



# Motorcycle Safety Program Data and Updates

*State Motorcycle Safety Association (SMSA)  
2023 National Motorcycle Training Summit  
September 13-16, 2023*

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# 2022 Early Estimates Data


- <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813448>
- *Crash Data Publications (Crash Stats)*



U.S. Department of Transportation  
National Highway Traffic Safety Administration

## TRAFFIC SAFETY FACTS

Crash • Stats



DOT HS 813 448
A Brief Statistical Summary
April 2023

### Early Estimates of Motor Vehicle Traffic Fatalities And Fatality Rate by Sub-Categories in 2022

**Introduction and Summary**

NHTSA has released the 2022 early estimate report presenting the projections of traffic fatalities (42,795) and the fatality rate per 100 million vehicle miles traveled (VMT) (1.35) for 2022 (*Early Estimate of Motor Vehicle Traffic Fatalities in 2022*, DOT HS 813 428). That Crash\*Stats shows a marginal decrease of about 0.3 percent as compared to 42,939 fatalities reported in 2021. The fatality rate is down from the 1.37 fatalities per 100 million VMT reported in 2021. This NHTSA report is being issued after conducting a special analysis of the fatalities and the fatality rates per 100 million VMT by key sub-categories in 2022. The analysis is based on ratio-adjusted estimates of 2022 fatal crash data coded thus far into NHTSA's Fatality Analysis Reporting System (FARS), as described in the Data and Methodology section.

There is a mixture of increases and decreases across the sub-categories. For instance, the total fatalities (fatality counts) on rural roads increased from 17,192 in 2021 to 18,478 in 2022, a 7-percent increase. However, the total estimated unrestrained passenger vehicle (PV) occupant fatalities decreased by 5 percent from 2021 to 2022. The trends of traffic fatalities in 2022 as compared to 2021 in the key sub-categories are summarized as follows.

- in roadway not departure crashes (up 4%)
- in speeding-related crashes (down 6%)
- in the <15 age group (down 5%), the 15-24 age group (down 4%), the 25-34 age group (down 3%), and the 65 and older age group (up 6%)
- males (up 1%) and females (down 3%)
- unrestrained occupants of PVs (down 5%)
- drivers (down 2%) and passengers (down 2%)
- passenger vehicle occupants (down 4%)
- motorcyclist fatalities (up 1%)
- pedestrian fatalities (down 1%)
- pedalcyclist fatalities (up 11%)
- in crashes each involving at least one large truck (up 2%)

Additionally, the trend of the total fatality rate per 100 million VMT in 2022 was strongly driven by the trends in the fatality rates per 100 million VMT on the rural arterials, rural local/collector/street roadways, and urban arterials.

**Data and Methodology**

NHTSA uses the Early Notification (EN) data and Monthly Fatality Counts (MFC) data for the early estimate of motor vehicle traffic fatalities every month. However, EN and MFCs do not include detailed crash characteristics and information necessary to compute fatality counts and fatality rates by sub-categories. NHTSA's FARS data includes such detailed information but is incomplete at this point since not every case has been entered into FARS. This analysis adjusts fatal crash cases currently coded for 2022 into NHTSA's FARS and scales it up to the most recent estimates of fatality counts

Published by NHTSA's National Center for Statistics and Analysis
1200 New Jersey Avenue SE, Washington, DC 20590

# 2021 Data Overview

- <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813435>
- *Crash Data Publications (Crash Stats)*



U.S. Department  
of Transportation  
National Highway  
Traffic Safety  
Administration

DOT HS 813 435



April 2023

## Overview of Motor Vehicle Traffic Crashes in 2021

# 2021 Data- Motorcyclist Fatalities

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42,939 people died on U.S. roads in 2021.

Traffic fatalities compared to 2020:

↑10% overall

↑2.2% rate per 100 million VMT

↑14% in alcohol-impaired-driving crashes

↑7.9% in speeding-related crashes

↑8.1% unrestrained passenger vehicle occupants

↑7.7% motorcyclists

↑13% pedestrians

↑17% in large-truck crashes

↑7.5% passenger vehicle occupants ejected

↑6.0% in single-vehicle crashes

↑15% in multi-vehicle crashes

↑14% in urban areas

↑11% during nighttime

↑11% during weekends

Sources: FARS 2020 Final File, 2021 ARF; 2020-2021 VMT – FHWA's Annual Highway Statistics



# 2021 Data- Motorcyclist Injuries

Estimated 2,497,657 people injured on U.S. roads in 2021.

Injured compared to 2020:

↑9.4% overall

↑1.3% rate per 100 million VMT

↑9.6% drivers and passengers

↑4.7% motorcyclists

↑11% pedestrians

↑7.0% pedalcyclists

↑9.4% people in large-truck crashes

↓7.7% large-truck occupants in single-vehicle crashes

↑6.6% large-truck occupants in multi-vehicle crashes

↑13% other vehicle occupants in large-truck crashes

↑16% nonoccupants in large-truck crashes

Estimated 6,063,428 police-reported non-fatal traffic crashes in 2021.

Non-fatal traffic crashes compared to 2020:

↑16% overall

↑8.4% injury crashes

↑20% PDO crashes

→0.0% injury crash rate per 100 million VMT

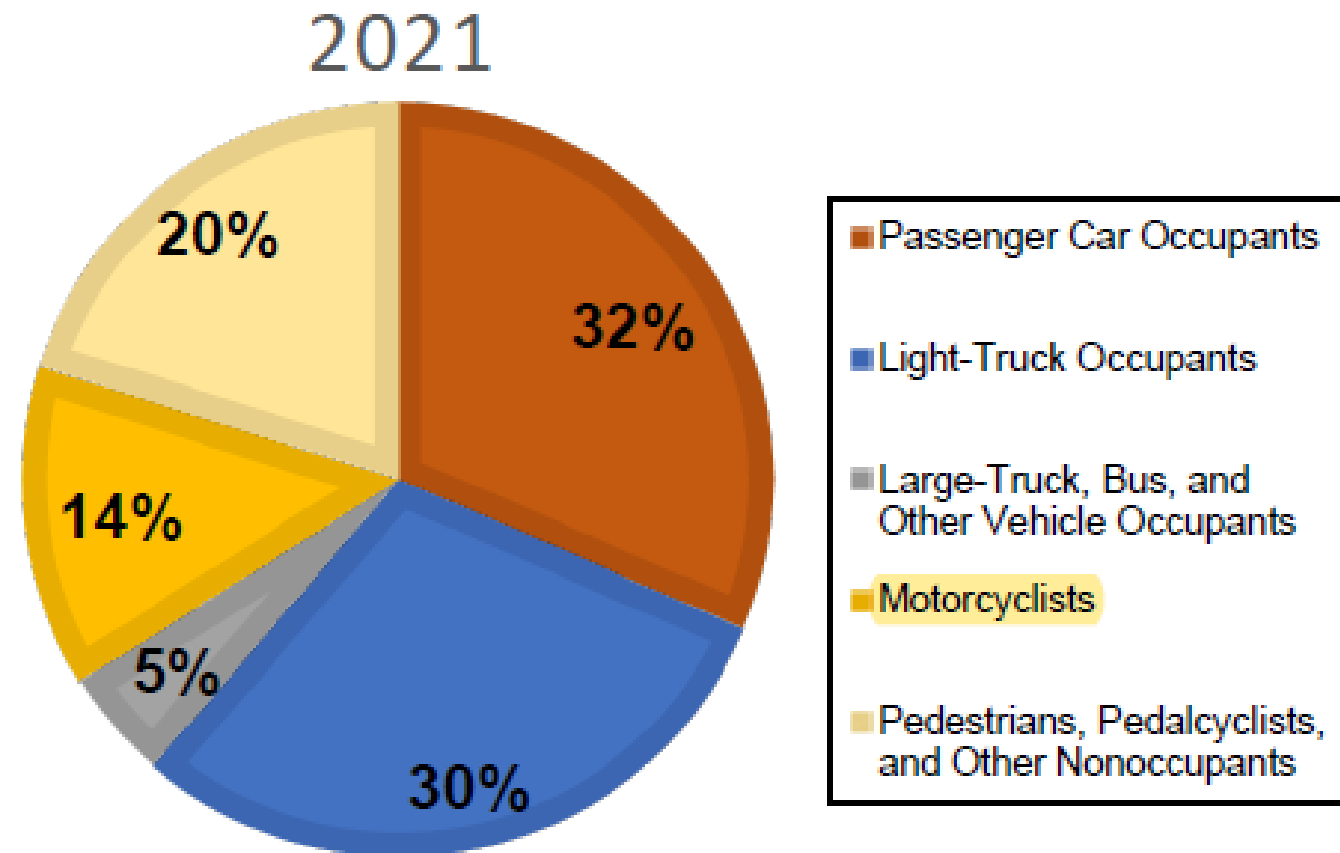
↑10% PDO crash rate per 100 million VMT

Travel pattern compared to 2020:

↑8.1% overall VMT

# 2021 Data- Percentages

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Source: FARS 2021 ARF

Note: Percentages do not add up to 100 percent due to individual rounding.

# Motorcyclist Data


- <https://cdan.nhtsa.gov/>
- *Crash Data Publications (Crash Stats)*



U.S. Department of Transportation  
National Highway Traffic Safety Administration  
NHTSA

## Traffic Safety Facts

### 2021 Data



DOT HS 813 466
June 2023 (Revised)

## Motorcycles

In this fact sheet for 2021 the information is presented as follows.

- [Overview](#)
- [Crash Characteristics](#)
- [Crash Involvement](#)
- [Motorcyclists](#)
  - [Age](#)
  - [Motorcycle Engine Size](#)
  - [Speeding](#)
  - [Licensing and Previous Driving Records](#)
  - [Alcohol](#)
- [Helmet Use and Effectiveness](#)
- [State](#)
- [Important Safety Reminders](#)

The following definitions apply to terms in this fact sheet:

- For the purposes of this fact sheet, motorcycles include two- and three-wheeled motorcycles, off-road motorcycles, mopeds, motor scooters, minibikes, and pocket bikes.
- The **motorcycle rider** is the person operating the motorcycle; the **passenger** is a person seated on, but not operating, the motorcycle; the **motorcyclist** is a general term referring to either the rider or passenger.
- Drivers or motorcycle riders are considered to be alcohol-impaired when their blood alcohol concentrations (BACs) are .08 grams per deciliter (g/dL) or higher.

### Key Findings

- In 2021 there were 5,932 motorcyclists killed, 14 percent of all traffic fatalities. This is the highest number of motorcyclists killed since FARS started data collection in 1975.
- The number of motorcyclist fatalities in 2021 increased by 8 percent from 2020, from 5,506 to 5,932.
- An estimated 82,686 motorcyclists were injured in 2021, a 5-percent increase from 78,944 motorcyclists injured in 2020.
- Per vehicle miles traveled in 2021, the fatality rate for motorcyclists (30.20) was almost 24 times the passenger car occupant fatality rate (1.26).
- Thirty-six percent of motorcycle riders involved in fatal crashes in 2021 were riding without valid motorcycle licenses.
- In 2021 motorcycle riders involved in fatal crashes had higher percentages of alcohol impairment than drivers of any other motor vehicle type (28% for motorcycles, 24% for passenger cars, 20% for light trucks, and 3% for large trucks).
- Forty-three percent of motorcycle riders who died in single-vehicle crashes in 2021 were alcohol-impaired.
- Motorcycle riders killed in traffic crashes at night were three times more frequently found to be alcohol-impaired than those killed during the day (42% and 16%) in 2021.
- In States without universal helmet laws, 55 percent of motorcyclists killed in 2021 were not wearing helmets, as compared to 9 percent in States with universal helmet laws.

U.S. Department of Transportation  
1200 New Jersey Avenue SE, Washington, DC 20590

NHTSA's National Center for Statistics and Analysis











# Helmets Save Lives

*NHTSA estimates that helmets saved the lives of 1,872 motorcyclists in 2017, and that 749 more could have been saved if all motorcyclists had worn helmets.*



# Data Visualization – Fatality Analysis Reporting System (FARS)

Data Visualization	Date Released	Date Last Updated	Notes
 Pedestrians	09/28/2020	04/07/2023	04/07/2023: Added 2021 data 03/07/2022: Added 2020 data 02/05/2021: Added 2019 data
 Pedalcyclists	09/28/2020	04/07/2023	04/07/2023: Added 2021 data 03/07/2022: Added 2020 data 02/05/2021: Added 2019 data
 Children	05/26/2021	04/17/2023	04/17/2023: Added 2021 data 03/25/2022: Added 2020 data
 Motorcycles	10/06/2021	04/24/2023	04/24/2023: Added 2021 data 04/04/2023: Fixed State Filter Issue 04/14/2022: Added 2020 data
 Speeding	03/15/2022	04/27/2023	04/27/2023: Added 2021 data 03/15/2022: 2011-2020 data
 Large Trucks	05/18/2022	05/01/2023	05/01/2023: Added 2021 data 04/04/2023: Fixed State Filter Issue 05/18/2022: 2011-2020 data
 Occupant Protection	10/18/2022	05/15/2023	05/15/2023: Added 2021 data 12/09/2022: Revised Restraint Use Action Filter 10/18/2022: 2011-2020 data
 Passenger Vehicles	01/13/2023	05/15/2023	05/15/2023: Added 2021 data 01/13/2023: 2011-2020 data

# Motorcycle Data Visualization

Click Images to access dashboards

## MOTORCYCLES



Geography



Crash Characteristics



Environmental Characteristics



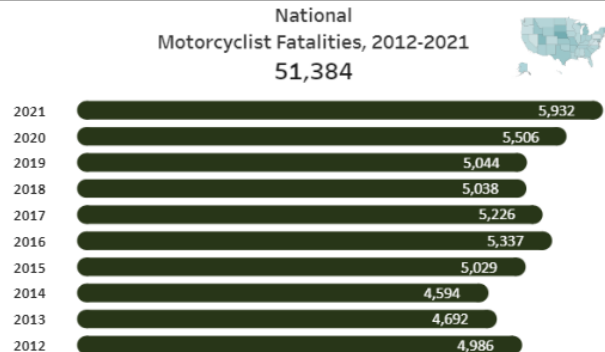
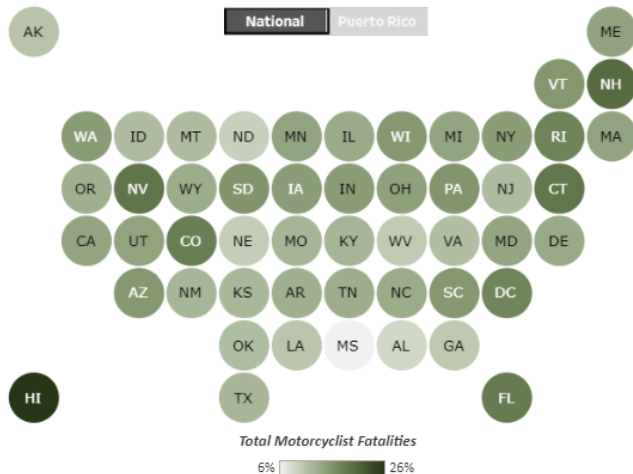
Motorcycle Riders



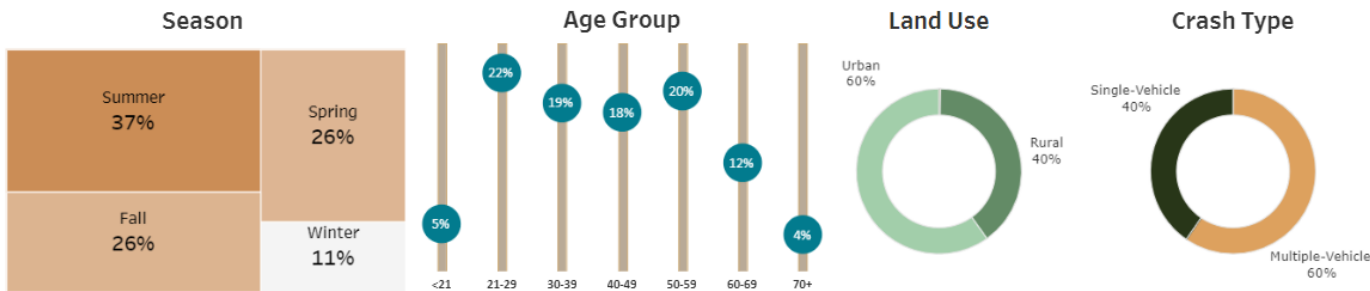
Helmets



Alcohol



Note: Select one year or consecutive years only



Motorcycles in this visualization include two- and three-wheeled motorcycles, off-road motorcycles, mopeds, scooters, mini-bikes, and pocket bikes. Motorcyclist is a general term referring to either the 'rider' (person operating) or 'passenger' (person seated on, but not operating). Data Source: [FARS](#)

Updated: June 27, 2023





# “The Data Say...”

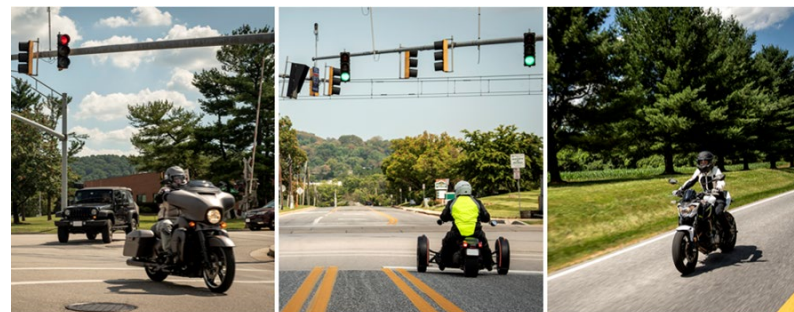
There is still much work to be done in the pursuit of saving lives.



# Current NHTSA Project

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- Update To National Motorcycle Safety Resources
- Awarded September 2022, Period Of Performance Through 2025
- The purpose of this project is to concurrently update, align, and enhance the National Agenda for Motorcycle Safety (NAMS), Model National Standards for Motorcycle Entry-Level Motorcycle Rider Training and Model National Standards for State Motorcycle Rider Training Programs documentation using information that is current, relevant, scientifically based and proven.



UPDATE TO NATIONAL MOTORCYCLE SAFETY  
RESOURCES

CONTRACT 47QRAA22D003L TASK ORDER 693JJ922F00179N

Jennifer Symoun, PMP

**toXcel**

Science. Excellence. Service. Others.

# Current NHTSA Project

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- IAA NPS/NHTSA- Raising Motorcycle Safety Awareness in National Parks- November 2021
- 5-year focus in two parks with high motorcycle crashes, injuries, and fatalities (Lake Mead National Recreation Area and Blue Ride Parkway)
- The purpose of this project is to collect and analyze data, develop messaging and outreach plan, provide summary of findings, and present model to be replicated nationwide for use by the National Park Service to provide targeted messaging that raises awareness and provides education on motorcyclists as road users, while promoting motorcycle safety.

National Park Service  
NHTSA  
Traffic Safety Partnership



Interagency Agreement  
Kick off meeting  
November 10, 2021





# Current NHTSA Project

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- Safety of Two-Wheeled Scooters – project ends 9/30/2023 – Final report is under review
- This project is focused on understanding the safety status of powered two-wheelers with small engines, including seated scooters, mopeds, mini-bikes, pocket motorcycles, and e-bikes. These types of vehicles are an increasing presence on public roads and it is important to examine their use patterns and crash and injury record. The project will help identify areas needing improvement in traffic data systems and other safety areas.

# Current NHTSA Project

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- Driver Attitudes toward Motorcycling – project ends 9/26/2023
- This survey is obtaining data on motorists' knowledge, attitudes, and beliefs about motorcycles in traffic. The survey will improve our understanding of how drivers' beliefs influence safe behaviors and identify areas for improvement in outreach and education. The survey was conducted in Florida and Pennsylvania.

# Current NHTSA Project

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- Field Test of an Observational Survey of Motorcycle Personnel Protective Equipment – project ended 4/15/2023. Final report is being prepared for publication.
- This project was a pilot test of an observational survey of the use of motorcycle Personnel Protective Equipment (PPE). The project goal was to develop a methodology that states can use. The final report will present guidance and lessons learned on selecting locations to observe traffic, developing a process for collecting data, training data collectors, and interpreting the results.



# Upcoming NHTSA Projects

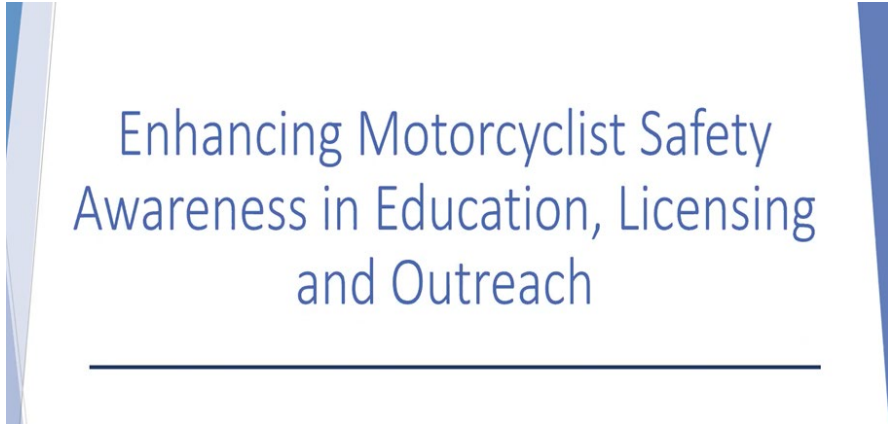
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- Assessing the Fit and Comfort of Motorcycle Safety Gear – Starts 9/1/2023 to 3/1/2027
- This project will examine the fit and comfort of motorcycle safety gear from the perspective of the motorcyclist. We will seek the participation of motorcyclists to learn about the gear they use, assess how well the gear fits, and ask about the comfort and usability of gear (e.g., does a jacket constrain the ability to turn). Additionally, we will look at the differences in fit and comfort by gear type and rider characteristics (age, sex, race, ethnicity). The project will also ask riders about their reasons for not using gear and their beliefs about the protective benefit of gear.

# NHTSA Project Resources

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- Enhancing Motorcycle Awareness in Education, Licensing and Outreach Stakeholder Web Meeting - Completed September 2022
- Highway Safety Services, LLC, with funding from the National Highway Traffic Safety Administration (NHTSA) developed motorcyclist safety education resources and graphics to enhance driver education and driver license testing materials and fact sheets that can be universally incorporated as a foundational motorcyclist safety outreach document, to raise the overall level of awareness and understanding of motorcyclist safety and operation.



Enhancing Motorcyclist Safety  
Awareness in Education, Licensing  
and Outreach

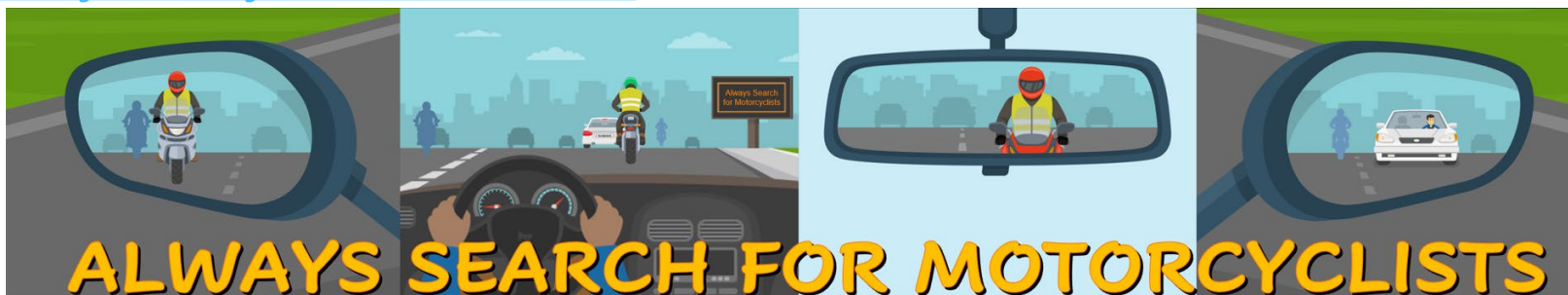
# NHTSA Project Resources

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Resources developed on motorcyclist awareness include:

1. Driver education language
2. Driver license manual language
3. Learning activities
4. Driver license and driver education knowledge test questions
5. Fact sheets for teens and general drivers

These materials are available free of charge by downloading through [Box \(file sharing system\)](#). If you have any questions, please contact Christie Falgione at [clewis@highwaysafetyservices.com](mailto:clewis@highwaysafetyservices.com) or 724-349-SAFE.



# NHTSA Project Resources

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- Motorcycle Safety– Developing Your Program Through Data and Collaboration
- This training series is offered in three levels and provides the tools to improve motorcycle safety programs by learning how to use data for problem identification and intervention development, while fostering collaborative stakeholder relationships This series is not a basics of motorcycle safety program management course. The focus is to enhance participants' understanding of how to use data and collaboration in addressing challenges within a motorcycle safety program.







## Level 1

- Open registration
- Six hours, online, self-paced training
- Topics include:
  - A Common Mission
  - Getting to the Root of the Problem
  - Taking Targeted Action
- Certificate of Completion



## Level 2

- Four hours, virtual-live instructor-led training
- Level 1 is a pre-requisite
- Networking with other participants to further explore and practice the concepts covered in Level 1
- Level 2 certificate after course completion



## Level 3

- Advanced assessment
- Levels 1 & 2 are pre-requisites
- Level 3 certificate after assessment



# MOTORCYCLE SAFETY-

## Developing Your Program Through Data and Collaboration



This course is recommended for:

- Motorcycle Safety Program Managers
- Motorcycle Safety and Traffic Safety Advocates
- State Highway Safety Office Personnel (SHSOs)
- Motorcycle Safety Grantees
- Motorcycle Rights Organizations
- Law Enforcement
- Academics and Researchers
- Communications and Advertising Professionals
- Other stakeholders and partners with an interest in reducing motorcycle-related injuries and fatalities

Click [here](#) to register!

# NHTSA Project Resources

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- TSI- Motorcycle Safety- Law Enforcement Officer (LEO) Course
- NHTSA developed the Motorcycle Safety Law Enforcement Course to provide law enforcement officers an understanding of motorcyclist behavior and enforcement concepts related to motorcycle safety, so that they have knowledge and confidence when interacting with motorcyclists.



Click [here](#) to register!

# “Go-to” Motorcycle Safety Links

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- Motorcycle Safety Awareness Month Materials
- Traffic Safety Marketing- <https://www.trafficsafetymarketing.gov/get-materials/motorcycle-safety>
  - FREE Marketing Resources
    - Social media graphics
    - Sample Press Releases
    - ...and MORE!!!





# “Go-to” Motorcycle Safety Links

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- Helmet Specific Resources
  - [How to Identify Safe Motorcycle Helmets - Electronic Brochure](#) (PDF, 570 KB) September 2019; DOT HS 807 880  
It's clear: motorcycle helmets save lives. To help protect the lives of motorcycle riders, the U.S. Department of Transportation requires that all motorcycle helmets sold in the United States meet Federal Motor Vehicle Safety Standard No. 218. This brochure helps riders know what to look for in a safe helmet.



# “Go-to” Motorcycle Safety Links

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- Impaired Riding Resources
  - **Ride Sober Or Get Pulled Over**
    - Main Page- <https://www.nhtsa.gov/campaign/ride-sober>
    - Traffic Safety Marketing- <https://www.trafficsafetymarketing.gov/get-materials/motorcycle-safety/ride-sober-or-get-pulled-over-motorcycles>
    - “Cross The Line” YouTube Video Links:
      - :30 Second Spot <https://www.youtube.com/watch?v=qaJoUukz1ow>
      - :15 Second Spot <https://www.youtube.com/watch?v=u-WrN05lg48>



# “Go-to” Motorcycle Safety Links

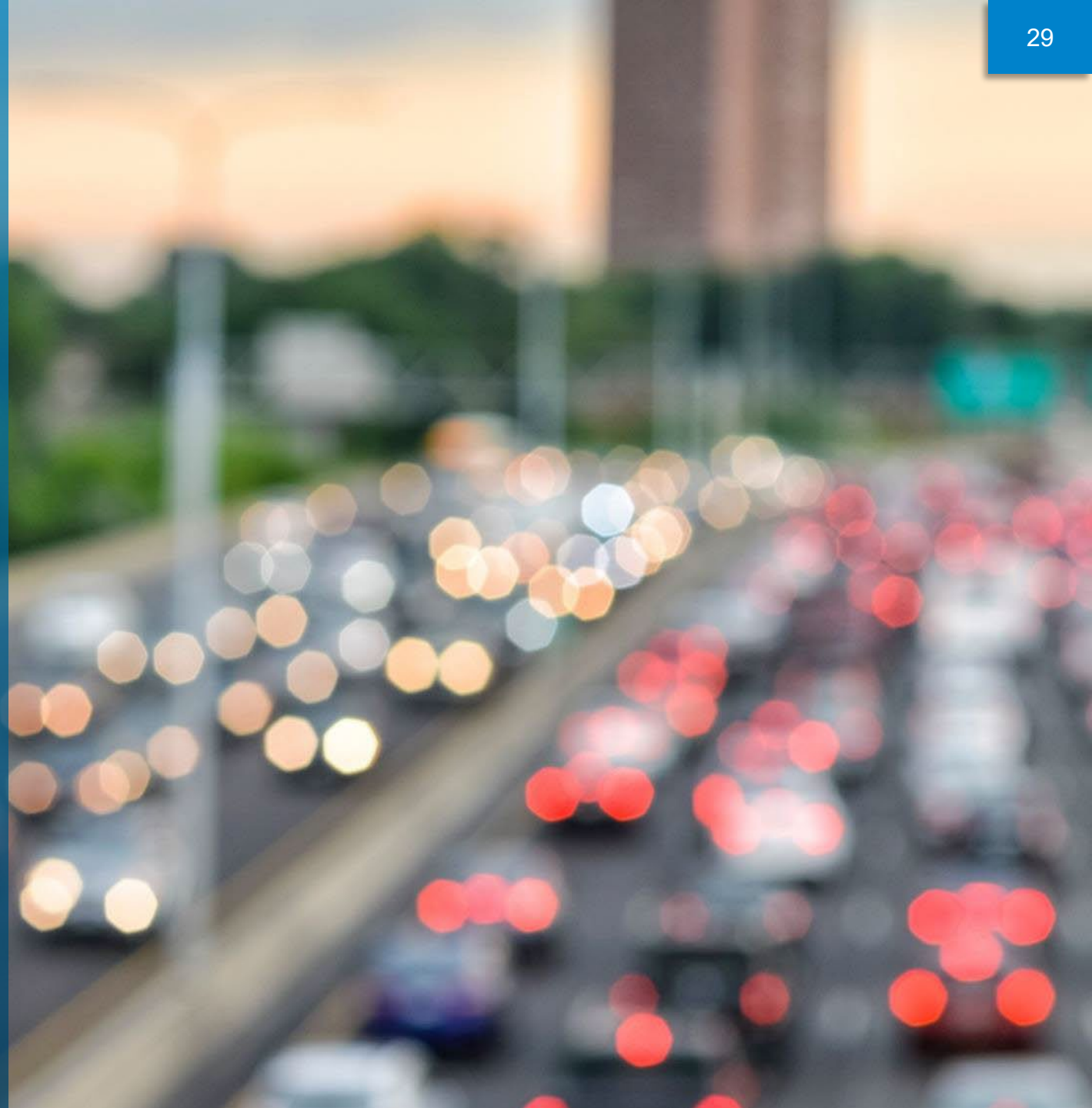
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- NCSA Tools, Publications, and Data- <https://cdan.nhtsa.gov/>
- Main Page- <https://www.nhtsa.gov/road-safety/motorcycle-safety>
- State Program Assessments- <https://www.nhtsa.gov/highway-safety-grants-program/safety-program-assessment>



# How To Take Action

- *Know the data, Use the data, Share the data*
- *Use and share NHTSA Resources!*
- *Get support!*  
State Safety Program  
Assessment





# State Assessments Are Important

- *Before 2020 the last Motorcycle Safety Program Assessment was in 2017*
- *Some States have not had one since 1996*
- *Since 2020- 3 completed, 5 in progress*

## State of Colorado



Motorcycle Safety Program Technical  
Assessment

August 1-5, 2022

National Highway Traffic Safety Administration Technical  
Assistance Team

## State of Maine



Motorcycle Safety Program Technical  
Assessment

January 30 – February 3, 2023

National Highway Traffic Safety Administration Technical  
Assistance Team

# Thank you!

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