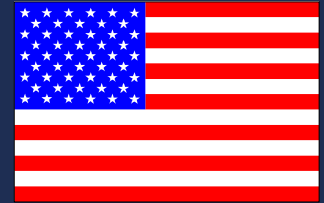




# Federal Railroad Administration



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## National Rail Safety Action Plan

Railroad Safety  
Advisory  
Committee

May 18, 2005

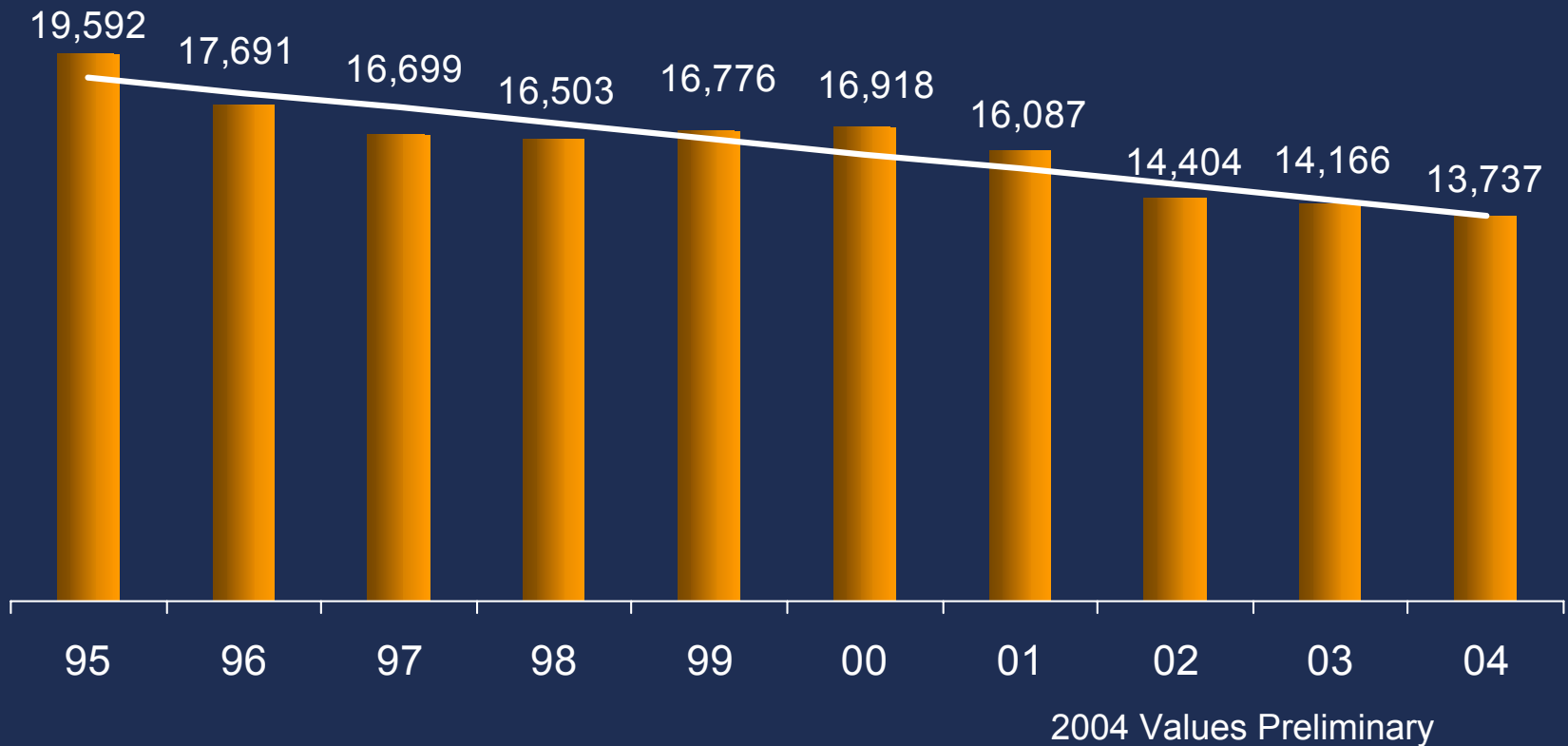
# Introduction

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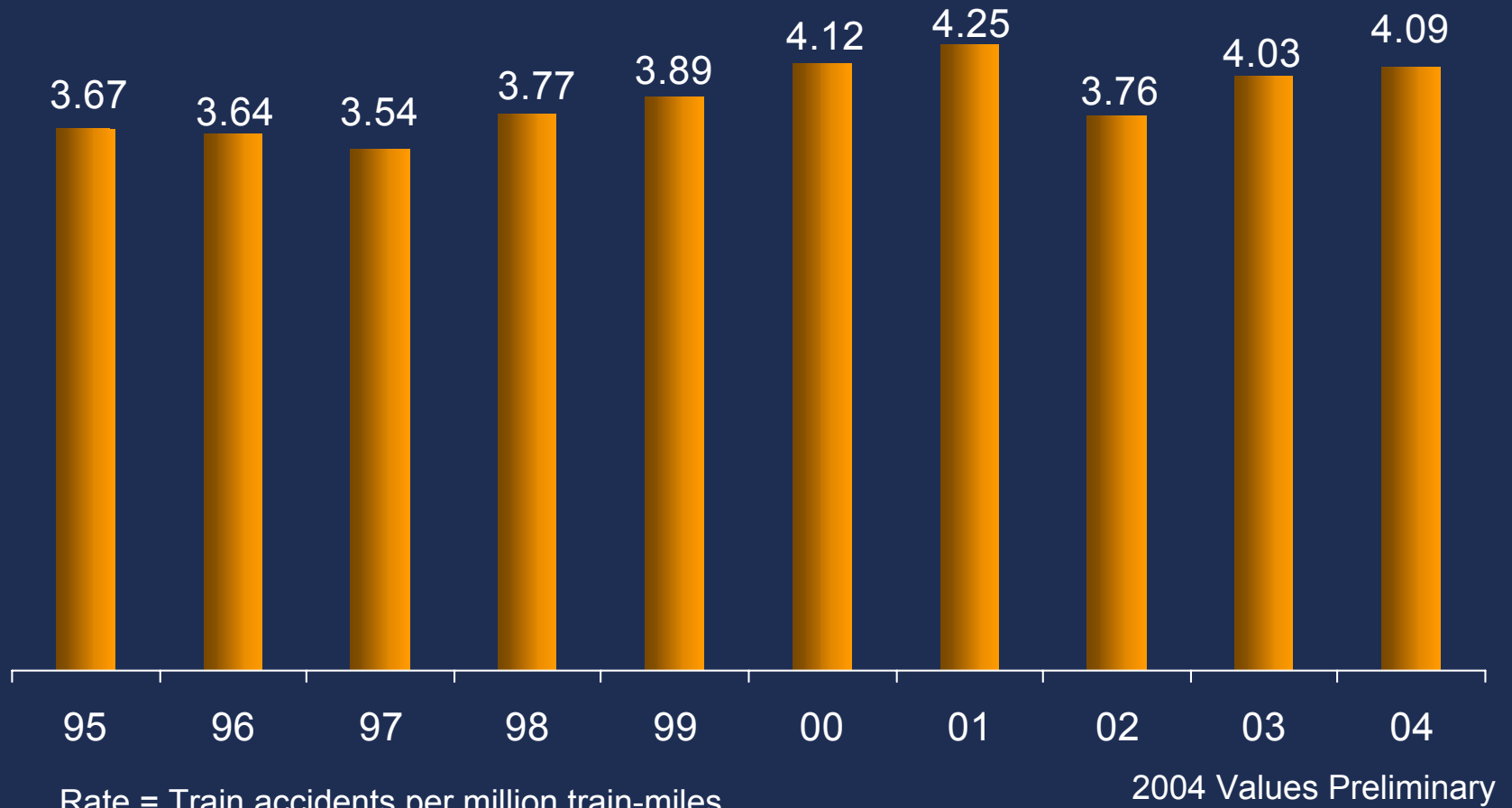
- Rail safety measures are generally moving in the positive direction: total accidents/incidents were down 39 percent from 1994 through 2004
- However, improvement in rate of *train accidents* has stalled since the early 1990s, and significant accidents continue to occur
- Increasing rail traffic and highway traffic are driving up exposure at *highway-rail crossings*
- FRA's new Action Plan is designed to drive down the risk of train accidents--including consequences from release of *hazardous materials*--and the risk of collisions at highway-rail crossings

# Delivering Results

## Total Accidents/Incidents



# Train Accident Rate



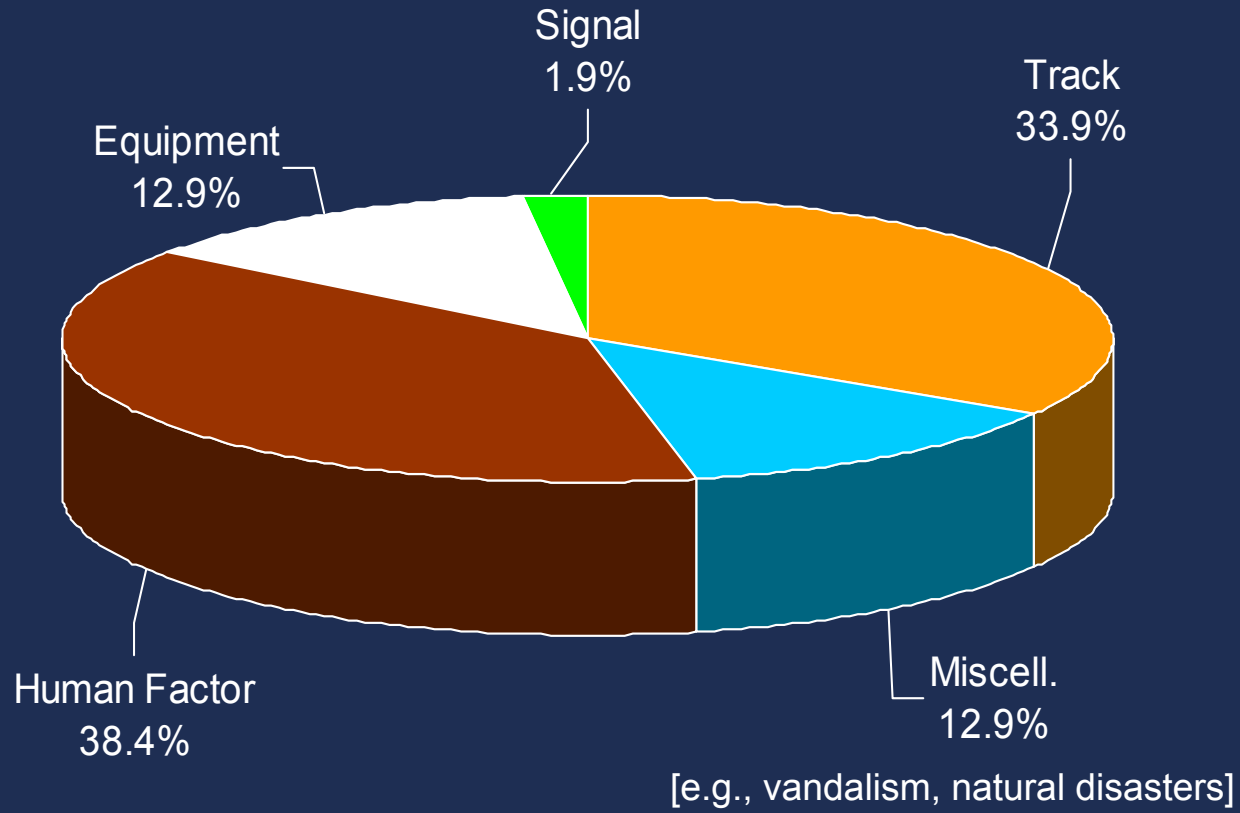
# Major Causes of Train Accidents

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- More than 70 percent of train accidents are caused by either human factors or defective track and structures.
- Strategy:
  - Target the most frequent, highest risk causes of train accidents;
  - Focus FRA's oversight and inspection processes;
  - Accelerate research that has the potential to mitigate the largest risks.

# Train Accident Cause Categories

2000 - 2004 excludes highway-rail grade crossing accidents



# Reducing Human-Factor Accidents

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- **Address leading human-factor causes**
  - **Top 10 human-factor causes resulted in 59 percent of human-factor accidents**
  - **Leading cause: switch improperly lined (16.6 percent)**
  - **FRA will offer the Railroad Safety Advisory Committee a task to produce a proposed rule establishing greater accountability for rules compliance and will act on its own if recommendations are not received on-time**
    - **Mandatory compliance with major rules**
    - **Review of training and oversight requirements**

# Reducing Human-Factor Accidents

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- **Develop close call data to reveal reasons for human failures**
- **Continue emphasis on development of positive train control systems (enabled by NDGPS)**



# Reducing Human-Factor Accidents— Role of Fatigue

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- **Railroad operating crews work long and often unpredictable schedules**
- **Hours of Service governed by 1907 law last updated in 1969**
- **Service demands are growing**
- **Employee education and awareness well developed**
- **Significant pockets of fatigued employees remain due to crew calling practices and collective bargaining agreements**
- **Significant contribution to human factor accidents**

# Reducing Human-Factor Accidents— Role of Fatigue

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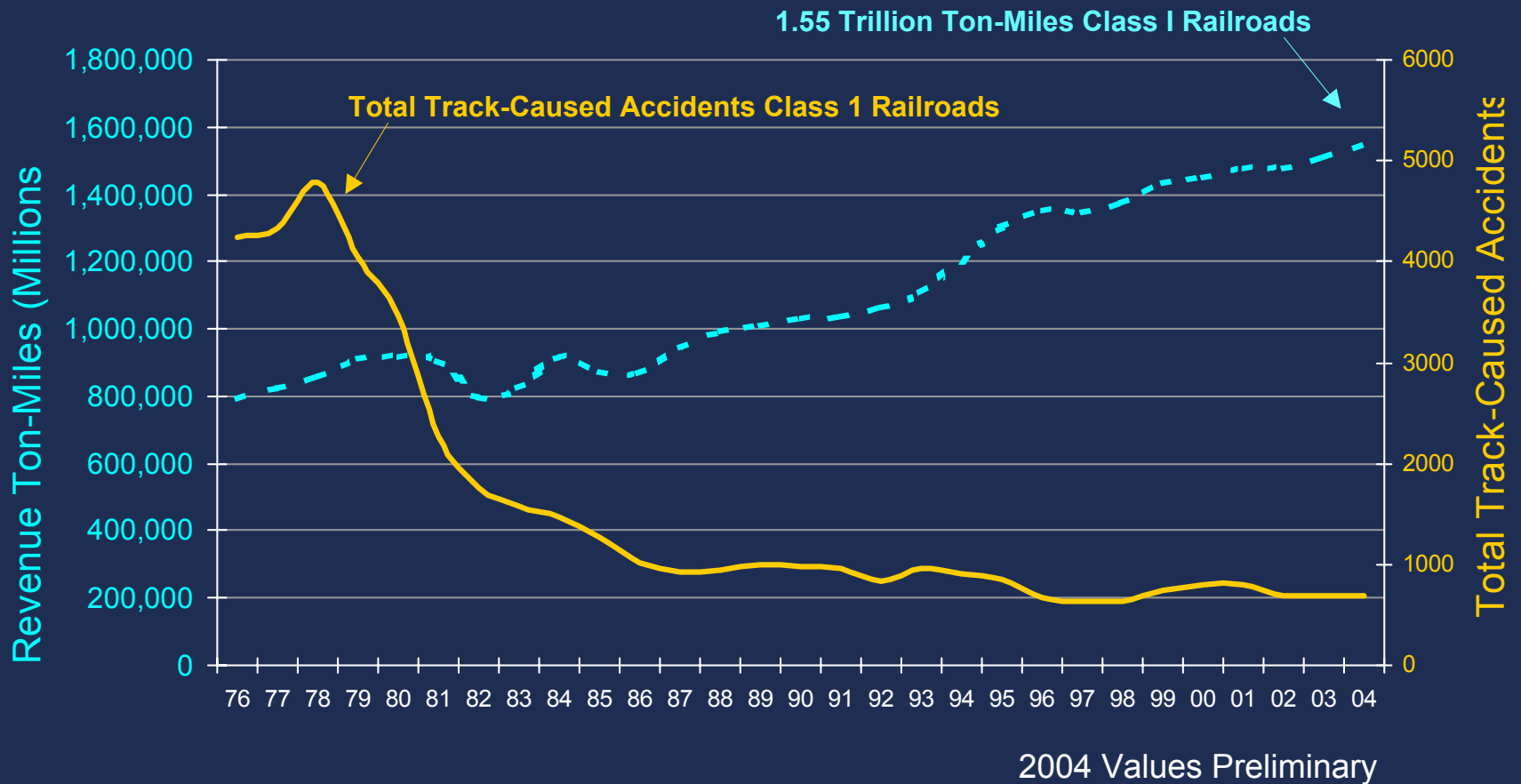
- Continue work on solutions through the North American Rail Alertness Partnership
- **Validate fatigue model for the railroad industry**
- **Make the model available for evaluation and planning of crew scheduling practices**

# Improving Track Safety

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- Trends are generally positive for track, but it's still a leading cause
- Increase detection capability for track geometry defects
- Accelerate research on methods of detecting some major causes (cracked joint bars, internal rail flaws) that are not easily spotted

# Track-Caused Accidents and Traffic



# Automated Track Geometry Program

- Currently one car available full time
- Two under construction
- Future annual survey capability: over 75,000 miles



# Track Research

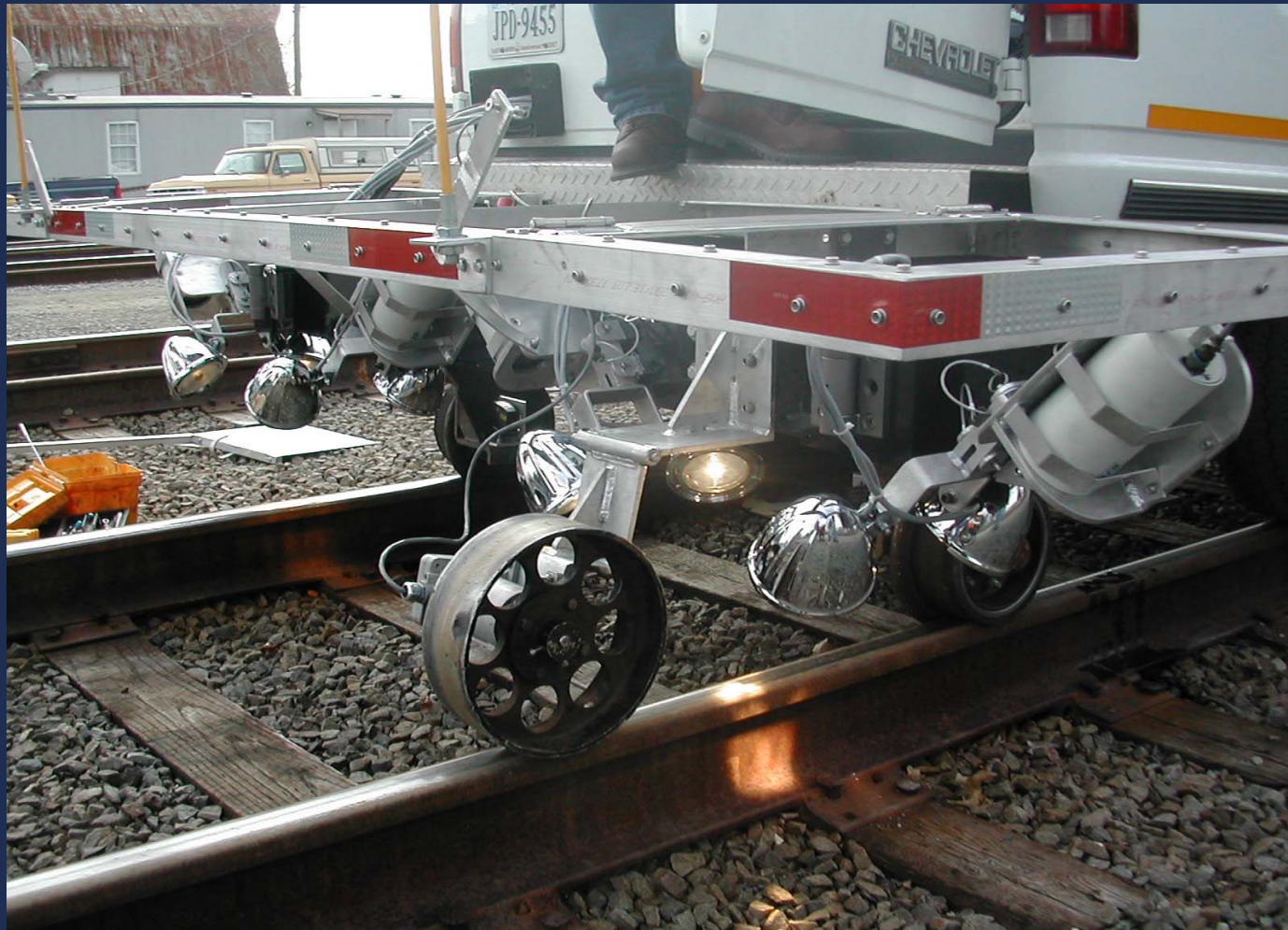
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- Accelerate research on methods of detecting some major causes (cracked joint bars, internal rail flaws) that are not easily spotted





# Track Research



# Hazardous Materials Transportation

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- Hazmat releases in train accidents and other hazmat releases from rail cars are both at or near all-time lows
- But recent accidents and fears of terrorism have heightened concern
- In addition to addressing the causes of train accidents, FRA will act in several ways to address that concern

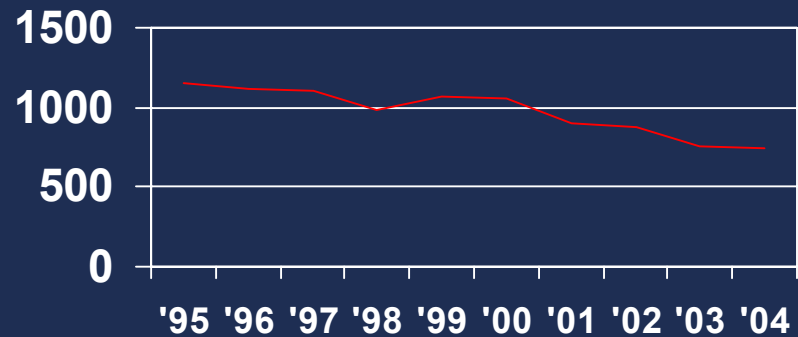


# Hazardous Materials Safety

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- **Ensure that emergency responders have access to hazmat information**
  - AAR Circular – top 25 (March '05)
  - Accident/incident notification system (AAR lead)
- **Accelerate tank car structural integrity research (to the extent funds permit)**
- **Identify promising technologies for reduction of train accidents on “TIH” corridors**

# Non-Accident Release Trends



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>All</b>	1,155	1,112	1,102	989	1,073	1,058	899	870	802	739
<b>Bulk</b>	1,031	1,000	977	896	975	944	813	771	732	672
<b>Non-bulk</b>	124	112	125	93	98	114	86	99	70	67

# Focused Inspections

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- **FRA has a staff of <400 inspectors in the field**
- **140,000 route miles of track 1.3 million pieces of rolling stock, 1.7 million hazardous materials shipments and over 200,000 railroad employees**
- **Intercity passenger and commuter service**
- **Using resources wisely is critical to effectiveness**

# Focused Inspections

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- **New National Inspection Plan**
  - Data driven
    - Accidents, injuries, inspection results and other data as available and relevant to discipline
  - Allocation of inspection resources by railroad and by State within disciplines
  - Ability to adjust the plan as new information is provided

# Highway-Rail Grade Crossing Safety

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- **FRA works with States, local governments, railroads, and other DOT administrations to improve safety at over—**
  - 148,000 public grade crossings and
  - 98,000 private grade crossings

## **2004 preliminary results--**

- **Incidents down 39% from 1994**
- **Fatalities down 40% from 1994**

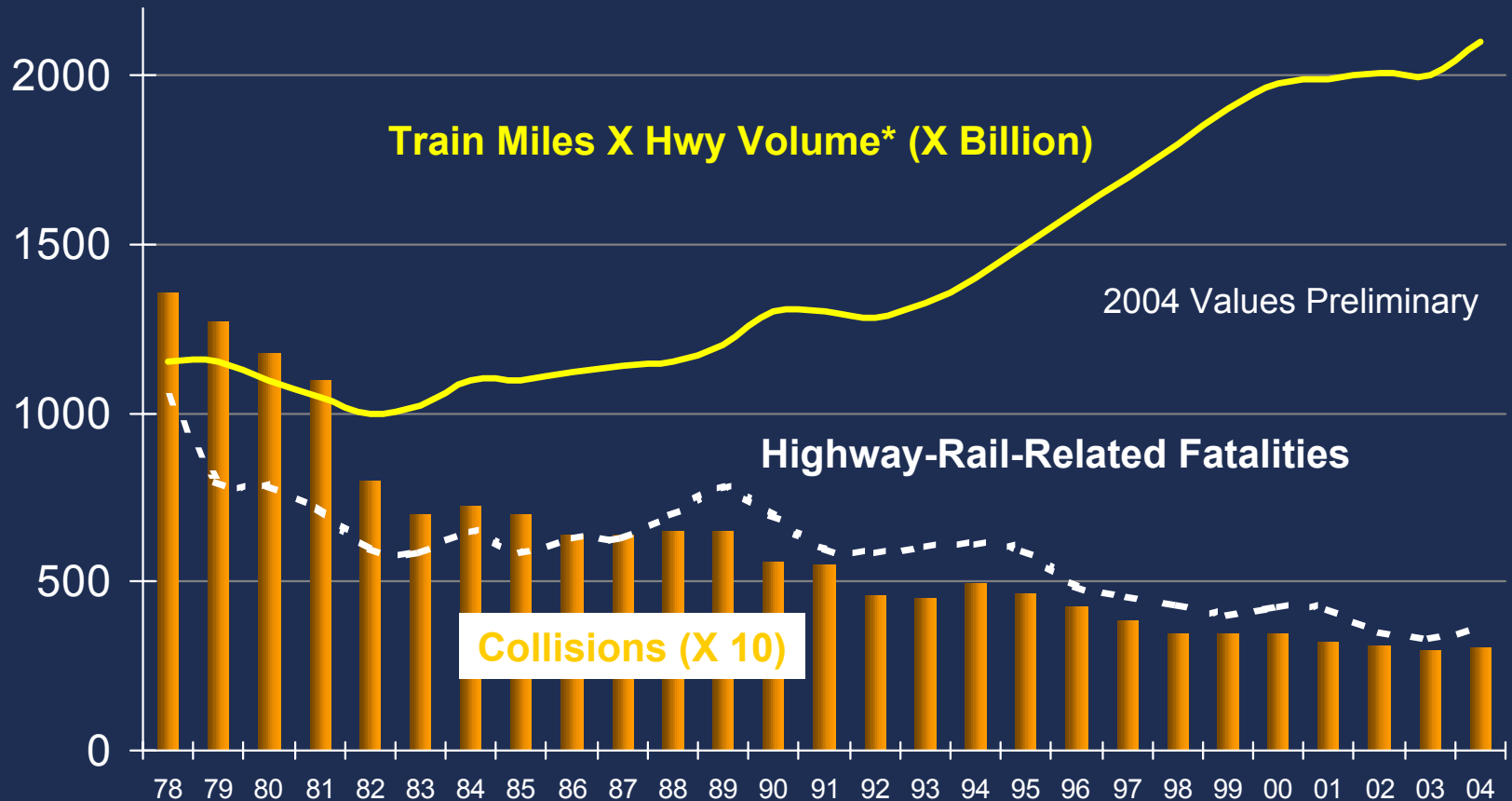
# Improving Grade Crossing Safety

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- **Although deaths from grade crossing accidents have trended in the right direction for many years, these accidents are still causing over 300 deaths per year, and 2004 saw an increase in fatalities**

# Delivering Results

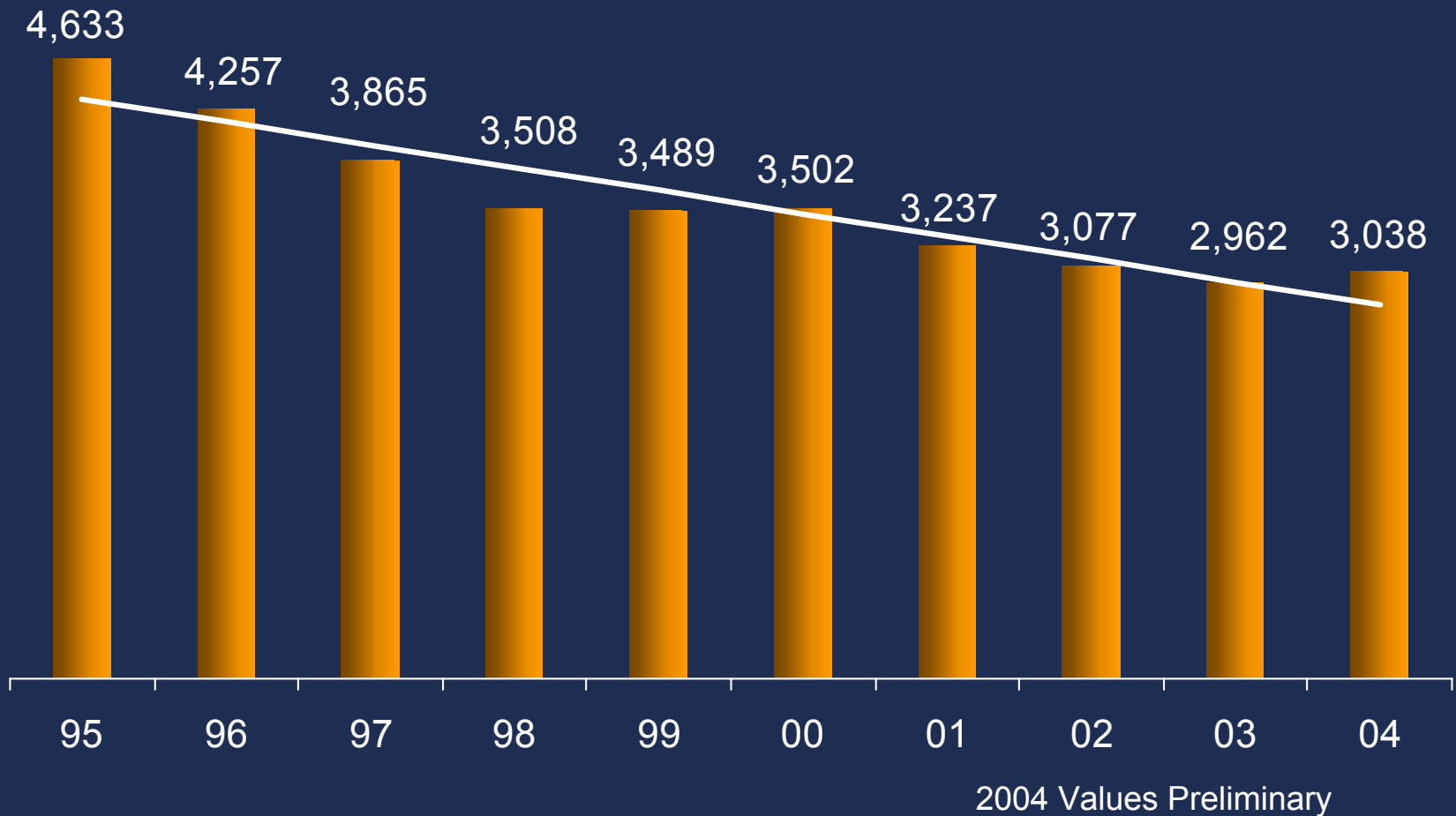
## Highway-Rail Crossings



\* Hwy. Vol. = Annual Vehicle-Miles-Traveled

# Delivering Results

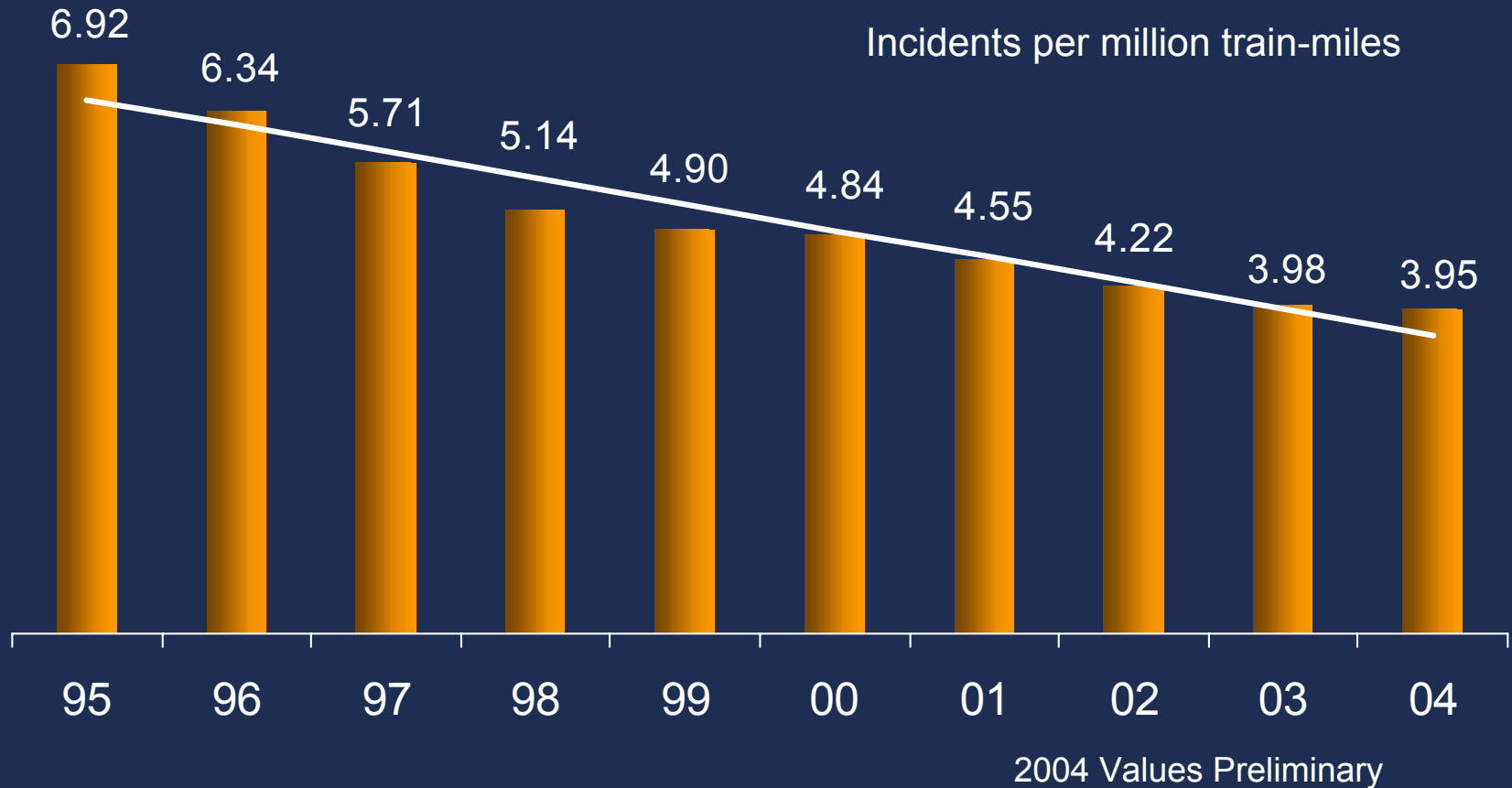
## Highway-Rail Incidents





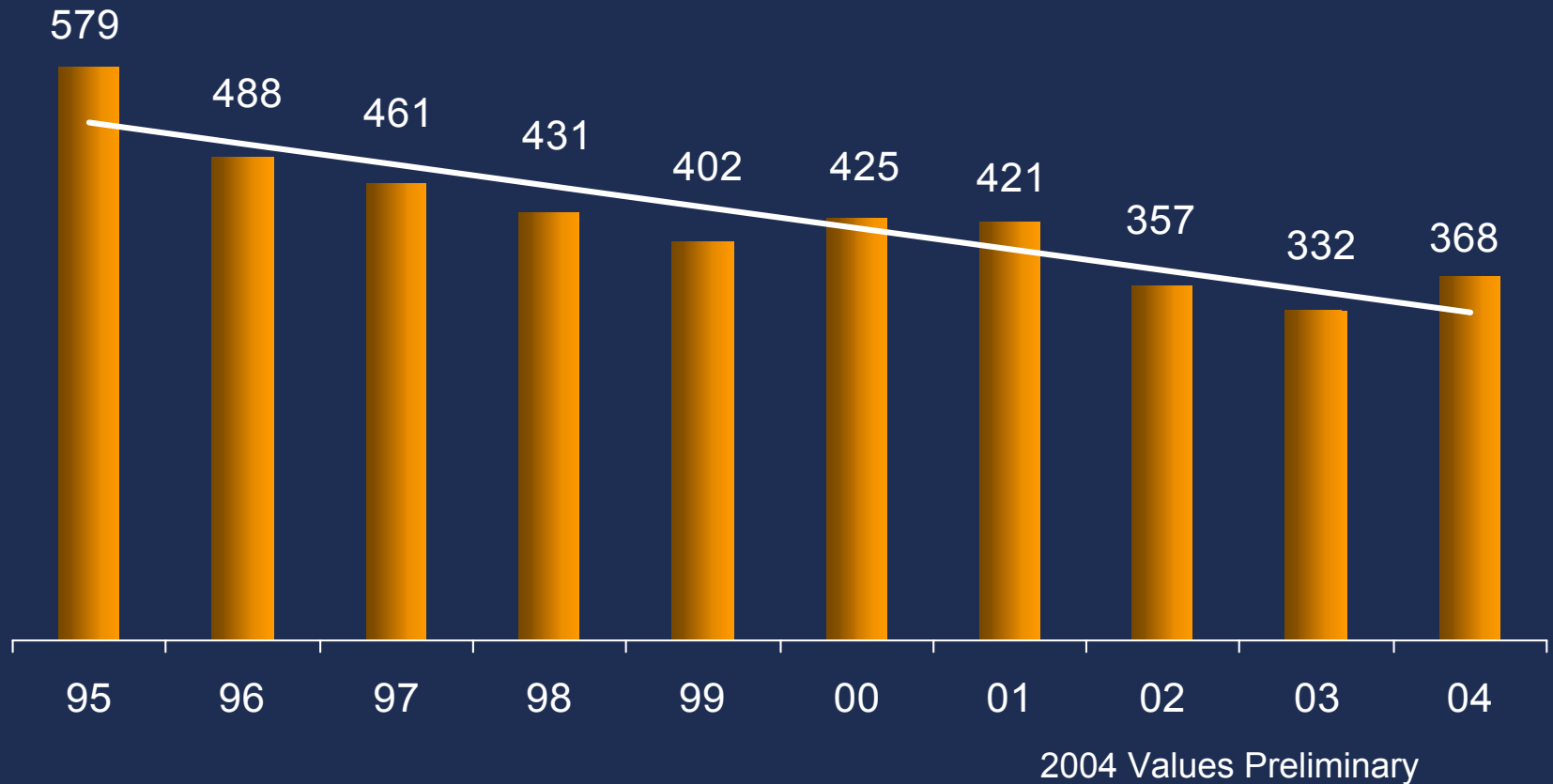
# Delivering Results

## Highway-Rail Incidents Rate



# Delivering Results

## Highway-Rail Fatalities



# Improving Grade Crossing Safety

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- **Build partnerships with State and local law enforcement (May 2, 2005, Safety Advisory)**
- **Improve data available for safety analysis**
- **Work with the State of Louisiana on its State Action Plan (the first pilot for this approach)**
- **Pedestrian focus**

# Summary

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- **Reduce accidents and casualties by—**
  - Focusing resources on major risks through better use of data
  - Using technology and new products of research strategically; and
  - Forming partnerships with State and local agencies and others to prevent and mitigate the consequences of accidents