

---

# Motorcycling and Alcohol

Do They Go Hand-In-Hand?

Michael Manser, Ph.D.

Texas A&M Transportation Institute



---

You're nuts!

They are crazy!

Risk takers/seekers!



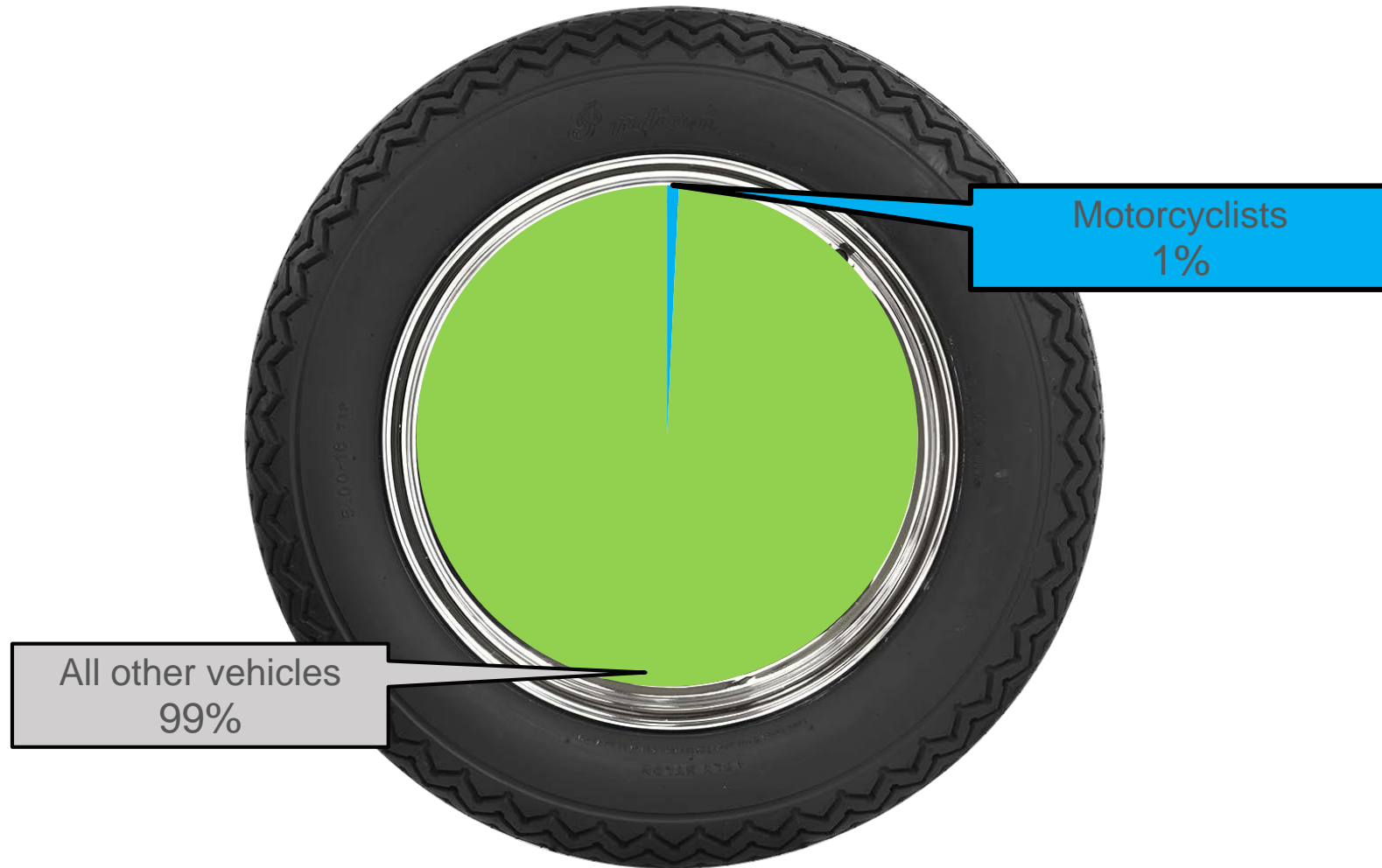
# Motorcycle Crash Statistics – The Vicious Cycle

---



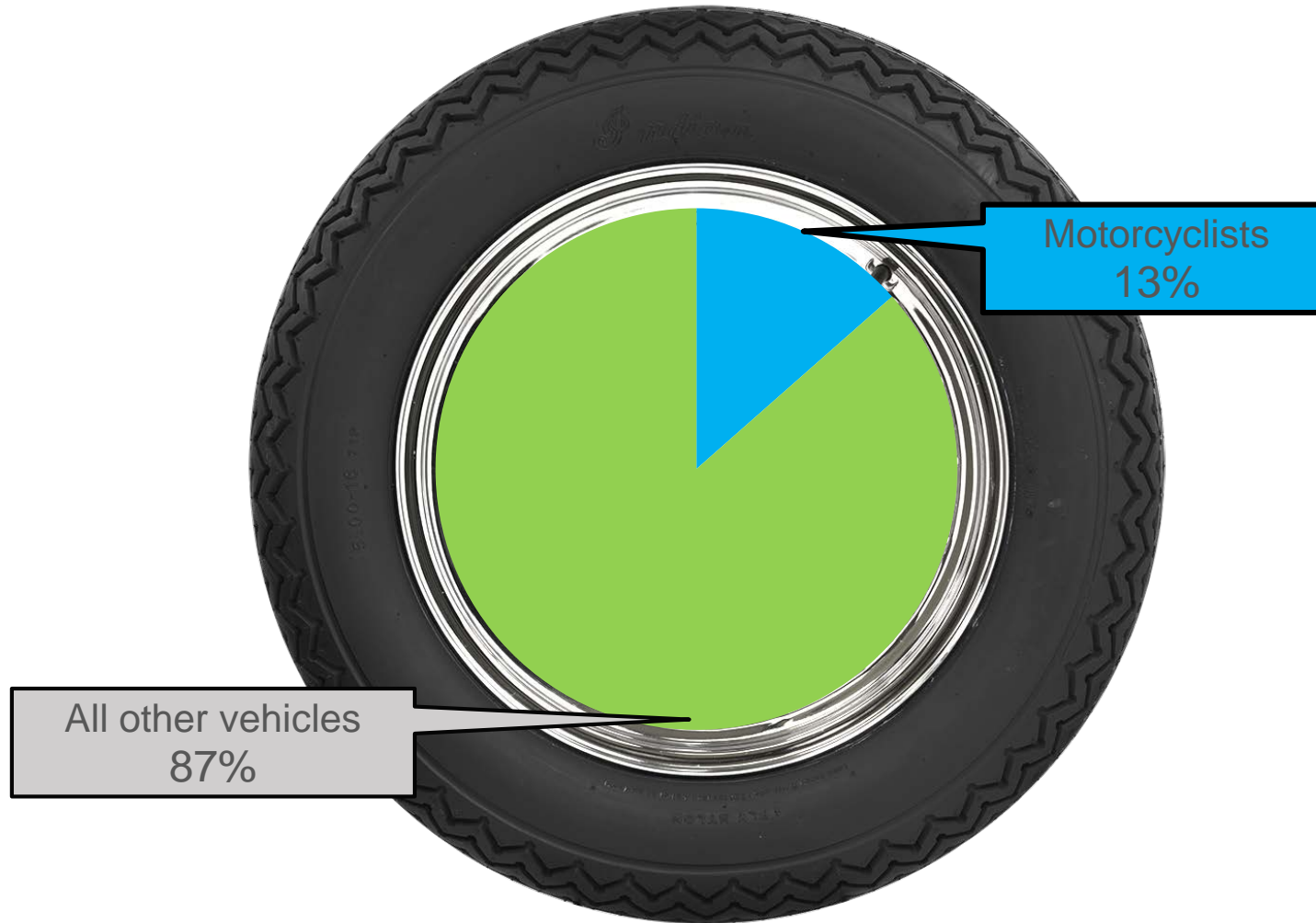
# Vehicle Miles Traveled

---



# Total Fatal Crashes

---



# Misconceptions

---

The weather was bad.

- 95% of those K & A motorcycle crashes have dry roadway surfaces
- 84% of all motorcycle crashes occur in clear weather
- 49% of all motorcycle crashes are single vehicle crashes

I know how to ride a motorcycle.

- Only 50% of motorcyclists involved in a crash had a valid motorcycle license



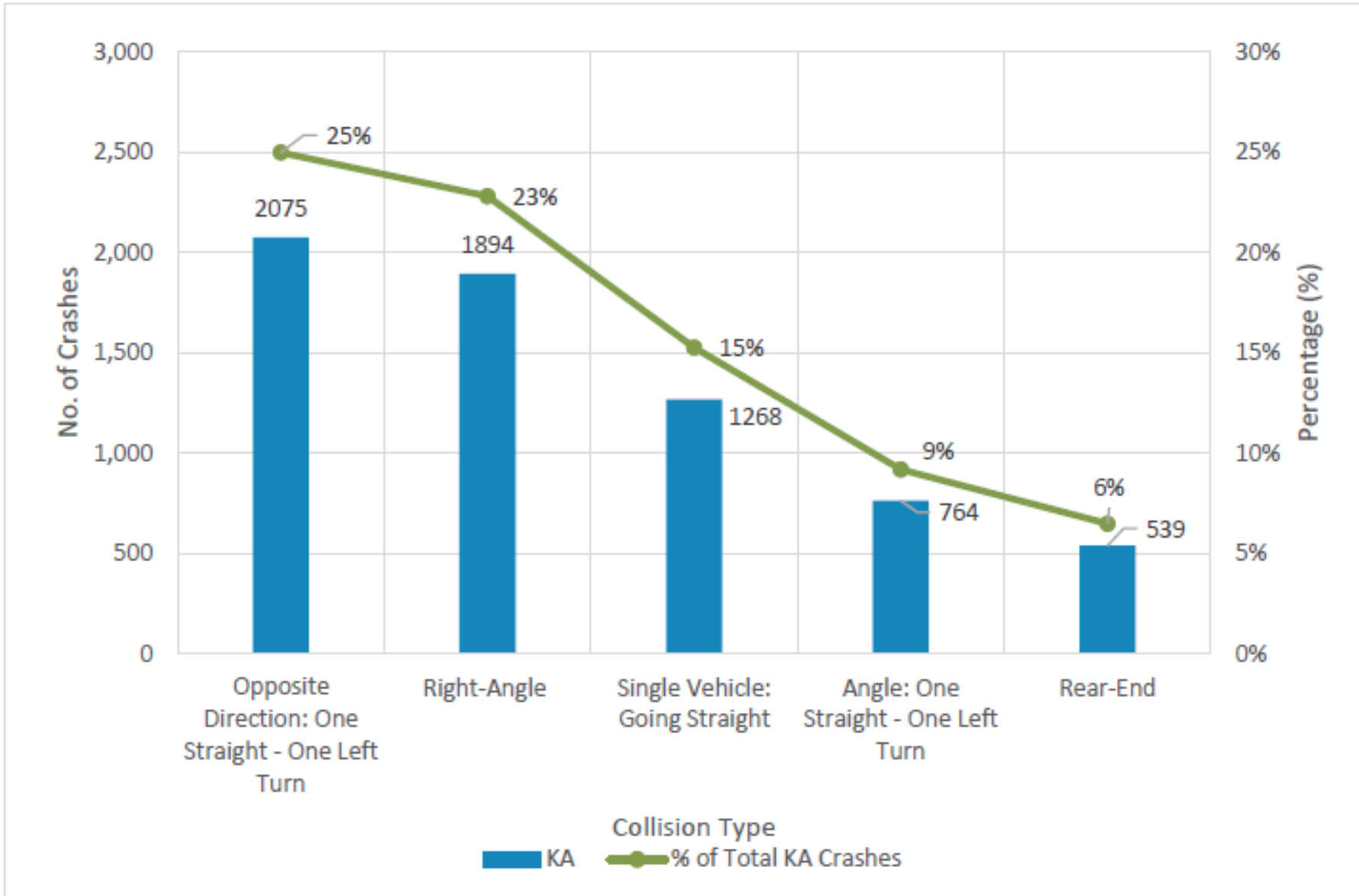


Figure 19: Top manner of collision for multi-vehicle intersection crashes involving motorcycles with K and A severity, 2010–2015.



# Motorcycle vs Motor Vehicle

---

- Motorcyclists are 26x more likely to be involved in a fatal crash versus a non-motorcycle...despite having 1% of the vehicle miles traveled
- 28% of motorcycle crashes are K & A, compared to only 4% for non-motorcycle crashes
- Average BAC for non-motorcycle crashes is 0.17. Rider crash BAC average?





# Alcohol Impairment

---

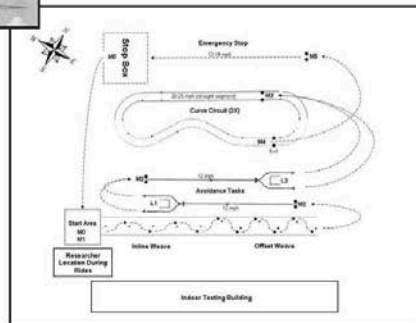
**DUI**

**Non-DUI**



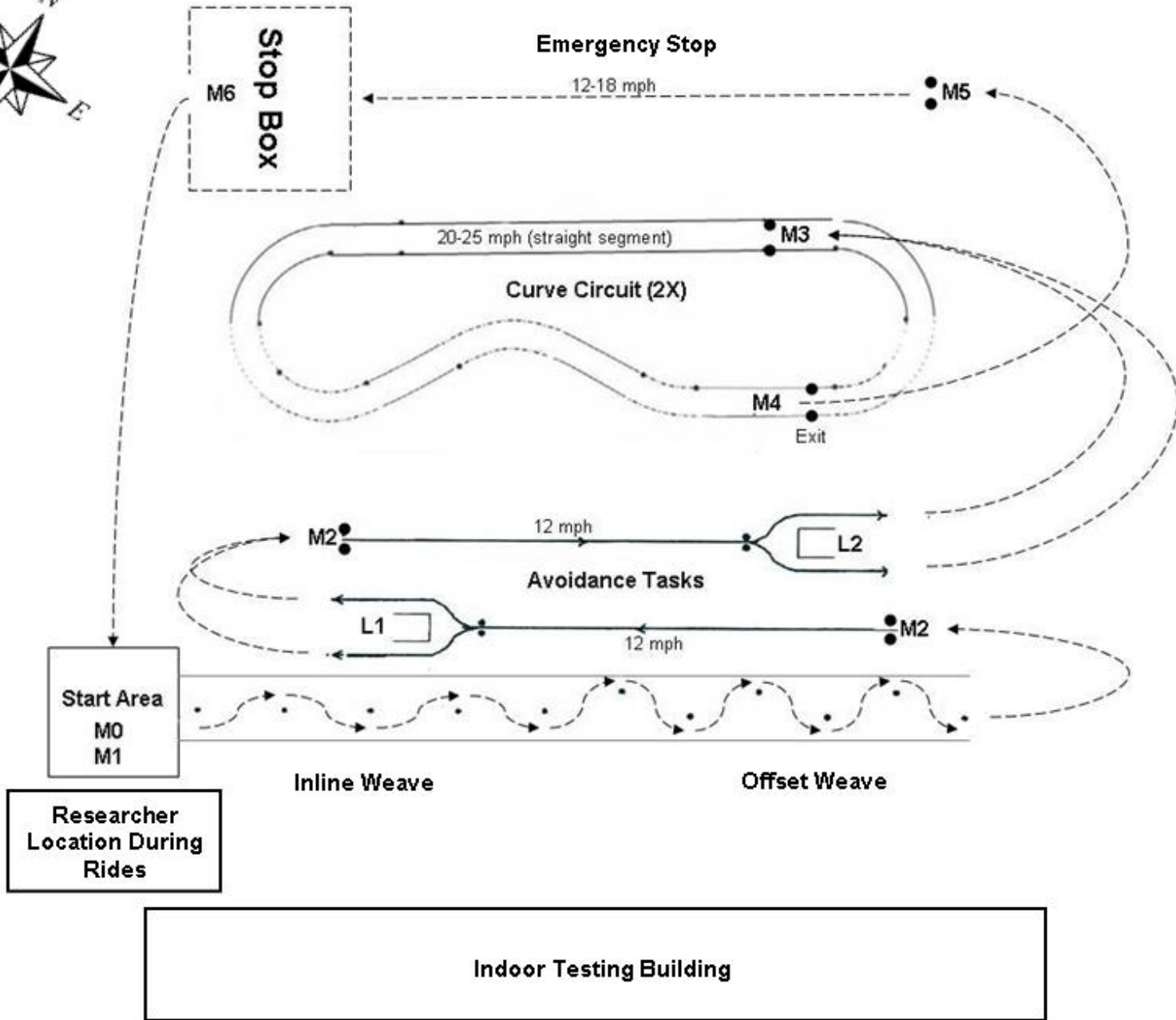
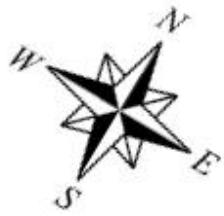
# Effects of Alcohol on Motorcycle Riding Skills

Final Report



What are the effects of alcohol on riding?





# The Motorcycle

---

- 2000 Honda Shadow VT1100
- Fitted with outriggers and sensor equipment for data collection
- Radio controlled kill switch



# Slalom Results

---

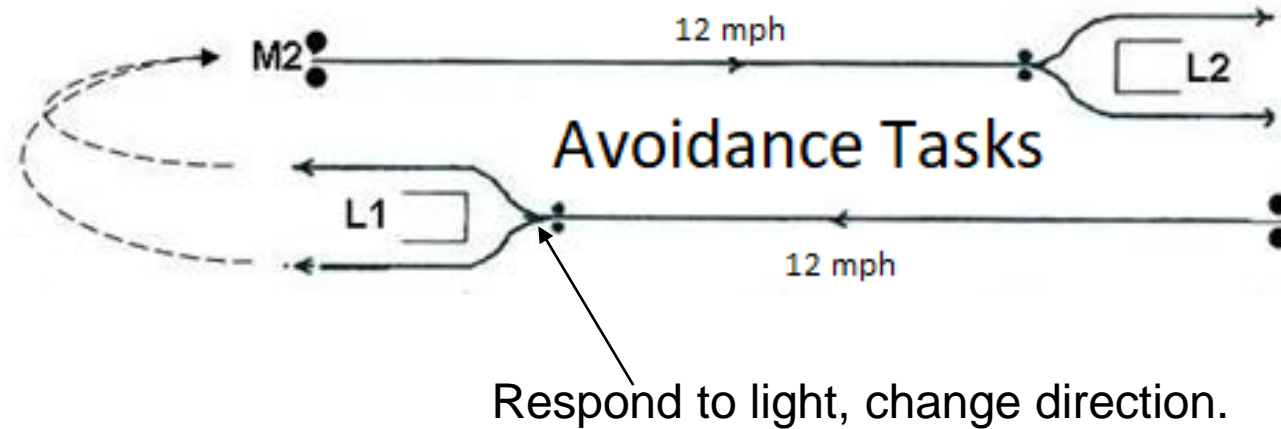


- Riders with 0.08 BAC rode 8cm closer to the pylons compared 0 BAC.
- Riders in the BAC 0.08 condition missed weaving correctly around more pylons (5) in the offset weave task than in the BAC 0.005 (1), the BAC 0.02 (2), and the BAC 0.00 (1) conditions.



# Hazard Avoidance Results

---

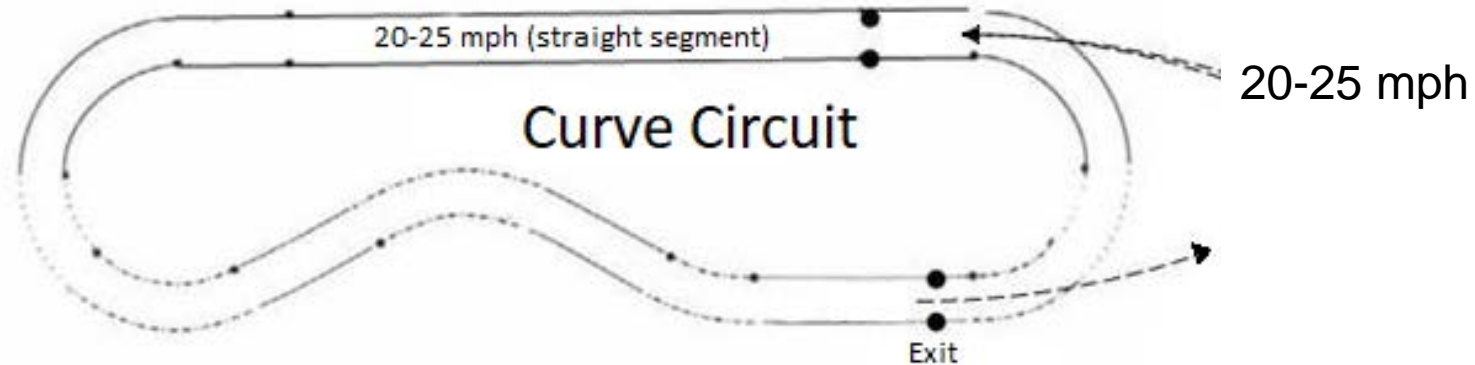


- Riders with tested 0.08 and 0.05 BAC levels responded 50 ms slower than riders with 0.02 and 0.00 levels.
- Riders in the BAC 0.08 condition chose the incorrect direction six times more as compared to BAC 0.05 at one, BAC 0.02 at two, and BAC 0.00 at one.



# Curve Circuit Results

---

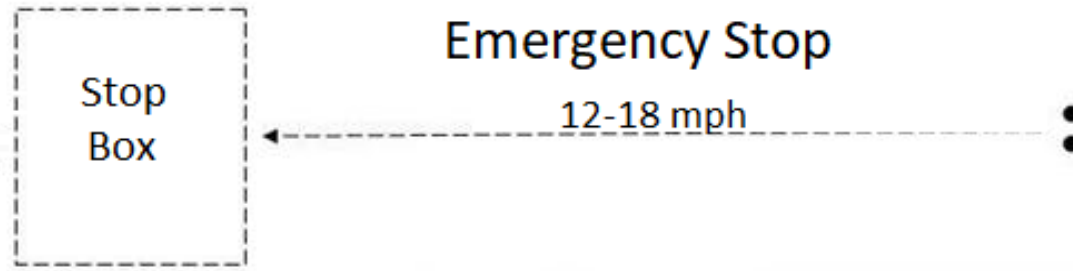


- Participants in all alcohol conditions had faster maximum speeds than riders with no alcohol.
- Riders in the BAC 0.08 condition had one more lane crossing than the BAC 0.00 riders.
- There was a direct relationship between increased BAC levels and increasing variability in speed across the circuit.



# Emergency Stop Results

---



- No significant effect of BAC condition on the reaction time or total stopping distance for the emergency stop task.
- As BAC increases, maximum deceleration rates increase.
- Riders with a 0.08 BAC reached maximum deceleration significantly slower when compared to 0.05 BAC riders.
- Riders in the BAC 0.08 condition had more deviation in motorcycle position than lower BAC conditions.





# Overall Findings & Limitations of Study

---

- Most of the significant effects were evident in the BAC 0.08 condition.
- Many of these same alcohol effects were significant in the lower BAC 0.05 condition.
- Some evidence of significant alcohol effects in the BAC 0.02 condition.



---

Full report can be found at:

<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=934>



**Comprehensive Analysis of Motorcycle Crashes in Texas:  
A Multi-Year Snapshot**

Report Number: 2016-TTI-G-1YG-0029

*Submitted by the*  
**TEXAS A&M TRANSPORTATION INSTITUTE**



September 2016



---

## Motorcycle Crash Statistics

Available on [LookLearnLive.org](http://LookLearnLive.org)



# DUI Findings

---

- 44% of fatal motorcycle crashes were associated with DUI
- Riders involved in a crash with  $>.08$  BAC contributed significantly to motorcycle fatalities
- No correlation found between DUI crashes involving motorcycles and proximity to alcohol outlets



# Time of Day for Non-DUI & DUI Related Crashes

- 88% of DUI K&A between 6pm-3am,
- Peaks 2am-3am
- Only 37% of non-DUI K&A crashes happen during this time.
- Non-DUI peaks 5pm-6pm

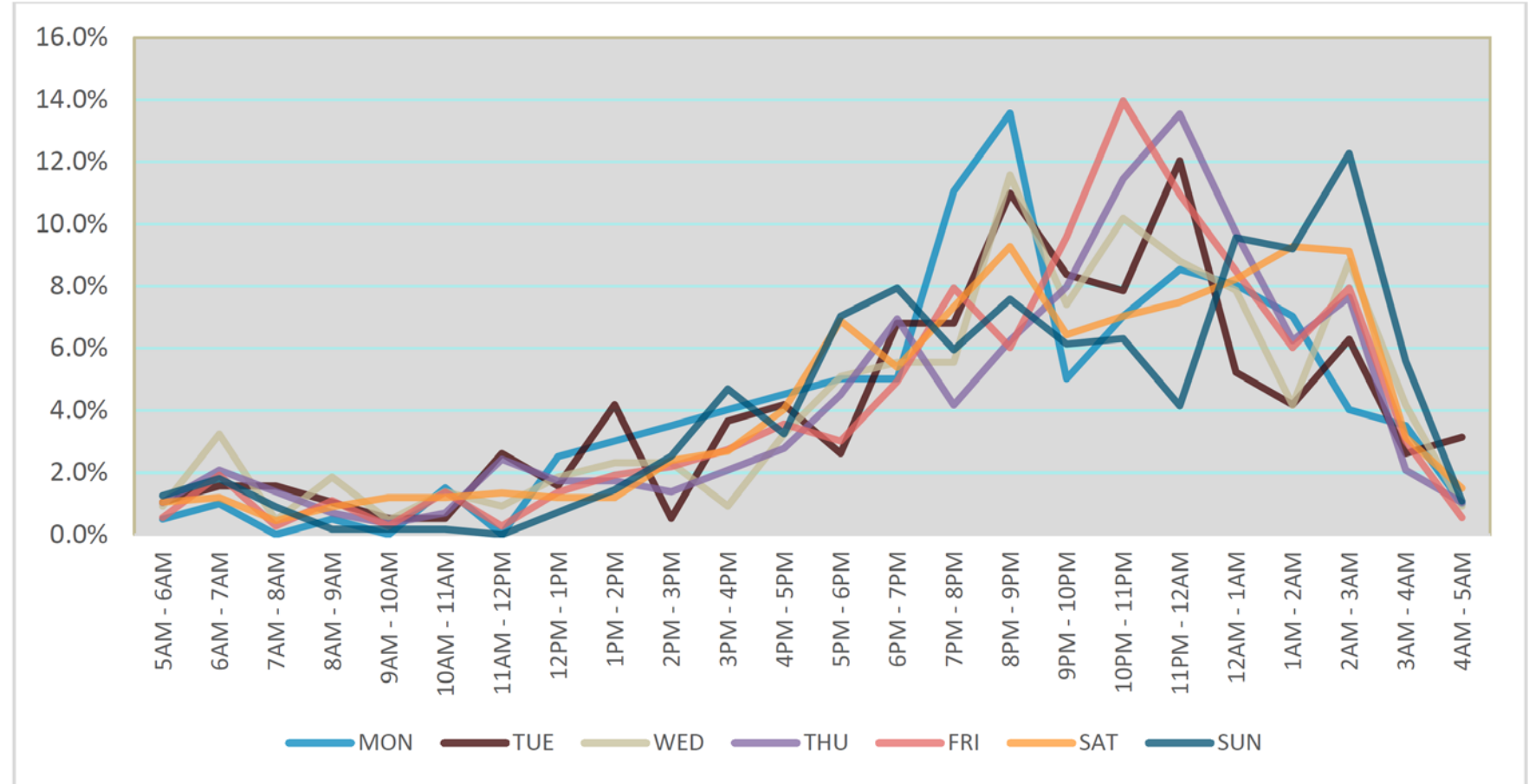


Figure 15: Percentage of DUI K and A motorcycle crashes by day of week and time of day, 2010-2015.



# Contributing Factors for Non-DUI & DUI Related Crashes

Speed or speeding over limit:

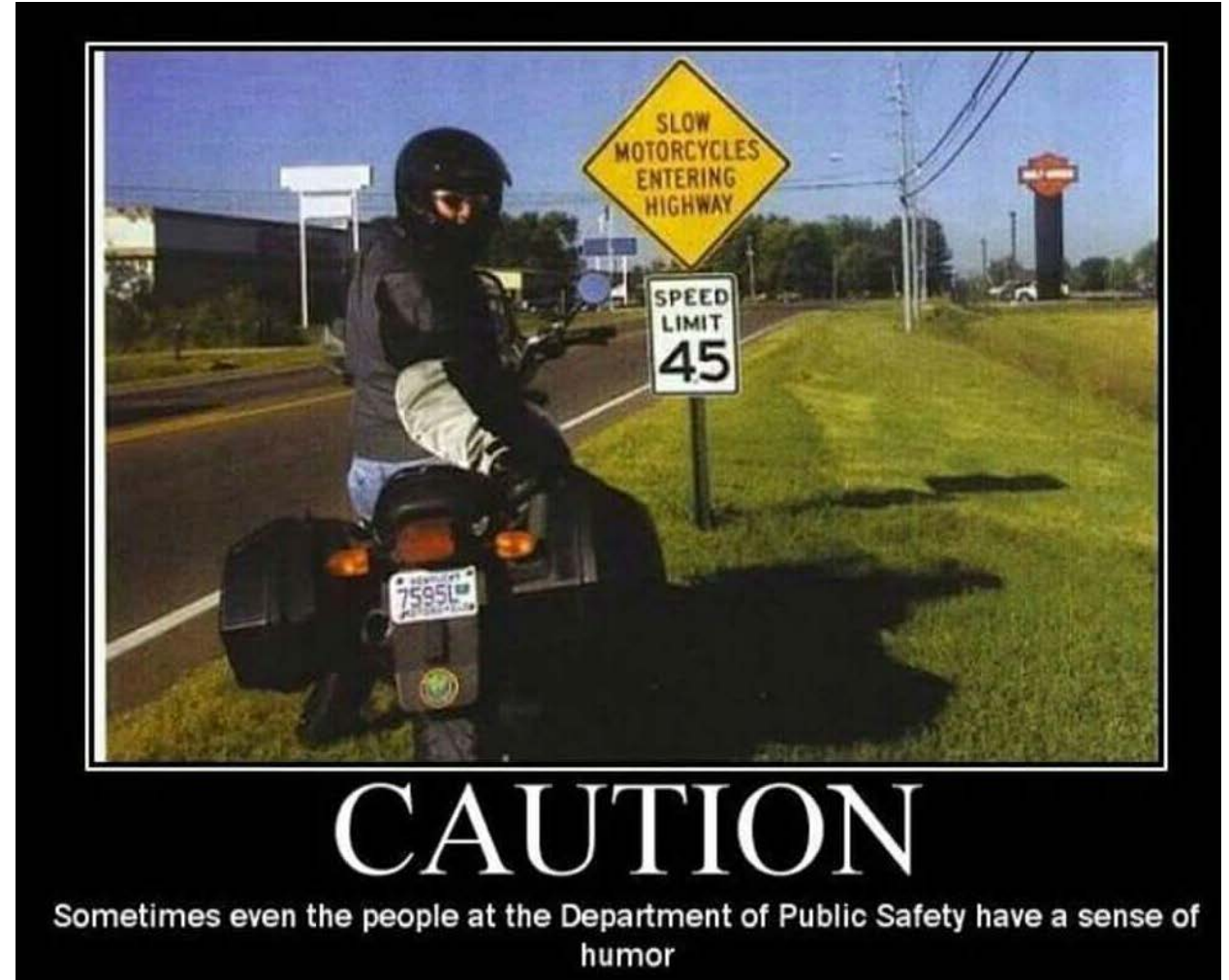
- 27.5% of DUI crashes
- 18.3% of non-DUI crashes

Fleeing or evading police:

- 2.2% of DUI crashes
- 1.6% of non-DUI crashes

Failed to drive in a single lane:

- 10.4% of DUI crashes
- 6.2% of non-DUI crashes



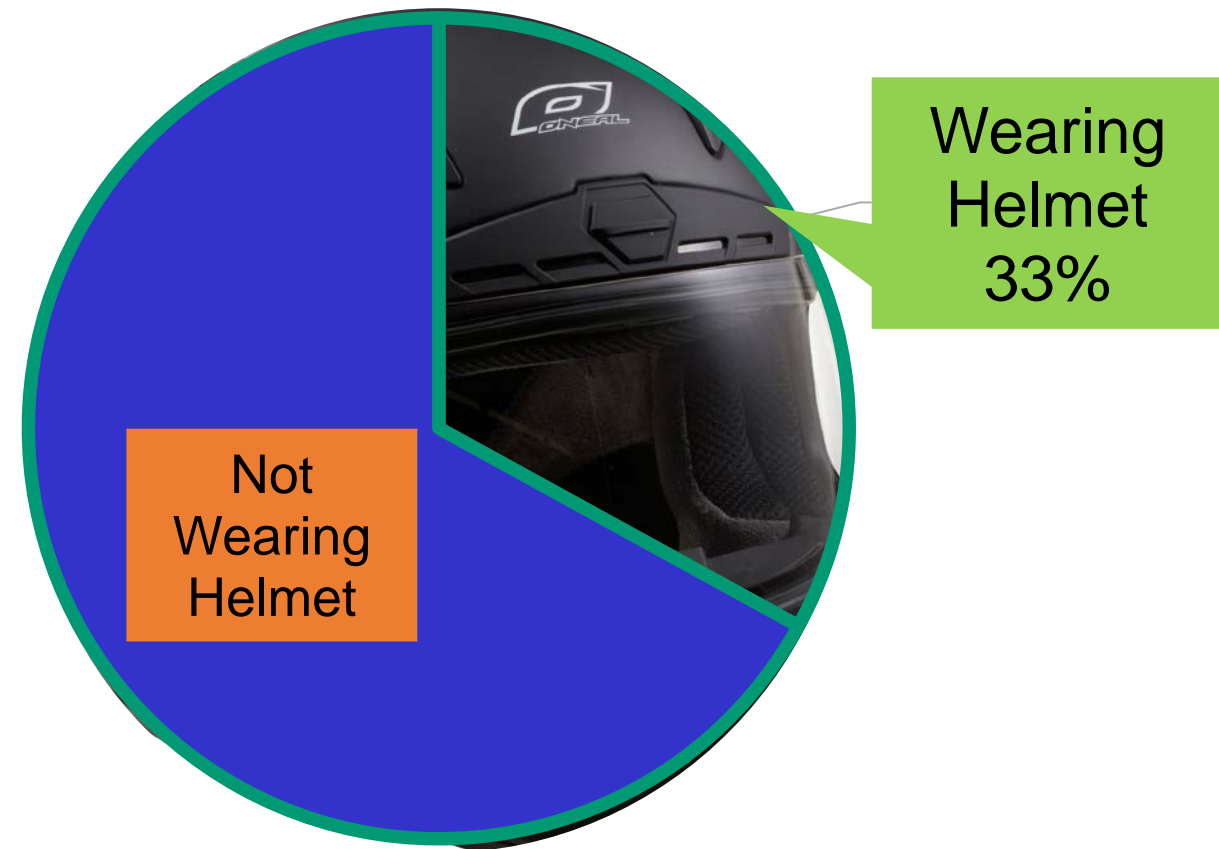
# Comparing Helmet Use for Non-DUI & DUI Related Crashes

---

## Non-DUI Related Crashes



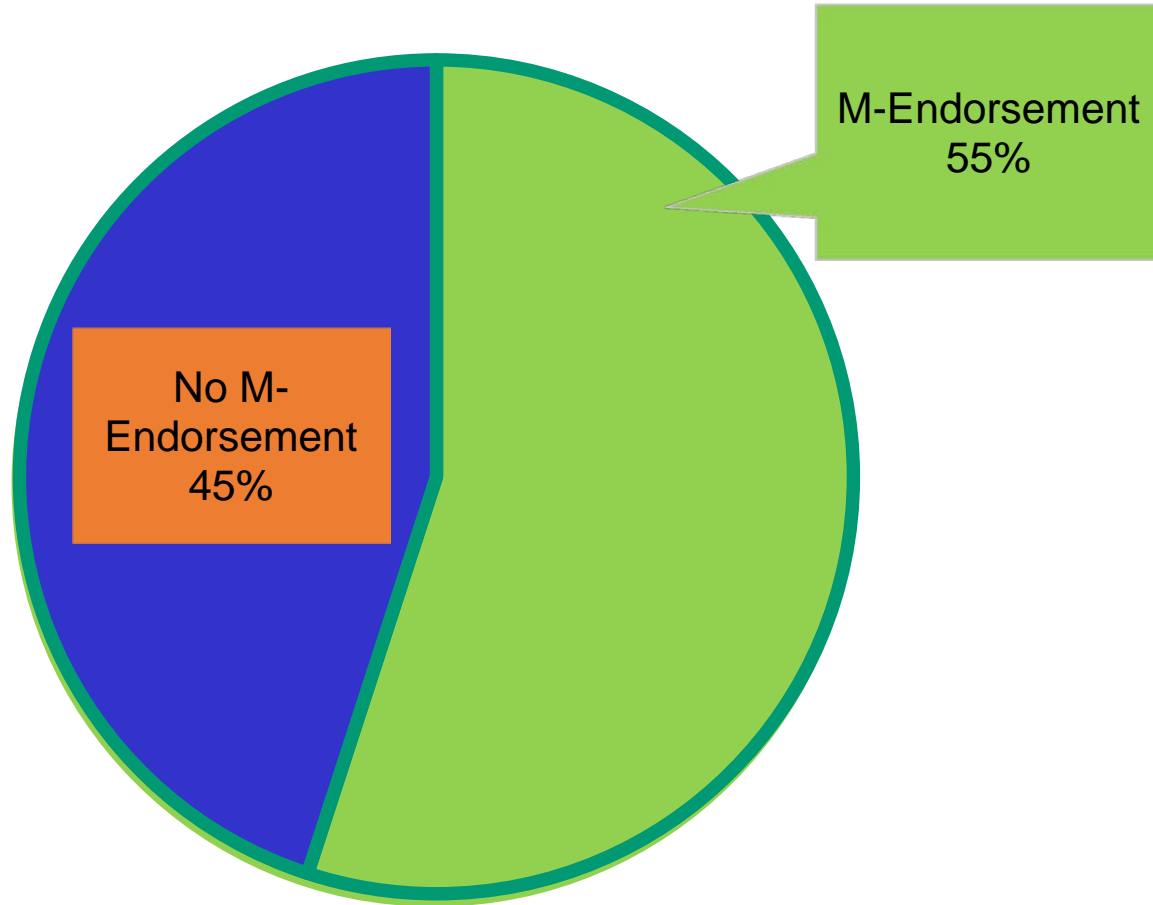
## DUI Related Crashes



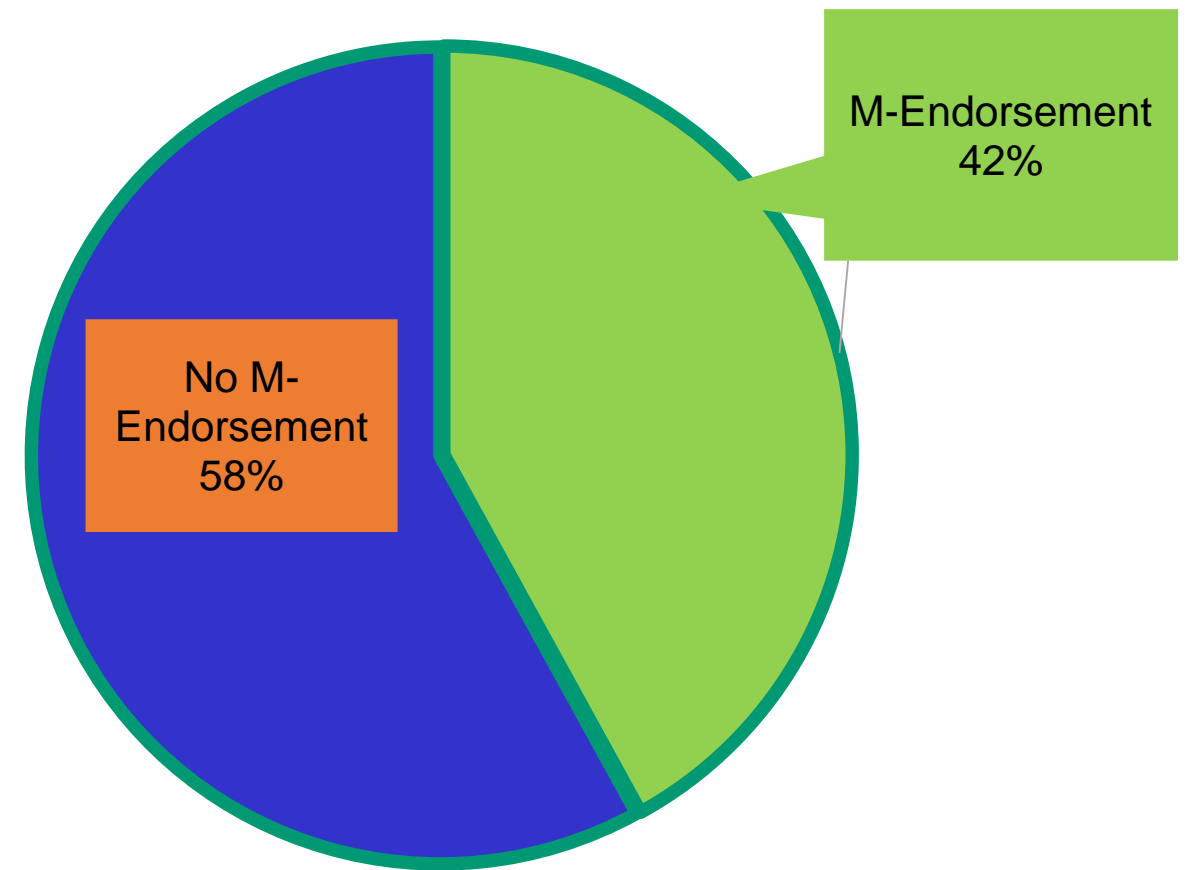
# Comparing Licensure for Non-DUI & DUI Related Crashes

---

## Non-DUI Related Crashes



## DUI Related Crashes





---

# NHTSA IMPAIRED DRIVING SEGMENTATION

MOTORCYCLE OVERVIEW

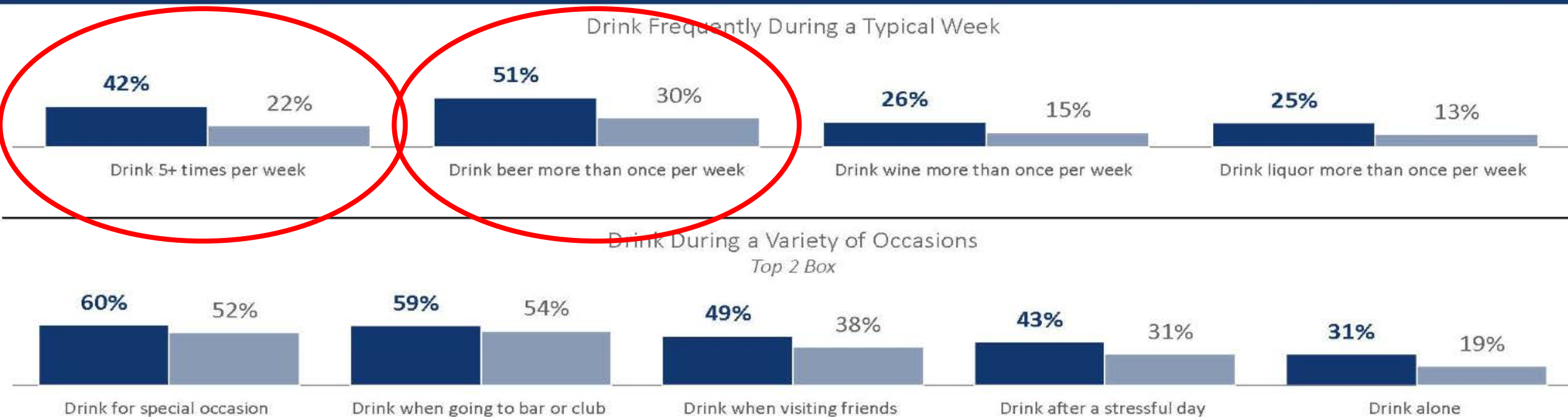
April 25, 2017



## INSIGHT A

# MOTORCYCLE RIDERS ARE FREQUENT DRINKERS

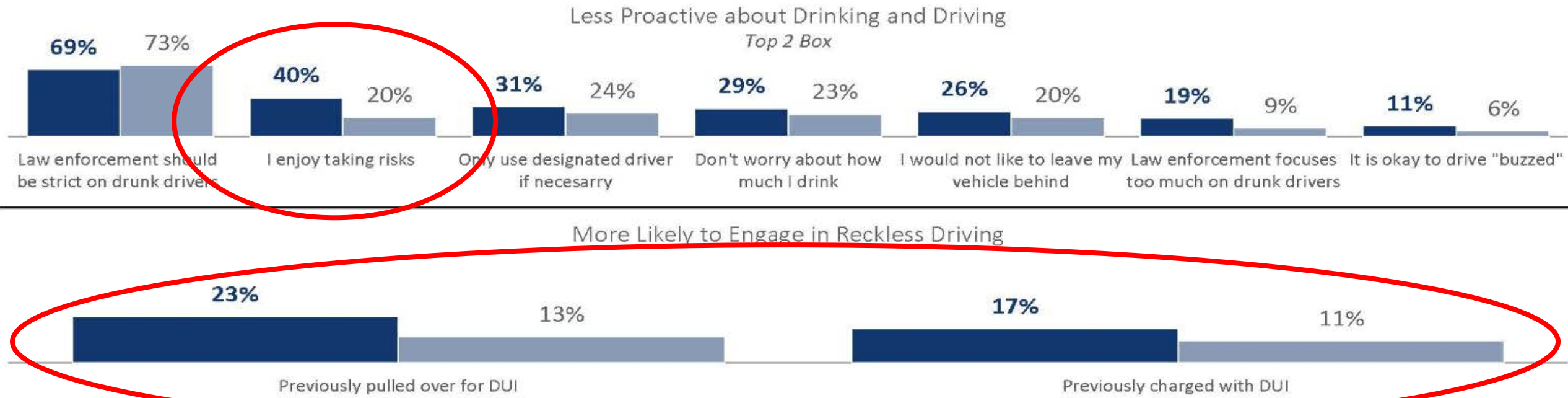
Motorcycle riders typically drink more often than motor vehicle drivers, including a variety of different types of alcohol. They tend to drink during most occasions, particularly special events and while at a bars or clubs.



## INSIGHT C

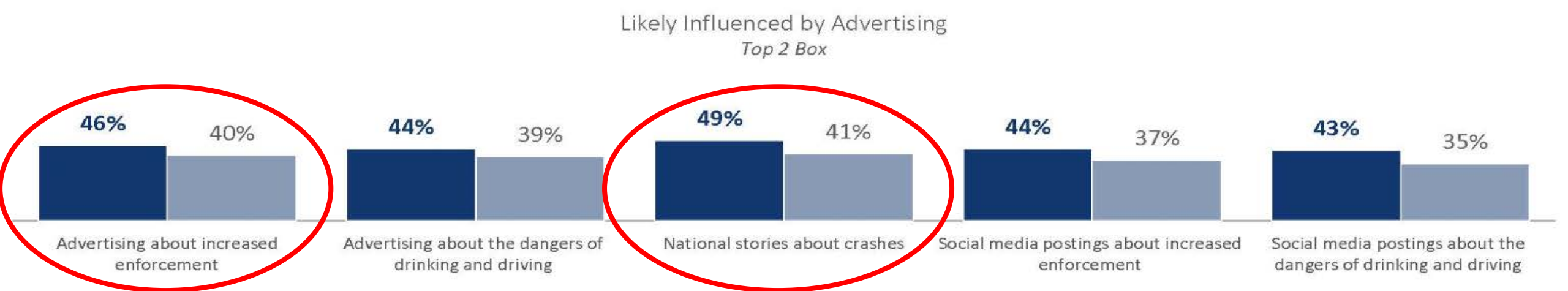
# MOTORCYCLE RIDERS ARE NOT PROACTIVE ABOUT DUI

Motorcycle riders are less proactive about driving after drinking, with more likely to engage in risky drinking and driving behaviors. Motorcycle riders have faced consequences of these choices, with more having been previously pulled over or arrested by law enforcement for driving under the influence.



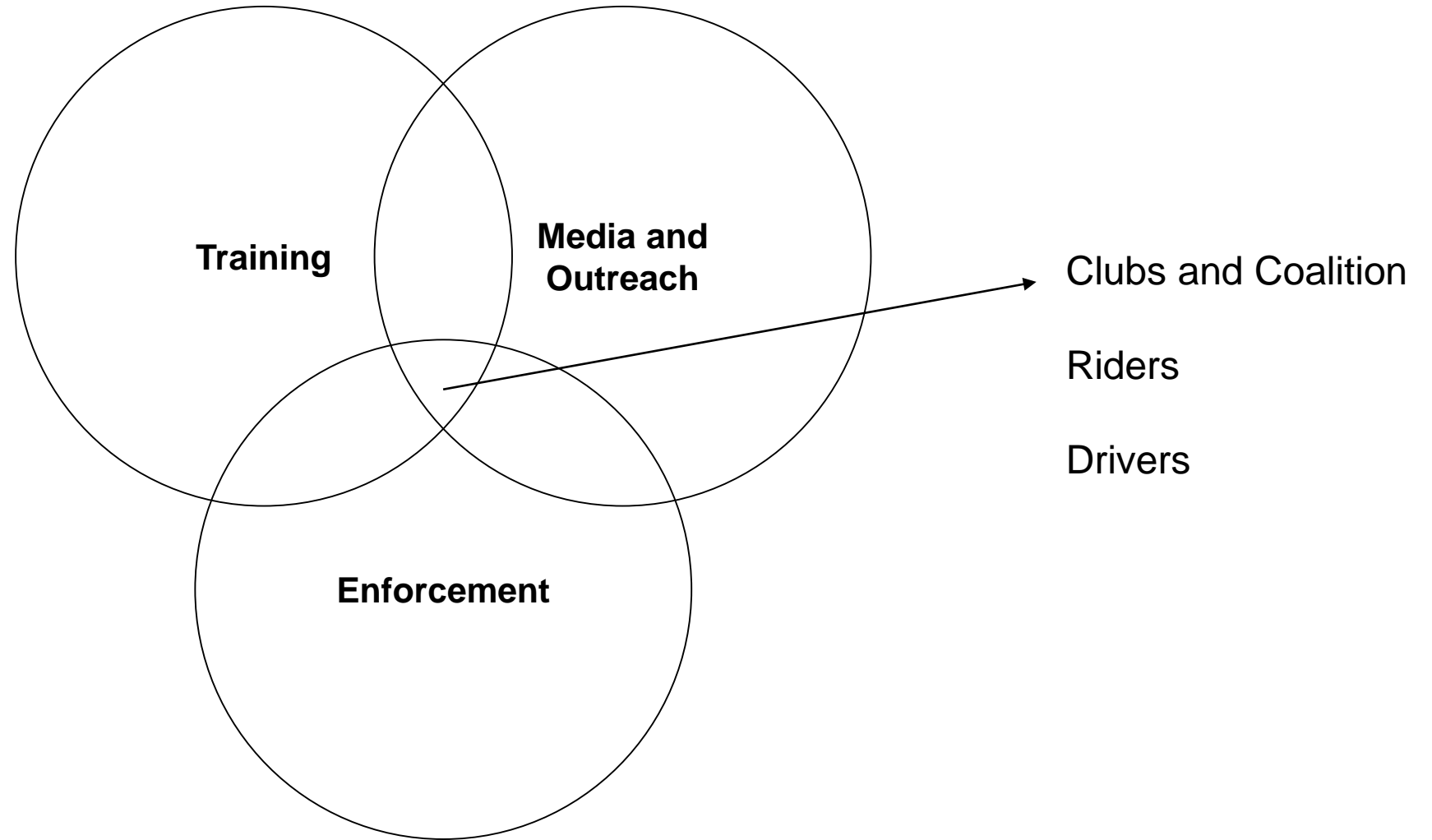
# DUI PREVENTION ADS WILL REACH MOTORCYCLE RIDERS

Though motorcycle riders tend to be more reckless when drinking and driving, they are more likely to be impacted by advertising advocating for safe drinking. In particular, advertising about the dangers and consequences of DUI are likely to reach motorcycle riders.



# Solutions

---



# Training

---

- In 2015, 21,199 people attended the Basic Rider Course which saw a 91.3% pass rate
- Texas has recently adopted a course tailored to experienced motorcycle riders that don't have their license as opposed to taking the Basic Riders Course
- Hawthorne Police Department in California, in memory of two officers killed in line of duty motorcycle crashes, has started a free program to offer hands on training by certified Police Motorcycle instructors and motor officers from Hawthorne PD



# Media & Outreach

---

- TxDOT's statewide "Share the Road: Look Twice for Motorcycles" motorcycle safety and public awareness campaign
- Texas Motorcycle Safety Coalition ([www.LookLearnLive.org](http://www.LookLearnLive.org))
- Public outreach programs



# Enforcement

---

Motorcycle checkpoints – not legal in Texas.

Tips from Worcester County Sheriff's Office in Maryland when asked about effective strategies for large motorcycle events.

- Non-aggressive enforcement
- Overwhelming police presence not necessary.
- Motor Deputies get out on foot at the event venues and engage attendees. People tend to gravitate to the Motor Deputies and Deputies take the opportunity to talk about equipment and safety training



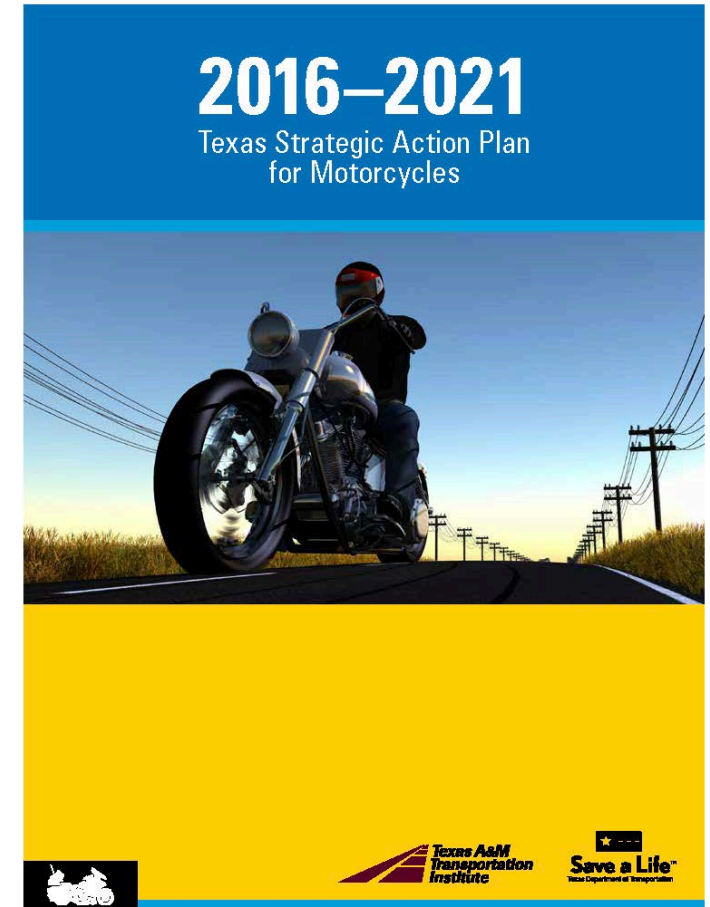


# Texas Strategic Plan for Motorcycles Countermeasures

---

- Seek guidance on encouraging legislation to require motorcycle training or endorsement to register a motorcycle.
- Update driver licensing system to improve recording of course completion.
- Educate riders on gear use (including conspicuity).
- Continue in-depth analysis of crash data to identify crash causation factors.
- Provide guidance to Texas Motorcycle Safety Coalition.

*Can be found on [www.LookLearnLive.org](http://www.LookLearnLive.org)*



---

# Motorcycling and Alcohol

Do They Go Hand-In-Hand?

Michael Manser, Ph.D.

Texas A&M Transportation Institute

