



OFFICE OF RESEARCH & DEVELOPMENT

**2012** **R&D**  
**REVIEW**

# Human Factors Research & Development (R&D) Program Overview



U.S. Department  
of Transportation

Federal Railroad  
Administration

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Office of Research and Development  
Office of Railroad Policy and Development

# Program Area & Risk Matrix

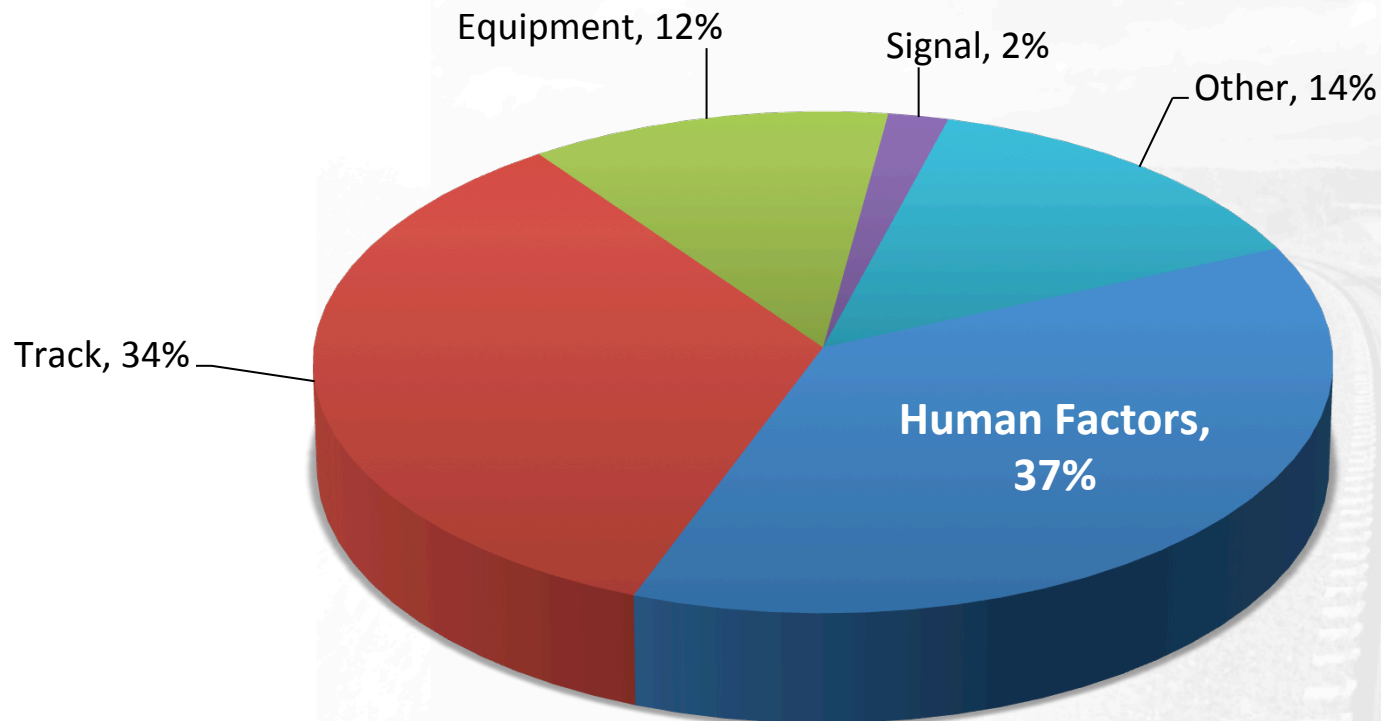
## Human Factors Research & Development (R&D) Program Overview

Program Areas	Risk Factors	Trespass	Grade Crossing	Derailment	Train Collision	All Other Safety Hazards
Railroad Systems Issues						
<b>Human Factors</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Track & Structures						
Track & Train Interaction						
Facilities & Equipment						
Rolling Stock & Components						
Hazardous Materials						
Train Occupant Protection						
Train Control & Communications						
Grade Crossings & Trespass						

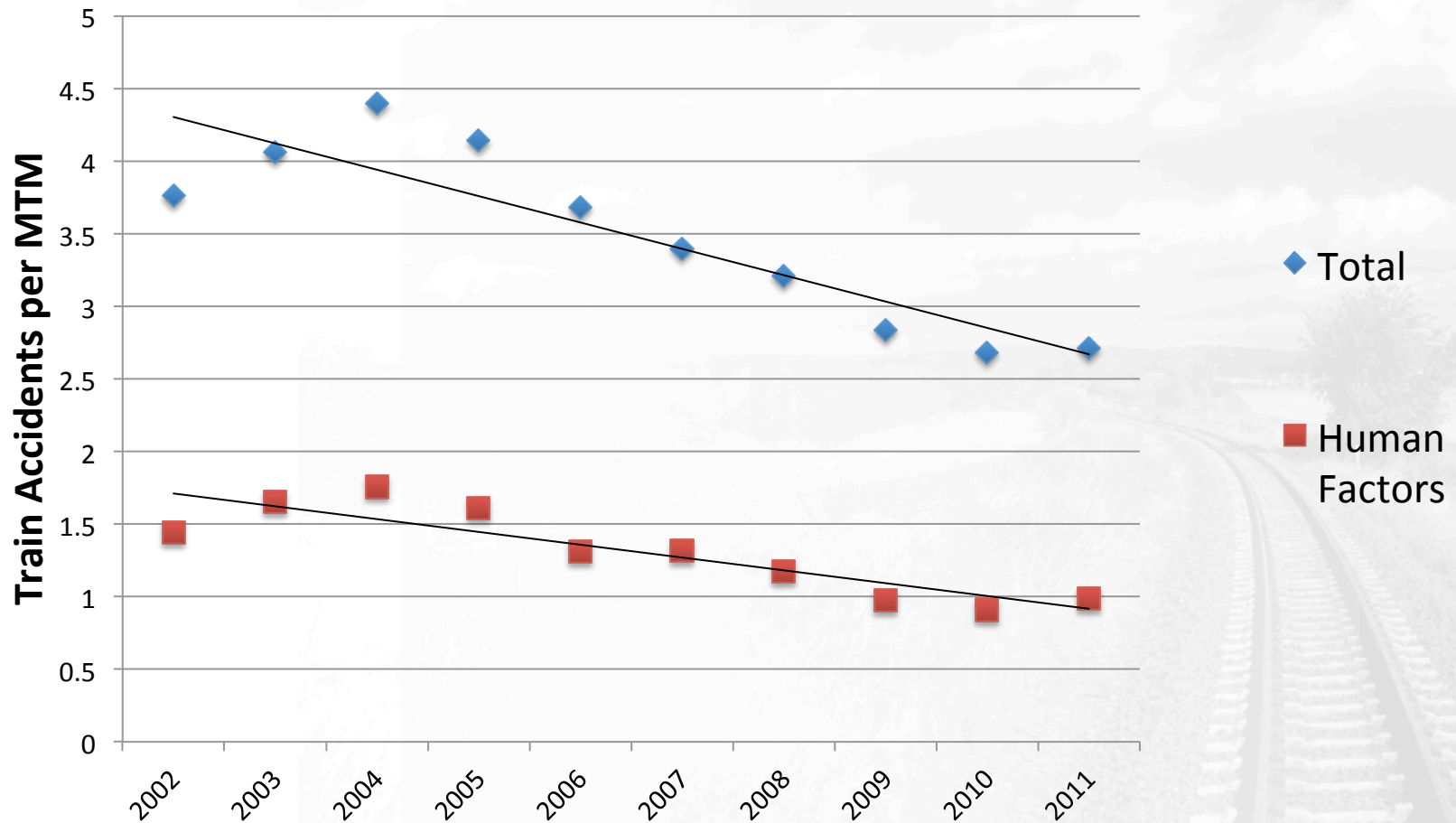
# Train Accident Cause Categories

*\* Does not include Grade Crossing Accidents*

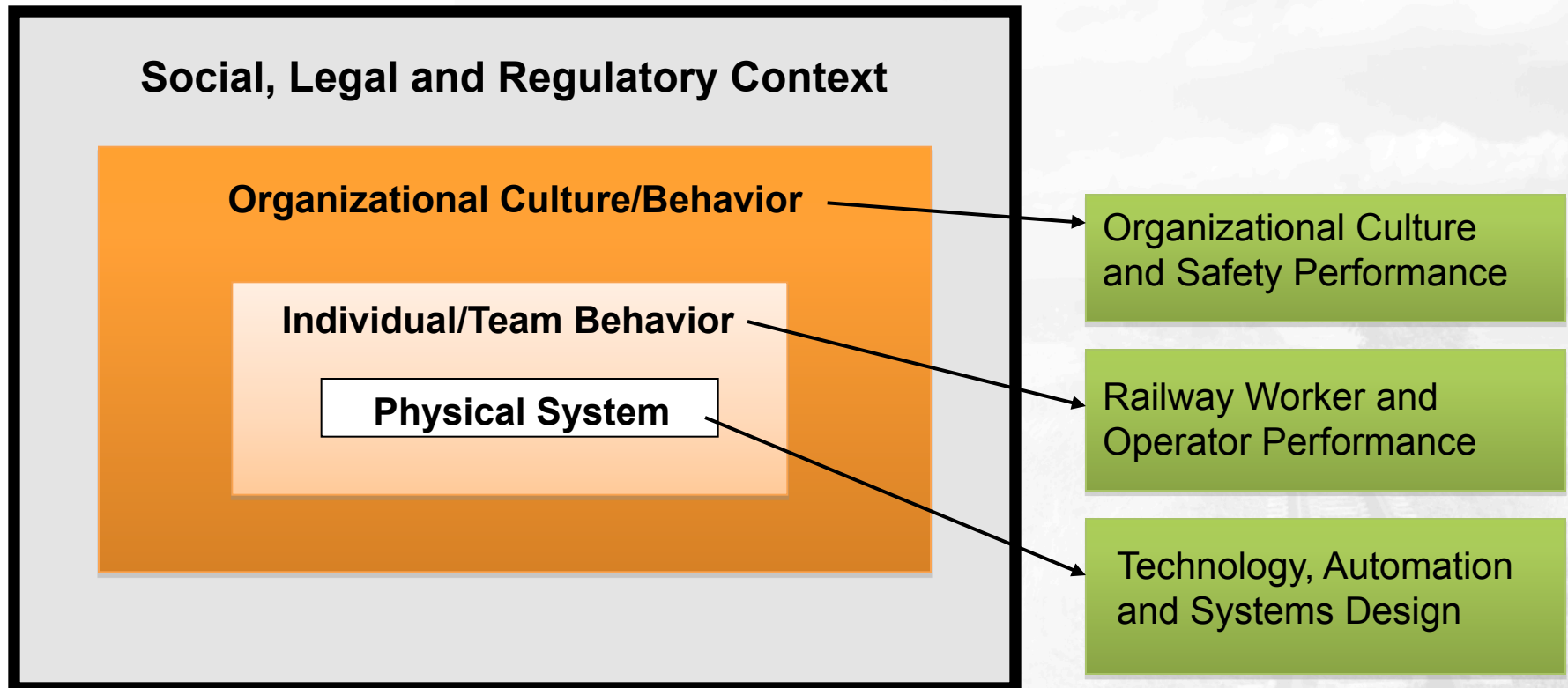
## Mean Percent Train Accidents 2002-2011



# Train Accident Rates Decline 2002 - 2011

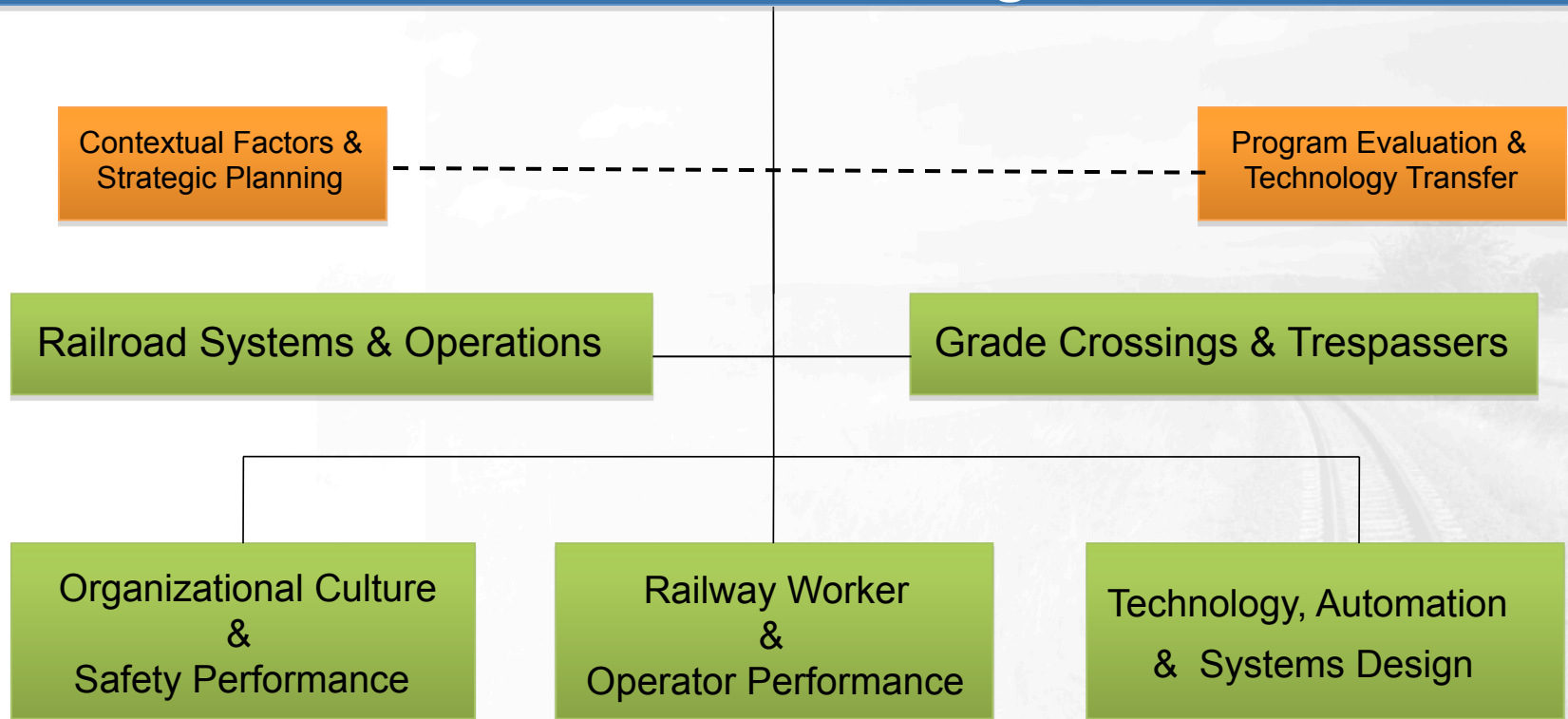


# FRA Human Factors R&D Program in a Socio-Technical System



# FRA Human Factors R&D Program

## FRA Human Factors R&D Program Structure



# Examples of Projects: Railroad Systems & Operations

- Organizational Behavior and Safety Culture
- Confidential Close Call Reporting System
- Peer-to-Peer +
- Railway Worker Performance
- Human Fatigue in U.S. Railroads
- Railroader's Guide to Healthy Sleep Website
- Technology, Automation & Systems Design
- Cab Technology Integration Laboratory (CTIL)
- Remote Control Operations Task Analysis and Design

# Examples of Projects: Grade Crossings & Trespassers

- Organizational Behavior and Safety Culture
- Operator Performance
- Critical Incident Stress Debriefing
- Motorist Behavior Modeling
- Trespasser Prevention
- Technology, Automation & Systems Design
- Grade Crossing Data Collection Device



# Break | Nearby Food Options

(all within 5-7 minutes walking distance)



- Au Bon Pain: 601 Indiana Ave NW # 1 Washington, DC 20004
- Burger King: 501 G Street NW, Washington, DC 20001
- Chipotle: 601 F Street NW, Washington, DC 20005
- Cosi: 601 Pennsylvania Ave NW # 2 Washington, DC 20004
- Dunkin Donuts: 601 F Street NW, Washington, DC 20004
- Firehook Bakery & Coffee House: 441 4th Street NW, Washington, DC 20001
- Jack's Famous Deli: 501 3rd St NW # 2, Washington, DC 20001
- Quiznos Sandwiches: 772 5th St NW, Washington, DC 20001
- Starbucks: 443 7th St. NW, Washington, DC 20004
- Subway: 501 D Street NW, Washington, DC 20001