital available for railroad safety and growth. Railroads have been especially concerned with the federal PTC implementation mandate to eliminate train-to-train collisions by 2015 on 73,000 miles of tracks used to transport passengers or hazardous materials. The railroads have estimated PTC costs to exceed \$14 billion and project PTC will only prevent four percent of accidents (Will, 2013). In April 2012, U.S. D.O.T amended its regulations to eliminate the 10,000 miles of the original network that will not carry hazardous materials or passengers after 2015.

### Planning Considerations

The railroads are looking to public agencies to enact cost-effective railroad safety laws and regulations with attainable implementation schedules. They are seeking greater public investment in projects that benefit the public (e.g., PTC, grade separations, quiet zones) so that the railroad's discretionary capital can be used to address railroad capacity expansion and global competitiveness.

### Resources

American Association of State Highway Transportation Officials (2003) Transportation: Investment in America, Freight-Rail Bottom Line Report. Retrieved: May 29, 2013. Available at: <http://rail.transportation.org/Documents/FreightRailReport.pdf>

Will, G. (2013) "A Mandate That is off the Rails." Washington Post: Opinions. Retrieved: July 1, 2013. Available at: [http://articles.washingtonpost.com/2013-05-31/opinions/39653953\\_1\\_freight-train-ptc-railroads](http://articles.washingtonpost.com/2013-05-31/opinions/39653953_1_freight-train-ptc-railroads)

American Association of Railroads: <http://www.aar.org>

BNSF Railway: <http://www.bnsf.com>

California Public Utilities Commission: [http:// www.cpuc.ca.gov](http://www.cpuc.ca.gov)

California Short Line Railroad Association: <http://www.cslra.org>

Federal Railroad Administration: <http://www.fra.dot.gov>

Federal Highway Administration: <http://www.fhwa.dot.gov>

National Transportation Safety Board: <http://www.nts.gov>

Union Pacific Railroad: <http://www.up.com>

