



**American Association of
Motor Vehicle Administrators**

**Revision of the
Motorcycle Operator Licensing System (MOLS)
and
Integrating Motorcycle Rider Education
and Licensing (IMREL)
Guideline Documents**

PROJECT DEFINITION REPORT

October 2005 – May 2007

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TITLE

Revision of the Motorcycle Operator Licensing System (MOLS) and the Integrating Motorcycle Rider Education and Licensing (IMREL) Guideline Documents.

PURPOSE

This document serves as the project definition report for the American Association of Motor Vehicle Administrators (AAMVA) revision effort of the MOLS and IMREL Guideline Documents.

OBJECTIVE

The MTWG shall revise the Motorcycle Operator Licensing System (MOLS) and Integrating Motorcycle Rider Education and Licensing (IMREL) guideline documents to assist driver license agencies and rider education programs in the reduction of motorcycle operator crashes and fatalities through improved interagency cooperation, enforcement, public awareness and licensing practices.

FACILITATED BY

The AAMVA Motorcycle Technical Working Group (MTWG) will facilitate the revision effort of the MOLS and IMREL Guideline Documents. The MTWG is comprised of representatives from various state, federal and private organizations (see working group structure).

BACKGROUND

Motorcycle fatalities have increased each year between 1997 and 2003 with a total increase of 1,545 or 73 percent. In 2003, 3,714 motorcyclists were killed and an additional 67,000 were injured in traffic crashes in the United States.

In 2004, 4,028 motorcyclists were killed and an additional 76,000 were injured in traffic crashes – 8 percent more than the 3,714 motorcyclist fatalities and 14 percent more than the 67,000 motorcyclist injuries reported in 2003.

In 2005, 4,553 motorcyclists were killed and an additional 87,000 were injured in traffic crashes in the United States – 13 percent more than the 4,028 motorcyclist fatalities and 14 percent more than the 76,000 motorcyclist injuries reported in 2004.

Year Fatalities

1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
2,320	2,227	2,161	2,116	2,294	2,483	2,897	3,197	3,270	3,714	4,028	4,553

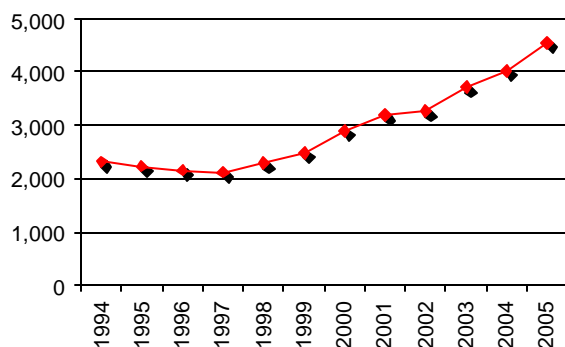
Source: NHTSA Traffic Safety Facts 2005 Data

Year Injuries

1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
57,000	57,000	55,000	53,000	49,000	50,000	58,000	60,000	65,000	67,000	76,000	87,000

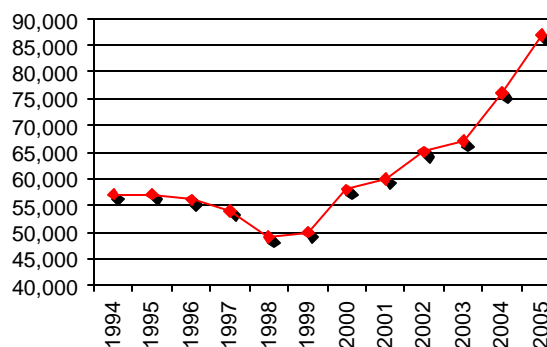
Source: NHTSA Traffic Safety Facts 2005 Data

Fatalities



Source: NHTSA Traffic Safety Facts 2005 Data

Injuries



Source: NHTSA Traffic Safety Facts 2005 Data

As demonstrated in the graphs above, motorcycle fatalities and injuries have experienced a dramatic increase from 1998 – 2005. As of 2005, an estimated 132,000 motorcyclists have died in traffic crashes since the enactment of the Highway Safety Act of 1966.

Motorcycles made up more than 2 percent of all registered vehicles in the United States in 2004 and accounted for only 0.3 percent of all vehicle miles traveled.

Per vehicle mile traveled in 2004, motorcyclists were about 34 times more likely than passenger car occupants to die in a motor vehicle traffic crash and 6 times more likely to be injured.

Occupant Fatality Rates by Vehicle Type, 1993 and 2004

Fatality Rates	Motorcycles	Passenger Cars	Light Trucks
1994			
Per 100,000 Register Vehicles	61.76	18.03	14.97
Per 100 Million Vehicle Miles Traveled	22.66	1.51	1.25
2004			
Per 100,000 Register Vehicles	69.68	14.4	14.09
Per 100 Million Vehicle Miles Traveled	40.09	1.18	1.16
Percent Change, 1994-2004			
Per 100,000 Register Vehicles	12.82	-20.14	-5.86
Per 100 Million Vehicle Miles Traveled	76.94	-21.59	-7.57

Source: NHTSA Traffic Safety Facts 2005 Data

Per registered vehicle, the fatality rate for motorcyclists in 2004 was 4.8 times the fatality rate for passenger car occupants. In 2005, motorcyclists accounted for 10 percent of total traffic fatalities, 12 percent of all occupant fatalities, and 3 percent of all occupants injured.

Motorcycle Involvement in Crashes

In 2005, 2,374 (50%) of all motorcycles involved in fatal crashes collided with another motor vehicle in transport. In two-vehicle crashes, 78 percent of the motorcycles involved were impacted in the front and 6 percent were struck in the rear.

Motorcycles are more likely to be involved in a fatal collision with a fixed object than any other vehicle. In 2005, 26 percent of the motorcycles involved in fatal crashes collided with fixed objects, compared to 17 percent for passenger cars, 12 percent for light trucks, and 3 percent for large trucks.

In 2005, there were 2,128 two-vehicle fatal crashes involving a motorcycle and another vehicle. In 38 percent (819) of these crashes the other vehicle was turning left while the motorcycle was going straight, passing, or overtaking the vehicle. Both vehicles were going straight in 593 (28%) crashes.

In 2005, 34 percent of all motorcyclists involved in fatal crashes were speeding, compared to 26 percent for passenger car drivers, 25 percent for light trucks, and 2 percent for large trucks.

Motorcycle Fatalities by Age Group, 1994 – 2005, Number

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Under 40	1,778	1,680	1,520	1,416	1,533	1,510	1,714	1,934	1,824	2,018	2,160	2,409
Over 40	541	547	641	699	760	973	1,178	1,261	1,444	1,694	1,847	2,143

Source: NHTSA and NCSA, Recent Trends in Fatal Motorcycle Crashes, 2001 and 2003

Motorcycle Fatalities by Age Group, 1994 – 2005, Percent

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Under 40	76%	75%	70%	67%	67%	61%	60%	60%	56%	54%	54%	53%
Over 40	23%	25%	30%	33%	33%	39%	41%	39%	44%	46%	46%	47%

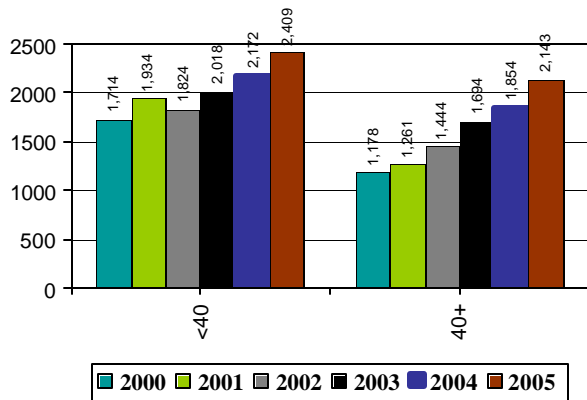
Source: NHTSA and NCSA, Recent Trends in Fatal Motorcycle Crashes, 2001 and 2003

Motorcycle Rider Fatalities by Age Group, 1995 and 2005

Year	Age Group				Total
	<30	30-39	40+	Unknown	
1995	1,104	576	547	0	2,227
2005	1,438	971	2,143	1	4,553

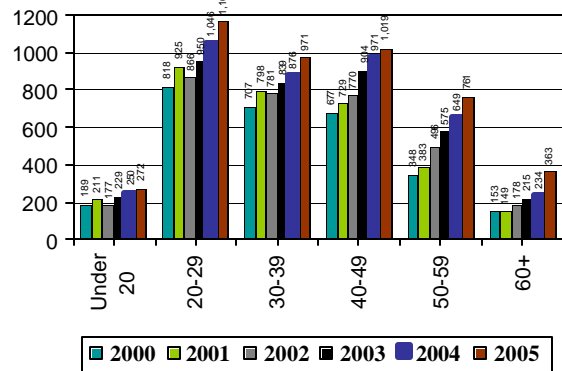
Source: NHTSA Traffic Safety Facts 2005 Data

2000 – 2005 Motorcycle Fatalities Comparison of Ages Under and Over 40



Source: FARS

2000 – 2005 Motorcycle Fatalities by Age Group



Source: NCSA, FARS 1995-2003 / FARS 2004-2005

As demonstrated in the graphs above, motorcycle fatalities have experienced a dramatic increase from 2000 – 2005 for all age groups. The number of motorcycle rider fatalities in the age group of 40-49 has steadily increased, each year from 677 in 2000 to 1,019 in 2005, an increase of 50 percent. The number of motorcycle rider fatalities in the age group of 50-59 has steadily increased, each year from 348 in 2000 to 761 in 2005, an increase of 118%. In all the years (2000-2005) the largest number of motorcycle fatalities occurred in the 20-29 age group.

Motorcycle Rider Fatalities by Engine Size, 1995 and 2005

Year	Engine Size				Total
	Up to 500	501-1,000	1,001-1,500	Other/Unknown	
1995	310	1,009	666	242	2,227
2005	255	1,902	1,857	539	4,553

Source: NHTSA Traffic Safety Facts 2005 Data

The overall increase in motorcycle rider fatalities in recent years has been due to a considerable increase in motorcycle rider fatalities within the 1,001-1,500 cc engine size group. The number of motorcycle rider fatalities within the 1,001-1,500 cc engine group increased from 666 in 1995 to 1,857 in 2005, an increase of 179 percent.

Increases in motorcycle rider fatalities were also seen in the 501-1,000 cc engine groups, where the largest number of motorcycle rider fatalities has occurred. However, the fatality count among motorcycle riders in the 1,001-1,500 cc group is quickly approaching the 501-1,000 cc level. Motorcycle rider fatalities declined in the 500 cc and below engine group by 18 percent from 1995 to 2005.

Licensing

In 2005, 21 percent of the motorcycle operators involved in fatal crashes were operating the vehicle without a valid license, while only 12 percent of passenger vehicle drivers in fatal crashes did not have a valid license.

Motorcycle operators involved in fatal traffic crashes were 1.4 times more likely than passenger vehicle drivers to have a previous license suspension or revocation (17% and 12%, respectively).

In 2005, 3.9 percent of motorcycle operators involved in fatal crashes had at least one previous conviction for driving while intoxicated on their driver records, compared to 3.1 percent of passenger vehicle drivers.

“Forty-one percent of the motorcycle operators who died in single-vehicle crashes in 2005 had BAC levels of .08 g/dL or higher.” “In fatal crashes in 2005 a higher percentage of motorcycle operators had BAC levels of .08 g/dL or higher than any other type of motor vehicle driver.”

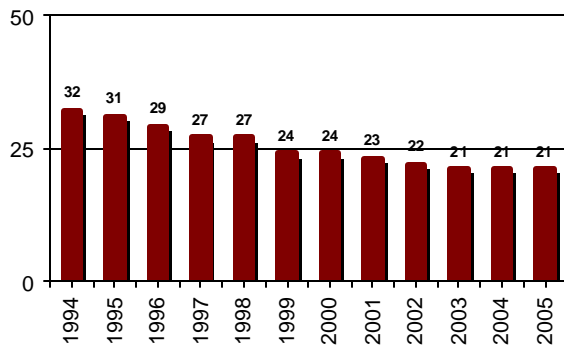
Motorcycle operators killed in traffic crashes at night were 3 times more likely to have BAC levels of .08 g/dL or higher than those killed during the day (43% and 13%, respectively).

Improperly Licensed Riders Involved in Fatal Crashes, 1994 - 2005

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number	743	701	631	578	638	609	702	764	737	809	858	972
Percent	32%	31%	29%	27%	27%	24%	24%	23%	22%	21%	21%	21%

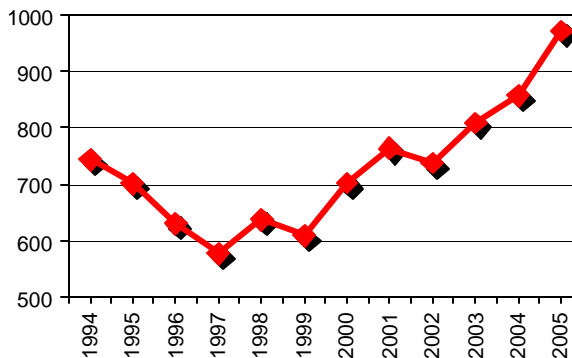
Source: FARS

Percent of Unlicensed Riders Involved in Fatal Crashes



Source: FARS

Improperly Licensed Riders Involved in Fatal Crashes 1994-2005



Source: FARS

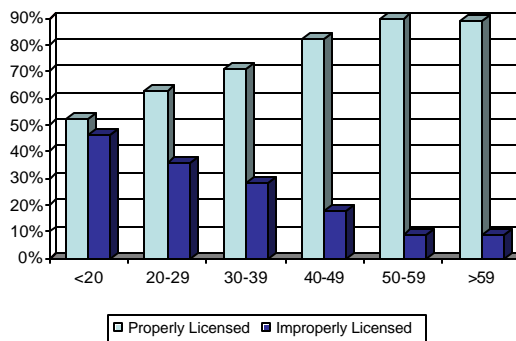
As demonstrated in the graphs above, the number of unlicensed riders involved in fatal crashes has steadily increased since 2002. In 2002 there were 737 unlicensed riders involved in fatal crashes compared to 972 in 2005, an increase of 32%. Although the number of unlicensed riders has increased, the percentage of unlicensed riders has decreased slightly since 1994.

Improperly Licensed Riders Involved in Fatal Crashes By Age Group, 2004

License Status	Age Group					
	<20	20-29	30-39	40-49	50-59	>59
Properly Licensed	52%	63%	71%	82%	90%	89%
Improperly Licensed	46%	36%	28%	18%	9%	9%

Source: NHTSA's Recent Trends in Fatal Motorcycle Crashes: An Update

Percent of Motorcycle Operator Fatalities in 2004 by Age Group and License Status



Among motorcycle operators fatally injured in crashes in 2004 a higher percentage of improperly licensed operators were in the under 20 age group. The percentage of properly licensed drivers was higher in all other age groups with the highest being in the above 50 age group category. The proportion of properly licensed operators increases with the increase in age group of the operator.

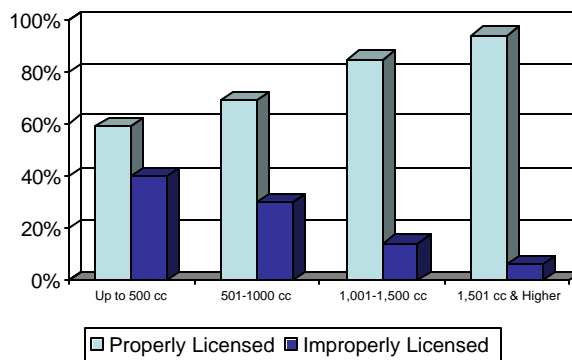
Improperly Licensed Riders Involved in Fatal Crashes by Engine Size cc, 2004

License Status	Engine Size			
	Up to 500 cc	501-1,000 cc	1,001-1,500 cc	1,501 cc & Higher
Properly Licensed	59%	69%	85%	94%
Improperly Licensed	40%	30%	14%	6%

Source: NHTSA's Recent Trends in Fatal Motorcycle Crashes: An Update

Motorcycle Operator Fatalities in 2004 by Engine Size cc and License Status

Among motorcycle operators fatally injured in crashes in 2004 a higher proportion of improperly licensed operators were in the 500 cc and below engine category. Increases in properly licensed motorcycle operators were seen with the increase in motorcycle engine size.



Conclusions

Motorcycle fatalities increased each year between 1997 (2,216) and 2005 (4,553) with a total increase of 2,437 or 115 percent. This presents a special concern and unique challenge for the driver license, motorcycle safety, rider education and law enforcement communities. As early as 1968, researchers identified motorcyclist testing and licensing as the most promising means of achieving long-term, cost effective crash reduction. This remains the case today.

The increase in fatalities between 1997 and 2005 of 115 percent clearly indicates an increase of epidemic proportions which should be addressed by the driver license, motorcycle safety, rider education and law enforcement communities. While motorcyclists represent a small portion of registered vehicles and licensed drivers/riders, driver license agencies and others must take appropriate actions to reduce motorcycle crashes and fatalities.

Supporting Materials

For over 20 years the Motorcycle Operator Licensing System (MOLS) has been the guide for improved operator licensing systems in the United States, Canada and several other countries. The original manual was published in 1974 and subsequently revised in 1981, 1989 and again in 1997.

The *Integrating Motorcycle Rider Education and Licensing (IMREL)* manual, created in 1993, describes recommendations for integrating motorcycle rider education and licensing, the rationale for such a system, the liabilities of an integrated system, and the responsibilities for such a system.

Both of these documents contain important licensing guidelines for State Motor Vehicle Administrators.

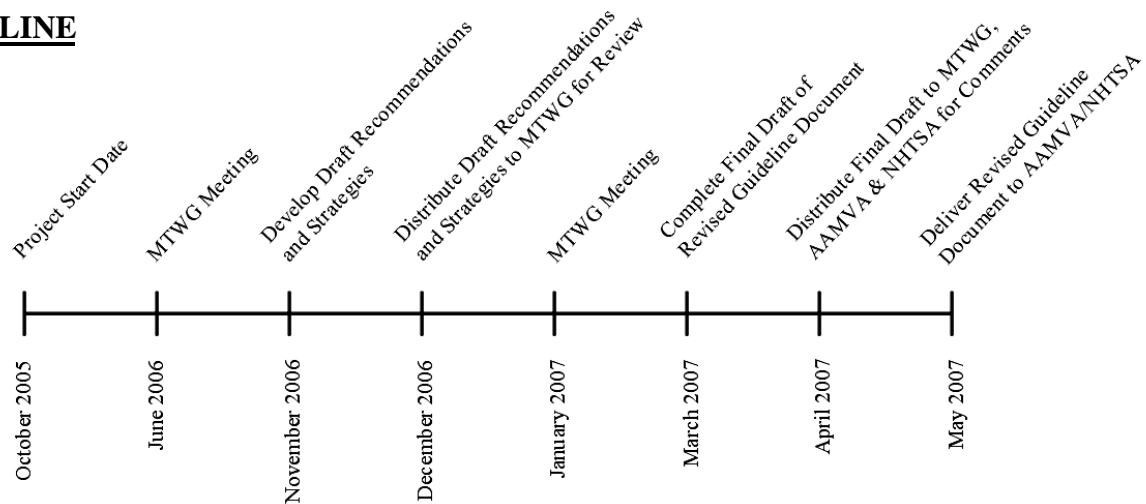
SPECIFIC TASKS

1. Review the current NHTSA Motorcycle Operator Licensing System (MOLS) guideline document for revisions.
2. Review the current NHTSA Integrating Motorcycle Rider Education and Licensing guideline document for revisions.
3. Determine approach for merging the IMREL and MOLS guideline documents for the purpose of providing a single resource document for motorcycle safety and licensing.
4. Identify strategies for jurisdictions to work cooperatively with law enforcement agencies on the reduction of motorcycle crashes and fatalities.
5. Identify strategies for jurisdictions to work cooperatively with the courts system and to establish judicial outreach programs on the reduction of motorcycle crashes and fatalities.
6. Identify strategies for jurisdictions to work cooperatively with their rider education programs and to develop effective recommendations for integrating rider education and rider licensing.
7. Identify strategies for jurisdictions to work cooperatively with local motorcycle dealers and riders clubs on the reduction of motorcycle crashes and fatalities.
8. Identify strategies for all jurisdictional government agencies to work cooperatively on the reduction of motorcycle crashes and fatalities.
9. Recommend to states the establishment or improvement of a special *task force* on motorcycle safety, licensing and enforcement as part of their *Governor's Highway Safety Plan*.
10. Identify strategies for jurisdictions to work cooperatively with federal and national organizations on the reduction of motorcycle crashes and fatalities.
11. Identify strategies to reduce the unlicensed rider population.
12. Identify strategies to assist the re-entry rider (have been licensed but have not been engaged in riding for many years).
13. Revise and develop licensing guidelines to assist jurisdictions on improving their rider licensing programs.
14. Revise and develop Graduated Rider Licensing (GDL) recommendations for jurisdictions to consider for improving their rider licensing programs.

DELIVERABLES

1. Revised guidelines for a motorcycle operator licensing system and guidelines for integrating motorcycle rider education and licensing.
2. Revised guidelines for a motorcycle rider licensing system.
3. Document strategies to assist jurisdictions on the reduction of motorcycle crashes and fatalities.
4. A recommendation for states to establish or improve a special *task force* on motorcycle safety, licensing and enforcement as a part of their *Governor's Highway Safety Plan*.
5. Upon completion of the revised document, promote the guidelines to all applicable parties.

TIMELINE



Guiding Principles for the Revised Document

The revised MOLS and IMREL Guideline Documents must:

- Provide recommendations for the improvement of motorcycle safety, licensing and enforcement.
- Be flexible in its recommendations for jurisdictions to implement.
- Be feasible and practical for jurisdictions to implement.
- Be feasible for the general rider population. Recommendations must not exacerbate the unlicensed rider crises.
- Operate within legal barriers as they relate to rider education, testing and enforcement.
- Be practical and feasible for the general public as the end user.

SPECIFIC EXCLUSIONS

The revised MOLS and IMREL Guideline Documents will not address or include the following:

- Recommendations for rider education practices or curricula.
- Specific recommendations for motorcycle knowledge testing.
- Specific recommendations for motorcycle skills or on-road testing.

ASSUMPTIONS

- The guidelines provided will offer jurisdictions base-line recommendations and strategies for the reduction of motorcycle crashes and fatalities.
- Jurisdictions must recognize the current motorcycle crash and fatality epidemic to work cooperatively to improve motorcycle safety and licensing practices.
- It may not be feasible for jurisdictions to implement all of the recommendations and strategies provided in the guideline document at one time.
- AAMVA and NHTSA will need to establish an on-going maintenance system to ensure regular updates of the guidelines and information provided in the MOLS and IMREL Guideline Documents.
- Jurisdictions must begin to work cooperatively at the national level to reduce motorcycle crashes and fatalities.

CONSTRAINTS

- Federal funding may not be available to assist jurisdictions to implement the recommendations and strategies provided in the guideline document.
- A reduction in motorcycle crashes and fatalities at the national level can only be achieved when all jurisdictions implement the recommendations and strategies provided in the guideline document and they begin to work cooperatively at the national level on the motorcycle crash and fatality epidemic.

PITFALLS

Jurisdictions will not be required to implement the recommendations provided in the guideline document and will only do so voluntarily. AAMVA will need to promote and encourage jurisdictions to incorporate the recommendations provided in the MTWG guideline document.

AAMVA COMMITTEE RESPONSIBLE

The AAMVA Driver Committee will oversee the efforts of the Motorcycle Technical Working Group.

PROJECT ORGANIZATION AND STAFFING APPROACH

The AAMVA Programs Division is responsible for providing input and guidance for policies and procedural considerations relative to this effort. The Programs Division is responsible for development of the design and documentation. The Programs Division will be responsible for the formation and support activities of the Motorcycle Technical Working Group (MTWG).

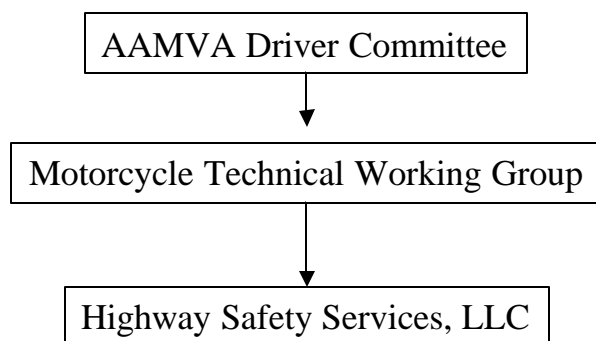
- Manager: Kevin Lewis will assign staff in this area.

The Law Enforcement department is responsible for providing guidance on Law Enforcement issues.

- Manager: Selden Fritschner will assign staff in this area.

Highway Safety Services, LLC is responsible for providing consultation services and staff support in of this effort.

- Manager: Brett Robinson will provide the support.



WORKING GROUP STRUCTURE

The Working Group shall consist of the following disciplines.

- State Driver License Agencies
- State Rider Education Programs
- State Highway Safety Offices
- State Law Enforcement Agencies
- Motorcycle Safety Advocates
- Federal Agencies
- AAMVA

WORKING GROUP MEMBERS

Barb Tanuis (CT)	State Driver License Representative
Louie Kyler (FL)	State Driver License Representative
Insp. Rosendo Martinez (TX)	State Driver License Representative
Syndi Worrel (ND)	State Driver License Representative
Steve Garets (OR)	State Rider Education Representative
Carl Spurgeon (WA)	State Rider Education Representative
Andy Krajewski (MD)	State Rider Education Representative
Lorrie J. Laing (OH)	State Highway Safety Office
Lieutenant Mike Turcott	Washington State Patrol
Ray Ochs	Motorcycle Safety Foundation (MSF)
Ken Kiphart	State Motorcycle Safety Administrators (SMSA)
Edward Moreland	American Motorcyclist Association (AMA)
Jeff Hennie	Motorcycle Riders Foundation (MRF)
Denise Hanchulak	AAMVA Staff
Kevin Lewis	AAMVA Staff
Michael Jordan	NHTSA Staff
Brett Robinson	Highway Safety Services, LLC (Consultant)

MTWG MEETINGS

The Working Group shall meet twice during the project. AAMVA will establish the dates and locations. Conference calls will be held as needed.

APPROACH

- The AAMVA Motorcycle Technical Working Group (MTWG) will oversee this project. The MTWG consists of the disciplines described above.
- The chair of the AAMVA Driver Committee will appoint the chair person of the MTWG and four driver license representatives.
- External reviewers will be established through representation of the national organizations represented on the MTWG.
- All external comments will be reviewed by the MTWG.
- All deliverables will receive an internal review by AAMVA.
- Issues will be reviewed and resolved by the chair of the MTWG in consultation with AAMVA Driver Committee Chair, AAMVA staff and NHTSA staff.

CONTACTS

For additional information contact Denise Hanchulak of the AAMVA Programs Division.

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