

Understanding Proposed CAFE Reforms for Light-Duty Trucks

The Case for Safety

**Washington, DC
October 20, 2005**

Adrian Lund, Chief Operating Officer

**INSURANCE INSTITUTE
FOR HIGHWAY SAFETY**

Safety acknowledged in the fuel economy debate

- ◆ "...the downweighting and downsizing that occurred in the late 1970s and early 1980s, some of which was due to CAFE standards, probably resulted in an additional 1300 to 2600 traffic fatalities in 1993."

From: Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards, NRC, 2002

Role of size and weight in vehicle safety

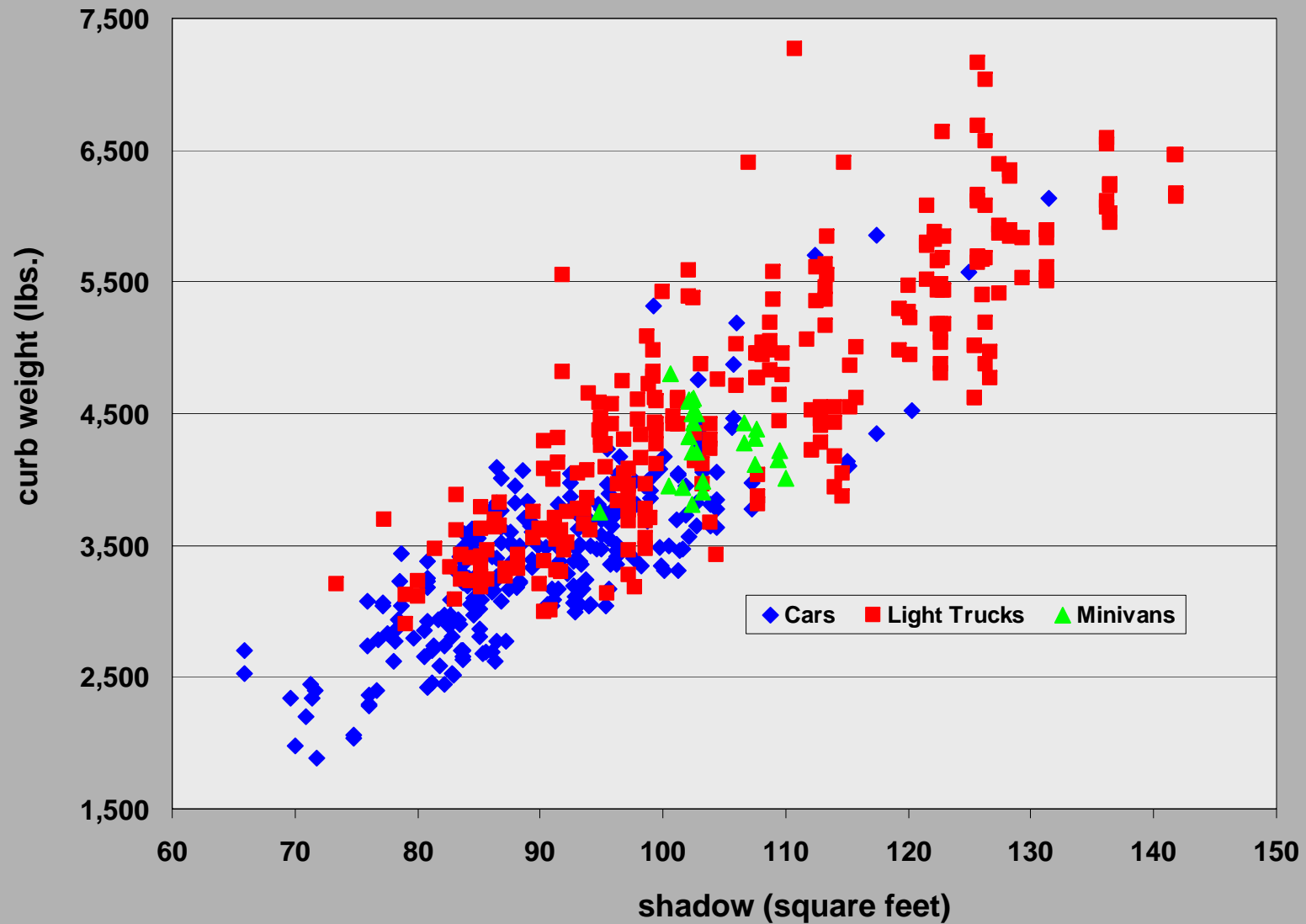
- ◆ Decreases in vehicle size increase occupant injury risk in two ways
 - Reduced crush space (shorter crash pulses)
 - Smaller often means lighter
- ◆ Decreases in vehicle mass increase occupant injury risk in two ways
 - Lighter weight means higher velocity changes
 - Lighter weight often achieved by making vehicles smaller

Why is this important for fuel economy?

- ◆ Because fuel is consumed in proportion to the amount of weight that must be moved
- ◆ The most direct way to reduce fuel consumption is to reduce vehicle weight
- ◆ The most direct way to reduce weight is to reduce vehicle size
- ◆ This has implications for how one specifies CAFE

Model year 2005 vehicles

By curb weight and shadow



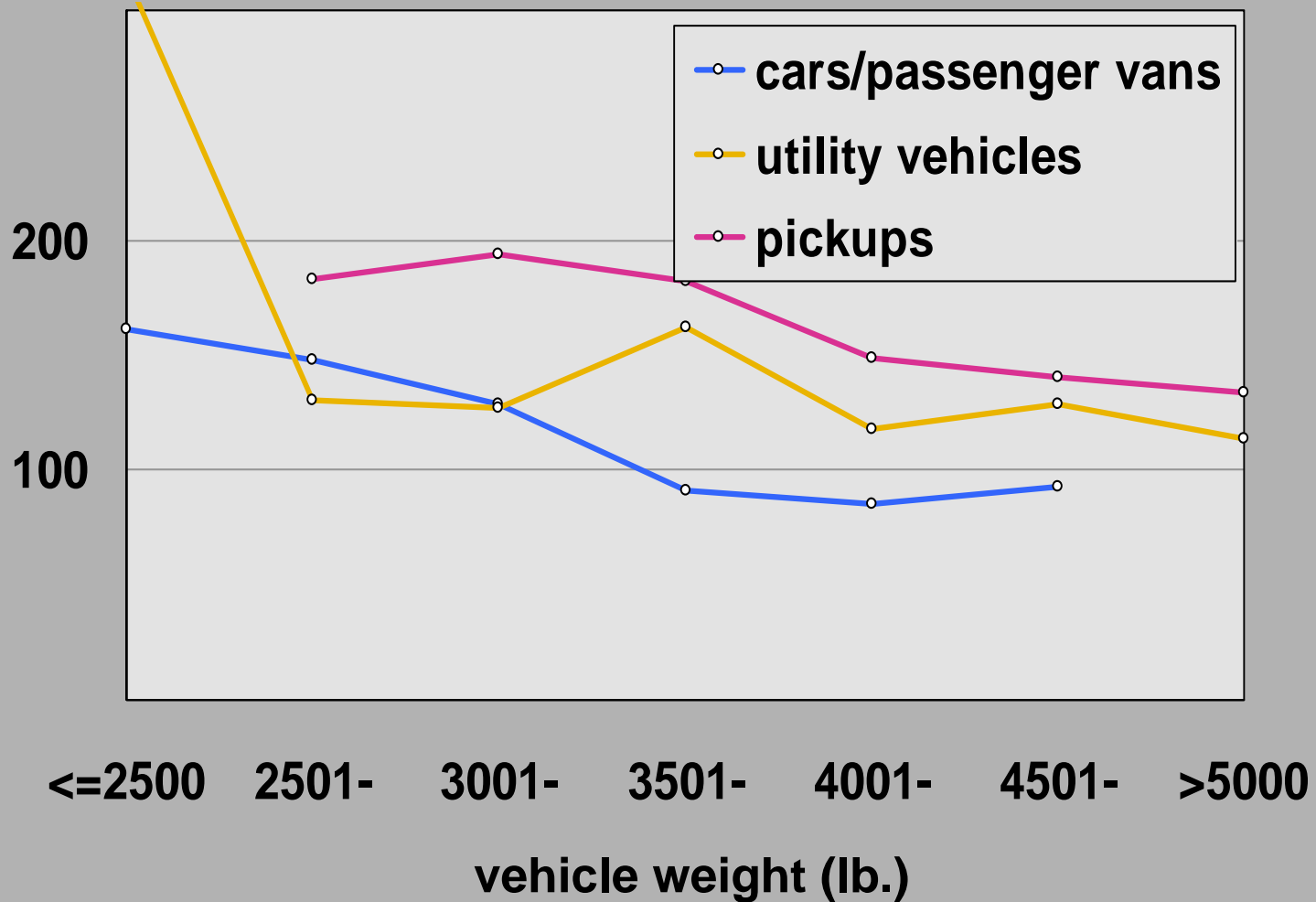


Despite huge improvements in vehicle safety, the effects of car size and weight still exist

Occupant death rates

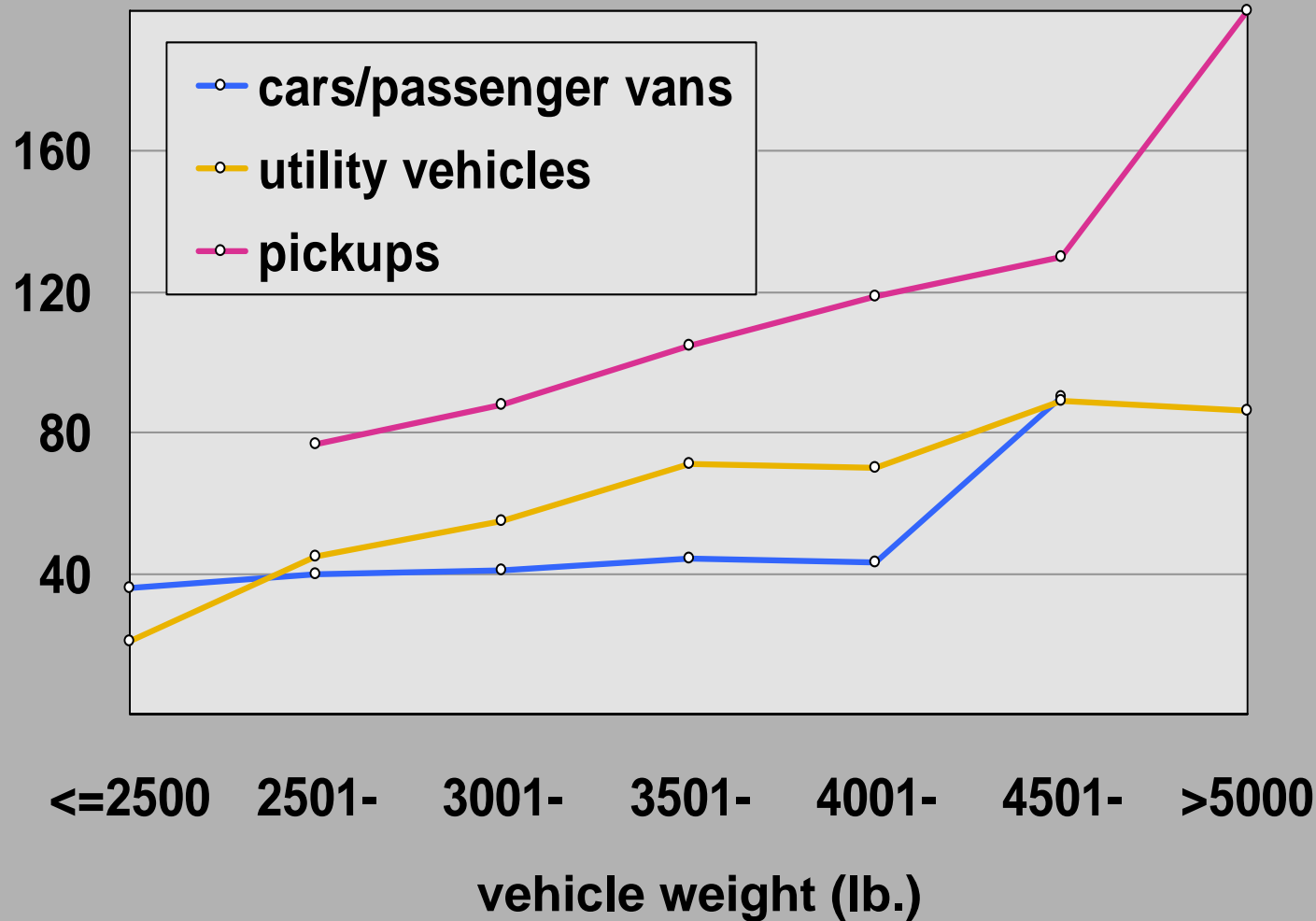
1997-03 model passenger vehicles

Deaths per Million Vehicles per Year



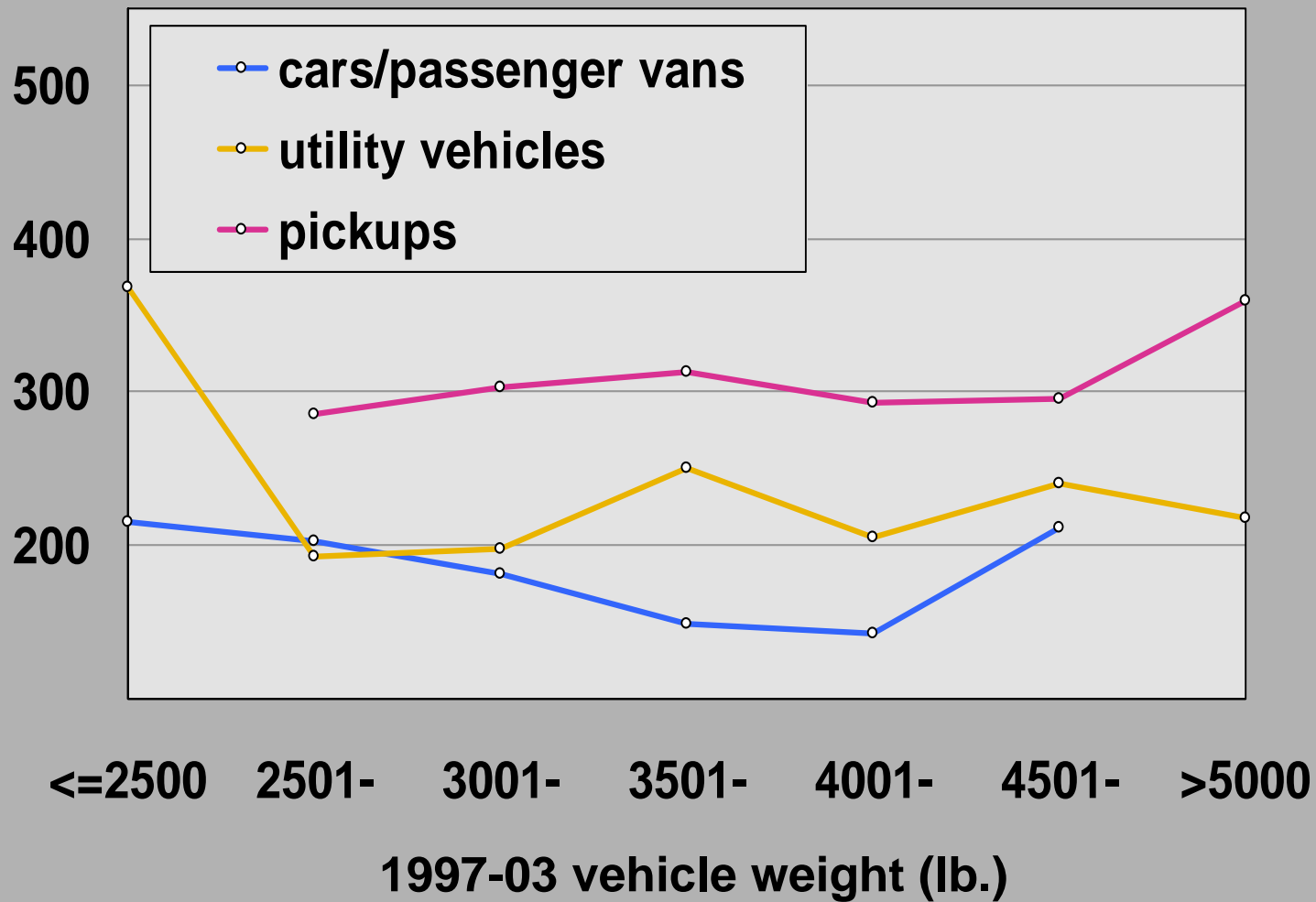
Occupant death rates in other vehicles in two-vehicle crashes, 1997-03 model passenger vehicles

Deaths per million vehicles per year



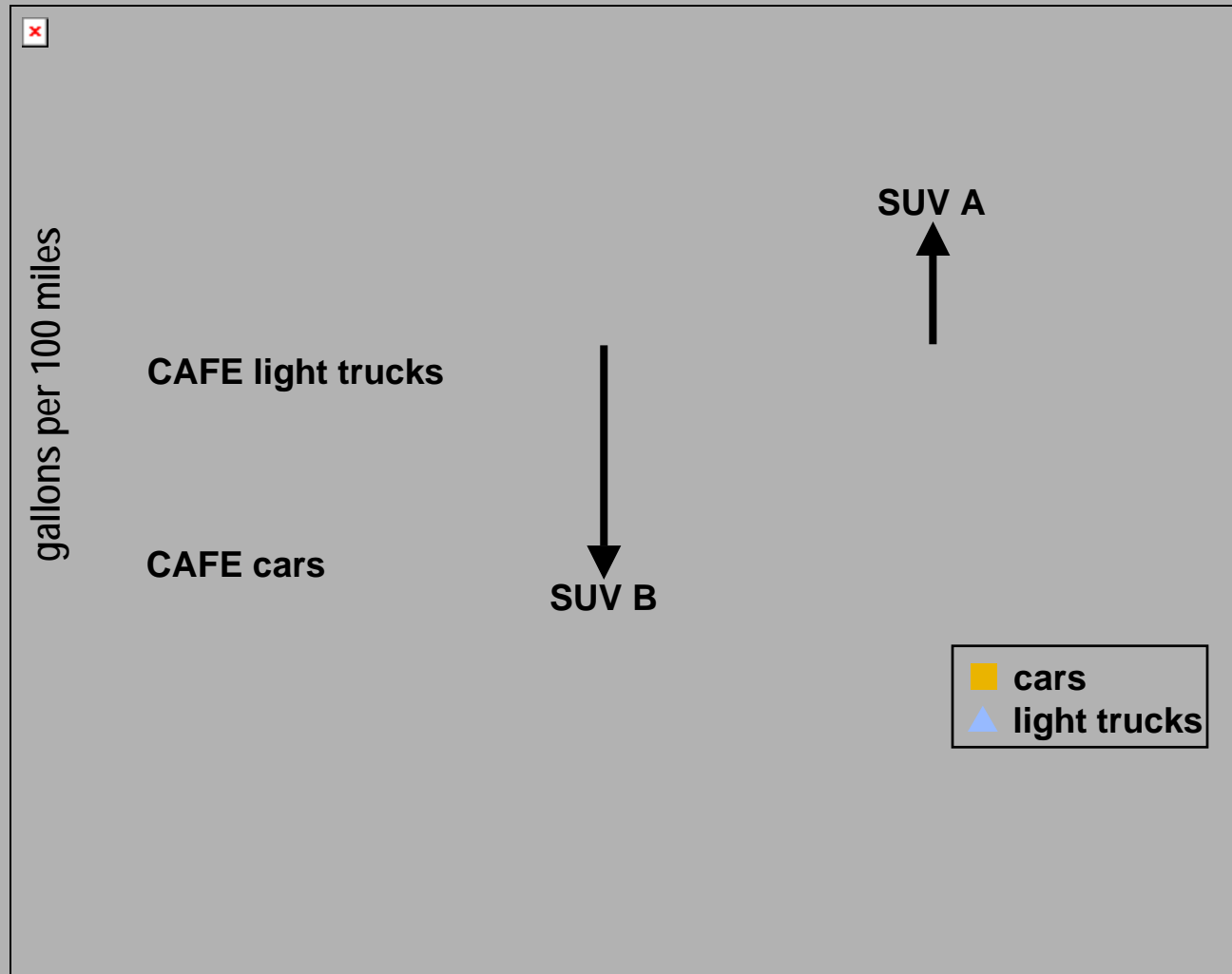
Occupant and other road user death rates in crashes with 1997-03 model passenger vehicles

Deaths per Million 1997-03 Vehicles per Year



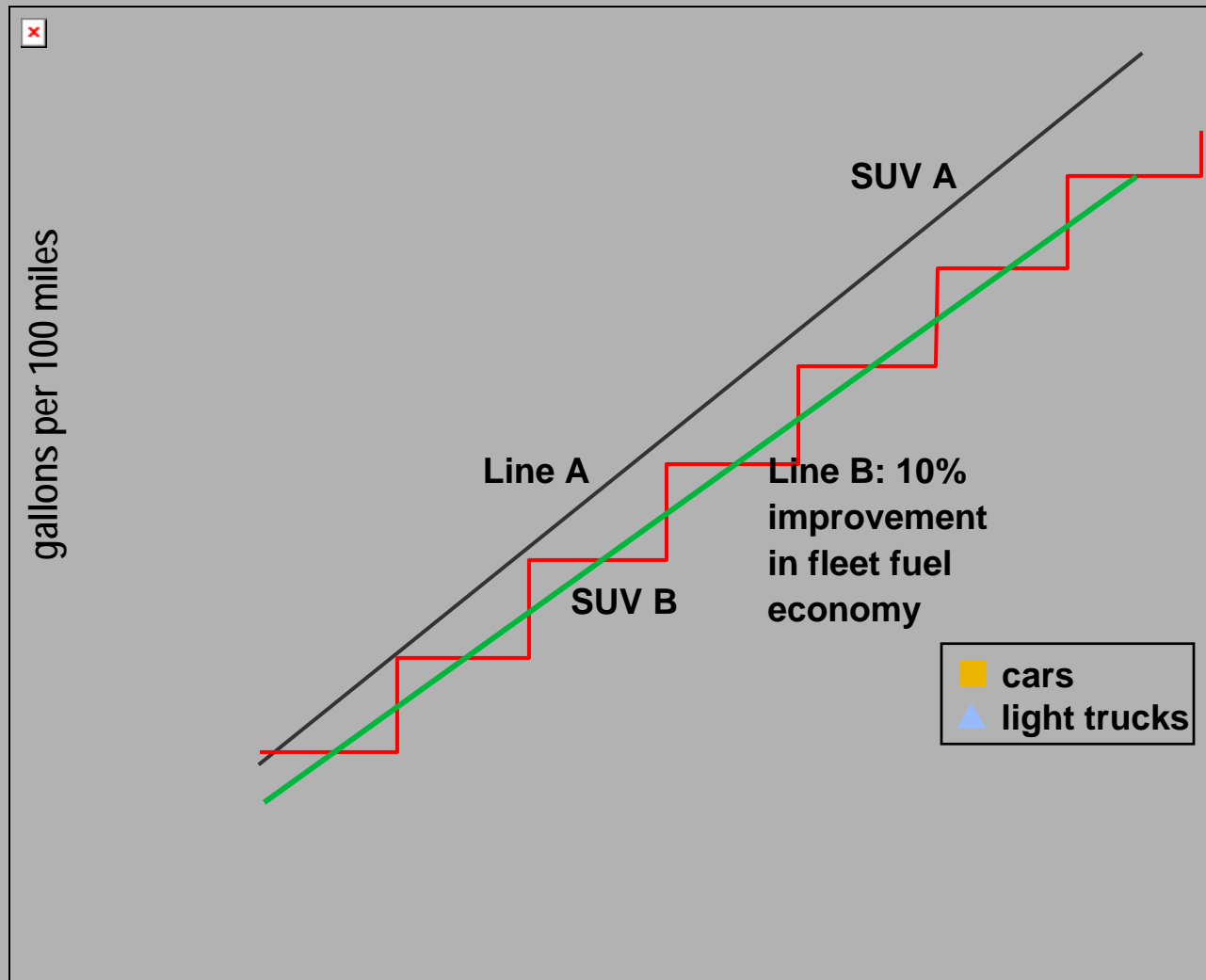
Fuel economy targets under current CAFE structure

By vehicle weight



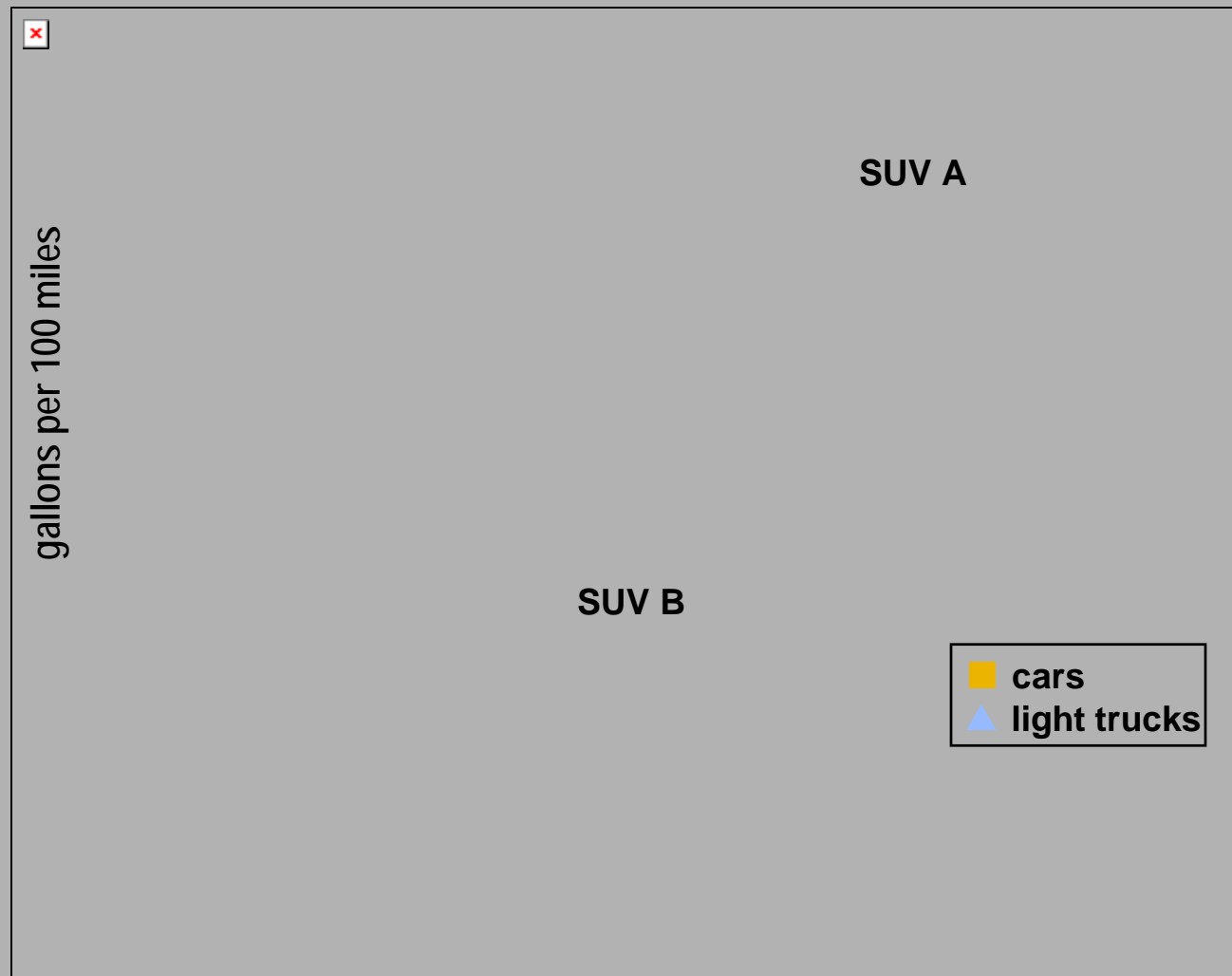
Fuel economy targets under a weight based structure

By vehicle weight



Fuel economy targets under a modified weight-based system to reduce aggressivity

By vehicle weight



www.iihs.org

Status Report: Vol. 37, No. 4, April 6, 2002

