

The use of road salt reduces crashes on 4-lane roads by 93%.

Road conditions impact the safety of highway users and the efficiency of commerce. In winter months, ice, sleet and snow present challenges to local and state governments, who must act quickly and decisively to keep roads safe and clear.

Motorists caught in treacherous conditions are at risk; ambulances, fire engines, police and other emergency vehicles must be able to effectively and safely perform their life-saving services; and our economy is stifled when winter weather paralyzes roads.



The American Highway Users Alliance, a 501(c)(6) non-profit organization headquartered in Washington, DC, represents the interests of motorists, truckers, RVers, motorcyclists, bus operators, and a broad range of businesses that depend on safe and efficient highways.

- 1 Prof. Liping Fu & Dr. Taimur Usman, Department of Civil & Environmental Engineering, University of Waterloo, "Safety Impacts of Using Deicing Salt" Nov. 2013.
- 2 IHS Global Insight Study, 2010 for the American Highway Users Alliance.
- 3 From Federal Highway Administration website "How Do Weather Events Impact Roads?" captured January, 2014 (www.ops.fhwa.dot.gov/weather/). Data averages based on fourteen-year study from 1995-2008 by Noblis, based on National Highway Traffic Safety Administration data.
- 4 From AAA's "Winter Driving Tips" website, captured January, 2014 (exchange.aaa.com/safety/roadway-safety/winter-driving-tips/).
- 5 David A. Kuemmel, P.E. & Rashad M. Hanbali, Ph.D., Department of Civil & Environmental Engineering, Marquette University, June 1992.



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Winter Weather Highway Safety: Preventing Crashes, Injuries and Deaths



Data Confirms
Tremendous Safety &
Economic Benefits of Winter
Salting & Plowing Operations

American Highway Users Alliance



Research¹ from University of Waterloo in Ontario, Canada provides the most comprehensive database of winter road safety information ever, including surface data, accident history, and weather conditions over 122,000 event-hours. The data covers almost 60 major snow events over seven years. The report largely confirms smaller studies on winter road maintenance showing that road salt reduces crashes by 88%, injuries by 85%, and accident costs by 85%.

Snow-related shutdowns harm hourly workers the most.

➔ According to an IHS Global Insight study²:

- The economic impact of snow-related road closures far exceeds the cost of timely snow removal. Although states and localities may be hesitant to expend significant upfront resources in the short-term, the long-term payoff more than justifies the expense.
- Among all economic classes, snow-related shutdowns harm hourly workers the most, accounting for almost two-thirds of direct economic losses.
- A one-day major snowstorm can cost a state \$300-\$700 million in both direct and indirect costs.

➔ Quick Facts from the Federal Highway Administration³ about Winter Weather-Related Crashes in the U.S.:

Each year, over 1,300 people are killed and more than 116,800 people are injured in vehicle crashes on snowy, slushy, or icy pavements.



During Snow & Sleet Activity

- 870 people are killed annually
- 70,900 injuries
- 225,000 crashes

Icy Pavements

- 680 people killed annually
- 62,700 injuries
- 190,100 crashes

Snowy/Slushy Pavements

- 620 people killed annually
- 47,700 injuries
- 168,300 crashes

544 million vehicle-hours of delay per year are due to snow, ice, and fog. This is nearly one-quarter of all non-recurrent delay.

Deicing pays for itself a mere 25 minutes after salt is applied.⁵

➔ The University of Waterloo study finds that:

- Road surface condition is the single most important safety factor during a winter event — more important than visibility, precipitation intensity, air temperature, wind speed, or exposure.
- Before and after analysis on four-lane roads showed a 93% reduction in accidents after deicing.
- A 10% improvement in the surface friction of a road (as measured by a Road Surface Index), yields approximately a 20% reduction in crashes.

Winter Road Safety Tips⁴:

- **Make certain your tires are properly inflated.**
- **Keep your gas tank at least half full.**
- **Do not use cruise control when driving on any slippery surface.**
- **Accelerate and decelerate slowly. It takes longer to slow down on snowy, icy roads.**
- **The normal dry pavement following distance of three to four seconds should be increased to eight to ten seconds.**

For additional winter weather road safety information, visit <http://exchange.aaa.com/safety/roadway-safety/winter-driving-tips/>.