

Source of Crash Costs For 2010 Crash Facts Book

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The purpose of this document is to demonstrate the sources for and the rationale behind the calculations of the crash costs for the 2010 edition of Crash Facts. The past ten years of Crash Facts are available at:

<http://www.safehomealabama.gov/category.aspx?cat=53>

Crash costs involve the cost of fatalities, the cost of injuries and the property damage associated with vehicle collisions. Dollar costs change each year due to inflation. The costs that are applied in the 2010 edition of Crash Facts were applied to all past years in order that the costs would be comparable *within this edition*. Different costs (per fatality, injury and property damage) have been applied in past years. The 2010 costs used numbers specified in CY2009 documents, and thus they should be viewed as “equivalent 2009 dollars.”

COST PER FATALITY

The cost per fatality is effectively mandated by the USDOT in a memorandum dated March 18, 2009 with the subject: “Treatment of the Economic Value of a Statistical Life in Departmental Analyses – 2009 Annual Revision.” This memorandum updates the \$5.8 million per fatality established in the previous year to \$6.0 million for current DOT analyses. Thus, the cost per fatality used in the 2010 Crash Facts document was \$6.0 million per fatality.

COST PER INJURY

No comparable standard cost per injury was found. The source from which we obtained the cost per injury was a 2009 National Safety Council entitled: “Estimating the Cost of Unintentional Injuries” from the following web page:

http://www.nsc.org/news_resources/injury_and_death_statistics/Pages/EstimatingtheCostsofUnintentionalInjuries.aspx

The following table contains the costs from this source:

Average Economic Cost by Injury Severity, 2009

Incapacitating injury (A)	\$67,800
Nonincapacitating evident injury (B)	\$21,900
Possible injury (C)	\$12,400

This is appropriate to Alabama, since it uses a very similar A-B-C designation for injury severity. In Alabama during 2010 the following non-fatal injury severities were incurred:

MAIS	NUMBER
A	10,522
B	13876
C	13930

This yields an average cost to be \$31,048 per non-fatal injury.

COST PER VEHICULAR PROPERTY DAMAGE

Some crashes obviously result in great property damage costs, especially those that result in a hazardous materials spill or damage to a roadway structure. These are not included in the costs below and will not be included in the total crash costs. Those wishing to consider such costs should consult other references.

The most recent cost estimate per property damage per vehicle involved in a crash was found in a July 2004 FHWA publication (FHWA-HRT-04-085) entitled “Highway Safety Information System: An Examination of Fault, Unsafe Driving Acts, and Total Harm in Car-Truck Collisions,” which can be found on the following web page:

<http://www.fhwa.dot.gov/publications/research/safety/humanfac/04085/index.cfm#ref5>

The cost give there is \$2,250 per vehicle (not per crash). This cost then must be charged to each vehicle involved in a crash.

In 2010 Alabama had 127,296, which involved 231,203 vehicles, which is 1.82 vehicles per crash. Thus, the average vehicular property damage cost per crash is:

$$1.82 * \$2250 = \$4088/\text{crash}.$$

TOTAL COST PER ALL CRASHES IN 2010

The following table summarizes the costs for 2010.

COST TYPE	NUMBER	COST PER UNIT	COST PER TYPE
Fatality	862	6,000,000	5,172,000,000
Injury	39,658	31,048	1,231,301,584
Property Damage	128,384	4,088	524,833,792
TOTAL			6,928,135,376

Similar calculations were performed for all back years to produce the results given in the 2010 Crash Facts book. These are given below:

Year	Crashes	Injuries	Deaths	\$\$\$\$	# for chart
1991	112400	41600	1110	\$ 8,411,118,883.53	8.41
1992	119000	42700	1033	\$ 8,010,254,002.81	8.01
1993	122300	44200	1040	\$ 8,112,317,301.37	8.11
1994	130300	48000	1082	\$ 8,515,005,879.71	8.52
1995	133400	48100	1113	\$ 8,716,784,323.82	8.72
1996	136500	48200	1142	\$ 8,906,562,767.93	8.91
1997	139300	49300	1190	\$ 9,240,162,730.34	9.24
1998	137500	47300	1071	\$ 8,456,707,840.22	8.46
1999	137700	47100	1148	\$ 8,913,315,894.68	8.91
2000	132600	43500	986	\$ 7,808,692,905.99	7.81
2001	133738	43901	998	\$ 7,897,795,607.85	7.90
2002	140437	44414	1038	\$ 8,181,110,567.94	8.18
2003	141068	43845	1001	\$ 7,944,023,955.76	7.94
2004	146359	45391	1154	\$ 8,931,655,212.46	8.93
2005	143994	45290	1134	\$ 8,798,850,600.49	8.80
2006	139781	43028	1208	\$ 9,155,396,133.32	9.16
2007	135257	39655	1110	\$ 8,444,175,885.47	8.44
2008	123969	35619	964	\$ 7,396,717,739.83	7.40
2009	123,731	35,969	848	\$ 6,710,611,531.02	6.71
2010	128,384	39,658	862	\$ 6,928,135,376.00	6.93