



VDA Technical Congress



Primary Safety and Passive Safety: NHTSA's Approach to Road Safety

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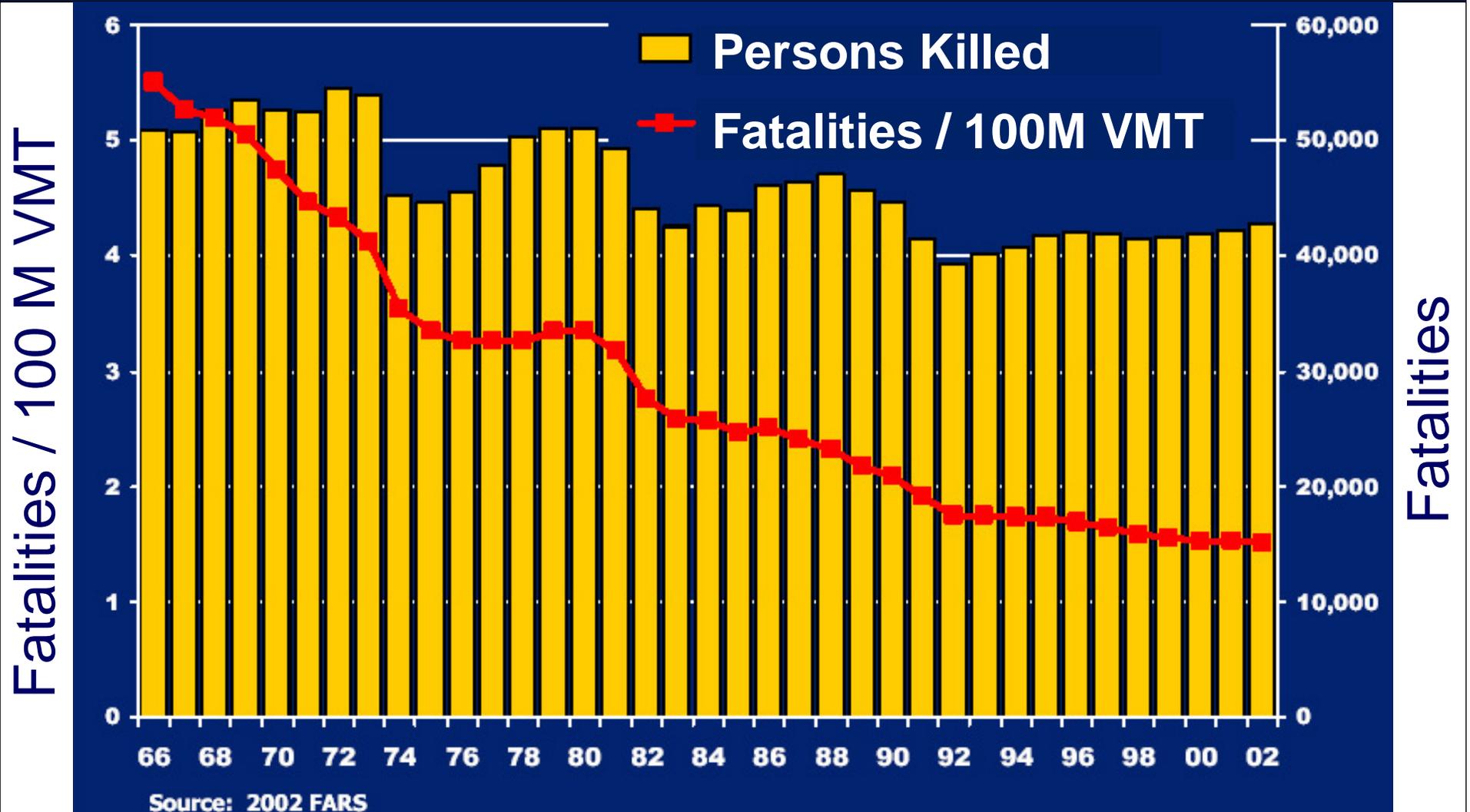
NHTSA Mission

- **To Reduce Motor Vehicle Fatalities and Injuries and the Costs Associated With Crashes**
- **Carrying Out Needed Research, Implementing Education and Enforcement Programs**
- **Responsible for Issuing Safety Standards**

NHTSA Approach to Safety

- **Engineering, Enforcement, Education**
- **Define Safety Need**
- **Supporting Research**
- **Science Based Regulations**
- **Performance Based Requirements**
- **Technically Feasible Solutions**
- **Ensure Cost Effectiveness**
- **Aggressive Enforcement**

Person Killed and Fatalities per 100M VMT



2008 Goal is Challenging



The Crash Epidemic

Fatal Crashes



42,815
Fatalities

*Police-Reported

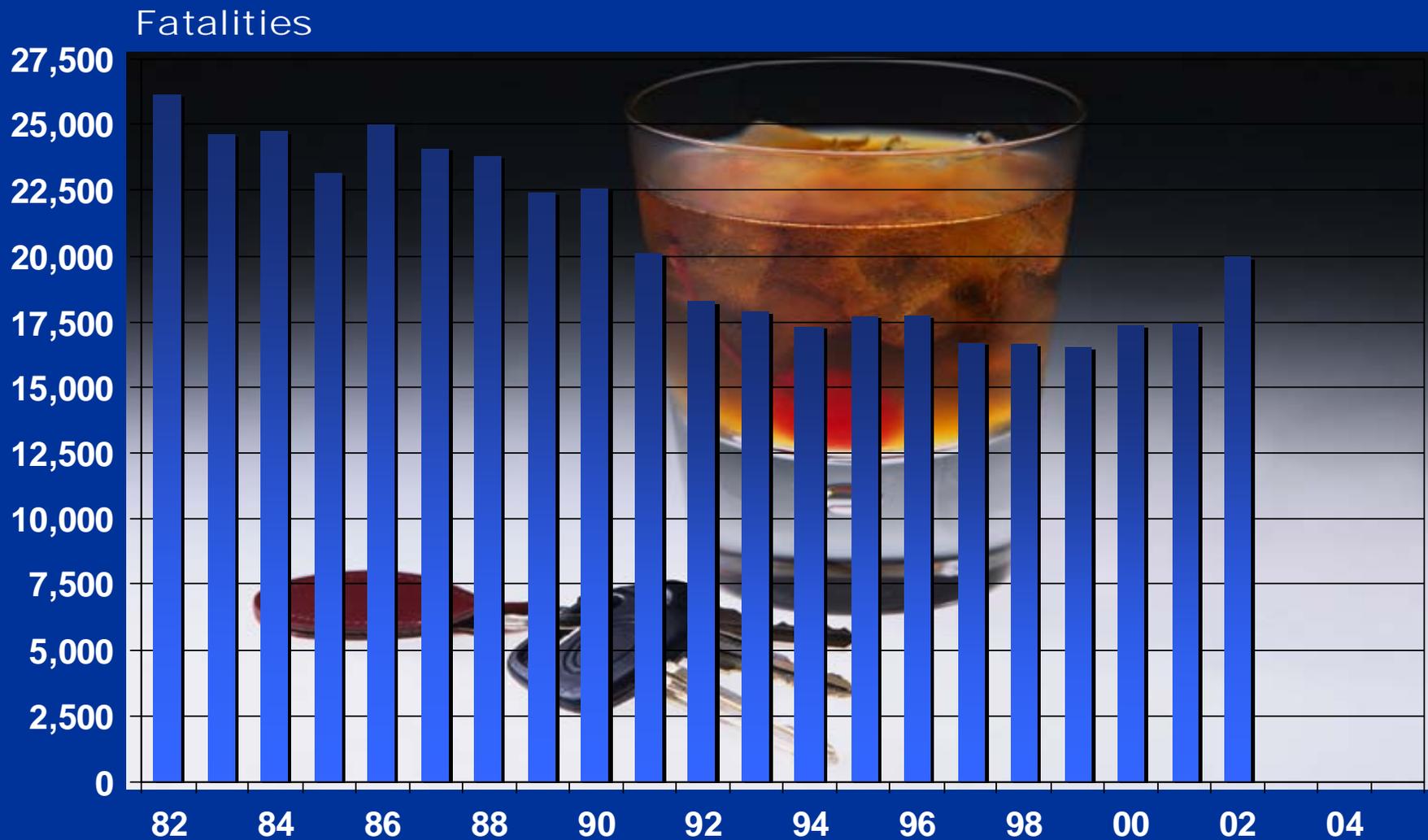
NHTSA Priorities

- In September 2002, NHTSA formed four Integrated Project Teams (IPTs) to conduct an in-depth review of four priority areas
 - Safety Belt Use
 - Impaired Driving
 - Rollover Mitigation
 - Vehicle Compatibility
- Final Reports were released June 2003

Safety Belt Use Rates 1983 – 2003 Percentage Use



Alcohol-Related Fatalities Trend



Predicted Lives Saved by Countermeasure

**Safety Belts
at 90% Use**

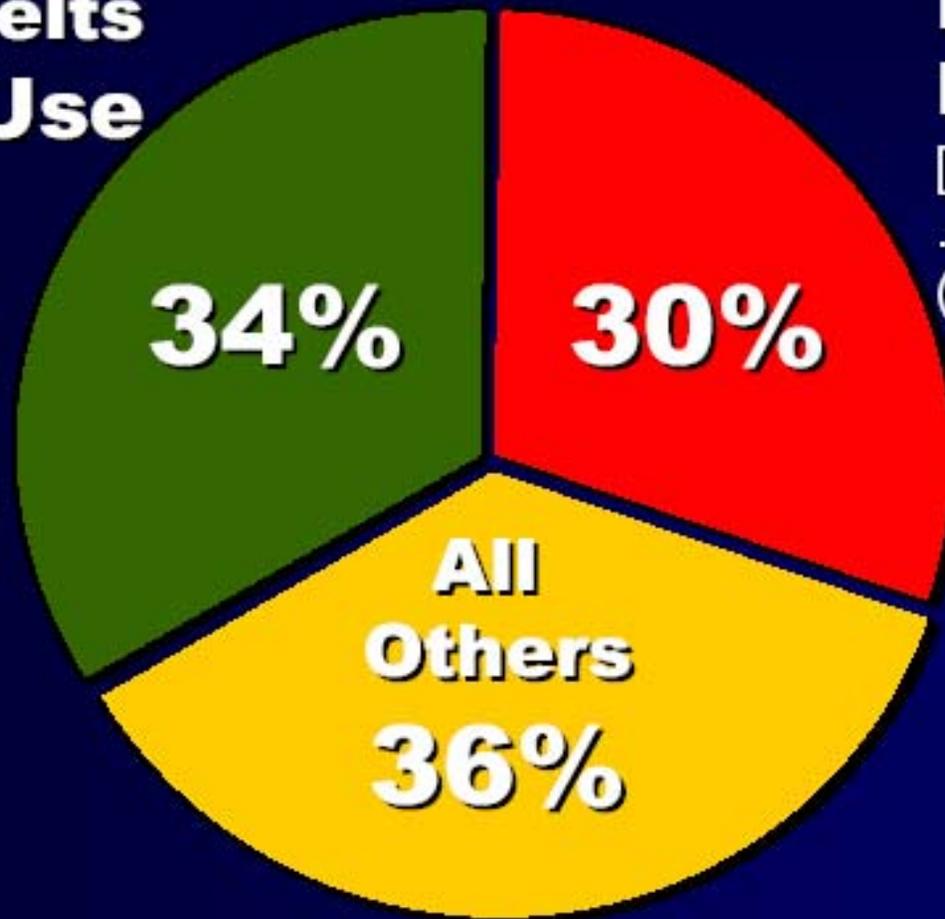
34%

**Impaired
Driving**

[Reduce a/r rate to
.44 per 100M VMT
(2000 baseline of .61)]

30%

**All
Others
36%**



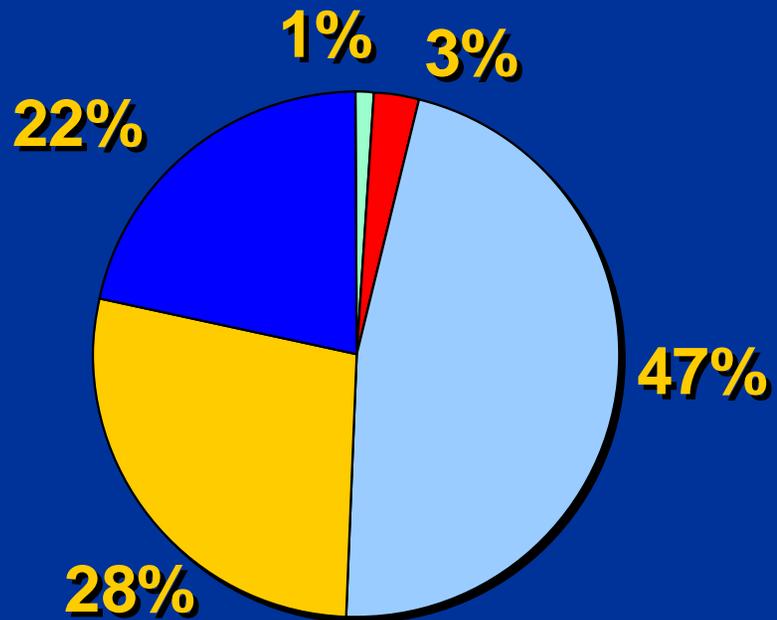
The Crash Safety Problem

- **Major Crash Types**
- **Fatalities and Injuries**
 - Front
 - Side
 - Rear
 - Rollover
 - Compatibility

Vehicles and Fatalities by Collision Type 2003

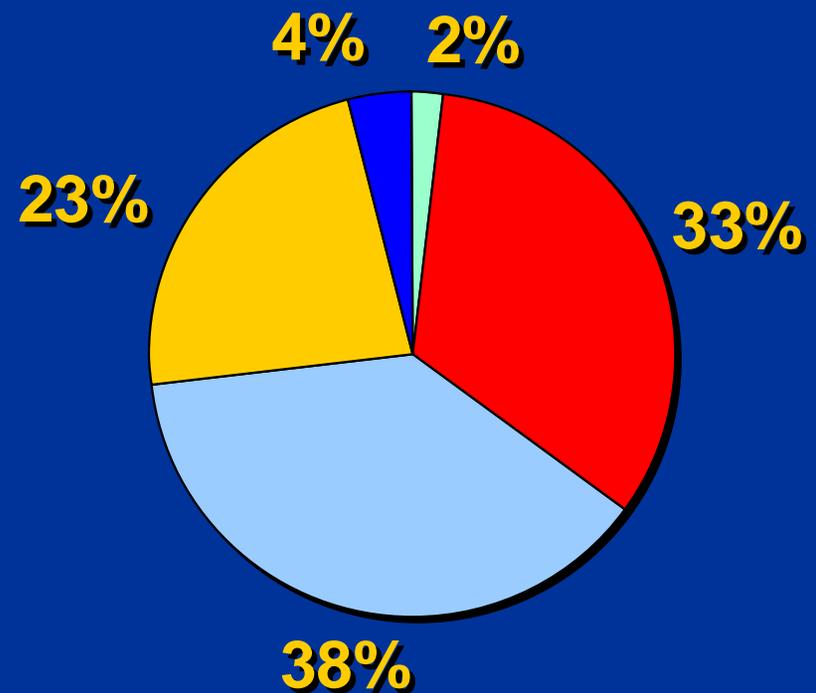
Passenger Vehicles in Crashes

Approx. 10.6 million vehicles involved



Passenger Vehicle Occupant Fatalities

31,904 total occupants killed



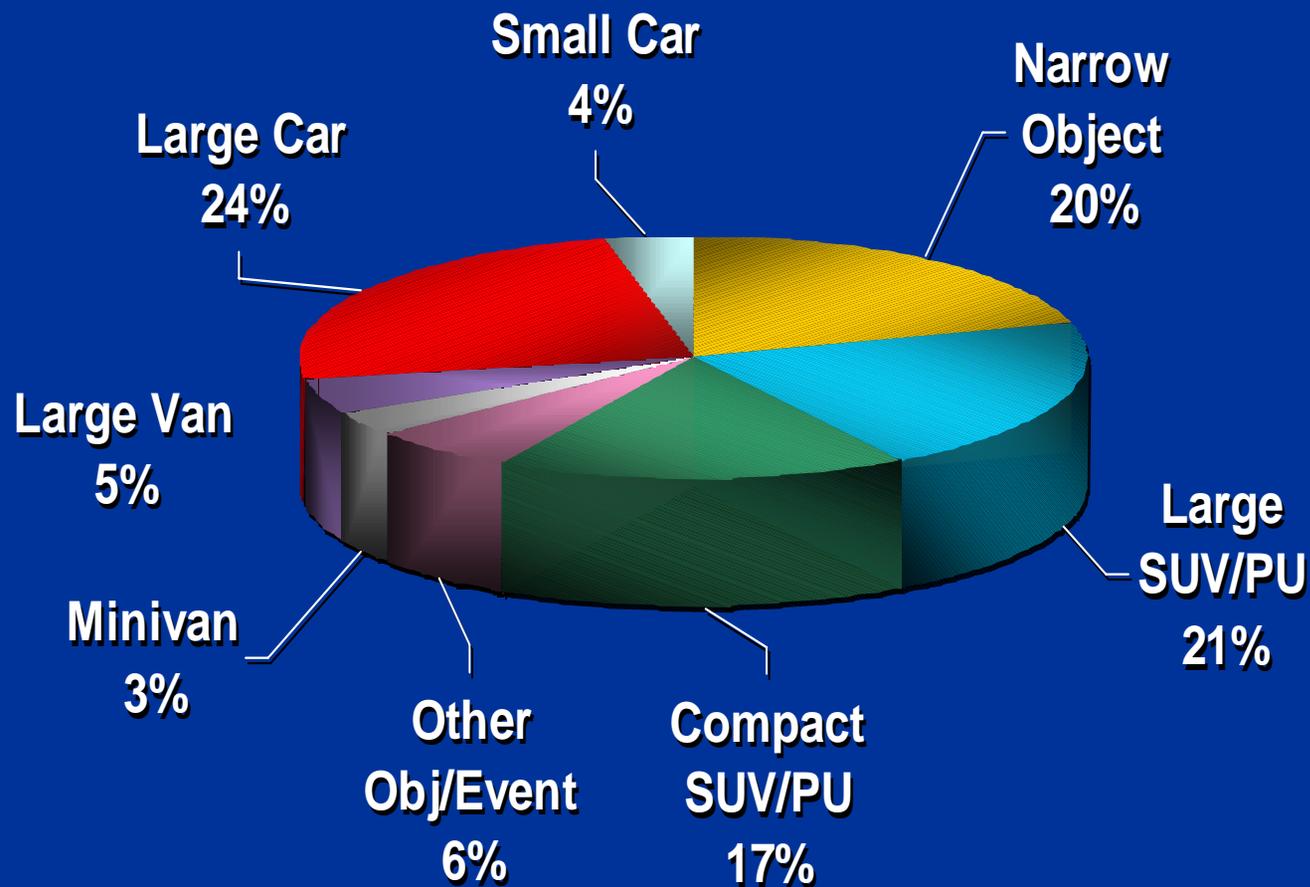
Legend: Rollover (Red), Front (Light Blue), Side (Yellow), Rear (Blue), Other (Light Green)

Vehicle Occupants Killed/Injured in Frontal Crashes

	Passenger Car	Light Trucks
Persons Killed	10,471	6,399
Person Injured	811,000	368,000

Current Side Crash Safety Problem Fatalities

Near Side Belted Fatalities by Crash Partner

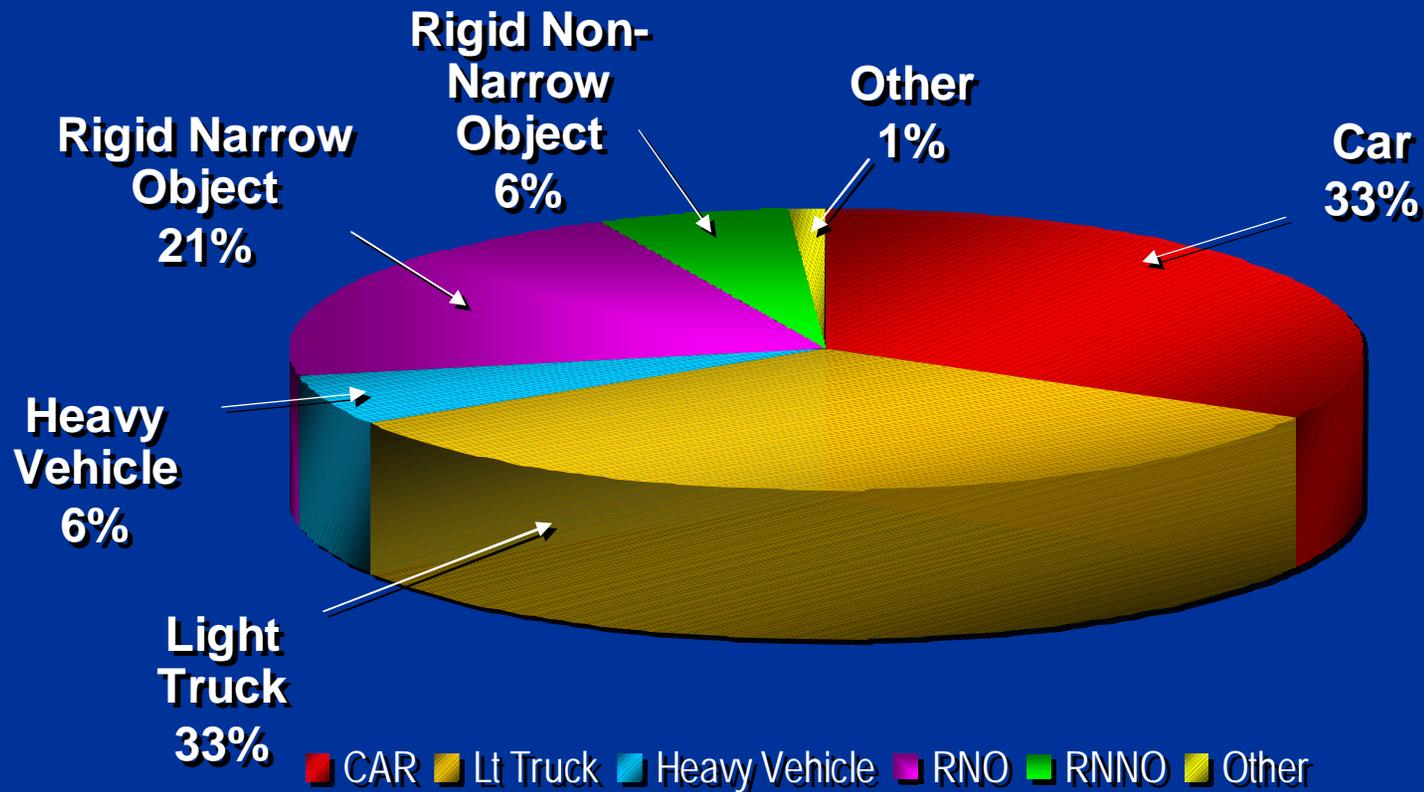


1999 FARS Side Crashes – Model Year 1995+ (light vehicles \leq 10,000lbs, no rollover)

N~1,450 fatalities (total)/year
N~805 fatalities (belted)/year

Current Side Crash Safety Problem Injuries

Occupants with AIS 3+ Injuries - Belted & Unbelted



NASS '95-'99 Weighted...Model Year 1995+ (light vehicles \leq 10,000lbs, no rollover)

3,272 Occupants
(total)/year

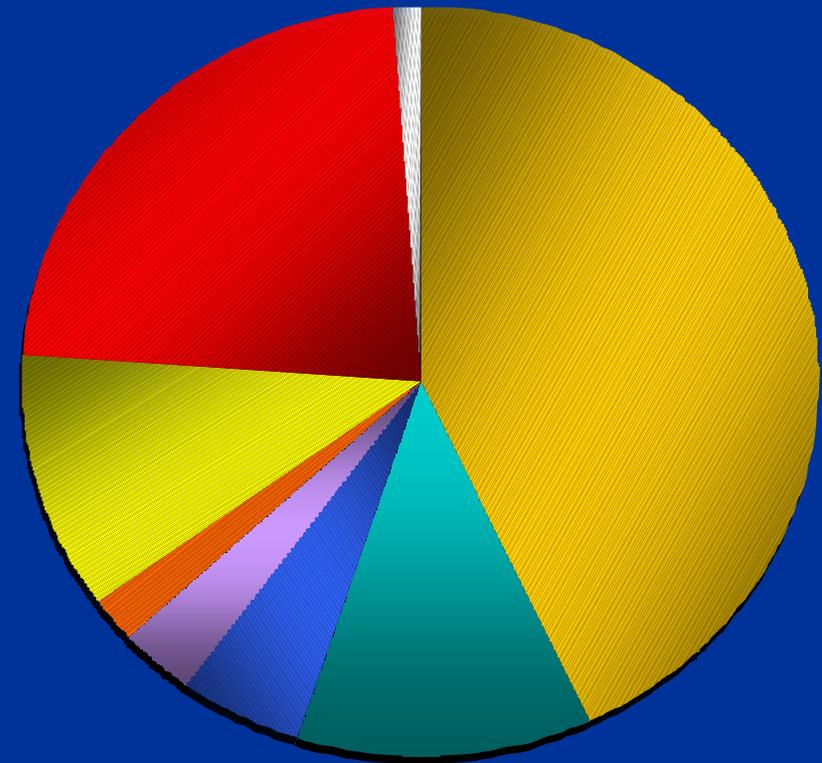
Annual Estimate of Struck Side Occupants

(Non Rollover Towaway Side Crashes)

1991-2000 NASS Weighted Data / Occupant \geq 56" in Height

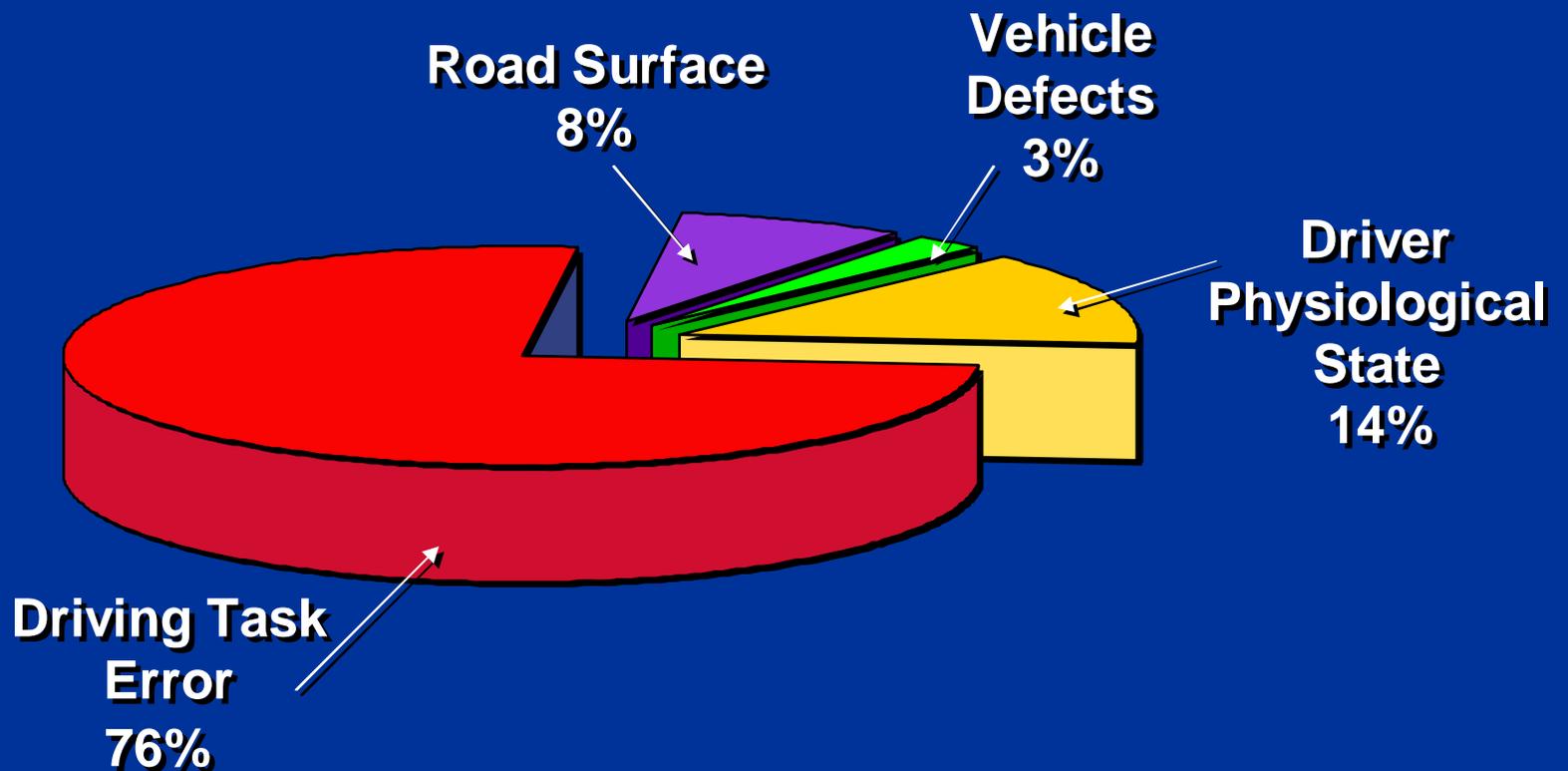
1%	Head/Abdomen/ Chest
2%	Chest/Abdomen
3%	Head/Chest
5%	Unknown
11%	Abdomen
12%	Other
23%	Head
43%	Chest

Distribution of Body Regions
Injured Male Occupants



The Safety Problem

Causal Factor Distribution

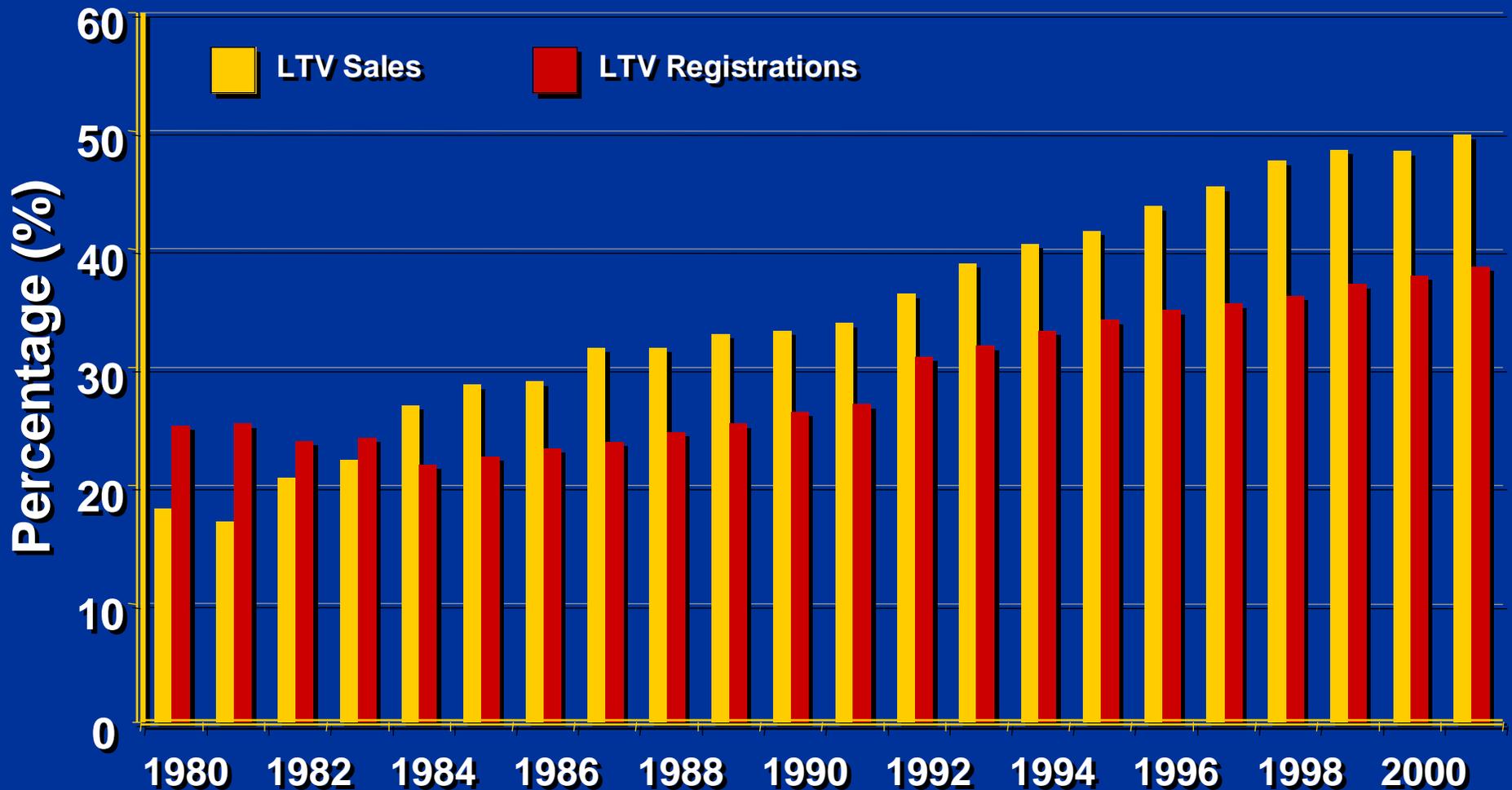


Rollover



Compatibility Problem

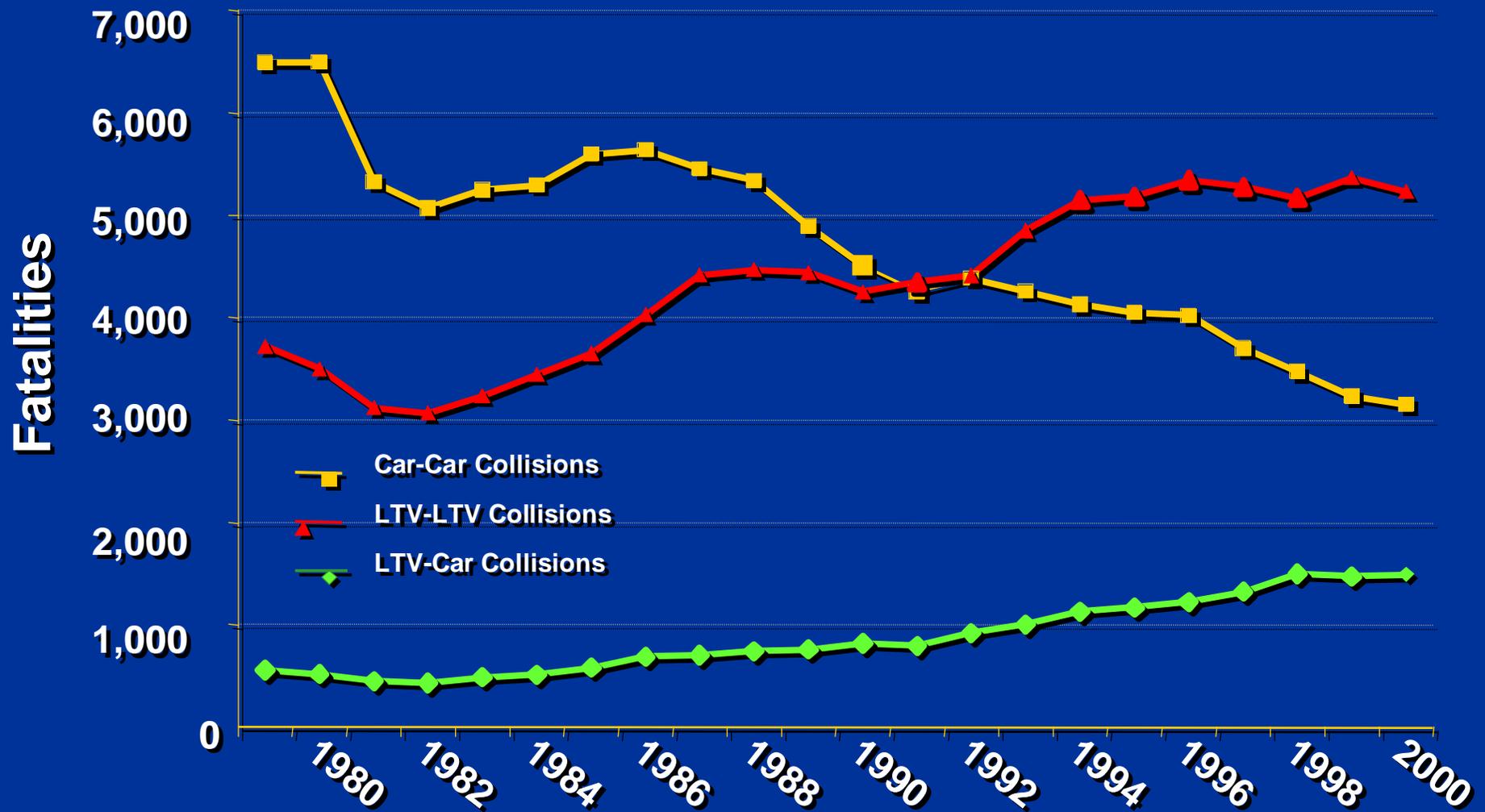
US LTV sales have leveled off at just under 50%



Compatibility Problem

Car – LTV fatalities appear to have leveled off just above 6,000 annually

Fatalities in Vehicle-to-Vehicle Collisions



Solving Problems

Human

Vehicle

Environment

Pre-Event



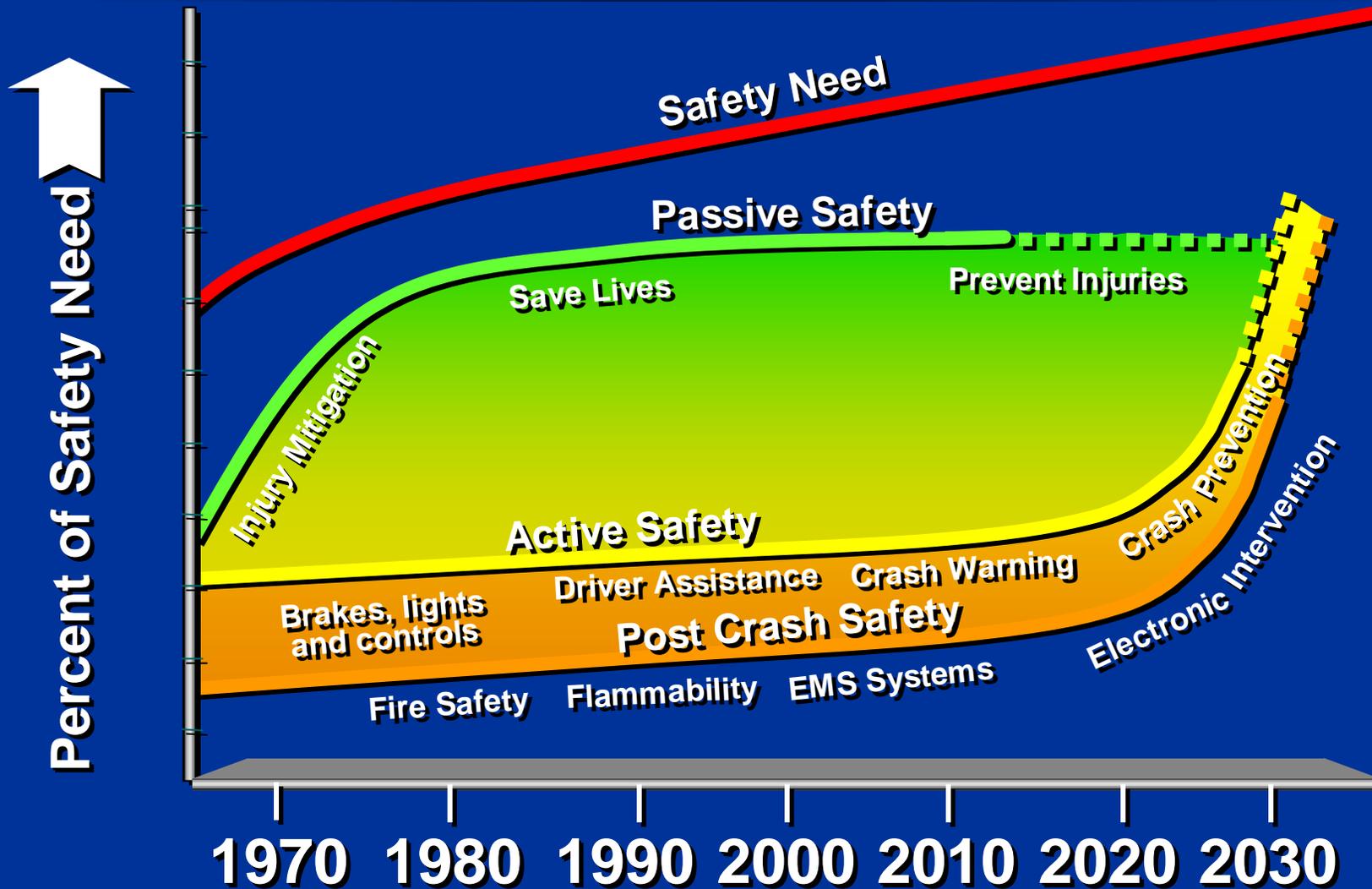
Event



Post-Event



The Safety Need



Safety of the Future

- **Evolution of Advanced Technology**
- **Vehicle/Driver/Environment as Total System**
 - **Need Constant Communications Among All Components**
- **Society Must Accept Some Control by Vehicle**
- **Proper Testing and Evaluation Procedures Needed**
- **Facilitate Deployment Through a Variety of Methods**

Conclusions

- **Safety Needs Novel Approaches**
 - Collaborative research
 - Innovative regulatory approaches
 - Consumer information and education
 - Closer cooperation between
Government and Industry