

**TESTIMONY OF TED R. MILLER, PH.D. BEFORE THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS:  
HEARING ON OPPORTUNITIES TO IMPROVE TRANSPORTATION SAFETY, APRIL 14, 2010**

Dr. William Haddon was the first administrator of the National Highway Safety Administration. One of his legacies was the concept that three factors – the driver, vehicle and road – play critical roles in causing crashes and determining crash outcomes. Each is important, and most experts agree that safety programs should focus on a combination of driver behavior, law enforcement, vehicle design, and roadway design and condition.

I recently studied crashes, injuries, and deaths that deficient road conditions cause. For example, a sharp curve might cause a crash or an unforgiving pole at the side of the road might turn that crash into a killer.

Deficient road conditions cause 10 crashes a minute or make them worse. They contribute to more than half of all roadway deaths.

Crashes associated with road deficiencies cost \$217 billion annually. That's more than \$1,000 per licensed driver. They cost American businesses \$22 billion and governments \$12 billion. They result in \$20 billion annually in medical spending.

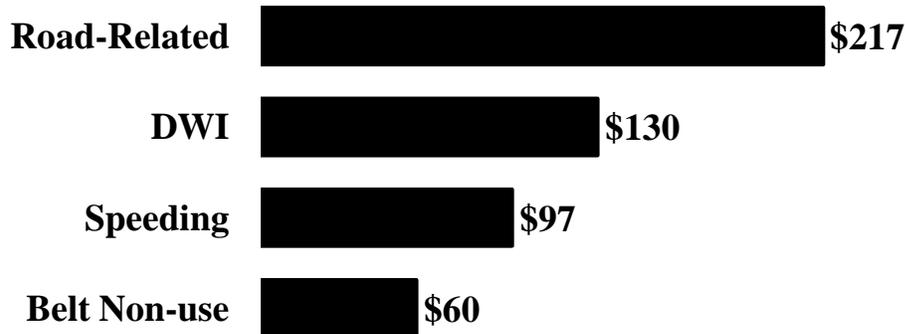
The driving environment is very forgiving. Drivers often make minor errors. They also speed, they get distracted, they drive drowsy or they take one drink too many. When the roadway is deficient, those errors are more likely to cause a crash and crashes that occur are more likely to result in serious injury or in death. Although behavioral factors are involved in most crashes, avoiding those crashes through driver improvement and enforcement requires reaching millions of individuals and getting them to sustain best safety practices. It can be far more practical to make the roadway environment more forgiving and protective.

Moreover, the costs of crashes involving deficient roadway conditions dwarf the costs of crashes involving alcohol, speeding, or failure to wear a safety belt. (See the figure.) Focusing as much on improving road safety conditions as on reducing impaired driving would save thousands of lives and billions of dollars each year.

Safer drivers and safer cars remain vitally important, but it also is critical to make the roads, bridges, and shoulders safer. It has been too long since we paid strong attention to that aspect of driving safety. Immediate solutions for problem spots include: using brighter and more durable pavement markings, adding rumble strips to shoulders, mounting more guardrails or safety barriers, and installing traffic signals and better signs with easier-to-read legends. More significant road improvements include replacing non-forgiving poles with breakaway poles, adding or widening shoulders, improving roadway alignment, replacing or widening narrow bridges, reducing pavement edges and abrupt drop offs, and clearing more space on the roadside.

Our report, *On a Crash Course: The Dangers and Health Costs of Deficient Roadways*, estimates crash costs per vehicle mile of travel by state. The highest costs are in Hawaii and the Southeastern and South Central United States, followed by the Northwest interior-- Idaho, Montana, Nevada, South Dakota, and Wyoming. The lowest costs are in the Upper mid-West and along the Eastern Seaboard from Maryland north.

## Crash Costs Involving Selected Problems (B of \$)



One reason for regional variations is the time period when the roads were built. Southern roads that originated in horse and buggy days were lined with trees for shade. Now those trees are killers. Similarly, buggies were slow and narrow, so bridges built a century ago tend to be problematic. In contrast, much of the MidWest was paved in the motor era.

The American Recovery and Reinvestment Act provided much needed funding for road maintenance. But its emphasis was not on increasing roadway safety. The next surface transportation bill needs a strong focus on improving the safety built into the roads and bridges.

In closing, let me add a message for you as road users. The next time you drive to an event, if you get off the interstate on unfamiliar roads, look around. You know how to recognize a deficient road. Are the lanes narrow? Are there bad curves and cluttered shoulders? If so, you need to become a better driver. The road can't forgive or protect you.

Our roadways and bridges could be a lot safer. Focusing as much on improving road safety conditions as we focus on reducing impaired driving or belt non-use could save thousands of additional lives and billions of dollars each year.

MY BACKGROUND: I am a safety economist with 27 years of experience assisting the US Department of Transportation in developing its highway crash costs. I also developed the injury and violence costs used by several other Federal agencies.

ABOUT PIRE: PIRE is a non-profit organization with more than 30 years experience in preventive health. It has become a leading independent transportation safety research organization. Its current and past clients include NHTSA, Insurance Institute for Highway Safety, Advocates for Highway and Auto Safety, MADD, and several auto manufacturers.