



2012 PRELIMINARY DATA

Prepared for Governors Highway Safety Association

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### Summary

The number of motorcyclist traffic fatalities in the United States probably increased about 9% in 2012 compared to 2011 based on preliminary data supplied by all 50 states and the District of Columbia. Motorcyclist fatalities will have increased in 14 of the last 15 years.

In the preliminary data, motorcyclist fatalities increased by 4.3% during the first nine months of 2012. The increase will be greater in the final data because some fatalities from these months are not yet included on state data files. The final motorcyclist fatality total for the first nine months of 2010 and 2011 was at least 4.5% greater than the total reported in the preliminary data. If the underreporting is similar in 2012, this suggests that the final motorcyclist fatality total for 2012 will be about 9% greater than the 4,612 recorded in 2011.

A 9% motorcyclist fatality increase for the year would exceed the total traffic fatality increase of 5% estimated by the National Safety Council (NSC) and the 7% increase over the first nine months estimated by the National Highway Traffic Safety Administration (NHTSA).

In the 2012 preliminary data, motorcyclist fatalities increased by 24% in the first quarter and by 6% in the second quarter while they decreased by 4% in the third quarter. Through nine months, fatalities increased in 34 states and decreased in 16 states. Fatalities in the District of Columbia were unchanged.

Record high temperatures in spring 2012 extended the riding season in cold-weather states and likely are responsible for a large portion of the fatality increases of the first six months. A stronger economy in some states may have encouraged more recreational motorcycling, while continued high gasoline prices may have prompted some riders to use their fuel-efficient motorcycles rather than automobiles for commuting and other everyday travel.

In the 14 years from 1997 to 2011, motorcyclist fatalities more than doubled, from 2,116 to 4,612, while total traffic fatalities dropped by 23%, from 42,013 to 32,367. Even after the predicted increase in 2012, total traffic fatalities will have dropped very substantially over the past 15 years. But motorcyclist fatalities in 2012 will have moved even closer to the highest levels ever recorded.

National data from 1976 to 2012 suggest that motorcyclist fatalities track motorcycle registrations quite closely and that registrations track inflation-adjusted gasoline prices. If the economy continues to improve and gasoline prices remain high, then motorcycle registrations, travel, and fatalities will continue to rise unless active measures are taken.

States seeking to reduce motorcyclist fatalities should adopt strategies to increase helmet use, reduce alcohol impairment, reduce speeding, train all motorcycle operators and ensure that they are properly licensed, and encourage other drivers to share the road with motorcyclists. The most effective strategy by far is to enact a universal helmet use law in the 31 states that lack them.

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### Introduction

Motorcyclist fatalities in the United States more than doubled in the 11 years from 1997 to 2008 (Figure 1). The substantial decrease in 2009 brought momentary hope that this deadly trend had been broken. But motorcyclist fatalities increased again in 2010 and 2011. In comparison, passenger vehicle fatalities decreased by 9% over these two years. In 2011, 14% of all traffic fatalities were motorcyclists (NHTSA, 2012a).



In January 2013 the Governors Highway Safety Association (GHSA) asked each state, territory, and the District of Columbia to provide their preliminary motorcyclist fatality counts for 2012, as they did at the same time in the previous three years. All 50 states and the District of Columbia, Guam, the Northern Mariana Islands, and Puerto Rico supplied data. Many states also presented their views on why their motorcyclist fatalities increased or decreased.

This report summarizes the information received. It should be read with three important considerations in mind.

- 1) All data are preliminary, especially for the last few months of 2012. This report presents data through September because these counts are reasonably complete.
- All data are reported by the states from their traffic record systems. Their motorcyclist fatality counts may differ slightly from the counts recorded in NHTSA's Fatality Analysis Reporting System (FARS).
- 3) The states' views on possible reasons for increases or decreases are based on their experience and best judgment, not on any scientific analyses.

Throughout this report, a motorcyclist is any person operating or riding as a passenger on a motorcycle, motor scooter, or other two-wheeled motorized vehicle. The one exception is Florida, which reported motorcycle operator fatalities but not passenger fatalities.

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### Motorcyclist fatalities in 2011 and 2012

Table 1 compares 2011 and 2012 motorcyclist fatality counts in three-month intervals through September 2012. See Table 5 for complete data by state.

Many states often have relatively little motorcycle travel in the winter months due to snow, ice, rain, and cold weather. In 2011, for the nation as a whole, only 13% of motorcyclist fatalities occurred in January through March and 17% in October through December. The remaining 70% occurred during the other six months: 32% in April through June, and 38% in July through September.

	Jan – Mar	Apr – June	Jul – Sept	Nine Month Total Jan – Sept
2011 final - reported by states	555	1,476	1,729	3,760
2012 preliminary	690	1,570	1,662	3,922
change from 2011	135	94	- 67	162
percent change	+ 24.3%	+ 6.4%	- 3.9%	+ 4.3%
States with increase	30	32	21	34
States unchanged	8	2	5	1
States with decrease	13	17	25	16

#### Table 1. Motorcyclist fatalities by quarter, 2011 and 2012, preliminary data for 2012

Data reported to GHSA by the states and the District of Columbia in January through March 2013; some 2012 data preliminary. States include the District of Columbia. Passenger fatalities in Florida are not included.

In the first quarter of 2012, January through March, motorcyclist fatalities nationwide increased by 24.3%. At the state level, fatalities increased in 30 states, were unchanged in 8, and decreased in 12 states and the District of Columbia. Several of the changes were substantial: six increases and one decrease were by 10 or more fatalities.

The second quarter produced substantially more motorcyclist fatalities as the riding season began in earnest. The first quarter's pattern moderated somewhat with an overall increase of 6.4%. Fatalities increased compared to 2011 in 32 states and decreased in 17. Seven of the increases and three of the decreases were by 10 or more fatalities. For the six months through June, fatalities increased by 229, or 11.3% (Table 5).

The third quarter produced an overall decrease of 3.9% in the preliminary data compared to 2011. More states reported decreases (25) than increases (20 and the District of Columbia). Thirteen of the increases and five of the decreases were by 10 or more fatalities.

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In the nine months through September, fatalities increased by 162, or 4.3%, with twice as many states reporting increases than decreases.

It's important to keep in mind that the 2012 data are preliminary and that the fatality counts will rise. As one state noted, "reports are still coming in almost daily. The [preliminary] number for 2012 will increase."

Experience from 2011 suggests how much they may increase. The final 2011 motorcyclist fatality total for the first nine months reported by FARS was 4.7% greater than the preliminary total for these months reported by the states in February and March 2012 and presented in *Spotlight on Highway Safety: Motorcyclist Traffic Fatalities by State, 2011 Preliminary Data* (GHSA, 2012). The states' preliminary reports underreported the final counts throughout the nine months (Table 2).

	Jan – Mar	Apr – June	Jul – Sept*	Nine Month Total Jan – Sept*
2011 preliminary	533	1,441	1,606	3,580
2011 final - reported by FARS	578	1,497	1,673	3,748
underreporting	45	56	67	168
percent under	+ 8.4 %	+ 3.9%	+ 4.2%	+ 4.7%

#### Table 2. Motorcyclist fatalities by quarter, 2011, state preliminary and FARS final data

Preliminary: Data reported to GHSA by the states and the District of Columbia in February and March 2012; GHSA (2012). Final: FARS

\* California August and September data not included in either preliminary or final.

Underreporting for 2012 probably is about the same as in 2011, or about 4.7% (this is also consistent with 2010, when underreporting was 4.5%). Table 3 accounts for this underreporting by increasing each quarter's count in the 2012 preliminary fatality data by the amount of underreporting in that quarter in 2011. So the first quarter's preliminary count of 690 is increased by 8.4%, or 58, to an adjusted total of 748. For the full nine months, 2012 fatalities adjusted for underreporting are 9.2% greater than fatalities in 2011.

### Table 3. Motorcyclist fatalities by quarter, 2011 and 2012, preliminary data for 2012,adjusted for underreporting

	Jan – Mar	Apr – June	Jul - Sept*	Nine Month Total Jan – Sept
2011 final reported by states	555	1,476	1,729	3,760
2012 preliminary	690	1,570	1,662	3,922
2011 underreporting	+ 8.4%	+ 3.9%	+ 4.2%	+ 4.7%
2012 adjusted	748	1,631	1,731	4,106
change from 2011	193	155	2	346
percent change	+ 34.8%	+ 10.5%	+ 0.1%	+ 9.2%

Data reported to GHSA by the states and the District of Columbia in January through March 2013; some 2012 data preliminary. Passenger fatalities in Florida are not included.

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Table 4 compares the 2012 quarterly changes in motorcyclist fatalities – both the changes reported in the preliminary data and the changes adjusted for underreporting – with the quarterly changes in overall traffic fatalities estimated by NHTSA (2012a). Both unadjusted and adjusted motorcyclist fatalities increased more than total traffic fatalities in each of the first two quarters and less than total traffic fatalities in the third quarter. For the nine months through September, unadjusted motorcyclist fatalities increased less than total traffic fatalities, but adjusted motorcyclist fatalities increased more. A 9% increase for the year also would exceed the 5% total traffic fatality increase for the year predicted by the National Safety Council (NSC, 2013).

	Jan – Mar change from 2011 to 2012	Apr – Jun change from 2011 to 2012	Jul – Sept change from 2011 to 2012	Nine month total Jan – Sept change from 2011 to 2012
motorcyclist fatalities	+ 24.3%	+ 6.4%	- 3.9%	+ 4.3%
motorcyclist fatalities adjusted for underreporting	+ 34.8%	+ 10.5%	+ 0.1%	+ 9.2%
total traffic fatalities	+ 13.0%	+ 4.7%	+ 4.9%	+ 7.1%

#### Table 4. Estimated traffic fatality change by quarter, 2011 to 2012, 2012 data preliminary

Motorcyclists: data reported to GHSA by the states and the District of Columbia in January thru March 2013; some 2012 data preliminary. Total: NHTSA (2012b)

A 9% increase in motorcyclist fatalities for the full year 2012 above the 4,612 reported in 2011 would produce a total of 5,027. Motorcyclist fatalities have exceeded 5,000 only twice before, in 2007 and 2008. Figure 2 illustrates how a 5,000 total in 2012 would continue the increases of the previous two years and would mark the 14th year with a fatality increase in the past 15 years.

In the 14 years from 1997 to 2011, motorcyclist fatalities more than doubled, from 2,116 to 4,612, while total traffic fatalities dropped by 23%, from 42,013 to 32,367 (NHTSA, 2012a). Even after the predicted increase in 2012, total traffic fatalities will have dropped very substantially over the past 15 years. But motorcyclist fatalities in 2012 will have moved even closer to the highest levels ever recorded.



#### Figure 2. United States motorcyclist fatalities, 1975-2012; 2012 fatalities estimated at 5,000

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### Reasons for changes in motorcyclist fatalities

Motorcyclist fatalities depend on the amount of motorcycle travel and the safety of that travel. While accurate state-level motorcycle travel data are not available, the amount of travel is influenced by the weather, the economy, gasoline prices, and motorcycle registrations. The safety of motorcyclist travel is influenced by the knowledge and skill of motorcyclists and by safety programs affecting both motorcyclists and other drivers who interact with motorcyclists. This section examines each of these influences in turn.

#### Weather

Much motorcycle travel is discretionary. It's affected by weather conditions: cold and wet weather discourages motorcycling, while warm and dry weather encourages it.

Across the lower 48 states, spring 2012 (March-May) recorded the warmest average temperature on record by a full 2 degrees (NCDC, 2012). Thirty-four states, all east of the Rocky Mountains, had record average temperatures, and 46 states were warmer than normal, with only Oregon and Washington near normal. Rainfall nationwide was slightly below normal during this period, though it varied considerably across the states.

This warm weather undoubtedly increased motorcyclist travel, crashes, and fatalities, especially in cold-weather states, and likely is responsible for much of the fatality increases of the first six months (Table 2). Many states explicitly noted the weather's influence, especially in the spring. Of those that did, all except Nebraska reported motorcyclist fatality increases through nine months.

- **Arkansas:** "warmer/dryer year in 2012...more riders riding their bikes, especially to work"
- Connecticut: "a very mild winter season and thus an extended riding season"
- Illinois: "due to an abnormally warm 2012 winter/spring, motorcycle activity was up"
- Indiana: "record-setting warmth in the first quarter of the year ... encouraged an earlier start to the traditional riding season ... warm year in 2012 extended into November"
- **Iowa:** "nicer than usual weather in 2012 which extended the riding season"
- Kansas: "more exposure due to warm temperatures during the winter months"
- Kentucky: "warmer winter months during both the beginning and end of 2012"
- Maine: "longer riding season due to uncommonly good weather in the Northeast"
- **Maryland:** "fair weather in the early months ... 'Goldilocks' weather (not too hot, n ot too cold) in the late summer/fall"
- Minnesota: "an unusually warm spring"
- Missouri: "extremely mild weather in late winter and early spring"
- Montana: "improvement in weather"
- **Nebraska:** "very favorable riding weather and road conditions throughout the year"

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- **New Hampshire:** "in March 2012 we had 10 days of 80 degree weather; motorcyclists were out all over the state even though the roads still had sand and salt on them"
- New York: "very mild winter in 2011-12 and an early spring 2012 with nice weather and increased riding"
- North Carolina: "excellent weather prolonged the riding season"
- North Dakota: "a warm March and April brought the motorcycles out early but the roads still had sand on them"
- **Ohio:** "better weather during January through March"
- Oregon: "warmer summer in August and September"
- Pennsylvania: "unseasonably warm weather in March and April"
- South Carolina: "unseasonably warm weather year-round"
- Tennessee: "warmer temperatures causing more motorcycle miles traveled"
- Wisconsin: "greatest contributing factor was the [increased] length of the riding season"

#### The economy

An improving economy produces more discretionary income with which to buy and ride motorcycles. A poor economy has the opposite effects. Several states suggested that the economy influenced their motorcyclist fatality increase or decrease.

- California (decrease): "the down economy"
- Maryland (increase): "could be due to the improvement in the economy"
- Minnesota (increase): "the economy finally improved enough for more people to begin riding and for riders to ride more"
- Missouri (increase): "the slow economic recovery may also have contributed to more motorcyclists purchasing and riding motorcycles"
- Oregon (increase): "local economy has picked up so more people are riding"

#### **Gasoline prices**

High gasoline prices may encourage riders to use their fuel-efficient motorcycles rather than automobiles for commuting and other everyday travel, as several states commented.

- Hawaii: "high gas prices"
- Maine: "increase in use of motorcycles over motor vehicle due to gasoline prices"
- South Carolina: "higher fuel prices"
- Texas: "more people riding as the gas prices are higher"
- Wisconsin: "price of gasoline which ... averaged higher than any previous year"

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### **Motorcycle registrations**

National motorcycle registration data are not yet available for 2012. Several states noted increases in either registrations or motorcycle endorsements.

- Florida: "motorcycle endorsements continued to increase"
- Hawaii: "increase in ... registrations"
- Maine: "possible increase in motorcycle registrations"
- Massachusetts: "increase of about 17,000 registered motorcycles"
- Nebraska: "motorcycle operator endorsements ... increased"
- New Mexico: "registrations continued to rise"
- **South Carolina:** "increased motorcycle registrations without corresponding increases in rider training"
- Utah: "29% increase in registered motorcycles"

#### National data on gasoline prices and motorcycle registrations

National data support a strong relation between motorcycle registrations and motorcyclist fatalities. Figure 3 plots fatality and registration trends from 1976 to 2011. Registration counts are adjusted to the same 1976 total as fatalities so the trends can be compared easily. Fatalities track registrations quite closely for the entire 34 years and extremely closely for the period 1990-2008. Registrations and fatalities increased by about the same amounts in both 2010 and 2011.





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National data also suggest a strong relation between gasoline prices and motorcycle registrations. Figure 4 plots gasoline prices (annual U.S. city average, unleaded regular, adjusted for inflation) and registration trends from 1976 to 2012 for gasoline prices and to 2011 for registrations. Both are adjusted to the same 1976 total as fatalities. Registrations track inflation-adjusted gasoline prices reasonably closely with the exception of the gasoline price dip in 2009 and 2010.



Figure 4. Gasoline prices and motorcycle registrations, 1976-2012

Figure 5 plots the three trends together.



Figure 5. Gasoline prices, motorcycle registrations, and motorcyclist fatalities 1976-2012

The gasoline price increase in 2012 suggests that registrations likely increased in 2012, as noted by several states. Both increases are consistent with the increase in motorcyclist fatalities observed in the preliminary state data.

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### Safety programs

Several states suggested that specific motorcycle safety programs may have played a role in decreasing or limiting the increase in motorcyclist fatalities. These programs include:

- Enforcement: noted in California, New York, Ohio, and Wyoming
- Education and publicity, including Share the Road campaigns: noted in California, Florida, Georgia, Louisiana, Mississippi, New York, Ohio, Rhode Island, and Wyoming
- Training: noted in California, Louisiana, Maryland, New Jersey, and Virginia

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### Discussion

The nine-month preliminary data reported by all 50 states and the District of Columbia leave no doubt that total motorcyclist fatalities in 2012 increased substantially, perhaps as much as 9% over 2011. What can be expected for 2013? As of late March the economy continues to recover. On March 14 the Dow Jones stock market average reached an all-time high after ten straight days of gains, and the broad-based Standard & Poor's 500 Index climbed within two points of its record high (Business Report, 2013). Gasoline remains expensive, with the national average at \$3.64 per gallon on Monday, April 1 (EIA, 2013).

If these two trends continue, motorcycle travel and motorcyclist fatalities likely will increase unless strong measures are taken. An improved economy will mean more disposable income, more motorcycle sales and registrations, more recreational motorcycle travel, and more motorcyclist fatalities (Figure 3). Continued high gasoline prices may shift more non-recreational travel to motorcycles, again increasing motorcyclist fatalities (Figure 5).

The effective strategies to prevent motorcyclist crashes, injuries, and fatalities are well-known. Many states have made motorcycle safety a high priority. Beyond this, states should address the six major areas identified in the Government Accountability Office (GAO) review of motorcycle crashes and countermeasures (GAO, 2012, pp. 16-21). As the GAO recommends, states should conduct a comprehensive motorcycle safety program, not restricted to the two areas that can be funded through NHTSA's motorcycle safety grants authorized under SAFETEA-LU and MAP-21: motorcyclist training and encouraging drivers to share the road with motorcyclists.

#### Increase helmet use.

Helmets are by far the single most effective method to prevent motorcyclist fatalities and serious injuries. Helmets are 37% effective in preventing fatal injuries to motorcycle riders (operators) and 41% effective for passengers. NHTSA estimates that 706 of the unhelmeted motorcyclists who died in 2010 crashes would have lived if they had worn helmets (NHTSA, 2012c).

More than 30 years of experience have confirmed that state motorcycle helmet use laws are the single most effective method to increase helmet use. In 2011, helmet use among all motorcyclists was 84% in states with laws requiring helmet use by all motorcyclists (universal helmet laws) and 50% in other states (NHTSA, 2012).

A universal helmet law is the only motorcycle safety strategy whose effectiveness is rated as five-stars ("demonstrated to be effective by several high-quality evaluations with consistent results") in *Countermeasures That Work* (CMTW), NHTSA's guide for states (NHTSA, 2011, Section 5). Similarly, increasing the use of helmets is the only motorcycle safety strategy rated as proven in the American Association of State Highway and Transportation Officials (AASHTO) *Guide for Addressing Collisions Involving Motorcycles* (Potts et al., 2008, Strategy 11.1E1) and the only strategy rated "scientifically proven" in the Center for Disease Control and Prevention's *Motorcycle Safety* (CDC, 2011). Most recently, GAO reviewed nine high-quality studies, all of which concluded that universal helmet laws significantly decrease motorcyclist fatalities. GAO concluded that "laws requiring all motorcyclists to wear helmets are the only strategy proven to be effective in reducing fatalities" (GAO, 2012, p. 16).

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Unfortunately, only 19 states and the District of Columbia have universal helmet laws, 28 states require helmets for motorcyclists younger than age 18 or 21, and 3 states have no helmet requirement. Most recently, Michigan repealed its universal helmet law as of April 12, 2012. Bills were introduced in six other universal helmet law states in 2012 to restrict helmet use requirements to motorcyclists younger than a specified age or to eliminate helmet requirements completely, but the bills failed to pass. Bills also were introduced in three states to require helmet use by some or all motorcyclists, but these bills also failed to pass (Teigen and Shinkle, 2013). No state has enacted a universal helmet law since Louisiana in 2004 (IIHS, 2012).

Two initial reports suggest the consequences of Michigan's helmet law repeal. The MLive Media Group examined state police data for more than 3,000 motorcycle crashes in the six months after the repeal, April 13 to Oct. 13, 2012. They concluded that motorcyclists without helmets were three times more likely to die and 43% more likely to suffer serious injuries in their crashes than motorcyclists wearing helmets (Keep, 2012). In March 2013, Carol Flannagan of the University of Michigan Transportation Research Institute (UMTRI) analyzed Michigan's motorcycle crashes for the full year. She estimated that motorcyclist fatalities would have decreased by 21% if Michigan had not repealed its helmet law (Klug, 2013a). In fact, fatalities increased by 18%, from 109 in 2011 to 129 in 2012 (Klug, 2013b).

Enacting universal helmet laws in the 31 states that lack them is the most effective method to increase helmet use and reduce motorcyclist head injuries and fatalities.

#### Reduce alcohol impairment.

In 2010, 29% of fatally injured motorcycle riders had a blood alcohol concentration above the legal limit of .08 (NHTSA, 2012c). States should include motorcyclists in their impaired driving program activities. For example, CMTW recommends highly publicized enforcement, using officers trained in identifying impaired motorcyclists as well as other vehicle drivers, combined with offender sanctions including vehicle impoundment or forfeiture (NHTSA, 2011, Strategy 5.2.1). The AASHTO Guide recommends a combination of education, prevention, and enforcement programs (Potts et al., 2008, Strategies 11.1B1-3).

#### Reduce speeding.

In 2010, 35% of motorcycle riders involved in fatal crashes were speeding, compared to 23% for passenger car drivers and 19% for light truck drivers (NHTSA, 2012c). Almost half of all motorcycle fatal crashes did not involve another vehicle, and speeding likely contributed to many of them.

#### Provide motorcycle operator training to all who need or seek it.

All beginning riders should be trained in basic motorcycle operating skills and safe riding practices. Refresher training can be useful for many riders who are returning to motorcycling after not riding for several years. All states currently conduct operator training courses, but they may not provide enough course openings at places and times when riders can attend. Both CMTW (NHTSA, 2011, Strategy 5.3.2) and AASHTO (Potts et al., 2008 Strategies 11.1C1-3) endorse rider training.

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#### Ensure that motorcyclists are properly licensed.

In 2010, 22% of motorcycle riders involved in fatal crashes did not have a valid motorcycle license, compared to the 12% of passenger vehicle drivers who were not properly licensed (NHTSA, 2012c). The motorcycle license tests prompt many beginning riders to complete a training course. By enforcing licensing requirements, states encourage training.

#### Encourage all drivers to share the road with motorcyclists.

When motorcycles crash with other vehicles, the other vehicle driver often violates the motorcyclist's right-of-way (NHTSA, 2011). Motorcycles and motorcyclists are smaller visual targets than cars or trucks, and drivers may not expect to see motorcycles on the road. Many states have conducted communications and outreach campaigns to increase other drivers' awareness of motorcyclists. Typical themes are "Share the Road" or "Watch for Motorcyclists." NHTSA provides marketing materials to promote sharing the road with motorcyclists and has designated May as Motorcycle Safety Awareness Month (NHTSA, 2013).

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#### Table 5

#### Motorcyclist fatalities, January – June and January – September 2011 and 2012

Data reported to GHSA by all 50 states, the District of Columbia, Guam, the Northern Mariana Islands, and Puerto Rico in January through March 2013; some 2012 data preliminary.

All Florida data exclude passenger fatalities.

Guam reported 3 motorcycle fatalities in the first nine months of both 2011 and 2012.

The Northern Mariana Islands reported no motorcycle fatalities in the first nine months of either 2011 or 2012.

Puerto Rico's motorcycle fatalities increased from 31 in the first nine months of 2011 to 35 in 2012.

	State	2011 6 months	2012 6 months	Change from 2011	2011 9 months	2012 9 months	Change from 2011
S	AK	3	2	-1	10	8	-2
-	AL	49	41	-8	80	65	-15
	AR	27	44	17	49	57	8
TA	AZ	65	73	8	106	107	1
	CA	192	202	10	321	318	-3
	со	35	34	-1	74	68	-6
	СТ	18	14	-4	32	37	5
	DC	2	1	-1	3	3	0
	DE	12	8	-4	16	15	-1
	FL	227	194	-33	312	287	-25
	GA	51	64	13	91	96	5
	н	13	24	11	27	37	10
	IA	11	25	14	31	48	17
	ID	4	8	4	13	22	9
	IL	46	75	29	128	132	4
	IN	40	66	26	101	130	29
	KS	21	22	1	41	42	1
	KY	28	39	11	64	66	2
	LA	45	40	-5	62	53	-9
	MA	14	17	3	32	40	8
	MD	36	34	-2	61	63	2
	ME	5	9	4	14	21	7
	МІ	41	55	14	99	120	21
	MN	13	23	10	41	52	11
	мо	26	50	24	69	89	20
	MS	30	24	-6	48	33	-15
	МТ	4	8	4	20	24	4
	NC	79	86	7	134	141	7
	ND	2	8	6	11	16	5
	NE	7	12	5	22	21	-1
	NH	5	11	6	12	25	13
	IJ	49	43	-6	79	65	-14
	NM	22	26	4	36	51	15
	NV	23	19	-4	36	32	-4
	NY	68	86	18	145	150	5
	OK	46	40	15	74	150	10
		40	40	-0	74	02	-12
	DA	19	110	-4	171	40	10
	PA	5	0	-3	14	7	-7
	SC N	58	69	-5	14	113	-7
	SD	1	5	4	14	24	10
	TN	58	68	10	102	114	12
	тх	254	226	-28	392	358	-34
	UT	10	12	2	27	28	1
	VA	36	39	3	77	72	-5
	VT	4	6	2	8	11	3
	WA	28	33	5	65	80	15
	wi	32	46	14	77	101	24
	wv	13	16	3	24	28	4
	WY	4	4	0	15	11	-4
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### References

Business Report (2013). Dow sets tenth straight all-time high. http://www.iol.co.za/business /international/dow-sets-tenth-straight-all-time-high-1.1487086

CDC (2011). Motorcycle Safety: How to Save Lives and Save Money. Atlanta, GA: National Center for Injury Prevention and Control. http://www.cdc.gov/Motorvehiclesafety/mc/index. html

EIA (2013). Gasoline and Diesel Fuel Update, April 1, 2013. Washington, DC: U.S. Energy Information Administration. http://www.eia.gov/petroleum/gasdiesel/

GAO (2012). Motorcycle Safety: Increasing Federal Funding Flexibility and Identifying Research Priorities Would Help Support States' Safety Efforts. GAO-13-42. Washington, DC: United States Government Accountability Office. http://www.gao.gov/products/GAO-13-42

GHSA (2012). Spotlight on Highway Safety: Motorcyclist Traffic Fatalities by State, 2011 Preliminary Data. Washington, DC: Governors Highway Safety Association. http://ghsa.org/ html/publications/pdf/spotlights/spotlight\_motorcycles12.5.pdf

IIHS (2012). Motorcycle and Bicycle Helmet Use Laws, March 2013. Arlington, VA: Insurance Institute for Highway Safety. http://www.iihs.org/laws/HelmetUseCurrent.aspx

Keep, P. (2012). What was learned in MLive investigation of motorcycle helmets. Ann Arbor, MI: MLive Media Group. http://www.mlive.com/opinion/index.ssf/2012/12/paul\_keep\_what\_was\_learned\_in.html

Klug, F. (2013a). 21 percent reduction in motorcycle deaths projected if Michigan helmet mandate was in place, researcher says. Ann Arbor, MI: MLive Media Group. http://www.mlive. com/news/index.ssf/2013/03/21\_percent\_reduciton\_of\_motorc.html

Klug, F. (2013b). Motorcycle fatalities up 18% in 2012; total number of crashes down 4% -Michigan State Police. Ann Arbor, MI: MLive Media Group. http://www.mlive.com/news/index. ssf/2013/03/michigan\_motorcycle\_fatalities.html

NCDC (2012). State of the Climate – National Overview – Annual 2012. Asheville, NC: National Climatic Data Center. http://www.ncdc.noaa.gov/sotc/national/2012/13#analysis

NHTSA (2011). Countermeasures That Work: A Highway Safety Countermeasures Guide for State Highway Safety Offices. Sixth Edition, 2011. DOT HS 811 444. Washington, DC: National Highway Traffic Safety Administration. http://www.nhtsa.gov/staticfiles/nti/ pdf/811444.pdf

NHTSA (2012a). Traffic Safety Facts, 2011 Motor Vehicle Crashes: Overview. DOT HS 811 701. Washington, DC: National Highway Traffic Safety Administration. http://www-nrd.nhtsa. dot.gov/Pubs/811701.pdf

NHTSA (2012b). Traffic Safety Facts, Early Estimate of Motor Vehicle Traffic Fatalities for the First Nine Months (January – September) of 2012. DOT HS 811 706. Washington, DC: National Highway Traffic Safety Administration. http://www-nrd.nhtsa.dot.gov/Pubs/811706.pdf

2012 PRELIMINARY DATA

NHTSA (2012c). Traffic Safety Facts, 2010 Data: Motorcycles. DOT HS 811 639. Washington, DC: National Highway Traffic Safety Administration. http://www-nrd.nhtsa.dot.gov/Pubs/811639.pdf

NHTSA (2012d). Motorcycle Helmet Use in 2011 – Overall Results. DOT HS 811 610. Washington, DC: National Highway Traffic Safety Administration. http://www-nrd.nhtsa.dot.gov/Pubs/811610.pdf

NHTSA (2013). Share the Road Marketing Materials. Washington, DC: National Highway Traffic Safety Administration. http://www.trafficsafetymarketing.gov/CAMPAIGNS/ Motorcycle+Safety/Share+The+Road

NSC (2013). NSC Motor Vehicle Fatality Estimates. Itasca, IL: National Safety Council. http://www.nsc.org/Documents/NSC%20MV%20Fatality%20Estimates.pdf

Potts, I., Garets, S., Smith, T., et al. (2008). Guidance for Implementation of the AASHTO Strategic Highway Safety Plan. A Guide for Addressing Collisions Involving Motorcycles. NCHRP Report 500, Vol. 22. Washington, DC: Transportation Research Board. http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\_rpt\_500v22.pdf

Teigen, A. and Shinkle, D. (2013). Traffic Safety Trends: State Legislative Action 2012. Denver, CO: National Conference of State Legislatures. http://www.ncsl.org/issues-research/transport/traffic-safety-trends.aspx