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MMUCC Guideline Model Minimum Uniform Crash Criteria 6th Edition

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16. Abstract The Model Minimum Uniform Crash Criteria (MMUCC) gives States a guideline for describing crashes involving motor vehicles in-transport. MMUCC can help States generate the data necessary to quickly gain traffic safety insights. Since its inception in 1998, MMUCC has been a voluntary guideline for States; however, standardization of crash data is essential to NHTSA and its safety stakeholders. Crash data NHTSA obtains from the States supports several of NHTSA's efforts such as the Fatality Analysis Reporting System (FARS) and the Crash Report Sampling System (CRSS), which are essential to NHTSA's traffic safety activities as well as to other Federal, State, and local agencies. The MMUCC 6th edition is the result of a 3-year collaboration with DOT modal partners and consultation with States and subject matter experts to redesign data elements with clarity, purpose, and feasibility, with the goal of harmonizing MMUCC with NHTSA's data systems CRSS, Crash Investigation Sampling System (CISS), and FARS. Significant changes to the MMUCC 6th edition include new chapters on Narrative and Diagram, Data Integration, and designing User-Centered Crash Reporting Systems. In addition, the formula for calculating MMUCC alignment now distinguishes between uniformity and completeness.			
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List of Acronyms

AAMVA	American Association of Motor Vehicle Administrators
ADAS	Advanced Driver Assistance System
ADS	Automated Driving System
ANSI	American National Standards Institute
ASD	alcohol screening device
ATC	all-terrain cycle
ATV	all-terrain Vehicle
BIL	Bipartisan Infrastructure Law (enacted in the Infrastructure Investment and Jobs Act, Pub. L. 117–58)
CDC	Centers for Disease Control and Prevention
CISS	Crash Investigation Sampling System Formerly NASS-CDS (National Automotive Sampling System Crashworthiness Data System)
CRSS	Crash Report Sampling System Formerly NASS-GES (National Automotive Sampling System - General Estimate System)
CVIEW	Commercial Vehicle Information Exchange Window
DFO	designated Federal officer
EMS	emergency medical services
FARS	Fatality Analysis Reporting System
FHWA	Federal Highway Administration
FIPS	Federal Information Processing Series
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
GVWR	gross vehicle weight rating
HOT Lane	high-occupancy toll lane
HOV Lane	high-occupancy vehicle lane
ILT	incident location tool
IRP	International Registration Plan
ISO	International Organization for Standardization
KABCO	(K) Fatal Injury, (A) Suspected Serious Injury, (B) Suspected Minor Injury, (C) Possible Injury, and (O) No Apparent Injury (scale of injuries)
LRS	linear referencing system
MIRE	Model Inventory of Roadway Elements
MMUCC	Model Minimum Uniform Crash Criteria
MOHUV	Multipurpose Off-Highway Utility Vehicle
MSP	mobility service provider
NCIC	National Crime Information Center
NCSA	National Center for Statistics and Analysis
NEMESIS	National Emergency Medical Services Information System
NTSB	National Transportation Safety Board
ORI	NCIC Originating Agency Identifier Code
PBT	preliminary breath test device
PCR	police crash report

RCUT	restricted crossing U-turn
ROV	recreational off-highway vehicle
TNC	transportation network company
TRCC	Traffic Records Coordinating Committee
USPS	United States Postal Service
UUID	universally unique identifier
VIN	Vehicle Identification Number

Executive Summary

Obtaining quality data from motor vehicle traffic crashes is essential to understanding and improving traffic safety. Collecting and analyzing crash data can provide insights into the nature, causes, and injury outcomes of crashes that require increased efforts in specific program areas to improve traffic safety. The data are used to identify trafficway and vehicle design challenges, research and conduct strategic safety communication campaigns, improve law enforcement resource allocation, inform traffic safety legislation, and evaluate the impact of programmatic traffic safety countermeasures.

Lack of uniformity can significantly hinder the timely analysis of critical crash data. Every State has its own police crash report, developed for that State's individual needs. Sharing and comparing data between localities, States, and the Federal Government can be very difficult when the data elements to describe similar crash characteristics have different definitions or collect different information. In addition, without standardized guidance or training, interpretations can vary greatly across the country.

The National Highway Traffic Safety Administration and national subject matter experts developed the Model Minimum Uniform Crash Criteria as a voluntary crash data collection guideline to encourage greater data uniformity. MMUCC identifies a minimum set of motor vehicle traffic crash data elements that States should consider collecting and including in their crash data systems. The MMUCC was first published in 1998 and updated in 2003, 2008, 2012, and 2017. This publication is the 6th edition of MMUCC.

The MMUCC 6th edition is the result of a comprehensive review of the MMUCC program and collaboration between many key partners. NHTSA worked with the Federal Highway Administration, Federal Motor Carrier Safety Administration, National Transportation Safety Board, Federal Railroad Administration, the U.S. Census Bureau, Centers for Disease Control and Prevention, and State and local subject matter experts, including law enforcement, in developing the content of this document. NHTSA established a new chartered MMUCC Committee to provide feedback and advice on the new edition. NHTSA also published the draft MMUCC 6th edition and invited public participation through a Federal Register Notice request for comment. The combined feedback from all sources was used to inform the final version of this document.

As changes to State datasets and systems can be costly and difficult to implement, it is anticipated that the next update of MMUCC is tentatively scheduled for 2029. During this period, the data elements and their attributes will be monitored for usefulness and reliability.

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MMUCC Committee

In 2023 NHTSA convened a committee of 25 members from State and local governments acting in their official capacity that collectively represented government agency stakeholders in the collection, management, and analysis of crash data. NHTSA’s Acting Administrator appointed the 25 members to review the draft MMUCC, 6th edition, and provide their expert feedback. The purpose of the MMUCC Committee was to exchange views, information, and advice with NHTSA to further develop and refine the MMUCC guideline. Committee members did not receive pay or other compensation from NHTSA for their MMUCC Committee services.

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Federal liaisons attended the meetings to listen to the MMUCC Committee member perspectives, to inform the Committee of ongoing or planned activities related to MMUCC, and to update their respective agencies on MMUCC Committee activities. Joanna Reed served as the designated Federal officer and chairperson for the MMUCC Committee.

- Jonae Anderson, NCSA, NHTSA
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Chapter 1: Introduction

Law enforcement officers collect information from motor vehicle traffic crashes using police crash reports. This information describes the characteristics of the events, vehicles, and people involved in the crash. Ideally the data from each PCR is then entered into a State’s centralized database, inspected for quality, amended if necessary, reported, and analyzed by a range of stakeholders.

Although all 50 States, the District of Columbia, and several U.S. Territories collect data about motor vehicle traffic crashes, there are significant differences in the way that such data is reported. Definitions, the number and type of data fields, the number and specificity of selections, and the threshold for data collection often vary from jurisdiction to jurisdiction and from State to State. This makes it especially difficult to compare data across State and local agencies, between States, and between States and the Federal Government. Determining larger patterns and timely trends in motor vehicle traffic crash data becomes much more challenging under these circumstances.

To encourage greater uniformity and consistency, the Model Minimum Uniform Crash Criteria Guideline was created to provide State and local agencies with a standard set of motor vehicle traffic crash data variables they should consider collecting. MMUCC was first developed in 1998 and has been updated four times: in 2003, 2008, 2012, and 2017. This 2024 version is the 6th edition of MMUCC.

1.1 Purpose

MMUCC’s purpose is to provide a voluntary guideline that represents a minimum, standardized set of data variables to describe motor vehicle traffic crashes, which could be used to identify traffic safety problems and design countermeasures to improve traffic safety nationally and in each State. While some States may use the information in this document for creating driver self-report tools, the MMUCC data elements detailed in Chapters 3 to 8 are intended for collection by trained personnel. The data elements identified in [Chapter 10: Traffic Records Data Integration](#) are collected in other traffic records data systems and could be integrated with the State electronic crash system.

1.2 Data Elements and Attributes

Throughout this guideline, the terms “element” or “data element” refer to the data fields on a crash report or in a database and the word “attribute” refers to the values or selections that an element may include. For ease of identification in text passages, MMUCC data elements are presented in all caps and MMUCC attributes are bolded. For example, the data element [LIGHT CONDITION](#) contains seven attributes: **Daylight**, **Dawn**, **Dusk**, **Dark-Lighted**, **Dark-Not Lighted**, **Dark-Unknown Lighting**, and **Unknown**. Data elements are incorporated into MMUCC if they are deemed critical for safety analysis or data integration purposes. States may include additional data elements or attributes to address their data collection needs or statutory requirements. States are free to implement their own coding system. The previous edition of MMUCC introduced numerical codes along with each attribute. This MMUCC 6th edition has removed these codes, as maintaining a catalogue of changes to the codes over the years is not practical for this guideline.

1.3 MMUCC Data Element Format

Data elements are presented using the following format.

Data Element Identifier + Number. Data Element Name

Element Definition:

The element definition will be found here.

Attribute Values:

Number of allowable selections:

- Not applicable
- None (or No)
- Attribute one
- Attribute two
- Attribute three
- ...
- Other
- Unknown

Remarks:

Guidance and attribute definitions will be found here.

Highway Safety Rationale:

The importance of the element for improving highway safety will be found here.

Implementation Suggestions:

Suggestions for electronic implementation will be found here.

Validation Rules:

- VR one
- VR two
- ...
- VR n

Alignment Considerations for ELEMENT:

Considerations for mapping the State element to the MMUCC element will be found here.

1.4 National Standards

Properly identified and defined vocabulary are necessary for a common language in the traffic safety community. The MMUCC guideline is primarily based on another national standard, the [American National Standards Institute D.16-2017 Manual on Classification of Motor Vehicle Traffic Crashes](#). ANSI D.16-2017 identifies, defines, and classifies the specific terminology associated with motor vehicle traffic crashes. The MMUCC guideline conveys the minimum data elements and attributes using the terminology and concepts from the ANSI D.16-2017 that a State's PCR should incorporate for nationally uniform data collection. When used together, the two standards provide the States with the necessary information to collect motor vehicle traffic crashes in a uniform manner.

In the interests of greater data uniformity and integration, the MMUCC 6th edition removed data elements that were previously meant to be derived from other data systems and instead recommends linkages to existing data elements from other national data standards. Data elements recommended under other national standards such as the [Model Inventory of Roadway Elements](#) developed by the FHWA and the [NEMSIS](#) produced by NHTSA's Office of EMS were considered in the development process. See [Chapter 10: Traffic Records Data Integration](#) (new to the 6th edition) for information on integrating data from other standardized datasets with the State crash system.

Regarding the overall concepts in this document, it is important to understand a few foundational terms and definitions from [ANSI D.16-2017](#). Visit ANSI D.16-2017 for more information and for specific inclusions and exclusions for these and many other terms.

- **2.1.4 transport vehicle:** A transport vehicle consists of one or more devices or animals and their load.
- **2.1.7 land vehicle:** A land vehicle is a transport vehicle which is neither an aircraft nor a watercraft.
- **2.1.8 transport way:** A transport way is any way or place reserved or commonly used for the operation of transport vehicles.
- **2.1.11 land way:** A land way is the space within property lines or other boundary lines of any transport way that is neither an airway nor a waterway.
- **2.2.1 trafficway:** A trafficway is any land way open to the public as a matter of right or custom for moving persons or property from one place to another.
- **2.2.2 private way:** A private way is any land way other than a trafficway. The space within a crossing of a private way and a trafficway shall be considered a trafficway.
- **2.2.6 road vehicle:** A road vehicle is any land vehicle other than a railway vehicle.
- **2.2.7 motor vehicle:** A motor vehicle is any motorized (mechanically or electrically powered) road vehicle not operated on rails.
- **2.2.7.2 working motor vehicle:** A working motor vehicle is a motor vehicle in the act of performing construction, maintenance or utility work related to the trafficway. This "work" may be located within open or closed portions of the trafficway and motor vehicles performing these activities can be within or outside of the trafficway boundaries.

- **2.2.34 in-transport:** The term “in-transport” denotes the state or condition of a transport vehicle which is in motion or within the portion of a transport way ordinarily used by similar transport vehicles. When applied to motor vehicles, “in-transport” means on a roadway or in motion within or outside the trafficway.
 - A transport vehicle which is also a working motor vehicle at the time of the [unstabilized situation \(See 2.4.4\)](#) is not “in-transport.”
 - In roadway lanes used for travel during some periods and for parking during other periods, a parked motor vehicle should be considered in-transport during periods when parking is forbidden.
- **2.4.1 harmful event:** A harmful event is an occurrence of injury or damage.
- **2.4.4 unstabilized situation:** An unstabilized situation is a set of events not under human control. It originates when control is lost and terminates when control is regained or, in the absence of persons who are able to regain control, when all persons and property are at rest.
- **2.4.6 crash:** A crash is an [unstabilized situation](#) which includes at least one harmful event.
- **2.4.7 contact vehicle:** A contact vehicle is any road vehicle which comes in contact with one or more road vehicles, non-motorists, or property in a collision crash, or has a noncollision crash. A contact vehicle is directly involved in a crash.
- **2.4.8 noncontact vehicle:** A noncontact vehicle is any vehicle other than a contact vehicle. A noncontact vehicle is indirectly involved in a crash.
- **2.4.9 transport crash:** A transport crash is a crash (1) that involves a transport vehicle in-transport, (2) in which the first harmful event is not produced by the discharge of a firearm or explosive device, and (3) that does not directly result from a cataclysm where the timing is such that the cataclysm is occurring at the time of the crash.
- **2.4.12 motor vehicle crash:** A motor vehicle crash is a transport crash that (1) involves a motor vehicle in-transport, (2) is not an aircraft accident or watercraft accident, and (3) does not include any harmful event involving a railway train in-transport prior to involvement of a motor vehicle in-transport.
- **2.4.18 traffic crash:** A traffic crash is a road vehicle crash in which (1) the [unstabilized situation](#) originates on a trafficway or (2) a harmful event occurs on a trafficway.
- **2.4.22 motor vehicle traffic crash:** A motor vehicle traffic crash is a motor vehicle crash which is also a traffic crash.

1.5 Federal Partner Agencies

The MMUCC 6th edition was developed by NHTSA’s National Center for Statistics and Analysis, Office of Traffic Records and Analysis, in close collaboration with several key Federal stakeholders. Subject matter experts from NHTSA’s FARS, CRSS, and CISS teams played a large role in the development process. NHTSA’s Office of EMS provided significant assistance to align MMUCC with NEMSIS data elements wherever possible. The Federal Motor Carrier Safety Administration provided input, and data elements critical to the FMCSA remain in

MMUCC, though some have been modified for better data collection. To recognize the most current definitions, terminology, and beneficial data collection for specific pieces of information, the FHWA, the FRA, and the U.S. Census Bureau provided important contributions. The National Transportation Safety Board, the Centers for Disease Control and Prevention, and the U.S. Fire Administration were also important partners in the MMUCC 6th edition development.

1.6 Aligning to MMUCC

A method for comparing a State's current set of data elements and attributes with those recommended in this 6th edition of MMUCC is included in [Chapter 12: Aligning to MMUCC](#). This chapter describes a method for making the comparison and identifies rules that NHTSA considers when mapping. The intent is to help States identify areas in their data collection systems that are not aligned to MMUCC, and then prioritize those data elements and attributes requiring modification when the State or locality updates its crash report. For a complete list of MMUCC guideline 6th edition standard data elements, see [Appendix C: MMUCC Standard Data Elements](#). NHTSA changed the MMUCC 6th edition mapping rules to be more flexible and enable more State data elements to align with MMUCC and facilitate electronic data sharing.

1.7 Reporting Threshold

MMUCC recommends the following threshold for all motor vehicle traffic crashes.

- All motor vehicle traffic crashes Statewide involving death, personal injury, or property damage of \$1,000 or more should be reported and included in the Statewide crash database.
- Crash data should be reported for all people involved.

Each State should adopt, and encourage their localities to adopt, a reporting threshold that is uniform and consistently implemented Statewide.

1.7.1 FMCSA Threshold

FMCSA has requirements pursuant to [Title 49 CFR 390](#) for collecting particular types of motor vehicle traffic crashes. The following can help States electronically identify and submit the correct types of crashes to the State's SAFETYNET Crash Analyst for reporting to FMCSA.

A crash should be reported to the State's SAFETYNET crash analyst for reporting to FMCSA if the following conditions are met (read as 1 and [2 or 3 or 4]):

1. [POWER UNIT GROSS VEHICLE WEIGHT RATING](#) equals:
 - **Light (10,000 lb or less GVWR), – AND –**
 - [VEHICLE TRAILING](#) equals **One Trailer, Two Trailers, Three or More Trailers, or Yes, Number of Trailers Unknown, – OR –**
 - if [MOTOR VEHICLE BODY TYPE CATEGORY](#) Subfield 1: Body Type Category equals **Limousine or Passenger Van, – OR –**
 - if [HAZARDOUS MATERIALS](#) Subfield 2: Placard equals **Yes**.
 - **Medium (10,001 – 26,000 lb GVWR).**
 - **Heavy (Greater than 26,000 lb GVWR).**
- AND –

2. [EXTENT OF DAMAGE](#) equals **Disabling Damage** – *AND* – [VEHICLE TOWED](#) equals **Towed**
– *OR* –
3. Any [INJURY STATUS](#) in the crash equals **(K) Fatal Injury**
– *OR* –
4. Any [INJURY STATUS](#) in the crash equals **(A) Suspected Serious Injury, (B) Suspected Minor Injury, or (C) Possible Injury** – *AND* – [TRANSPORTED TO FIRST MEDICAL FACILITY BY](#) equals **EMS Air; EMS Ground; EMS, Unknown if Air or Ground; Law Enforcement; Transported, Unknown Type; or Other.**

1.7.2 FARS Threshold

All fatal crashes should be reported to the State’s FARS office. To be included in NHTSA’s FARS data collection, a crash must involve at least one [motor vehicle in transport](#) traveling on a trafficway customarily open to the public (a [motor vehicle traffic crash](#)) and must result in the death of at least one person (occupant of a motor vehicle or a non-motorist) within 30 days (720 hours) of the crash. If it is unknown whether a crash qualifies for FARS, contact the State’s FARS office for verification.

1.8 New Features in the 6th Edition

Below are important highlights of the 6th edition.

- Numerical coding values from the 5th edition have been removed. States are free to implement their own values.
- When applicable, implementation suggestions have been added to the data elements to ease data collection efforts.
- Element-specific alignment considerations have been moved to each applicable data element.
- To standardize criteria, decisions, and data element format included in this and future editions of MMUCC, the 6th edition now includes [Chapter 2: MMUCC Guiding Principles](#).
- New [Chapter 3: System-Populated Data Elements](#) provide tracking information on the status of a crash record in the workflow and enable system linkage with other data systems. NOTE: Although these data elements are not manually completed by law enforcement officers at the scene of a crash, several data elements in this chapter are considered part of the MMUCC guideline national standard and are included in a State’s MMUCC alignment percentage. For a complete list of MMUCC guideline 6th edition standard data elements, see [Appendix C: MMUCC Standard Data Elements](#).
- Data elements that are only applicable to drivers have been organized in the new [Chapter 6: Driver Data Elements](#).
- A new [Chapter 9: Narrative and Diagram](#) explains the importance of these best practices in crash reporting using narratives and diagrams.

- Data elements that can be obtained from another State data system are in the new [Chapter 10: Traffic Records Data Integration](#). These data elements are identified by their appropriate traffic records data system and national standard, where applicable. For specific information on each data element, please visit the applicable national standard.
- A new [Chapter 11: Designing User-Centered Crash Reporting Systems](#) highlights best practices for more efficient and effective electronic data collection. NHTSA encourages States to adapt the MMUCC 6th edition guideline in ways that best suits their law enforcement officers' abilities to collect crash data while conforming to the MMUCC alignment rules. This means that States should review the list of attributes for each data element and, following the human factors principles outlined in Chapter 11, determine the best way to organize the list of attributes for ease of use of their officers.
- NHTSA changed the MMUCC 6th edition mapping rules to be more flexible and enable more State data elements to align with MMUCC and facilitate electronic data sharing. See [Chapter 12: Aligning to MMUCC](#) for details.
- Many definitions have been added to the data elements and the [Glossary of Terms](#).
- Validation rules (consistency within a data element) are listed under each applicable data element (chapters 3 to 8). Error rules and warning rules (consistency between data elements) are listed in [Appendix B: Edit Rules](#).
- As most of the country has moved to electronic data collection, the paper-based MMUCC crash report has been discontinued and removed from the guideline.
- Several data elements have been reconfigured for simpler data collection. This will enable law enforcement officers to quickly answer the questions and move on without necessitating looking up definitions, rules, or other guidance. This includes several data elements critical for FMCSA crash reporting. This will result in more accurate and efficient data collection.
- The MMUCC 5th edition Roadway, Fatal, Large Vehicles and Hazardous Materials, and Dynamic sections have been removed to accommodate the new layout and changing data needs.
- Discrepancies between MMUCC and NHTSA's FARS and CRSS data systems have been substantially reduced. By doing so, States and NHTSA will collect the same information using the same formats. This will benefit States wishing to participate in NHTSA's electronic data transfer protocol.

1.9 MMUCC 6th Edition Development Timeline

NHTSA began collecting and developing proposals for changes to MMUCC after publication of the MMUCC 5th edition in 2017. Comments, suggestions, and the results of the national State-to-MMUCC alignment assessment informed the revisions. NHTSA continued the development of the MMUCC 6th edition following the timeline outlined below.

- Early 2020 - NHTSA met with key stakeholders to work through the collected proposals for change.

- Late 2020 - NCSA began a comprehensive review of the MMUCC program, including the document and the development process, to modernize and refine MMUCC.
- Throughout 2021 - NCSA continues a comprehensive review of every MMUCC data element, which postpones the 6th edition.
- November 2021 - The Bipartisan Infrastructure Law is signed into law. It provides substantial funding to the U.S. Department of Transportation to assist States in upgrading their State crash data systems and aligning to MMUCC to enable electronic data transfer to NHTSA. This new directive affects the efforts of the MMUCC review already in progress.
- Throughout 2022 - NCSA works internally to identify the changes necessary to bring MMUCC and NHTSA's crash data systems into alignment, identify and harmonize with other national data standards, and increase States' alignment to MMUCC.
- Early 2023 - NHTSA published a draft of the MMUCC 6th edition in the Federal Register seeking public comment and established a chartered MMUCC Committee, made up of State subject matter experts, to provide feedback to NHTSA on the content of the MMUCC 6th edition.
- Summer 2023 - NCSA incorporated feedback received from public comments and the MMUCC Committee to finalize the list of data elements and attributes.
- Autumn 2023 - NCSA finalized the MMUCC 6th edition document to send for agency review and approval.
- January 2024 - NCSA publishes the MMUCC 6th edition.

A summary of changes to MMUCC from the 5th edition to the 6th edition is shown in [Appendix A: Summary of Changes to the MMUCC Guideline, 5th Edition \(2017\)](#).

1.10 Future Updates

MMUCC is generally updated every 5 years. The next update is tentatively scheduled for 2029. In the years preceding the next update, traffic records experts and the public will have opportunities to provide suggestions for improving MMUCC for the 7th edition.

Chapter 2: MMUCC Guiding Principles

NHTSA developed the following principles to standardize the data elements included in this and future editions of the guideline. Data element specific guidance is provided in Chapters 3 to 8.

1. An element must be appropriate.

There must be a relationship between the element and its use for problem identification and countermeasures development and evaluation. Data elements describing the location, date, time, people involved, and others are important for law enforcement to document the events at the crash scene. When standardized, they are also useful for integrating with other data systems.

2. An element must be broadly applicable.

Elements and attributes must be applicable to a majority of the States, District of Columbia, and the U.S. Territories.

3. An element must be comprehensive.

The list of attributes must be exhaustive (cover all possibilities). The attributes must be mutually exclusive or provide hierarchy guidance for a single selection, or the attributes should allow two or more selections when more than one may apply.

4. An element must measure a single concept.

Attributes and subfields within a data element must have relevance, share the same concept, show a direct relationship, and measure a single concept.

5. Each data element section includes:

- a. An element definition;
- b. Attributes;
- c. Remarks including definitions and guidance as appropriate;
- d. A highway safety rationale;
- e. Implementation suggestions;
- f. Validation rules;
- g. Alignment considerations;

6. Data elements will follow existing national standards.

ANSI D.16-2017, AAMVA D20, MIRE, the Manual on Uniform Traffic Control Devices, and other national standards will be used where applicable. However, modifications to definitions and values may be made as appropriate for this publication and the intended audience.

7. The data set collected from the scene must be reasonable.

Data collected from the scene of the crash must be feasible and accessible to law enforcement. Data for analytical purposes should be derived from existing data elements or obtained through integration with other data systems whenever possible.

8. Integrated data elements must provide the source.

Each data element obtained from traffic records datasets other than the crash system must identify the source dataset (e.g., roadway system, driver license system, EMS system) and must exist in that source dataset. To avoid discrepancies between MMUCC and other national standards, integrated data elements are referenced from the appropriate national standard for that data system, and not recreated in detail in MMUCC.

Chapter 3: System-Populated Data Elements

The data elements in this chapter should be system-populated and should not be the responsibility of law enforcement officers to collect at the scene of the crash. These data elements provide tracking information on the status of a crash record in the workflow, case categorization, and enable record linkage with other data systems.

3.1 Essential System-Populated Data Elements

The following four data elements are part of the MMUCC guideline data standard. Data elements in this section are given the element identifier S (e.g., S1, S2, S3). NHTSA requires these four elements for States participating in NHTSA's EDT program.

- [S1. State Unique Crash ID](#)
- [S2. Agency \(Police Jurisdiction\)](#)
- [S3. Police-Reported](#)
- [S4. State Reportable Crash](#)

S1. State Unique Crash ID

Element Definition:

The unique crash report identifier (also referred to as the State case number) maintained in the statewide crash data repository.

Attribute Values:

- State Unique Crash ID

Remarks:

This is the key element to identify a crash record in the State's crash database.

Highway Safety Rationale:

This data element is critical for uniquely identifying a traffic crash record in a State, linking traffic record data systems, tracking and updating information, and for reference identification.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for STATE UNIQUE CRASH ID

None

S2. Agency (Police Jurisdiction)

Element Definition:

Law enforcement agency reporting the crash.

Attribute Values:

- Unique Agency ID

Remarks:

None

Highway Safety Rationale:

This data element is critical for identifying the initial investigation agency and aggregating and locating data.

Implementation Suggestions:

The State may wish to provide the NCIC Originating Agency Identifier (ORI Code) or State-generated Unique Agency ID.

Validation Rules:

None

Alignment Considerations for AGENCY (POLICE JURISDICTION)

None

S3. Police-Reported

Element Definition:

Indicates whether this is a crash report completed and signed by a law enforcement officer or representative appointed by the law enforcement agency (e.g., a non-sworn officer).

Attribute Values:

- [No](#)
- [Yes](#)

Remarks:

If a State database only includes police-reported crashes, this flag is not needed (i.e., POLICE REPORTED = **Yes** for all crashes). If a State database includes crashes not completed by law enforcement officers or appointed representatives, this flag is needed to identify police-reported crashes.

- **No** – This is a crash report completed by a driver, witness, or someone other than law enforcement. This could be online or by calling into an agency (e.g., driver self-report, desk reports).
- **Yes** – This is an official crash report completed and signed by a law enforcement officer or representative appointed by the law enforcement agency (e.g., a non-sworn officer).

Highway Safety Rationale:

This data element is critical for data filtering. NHTSA's EDT program will use this to identify police-reported crashes of interest for analysis.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for POLICE-REPORTED

None

S4. State Reportable Crash

Element Definition:

Indicates whether a crash meets the State's threshold for a reportable crash and is required to be reported by State law.

Attribute Values:

- [No](#)
- [Yes](#)

Remarks:

If a State database only includes State reportable crashes, this flag is not needed (i.e., STATE REPORTABLE CRASH = **Yes** for all crashes). If a State database includes crashes that are not State reportable, this flag is needed to identify the State reportable crashes.

- **No** – This crash does not meet the State's threshold for a reportable crash and is not required to be reported by State law.
- **Yes** – This crash meets the State's threshold for a reportable crash and is required to be reported by State law.

Highway Safety Rationale:

This data element is critical for determining if the crash meets the State's threshold for a reportable crash.

Implementation Suggestions:

Use business logic to determine if a crash is reportable or non-reportable based on the State's definition of a crash.

Validation Rules:

None

Alignment Considerations for STATE REPORTABLE CRASH

None

3.2 Optional System-Populated Data Elements

The following data elements are for tracking the case status and quality control efforts. Optional data elements are not given an element identifier, are not part of the MMUCC guideline data standard, and are not part of MMUCC mapping or alignment calculations as described in [Chapter 12: Aligning to MMUCC](#). For States participating in NHTSA’s EDT program, these data elements are helpful for NHTSA to understand the case status.

- **PAR Number,¹ PCR Number, or Local Case Number**
Law enforcement agency-assigned identifier for a crash. This could be used to cross check if there are any duplicate cases or for FARS early notification (EN) matching.
- **Date Crash Record Created**
Date the crash record is initially created or reported at the police jurisdiction (PJ) level.
- **Date Entered Into Statewide Crash Data Repository**
Date the crash record is entered into the statewide crash data repository.
- **Quality Control Review Date**
Date the crash record is reviewed for quality control in the State system. This field can be left blank if quality control has not been performed.
- **Crash Amended**
A Yes/No or True/False flag that indicates whether an existing crash record was amended. This could include adding information for a field (e.g., alcohol test results), adding a person to the crash record, etc.
- **Date Last Amended**
Date when the crash record was last updated by State. This field can be left blank if there is no amendment or update.
- **Investigation Completed**
A Yes/No or True/False flag that indicates whether the crash investigation is complete.
- **Investigation Completion Date**
Date when the investigation was complete.
- **Submission Type**
Type of crash report submission to the State’s central crash data repository (i.e., electronic or paper).

¹ NHTSA no longer uses the term “police accident report” or the word “accident.”

3.3 State Crash Repository Information

This information is part of the general description of the statewide crash data repository and is not specific to a crash record. For States participating in NHTSA's EDT program, NHTSA would like the following information about the statewide crash data repository.

- **Property Damage Threshold (dollar value)**

The State's threshold (dollar value) for a reportable non-injury crash as required by State law. For example, the State may require all non-injury crashes of \$1,000 or more to be reported and included in the State crash system.

- **Reporting of Non-Trafficway Crashes**

A Yes/No or True/False flag that indicates whether the State collects information on the crashes occurring outside of a trafficway.

Chapter 4: Crash Data Elements

The crash data elements describe the overall characteristics of the crash. Data elements in this chapter are given the element identifier C (e.g., C1, C2, C3).

- [C1. Crash Date](#)
- [C2. Crash Time](#)
- [C3. Date of Roadway Clearance](#)
- [C4. Time of Roadway Clearance](#)
- [C5. County or Equivalent](#)
- [C6. Global Position \(Latitude, Longitude\)](#)
- [C7. First Harmful Event](#)
- [C8. Location of First Harmful Event Relative to the Trafficway](#)
- [C9. Manner of Collision of the First Harmful Event](#)
- [C10. Atmospheric Conditions](#)
- [C11. Light Condition](#)
- [C12. Relation to Junction](#)
- [C13. Type of Intersection](#)
- [C14. School-Bus-Related](#)
- [C15. Work Zone](#)
- [C16. Secondary Crash](#)
- [C17. Related Factors - Crash Level](#)
- [C18. Route Number or Road Name](#)

C1. Crash Date

Element Definition:

The date when the crash occurred or if unknown, the date the crash was reported.

Attribute Values:

Specify:

- Crash Date

Remarks:

If the date of the crash is unknown, use the date the crash was reported.

Highway Safety Rationale:

This information is important for management, administration, evaluation, and linkage.

Implementation Suggestions:

- CRASH DATE can be used in conjunction with other data elements from the crash report to retrieve information from other traffic records data systems. See [Chapter 10: Traffic Records Data Integration](#) for details.
- The State may wish to have a calendar interface for the officer to select the date.
- The State may wish to store as ISO 8601 standard: yyyy-mm-dd.
- The State could separate Year, Month, and Day into subfields.

Validation Rules:

CRASH DATE must not be greater than the current date.

Alignment Considerations for CRASH DATE

1. Months in numerical form are acceptable (e.g., 01 for January, 02 for February).
2. If the State separates Year, Month, and Day into subfields, this *may* map to the MMUCC element.

C2. Crash Time

Element Definition:

The time at which the crash occurred.

Attributes Values:

Specify or select **Unknown**:

- Enter Valid Military Time (0000 – 2359)
- Unknown

Remarks:

Code Midnight as “0000.”

Highway Safety Rationale:

This information is important for management, administration, evaluation, and linkage.

Implementation Suggestions:

None

Validation Rules:

CRASH TIME must be in the range 0000 to 2359 or **Unknown**.

Alignment Considerations for CRASH TIME

1. The State will not align with MMUCC if they use the time of discovery rather than the MMUCC attribute **Unknown**.

C3. Date of Roadway Clearance

Element Definition:

The date of first recordable awareness to when all traffic lanes became available for normal traffic flow.

Attribute Values:

Specify:

- Date

Remarks:

None

Highway Safety Rationale:

This information is used by the State and FHWA Traffic Incident Management program to measure performance and identify opportunities to improve.

Implementation Suggestions:

- The State may wish to have a calendar interface for the officer to select the date.
- The State may wish to store as ISO 8601 standard: yyyy-mm-dd.
- The State may wish to have a method to select if the DATE OF ROADWAY CLEARANCE is the same as the CRASH DATE, and then auto-populate the information for this data element.

Validation Rules:

DATE OF ROADWAY CLEARANCE must not be greater than the current date.

Alignment Considerations for DATE OF ROADWAY CLEARANCE

1. Months in numerical form are acceptable (e.g., 01 for January, 02 for February).
2. If the State separates Year, Month, and Day into subfields, this *may* map to the MMUCC element.

C4. Time of Roadway Clearance

Element Definition:

The time of first recordable awareness to when all traffic lanes became available for normal traffic flow.

Attribute Values:

Select one or specify time:

- Not Applicable, Travel Lanes Not Blocked
- Enter Valid Military Time (0000 – 2359)
- Unknown

Remarks:

Code Midnight as “0000.”

Highway Safety Rationale:

This information is used by the State and FHWA’s TIM program to measure performance and identify opportunities to improve.

Implementation Suggestions:

None

Validation Rules:

TIME OF ROADWAY CLEARANCE fields must be in the range 0000 to 2359, **Not Applicable, Travel Lanes Not Blocked, or Unknown.**

Alignment Considerations for TIME OF ROADWAY CLEARANCE

None

C5. County or Equivalent

Element Definition:

The county or equivalent entity in which the crash physically occurred.

Attribute Values:

Specify one or select **Unknown:**

- [County or Equivalent Name](#)
- Unknown

Remarks:

When using software that recognizes the user's location (e.g., in a mapping tool), it is crucial to ensure the location captured in the software is the site of the [FIRST HARMFUL EVENT](#) rather than the location where the crash report is completed (if different).

- **County or Equivalent Name** - the name of the county (or equivalent) in which a crash physically occurred.

Highway Safety Rationale:

The crash location is important for analyses of local traffic safety programs, linkage of the crash system to other State traffic records data systems, and intrastate comparisons.

Implementation Suggestions:

- Create a dropdown list of the counties (or county equivalents) in the State, followed by their FIPS code. Examples from Maryland:
 - Allegany (24001)
 - Anne Arundel (24003)
 - Baltimore County (24005)
 - Baltimore City (24510)
 - Calvert (24009)
- County FIPS codes may be found from the [U.S. Census Bureau](#).
- This data element could be system populated based upon the location identified in [GLOBAL POSITION \(LATITUDE, LONGITUDE\)](#).

Validation Rules:

None

Alignment Considerations for COUNTY OR EQUIVALENT

1. Using the County FIPS Codes instead of county names are acceptable.
2. For States with ambiguous county or independent city names, the county identified must map to one and only one FIPS code. Examples:
 - a. Use "Baltimore City" or "Baltimore County" rather than "Baltimore"
 - b. Use "Richmond City" or "Richmond County" rather than "Richmond"
3. This data element could be system populated based upon the location identified in [GLOBAL POSITION \(LATITUDE, LONGITUDE\)](#).

C6. Global Position (Latitude, Longitude)

Element Definition:

The latitude and longitude where the [FIRST HARMFUL EVENT](#) of the crash occurred.

Attribute Values:

Specify or select **Unknown:**

- [Latitude, Longitude](#)
- Unknown

Remarks:

The location information in a crash file must have the capability to be linked to location information in other traffic records systems to study site-specific safety issues.

- **Latitude, Longitude** - The optimum method for recording crash locations is by lat/ long coordinates, which are universal. The format may be in degrees, minutes, seconds or in decimal degrees. States can collect the [Global Positioning System](#) coordinates by one of three recommended methods:
 - directly using GPS devices available on scene,
 - using clickable maps integrated into electronic crash reporting software, or
 - converting a linear referencing system coordinate to lat/long coordinates.

It should be noted that use of GPS units requires data collection agencies to verify the relative accuracy of those units and to maintain them (regular calibration, etc.) to ensure quality data. When using software that recognizes the user's location (e.g., in a mapping tool), it is crucial to ensure the location captured in the software is the site of the [FIRST HARMFUL EVENT](#) rather than the location where the crash report is completed (if different).

Highway Safety Rationale:

The geographic coordinates of the crash location are critical for problem identification, prevention programs, engineering evaluations, spatial analysis, and linking traffic records data files.

Implementation Suggestions:

- GLOBAL POSITION (LATITUDE, LONGITUDE) can be used in conjunction with other data elements from the crash report to retrieve information from other traffic records data systems. See [Chapter 10: Traffic Records Data Integration](#) for details.
- For States participating in NHTSA's EDT program, consider converting to decimal degree format prior to sending data.
- If using decimal degrees, the location information should be as precise as possible (e.g., five decimal places).

Validation Rules:

States should set up the minimum and maximum value for latitude and longitude based on the States' boundaries, or narrow it down to the appropriate level, such as county boundary, to ensure the accuracy of the crash location.

Alignment Considerations for GLOBAL POSITION (LATITUDE, LONGITUDE)

1. If the State element collects the Latitude and Longitude of the location where the unstabilized situation began rather than the location of the [FIRST HARMFUL EVENT](#), then it does not align with the MMUCC element.

C7. First Harmful Event

Element Definition:

The first injury- or damage-producing event of the crash.

Attribute Values:

Select one:

Group 1: Non-Collision Harmful Events

- [Rollover or Overturn](#)
- [Cargo or Equipment Loss, Shift, or Damage \(harmful\)](#)
- [Fell or Jumped From Motor Vehicle](#)
- [Fire or Explosion](#)
- [Immersion, Full or Partial](#)
- [Jackknife \(harmful to this vehicle\)](#)
- [Thrown or Falling Object](#)
- [Pavement Surface Irregularity \(ruts, potholes, grates, etc.\)](#)
- [Other Non-Collision](#)

Group 2: Collision with Motor Vehicle

- [Motor Vehicle In-Transport](#)
- [Parked Motor Vehicle](#)
- [Working Motor Vehicle](#)

Group 3: Collision With Non-Fixed Object

- [Non-Motorist](#)
- [Live Animal](#)
- [Ridden Animal or Animal-Drawn Conveyance](#)
- [Railroad Vehicle](#)
- [Road Vehicle on Rails](#)
- [Strikes Object at Rest That Had Fallen From Motor Vehicle In-Transport](#)
- [Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport](#)
- [Other Object \(not fixed\)](#)
- [Unknown Object Not Fixed](#)

Group 4: Collision With Fixed Object

- **Subgroup 1: Bridge Parts**
 - [Bridge Overhead Structure](#)
 - [Bridge Pier or Support](#)
 - [Bridge Rail \(includes parapet\)](#)
- **Subgroup 2: Structures**
 - [Building](#)
 - [Wall](#)
- **Subgroup 3: Traffic Barriers and Parts**
 - [Cable Barrier](#)
 - [Concrete Traffic Barrier](#)
 - [Guardrail Face](#)
 - [Guardrail End](#)
 - [Impact Attenuator or Crash Cushion](#)
 - [Other Traffic Barrier](#)
- **Subgroup 4: Posts, Poles, and Supports**
 - [Traffic Sign or Support](#)
 - [Traffic Signal or Support](#)
 - [Utility Pole or Light Support](#)
 - [Other Post, Pole, or Other Supports](#)
- **Subgroup 5: Other Trafficway Components**
 - [Culvert](#)
 - [Curb](#)
 - [Ditch](#)
 - [Embankment](#)
- **Subgroup 6: Other Specific Fixed Objects**
 - [Boulder](#)
 - [Ground](#)
 - [Tree \(standing only\)](#)
 - [Shrubbery](#)
 - [Snowbank](#)
 - [Fence](#)

- [Mailbox](#)
- [Fire Hydrant](#)
- **Subgroup 7: Other and Unknown**
 - [Other Fixed Object](#)
 - [Unknown Fixed Object](#)

Group 5: Unknown

- [Harmful Event, Details Unknown](#)

Remarks:

A non-collision harmful event is a [harmful event](#) that does not involve a collision.

A collision event is a harmful event that involves the collision of a [motor vehicle in-transport](#) with another motor vehicle, a non-fixed object, or a fixed object.

Group 1: Non-Collision Harmful Events

- **Rollover or Overturn** – used when a motor vehicle rotates (rolls over) at least one quarter turn onto its side or end. For motorcycles, laying the motorcycle down on its side is sufficient to use this attribute as a harmful event if damage or injury is produced.
- **Cargo or Equipment Loss, Shift, or Damage (harmful)** – refers specifically to the loss or shift of items carried on or in a motor vehicle or its trailing unit, causing damage and/or injury to the vehicle, its occupants, its parts, trailing unit, or the cargo itself. Harm can be measured in loss of monetary value from unrecoverable cargo loss as well as physical damage. For example: (1) A pickup truck brakes rapidly to avoid a collision. This causes a piece of lumber in the pickup bed to smash through the rear window. (2) Unsecured cargo shifts inside a box truck and bursts through the wall of the trailer. (3) Pallets of beehives on a flatbed truck fall off the truck on a sharp curve causing the hives to open and the bees to fly away.

Do not use this attribute if the cargo or equipment loss or shift on its own does not cause damage or injury (i.e., not a harmful event). Instead, see the SEQUENCE OF EVENTS non-harmful event [Cargo or Equipment Loss or Shift \(non-harmful\)](#). For example, a cargo tank driver swerves or over-corrects causing liquid in the tank to slosh and overtake vehicle control causing the vehicle to rollover. In this case, the cargo shift was not harmful on its own, but led to the harmful event [Rollover or Overturn](#).

- **Fell or Jumped From Motor Vehicle** – used when an occupant of this vehicle falls or jumps (not suicide) from the vehicle causing injury. For example, an occupant of a motor vehicle in-transport leans against the car door, it opens, and the occupant falls out; or a person riding on a vehicle's exterior (hood, roof, running board, etc.) falls or jumps, and is injured by the fall. If an occupant falls or jumps from a vehicle and is struck by that vehicle, use this attribute.
- **Fire or Explosion** – a fire or explosion that was the cause or result of the crash. A fire or explosion is a non-collision harmful event.

- **Immersion, Full or Partial** – occurs when a motor vehicle enters a body of water and results in injury or damage. This attribute would also be used if the vehicle came to rest in water and the depth cannot be ascertained.
- **Jackknife (harmful to this vehicle)** – a condition that occurs to a combination vehicle while in motion. The condition reflects a loss of control of the vehicle by the driver in which the trailer (or trailers) yaws from its normal straight-line path behind the power unit, striking the power unit, or other trailers, causing damage to the power unit or trailer. **Jackknife (harmful to this vehicle)** should only be coded as a harmful event if there is clear indication of damage to the jackknifed vehicle or injury to its occupants caused by the jackknife. If the jackknife was not harmful to this vehicle, see SEQUENCE OF EVENTS attribute [Non-Harmful Swaying Trailer or Jackknife](#).
- **Thrown or Falling Object** – a non-collision harmful event where any object is thrown (intentionally or unintentionally) and impacts an [in-transport](#) vehicle, or falls onto, into, or in the path of an in-transport motor vehicle. This excludes contacts made by loads or objects set in-motion by a motor vehicle (see [Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport](#)).
- **Pavement Surface Irregularity (ruts, potholes, grates, etc.)** - used when the surface irregularity is on a paved surface. Other examples include indication of contact with a dip, depression, low spot, trough, etc. If the impact is with a surface irregularity not on a paved surface, use the attribute [Ground](#). For a vehicle that “bottoms out” on the paved surface (causing damage) due to speed but not because of a pavement surface irregularity, use the attribute [Other Non-Collision](#).
- **Other Non-Collision** – a non-collision event not captured by other non-collision event attributes. For example, driving off a cliff where damage is not the result of an overturn or a collision with a fixed object, an unbelted passenger hits their head on the roof of a vehicle and is injured when the vehicle travels over a sharp dip in the road, situations where a passenger is sickened or dies due to carbon monoxide fumes leaking from a Motor Vehicle In-Transport.

Group 2: Collision with Motor Vehicle

- **Motor Vehicle In-Transport** – A motor vehicle is any motorized (mechanically or electrically powered) road vehicle not operated on rails. When applied to motor vehicles, “[in-transport](#)” refers to being in motion or on a [roadway](#) (travel lanes). Includes: motor vehicle in traffic on a highway, driverless motor vehicle in motion, motionless motor vehicle abandoned on a roadway, disabled motor vehicle on a roadway, etc.
- **Parked Motor Vehicle** – ANSI D.16-2017 defines a parked motor vehicle is a motor vehicle not in-transport, other than a [working motor vehicle](#), that is not in motion and not located on the [roadway](#) (travel lanes). In roadway lanes used for travel during some periods and for parking during other periods, a parked motor vehicle is considered [in-transport](#) during periods when parking is forbidden. This attribute includes any stopped motor vehicle where the entirety of the vehicle’s primary outline as defined by the four sides of the vehicle (e.g., tires, bumpers, fenders) and load, if any, is not within the roadway.

- **Working Motor Vehicle** – ANSI D.16-2017 defines a working motor vehicle as a motor vehicle in the act of performing construction, maintenance, or utility work related to the [trafficway](#). The “work” may be located within open or closed portions of the trafficway, and the vehicle performing these activities can be within or outside the trafficway boundaries. A working motor vehicle at the time of the [unstabilized situation](#) is not considered “in-transport.”

Group 3: Collision With Non-Fixed Object

- **Non-Motorist** – Any person who is not an occupant of a motor vehicle. This includes pedestrians, bicyclists, other cyclists, and occupants of non-motor vehicle transport devices.
- **Live Animal** – used for collisions with domesticated or wild live animals that are not themselves being used as transportation or to draw a wagon, cart, or other transport device. Use **Live Animal** if it cannot be determined if the struck animal is alive, dead, or if it was being ridden or drawing a transport device. If the animal was deceased prior to the crash, then use [Other Object \(not fixed\)](#).
- **Ridden Animal or Animal-Drawn Conveyance** - used for any type of animal being ridden at the time of the crash or any device being drawn by an animal (e.g., wagon, carriage, sleigh).
- **Railroad Vehicle** – Any land vehicle (train, engine) that is (1) designed primarily for, or in use for, moving people or property from one place to another on rails and (2) not in use on a land way other than a railroad.
 - Includes: Railroad trains, streetcar, trolley, or light rail on private way, railroad maintenance vehicles operating on rails.
 - Excludes: Streetcar or trolley operating on trafficway (see [Road Vehicle on Rails](#)).
- **Road Vehicle on Rails** - any land vehicle on rails designed to operate primarily within a trafficway.
 - Includes: Streetcar, trolley, or light rail operating on trafficway.
 - Excludes: Railroad trains, railroad maintenance vehicles operating on rails, or streetcar, trolley, or light rail operating on a private way (see [Railroad Vehicle](#)); streetcar, trolley, or electric bus operating on tires.
- **Strikes Object at Rest That Had Fallen From Motor Vehicle In-Transport** – used when a [motor vehicle in-transport](#) impacts a non-fixed object at rest that is known to have been the cargo or part of another motor vehicle in-transport. For example, a motor vehicle in-transport strikes a mattress that fell from another motor vehicle in-transport and was at-rest in the roadway. Do not use this attribute:
 - If the cargo or debris was at rest as a result of a prior crash, use attribute [Other Object \(not fixed\)](#).

- For vehicle occupants who are ejected or fall from a motor vehicle in-transport (e.g., a motorcycle operator falling from a motorcycle). For people falling from a motor vehicle, see non-collision event [Fell or Jumped From Motor Vehicle](#).
- For impacts involving two motor vehicles in-transport resulting from cargo, people, or objects set-in-motion. See [Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport](#).
- For at-rest detached trailers (e.g., a detached semi-trailer). See attribute [Other Object \(not fixed\)](#).
- **Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport** – used when the injury- or damage-producing event is two motor vehicles in-transport making contact by something set-in-motion by one or both of the vehicles. Examples:

- Logs fall off or come loose from an in-transport truck (see SEQUENCE OF EVENTS non-harmful event [Cargo or Equipment Loss or Shift \(non-harmful\)](#)) and the logs strike another motor vehicle in-transport traveling behind the truck causing injury or damage.
- A tire blows out on a motor vehicle in-transport (see SEQUENCE OF EVENTS non-harmful event [Equipment Failure \(blown tire, brake failure, etc.\)](#)) and pieces of the tire fly up and strike another motor vehicle in-transport causing injury or damage.
- A motor vehicle in-transport strikes a rock in the roadway producing injury or damage (see [Other Object \(not fixed\)](#)) and propels the rock into another motor vehicle in-transport causing injury or damage.
- A motorcycle rider loses control of the motorcycle that overturns (see [Rollover or Overturn](#)) and the rider is propelled into another motor vehicle in-transport causing injury or damage.

This attribute does not apply when the cargo, people, or objects set-in-motion by an in-transport motor vehicle strikes something other than another in-transport motor vehicle. In this case, use the applicable harmful attribute for the thing struck by the cargo, person, or object set-in-motion. Examples:

- If cargo falls from an in-transport truck (see SEQUENCE OF EVENTS non-harmful event [Cargo or Equipment Loss or Shift \(non-harmful\)](#)) and the cargo strikes a parked motor vehicle, use the attribute [Parked Motor Vehicle](#).
- If a motor vehicle in-transport strikes a rock in the roadway producing injury or damage (see [Other Object \(not fixed\)](#)) and propels the rock into a pedestrian, use the attribute [Non-Motorist](#).
- If a motorcycle rider loses control of the motorcycle that overturns (see [Rollover or Overturn](#)) and the rider is propelled into a standing tree, use the attribute [Tree \(standing only\)](#).
- **Other Object (not fixed)** – used when a motor vehicle in-transport strikes a non-fixed object that is known NOT to have been the cargo or part of another motor vehicle in-

transport, or when it is UNKNOWN whether the object was the cargo or part of another motor vehicle in-transport (i.e., objects such as a dead body, animal carcass, construction cones or barrels, an unattached trailer, a bicycle without a rider, downed tree limbs or power lines, or debris from a prior crash). For objects that have become separated from a motor vehicle in-transport not as a result of a prior crash, use attribute [Strikes Object at Rest That Had Fallen From Motor Vehicle In-Transport](#).

- **Unknown Object Not Fixed** - used when the event involves an object that is known to be not fixed but the specific object cannot be determined.

Group 4: Collision With Fixed Object

- **Bridge Overhead Structure** – any part of a bridge that is over the reference or subject [roadway](#). In crash reporting, this typically refers to the beams or other structural elements supporting a bridge deck.
- **Bridge Pier or Support** – support for a bridge structure including the ends (abutments).
- **Bridge Rail (includes parapet)** – barrier attached to a bridge deck or a bridge parapet to restrain motor vehicles, pedestrians, or other users.
- **Building** – roofed and walled structure built for permanent use. The type of construction material used is not of interest, nor is the use of the building.
- **Wall** - primarily vertical structure composed of concrete, metal, timber, or stone that is not part of a [Building](#) or a [Fence](#) but typically is used for retaining earth, abating noise, and separating areas. Also included as **Wall** are headwalls (or endwalls) that are sometimes provided on culvert ends principally to protect the sides of the embankment around the culvert opening against erosion. This does not include wingwalls, which are attached to ends of bridge abutments and extend back at an angle from the roadway. Wingwalls should be coded as [Bridge Pier or Support](#).
- **Cable Barrier** – flexible barrier system that uses several cables typically supported by steel posts. These can be used on the [roadside](#) or as a median barrier. These barriers are designed to help lessen impact or keep vehicles within the confines of the [road](#).
- **Concrete Traffic Barrier** – longitudinal traffic barrier constructed of concrete and located on the outside of the [road](#) surface, in a median, or in [gore](#) areas. This includes all temporary concrete barriers regardless of location (e.g., temporary barrier on a bridge being used to control traffic during bridge repair or construction).

Guardrail Face – surface area of the guardrail other than the end. Its function is to redirect the vehicle back onto the roadway. See [Figure 1. Guardrail face and guardrail end](#). **Guardrail End** – the end of the guardrail, with or without treatment. See [Figure 1. Guardrail face and guardrail end](#).



Figure 1. Guardrail face and guardrail end. Source: FHWA

- **Impact Attenuator or Crash Cushion** – a device for controlling the absorption of energy released during vehicle collision (crash cushion). Its most common application involves the protection of fixed roadside objects such as bridge piers, elevated gores at exit ramps, etc. Examples include barrels filled with water or sand, and plastic collapsible structures. See [Figure 2. Impact attenuator or crash cushion. Source: FHWA](#)



Figure 2. Impact attenuator or crash cushion. Source: FHWA

- **Other Traffic Barrier** – longitudinal barriers other than guardrails, [concrete traffic barriers](#), or [cable barriers](#). They may be composed of material such as wood or rock.
- **Traffic Sign or Support** – used when the post supporting a traffic sign, or the sign itself, is hit by a motor vehicle in-transport. This includes mile marker posts and elevated signs.
- **Traffic Signal or Support** – used when the post supporting a traffic signal, or the signal itself, is hit by a motor vehicle in-transport. Use **Traffic Signal or Support** for a railroad crossing arm or gate.
- **Utility Pole or Light Support** – constructed for the primary function of supporting an electric line, telephone line, or other electrical or electronic transmission line or cable. This includes the support poles for roadway lighting.
- **Other Post, Pole, or Other Supports** – used for posts other than [traffic signs](#), [traffic signals](#), [utility poles](#), or [light supports](#) (e.g., reflectors on poles alongside of roadway, parking meters, flag poles). For mailbox posts, use [Mailbox](#). For fence posts, use [Fence](#).
- **Culvert** – used when the vehicle strikes a manmade drain or channel crossing under a road, sidewalk, etc., resulting in injury or damage.

- **Curb** – used when the vehicle strikes a raised edge or border to a [roadway](#), resulting in injury or damage. Curbs may be constructed of concrete, asphalt, or wood and typically have a face height of less than 9 inches.
- **Ditch** – used when the vehicle strikes a trench used for drainage purposes, resulting in injury or damage. A ditch ends where a [culvert](#) begins and resumes on the opposite side of the culvert.
- **Embankment** – used when the vehicle strikes a raised structure to hold back water, to carry a roadway, or the result of excavation or washout (including erosion) that may be faced with earth (or rock, stone, or concrete), resulting in injury or damage. An **Embankment** can usually be differentiated from a [Wall](#) by its incline, whereas a wall is usually vertical. However, there are exceptions to this, such as a retaining wall that may be inclined or a vertical embankment that is caused by a natural event such as a washout.
In crashes involving a field approach or driveway crossing, use attribute **Embankment** when no specific components (e.g., culverts or ditches) are identified.
- **Boulder** - a rock of sufficient mass that when struck by a motor vehicle moves very little and remains basically intact. It may be considered as a fixed object.
- **Ground** - used when the impact is with an earthen or paved surface off this vehicle's roadway. For example, free falls or vaults from the road surface to the ground. If the impact is with a surface irregularity (e.g., ruts, potholes) not on a paved surface, use **Ground**. If the impact is with a pavement surface irregularity, use [Pavement Surface Irregularity \(ruts, potholes, grates, etc.\)](#). **Ground** should not be used when the harmful event is [Rollover or Overturn](#).
- **Tree (standing only)** – Tree is upright and in the ground. A standing tree is a fixed object as opposed to a fallen tree that is a moveable object.
- **Shrubbery** - vegetation usually of a woody multi-stemmed variety and in most instances is low growing rather than tall. May also be called bushes. Some common examples are boxwood, hawthorn, and mountain laurel.
- **Snowbank** - used when snowfall and/or road plowing creates essentially fixed barriers of snow and/or ice that are not snow-covered earth or rock embankments.
- **Fence** - a barrier constructed to prevent escape or intrusion or to mark a boundary. A fence can be made of wood, metal, stone, etc., and includes the fence posts and gates.
- **Mailbox** - a residence or business mail or newspaper box including the post. A cluster of mailboxes is included in this attribute. This attribute does not include USPS mailboxes, which are typically blue and are for general public use. For a USPS mailbox, use the attribute [Other Fixed Object](#).
- **Fire Hydrant** - the roadside device used by fire departments to provide water for fighting fires. Usually made of steel, these devices are also referred to as fire plugs or fire standpipes in some areas.
- **Other Fixed Object** – used when the object is fixed (considered a permanent structure) and is not described by any of the other fixed object attributes. This attribute excludes

collisions with curbing that forms raised islands, medians, or separators (see [Curb](#)).
Examples:

- Bus shelters
- Pedestrian walkways
- Toll booths
- Guy wires supporting utility poles
- USPS Mailbox for public use

Other examples include property damage to standing crops, yards, and other vegetation (excluding [Shrubbery](#), [Tree \(standing only\)](#), and [Ground](#)).

- **Unknown Fixed Object** - used when the event involves an object that is known to be fixed but the specific object cannot be determined.

Group 5: Unknown

- **Harmful Event, Details Unknown** - a harmful event occurred, but the classification (non-collision, collision with a motor vehicle, fixed object, or non-fixed object) was unknown.

Highway Safety Rationale:

This data element is essential for understanding crash causation and identifying traffic safety countermeasures.

Implementation Suggestions:

The attribute groupings are suggestions for nested drop-down lists. The State should organize the attributes in a way that is meaningful to the State's users. See [Chapter 11: Designing User-Centered Crash Reporting Systems](#) for more information.

Validation Rules:

None

Alignment Considerations for FIRST HARMFUL EVENT

1. This MMUCC element refers to the first [harmful event](#) occurring in the entire crash. The State must have a similar element at the Crash level.
2. Consider the following when mapping to the "Other" attributes. See [Uniformity Alignment Rules 10-14](#) for more information on "Other" attributes.
 - a. To align with the attribute **Other Non-Collision**, the State must possess all other attributes in [Group 1: Non-Collision Harmful Events](#).
 - b. To align with attribute **Other Object (not fixed)**, the State must possess all other attributes in [Group 3: Collision With Non-Fixed Object](#).

- c. To align with attribute **Other Traffic Barrier**, the State must possess all other attributes in Group 4: Collision With Fixed Object, [Subgroup 3: Traffic Barriers and Parts](#).
- d. To align with attribute **Other Post, Pole, or Other Supports**, the State must possess all other attributes in Group 4: Collision With Fixed Object, [Subgroup 4: Posts, Poles, and Supports](#).
- e. To align with attribute **Other Fixed Object**, the State must possess all other attributes in [Group 4: Collision With Fixed Object](#).

C8. Location of First Harmful Event Relative to the Trafficway

Element Definition:

The location of the [FIRST HARMFUL EVENT](#) as it relates to its position within or outside the [trafficway](#).

Attribute Values:

Select one:

- [On Roadway](#)
- [Continuous Left-Turn Lane](#)
- [On Shoulder](#)
- [On Roadside](#)
- [On Median](#)
- [Pedestrian Refuge Island or Traffic Island](#)
- [In Parking Lane or Zone](#)
- [Separator](#)
- [Gore](#)
- [Off-Roadway, Location Unknown](#)
- [Non-Trafficway Area](#)
- Unknown

Remarks:

See [Figure 3. Diagram of a trafficway](#) for diagrams of the trafficway.

- **On Roadway** – the portion of the [trafficway](#) normally designed for vehicular traffic (i.e., travel lanes). If the [FIRST HARMFUL EVENT](#) occurs in a continuous left-turn lane, use [Continuous Left-Turn Lane](#).
- **Continuous Left-Turn Lane** - a two-way left turn lane positioned between opposing straight-through travel lanes. When the [FIRST HARMFUL EVENT](#) occurs in a continuous left-turn lane, this attribute takes precedence over [On Roadway](#).
- **On Shoulder** - (if present) the part of a trafficway contiguous with the roadway for emergency use, for accommodation of stopped vehicles, and for lateral support of the roadway structure. A shoulder should be improved or maintained for these purposes (can be paved or unpaved). Not all roadways have shoulders.
- **On Roadside** – the outermost part of the [trafficway](#) from the property line or other boundary to the edge of the first [road](#). Includes: area between edge of trafficway and edge of [roadway](#) with no shoulder, and area between edge of trafficway and edge of shoulder. Excludes: roadways, shoulders, separators, and medians.

- **On Median** – the area of a divided trafficway between parallel roads separating travel in opposite directions. The principal functions of a median are to provide the desired freedom from interference of opposing traffic, to provide a recovery area for out-of-control vehicles, to provide a stopping area in case of emergencies, and to minimize headlight glare. Medians may be depressed, raised, or flush. Flush medians can be as little as four feet wide between roadway edge lines. Painted roadway edge lines four or more feet wide denote medians. Medians of lesser width must have a barrier to be considered a median. [Continuous Left-turn Lanes](#) are not considered Medians.
- **Pedestrian Refuge Island or Traffic Island** – A defined area between traffic lanes for control of vehicular movements, for toll collection, or for pedestrian refuge. Examples include areas:
 - between roadways of a trafficway meant to allow for a non-motorist to pause while traveling from one side of a trafficway to the other side;
 - for channelizing the flow of traffic at an intersection;
 - in the center island of a circular intersection;
 - dividing the entrance and exit in a driveway access.
- **In Parking Lane or Zone** – an area on the roadway, or next to the roadway, on which parking is permitted in marked or unmarked spaces. This includes curbside and edge of-roadway parking (legal residential parking, city-street parking, etc.). Sometimes a strip of roadway can be designated for parking at certain hours of the day (parking lane) and for regular travel at other hours (travel lane). This attribute should NOT be used during hours when parking is NOT permitted (see [On Roadway](#)). See [Figure 4. Diagram of a trafficway with parking lanes](#).
- **Separator** – the area of a [trafficway](#) between parallel [roads](#) separating travel in the same direction or separating a frontage road from other roads.
- **Gore** – area of land where two [roadways](#) diverge or converge. The area is bounded on two sides by the edges of the roadways, which join at the point of divergence or convergence. The direction of traffic must be the same on both sides of these roadways. The area includes shoulders or marked pavement, if any, between the roadways.
- **Off-Roadway, Location Unknown** – The [FIRST HARMFUL EVENT](#) is off the [roadway](#), but the location of the property line is unknown.
- **Non-Trafficway Area** – The [FIRST HARMFUL EVENT](#) was not physically located on any land way open to the public as a matter of right or custom for moving people or property from one place to another (i.e., outside the right-of-way).

Highway Safety Rationale:

This data element is important to categorize motor vehicle traffic versus non-traffic crashes and the relationship to the trafficway infrastructure.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY:

None

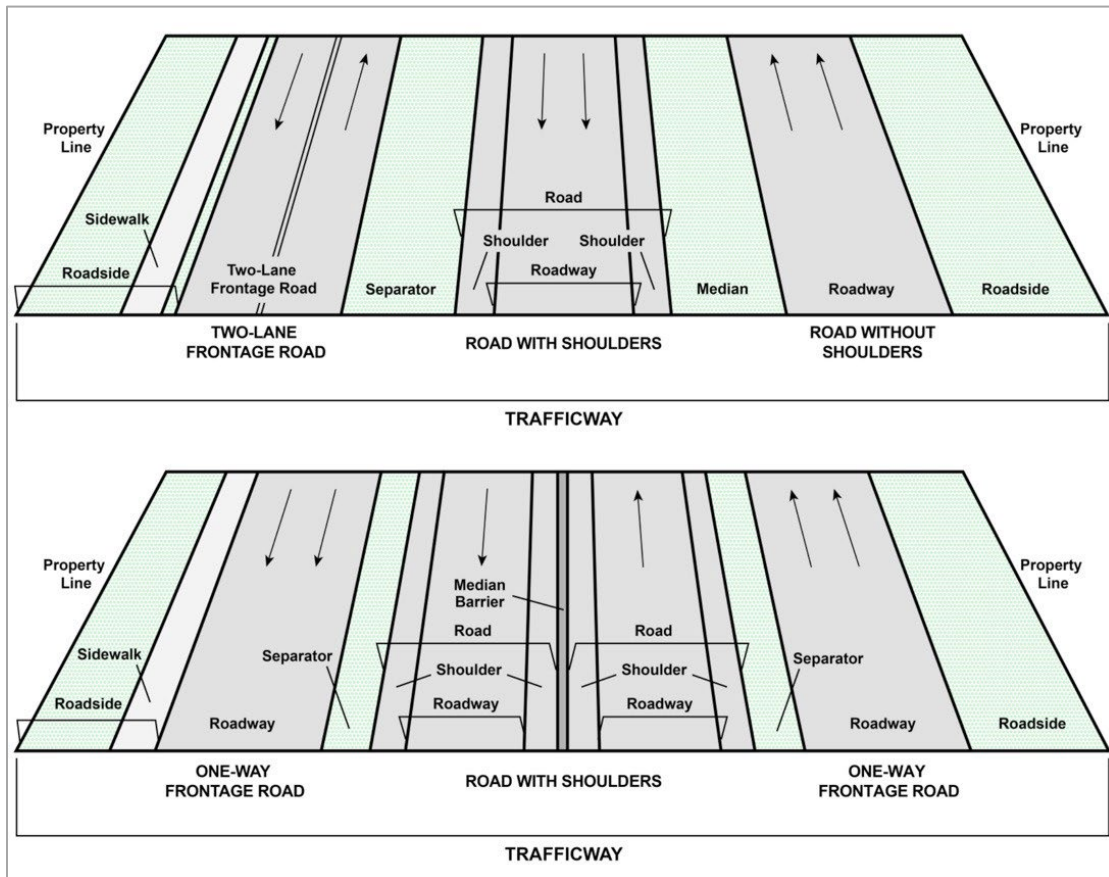


Figure 3. Diagram of a trafficway

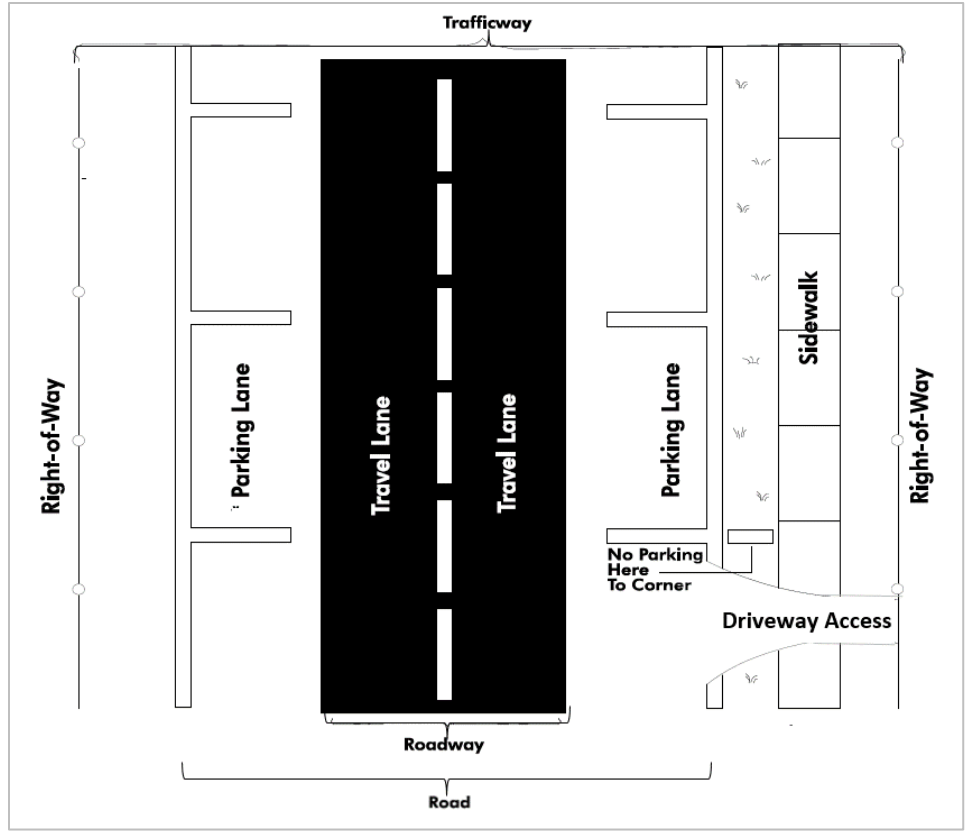


Figure 4. Diagram of a trafficway with parking lanes

C9. Manner of Collision of the First Harmful Event

Element Definition:

Identifies the orientation of two [Motor Vehicles In-Transport](#) when they are involved in the [FIRST HARMFUL EVENT](#) of a collision crash. If the FIRST HARMFUL EVENT is not a collision between two motor vehicles in-transport, it is classified as such.

Attribute Values:

Select one:

- [The First Harmful Event Was Not a Collision With a Motor Vehicle In-Transport](#)
- [Angle](#)
- [Front to Front](#)
- [Front-to-Rear or Rear-to-Front](#)
- [Rear to Rear](#)
- [Rear-to-Side or Side-to-Rear](#)
- [Sideswipe, Opposite Direction](#)
- [Sideswipe, Same Direction](#)
- [Other](#)
- [Unknown](#)

Remarks:

See [Figure 5. Manner of collision and associated crash diagrams](#) for diagrams of the manner of collision.

- **The First Harmful Event Was Not a Collision With a Motor Vehicle In-Transport** - is used when the [FIRST HARMFUL EVENT](#) is not an impact between two in-transport motor vehicles.
- **Angle** – A crash where two motor vehicles impact at an angle. For example, the front of one motor vehicle impacts the side of another motor vehicle.
- **Front to Front** – The front end of one vehicle collides with the front end of another vehicle, while the two vehicles are traveling in opposite directions.
- **Front-to-Rear or Rear-to-Front** – used when a collision occurs between the rear of one vehicle and the front of another vehicle. If this attribute is selected, the [INITIAL CONTACT POINT](#) for the vehicles involved in the [FIRST HARMFUL EVENT](#) must be the rear of one vehicle and the front of the other vehicle.
- **Rear to Rear** – used when the rear of a vehicle makes contact with the rear of another. This can happen when two vehicles are backing up.

- **Rear-to-Side or Side-to-Rear** – used when the rear of a vehicle makes contact with the side of another. This can happen when a vehicle backs up into the side of another vehicle or a vehicle hydroplanes and the side of the vehicle contacts the rear of another vehicle.
- **Sideswipe, Opposite Direction** – Two vehicles traveling in the opposite direction impact one another where the initial engagement does not overlap the corner of either vehicle so that there is no significant involvement of the front or rear surface areas. The impact then swipes along the surface of the vehicle parallel to the direction of travel.
- **Sideswipe, Same Direction** – Two vehicles traveling in the same direction impact one another where the initial engagement does not overlap the corner of either vehicle so that there is no significant involvement of the front or rear surface areas. The impact then swipes along the surface of the vehicle parallel to the direction of travel.
- **Other** - should be used for any collision between two motor vehicles in-transport where the collision is not described by the other listed attributes for this data element, including set-in-motion situations. Examples:
 - One motor vehicle in-transport end-swipes another motor vehicle in-transport instead of their sides swiping.
 - One motor vehicle in-transport slides into another motor vehicle in-transport such that they impact side-to-side (not a sideswipe).
 - One motor vehicle in-transport is airborne and makes contact with its front or undercarriage to the other motor vehicle in-transport’s hood or top.
 - Cargo or other load on one motor vehicle in-transport shifts and lands or is thrown into or onto another motor vehicle in-transport.
 - The tire of one motor vehicle in-transport throws a stone through the windshield of another motor vehicle in-transport.
 - An occupant of a motor vehicle in-transport falls or is thrown from the vehicle striking or is struck by another motor vehicle in-transport.
- **Unknown** – used when the MANNER OF COLLISION OF THE FIRST HARMFUL EVENT cannot be determined.

Highway Safety Rationale:

This data element is important for evaluating motor vehicle safety standards, driver behavior, infrastructure design, and for understanding crash causation.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for MANNER OF COLLISION OF THE FIRST HARMFUL EVENT

1. Please refer to the illustrations in [Figure 5. Manner of collision and associated crash diagrams](#) and the definitions to ensure that the attributes in the crash report represent the same attributes as in the MMUCC Guideline.
2. Some State crash reports may collect the direction of force, rather than the vehicle orientation at contact. Be aware that the MMUCC element is looking for the orientation of the vehicles when they made contact, regardless of the direction of force.
3. Some State crash reports may use the crash type “Backing,” which is a combination of MMUCC attributes **Rear-to-Side or Side-to-Rear** and **Rear to Rear**. If so, the State does not align to either of the two MMUCC attributes.
4. Be aware that the MMUCC element is looking for contact made in the [FIRST HARMFUL EVENT](#) of the entire crash. Contact between vehicles after the FIRST HARMFUL EVENT are not considered in this element. If the State element collects contact between vehicles at any other time during the crash events, the State element does not align with the MMUCC element.

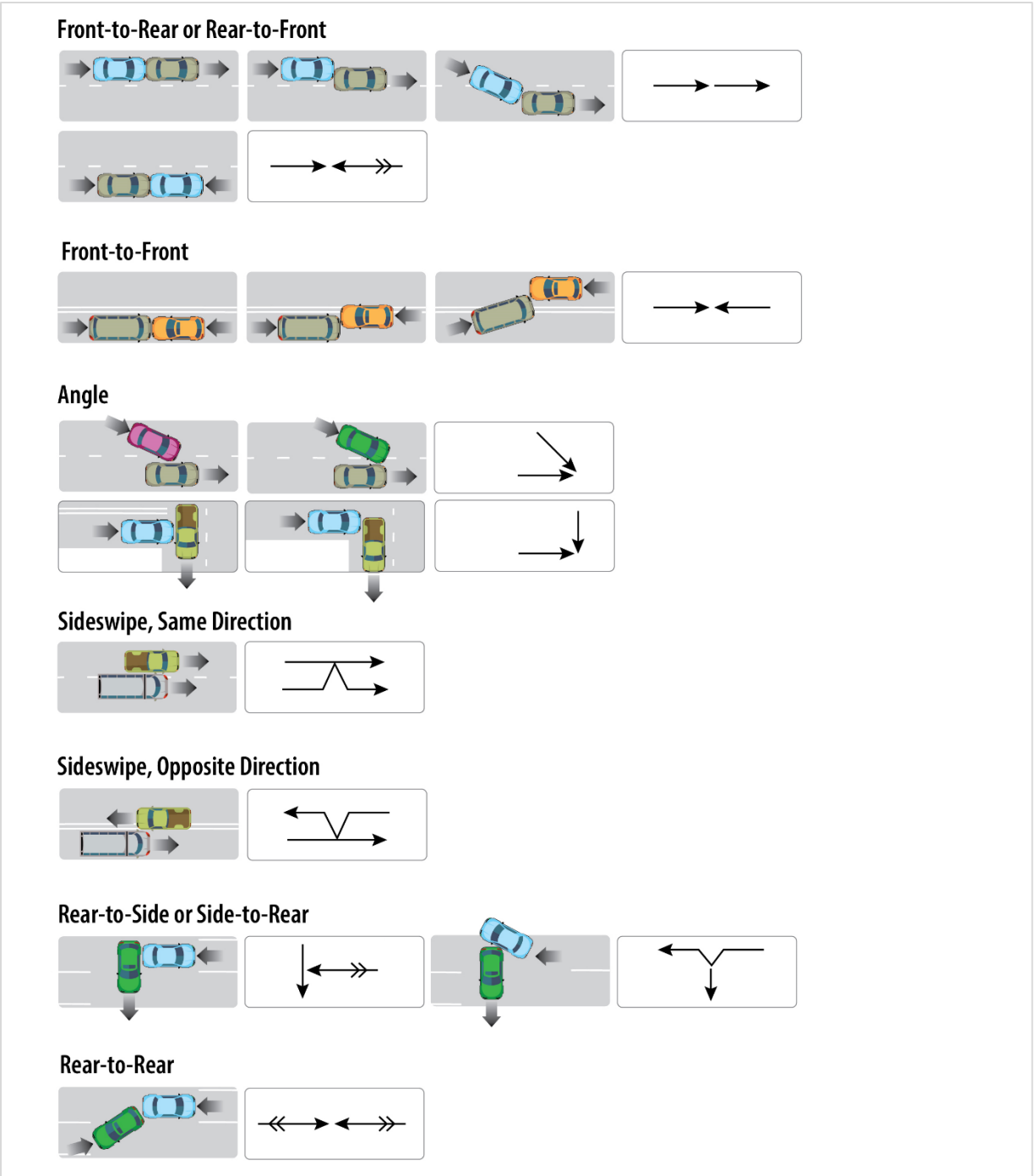


Figure 5. Manner of collision and associated crash diagrams

C10. Atmospheric Conditions

Element Definition:

The prevailing atmospheric conditions that existed at the time of the crash.

Attribute Values:

This is a multi-selection data element. Allow a minimum system capability of two selections (see [Implementation Suggestions](#)).

- [Clear](#)
- [Cloudy](#)
- [Rain](#)
- [Freezing Rain](#)
- [Fog or Mist](#)
- [Snow](#)
- [Blowing Snow](#)
- [Blowing Sand, Soil, Dirt, or Dust](#)
- [Smog or Smoke](#)
- [Severe Crosswinds](#)
- [Sleet or Hail](#)
- Other
- Unknown

Remarks:

- **Clear** - used when the sky is free of clouds or partially cloudy if sunlight is not diminished.
- **Cloudy** - used when the sky is overcast or partially cloudy when sunlight is diminished.
- **Rain** - used for precipitation other than [Snow](#) or [Sleet or Hail](#). If the rain is freezing, select [Freezing Rain](#).
- **Freezing Rain** – used for precipitation falling as liquid (rain) and then freezing on the roadway, not including sleet or hail (see [Sleet or Hail](#)).
- **Fog or Mist** - used for a visible accumulation of fine water droplets in the atmosphere that reduce visibility.
- **Snow** - used when precipitation is falling as frozen flakes at the time of the crash not including blowing snow (see [Blowing Snow](#)).

- **Blowing Snow** – used for wind-driven snow that reduces visibility. **Blowing snow** can be falling snow or snow that has already accumulated but is picked up and blown by strong winds.
- **Blowing Sand, Soil, Dirt, or Dust** – used for earthen particles being blown about by the wind, reducing visibility.
- **Smog or Smoke** - used for a natural and/or man-made condition of suspended particles resulting from combustion or other atmospheric pollutants that causes reduced visibility.
- **Severe Crosswinds** – used for strong air flow perpendicular to the intended path of travel.
- **Sleet or Hail** – used for conditions where the precipitation is falling as ice (sleet or hail), not including freezing rain (see [Freezing Rain](#)).

Highway Safety Rationale:

The weather conditions are important for understanding factors related to crash causation.

Implementation Suggestions:

- Although the minimum system capability requirement for this data element is two selections, NHTSA recommends this as a “Select All That Apply” data element.
- If the State allows two or more selections, gray out or remove previous selections in the drop-down list for each successive selection.
- If the State allows two or more selections, only allow an attribute to be selected once.

Validation Rules:

If ATMOSPHERIC CONDITIONS = **Clear**, then only that one code and no other must be coded.

Alignment Considerations for ATMOSPHERIC CONDITIONS:

None

C11. Light Condition

Element Definition:

The type or level of light that existed at the time of the motor vehicle traffic crash.

Attribute Values:

Select one

- [Daylight](#)
- [Dawn](#)
- [Dusk](#)
- [Dark – Lighted](#)
- [Dark – Not Lighted](#)
- [Dark – Unknown Lighting](#)
- Unknown

Remarks:

If the crash occurs within a tunnel, select the appropriate attribute for the lighting conditions in the tunnel.

- **Daylight** – use whenever the sun is above the horizon at a given location.
- **Dawn** – the transition period going from “dark of night” to daylight. This is typically the 30-minute period before the sun rises.
- **Dusk** – the transition period going from daylight to “dark of night.” This is typically the 30-minute period after the sun sets.
- **Dark – Lighted** – the scene of the crash is illuminated at night, or another period of darkness, by streetlamps or other man-made light sources.
- **Dark – Not Lighted** – the scene of the crash is not illuminated at night, or another period of darkness, by streetlamps or other man-made light sources.
- **Dark – Unknown Lighting** – used when it is known that the crash occurred at night or during another period of darkness, but not known if the crash scene was illuminated by a man-made light source.

Highway Safety Rationale:

This data element is important for understanding factors related to crash causation and evaluating traffic safety countermeasures.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for LIGHT CONDITION:

None

C12. Relation to Junction

Element Definition:

The location of the [FIRST HARMFUL EVENT](#) with respect to presence in a junction or proximity to components typically in junction or interchange areas.

Attribute Values:

Subfield 1: Within [Interchange Area](#) (select one)

- No
- Yes
- Unknown

Subfield 2: Specific Location (select one)

- [Non-Junction](#)
- [Acceleration or Deceleration Lane](#)
- [Crossover-Related](#)
- [Driveway Access or Related](#)
- [Entrance or Exit Ramp or Related](#)
- [Intersection or Related](#)
- [Railway Grade Crossing](#)
- [Shared-Use Path or Trail](#)
- [Through Roadway](#)
- [Other Location Within an Interchange Area](#) (median, shoulder, and roadside)
- Unknown

Remarks:

The coding of this data element is based on the location of the [FIRST HARMFUL EVENT](#) of the crash.

An interchange is a system of interconnecting roadways in conjunction with one or more grade separations, providing for the movement of traffic between two or more roadways on different levels. See [Figure 6. Diagram of an interchange](#) and [Figure 7. Diagram of an interchange area](#).

A junction is either an intersection or the connection between a driveway access and a roadway other than a driveway access. See [Figure 8. Diagram of an intersection](#).

- **Non-Junction** – is used when the [FIRST HARMFUL EVENT](#) occurs in the [roadway](#) that is not an intersection or a connection between a driveway access and a roadway other than a driveway access. Use **Non-Junction** for crashes where the FIRST HARMFUL EVENT occurs outside an interchange area and does not occur in or related to a junction,

ramp, rail grade crossing, crossover, or shared-use path or trail. This attribute includes crashes that occur on a parking lot way (access road) at the connection of a parking aisle.

- **Acceleration or Deceleration Lane** – used when the [FIRST HARMFUL EVENT](#) occurs in a travel lane in the [roadway](#) that is designated for vehicles to either increase vehicle speed to reach traffic speed, or to reduce speed.
- **Crossover-Related** – used when the [FIRST HARMFUL EVENT](#) occurs in a crossover or on approach to or exit from a crossover and related to the movement of traffic units through the crossover. Note a crossover is the area of the median of a divided trafficway where motor vehicles are permitted to cross the opposing lane of traffic or execute a U-turn. Breaks in the median designated for “authorized vehicles only” are not considered crossovers.
- **Driveway Access or Related** – used when the [FIRST HARMFUL EVENT](#) occurs:
 - On a driveway access or involves a road vehicle entering or leaving by way of a driveway access where at least one traffic unit (vehicle, cyclist, or pedestrian) is physically on the driveway access within the [trafficway](#), OR
 - Adjacent to a driveway, does not occur on a driveway access but results from an activity, behavior, or control related to the movement of traffic units onto or out of a driveway.
- **Entrance or Exit Ramp or Related** – used when the [FIRST HARMFUL EVENT](#) occurs on an approach to or exit from a [roadway](#) or results from an activity, behavior, or control related to the movement of traffic units entering or exiting a ramp.
- **Intersection or Related** – used when the [FIRST HARMFUL EVENT](#) (1) occurs within an intersection or on an approach to or exit from an intersection and (2) results from an activity, behavior or control related to the movement of traffic units through the intersection.
- **Railway Grade Crossing** – used when the [FIRST HARMFUL EVENT](#) occurs in the at-grade crossing of the trafficway and railroad.
- **Shared-Use Path or Trail** – used when the [FIRST HARMFUL EVENT](#) occurs in a bikeway physically separated from motor vehicle traffic by an open space or barrier. They may also be used by pedestrians, skaters, wheelchair users, joggers, and other users. Most have two-way travel.
- **Through Roadway** – used when the [FIRST HARMFUL EVENT](#) occurs in an interchange area and it does NOT occur (1) on an [Entrance or Exit Ramp](#), (2) in an [Intersection or Related](#) to an intersection or other junction, or (3) in an [Acceleration or Deceleration Lane](#).

- **Other Location Within an Interchange Area (median, shoulder, and roadside)** - used when the [FIRST HARMFUL EVENT](#) occurs within an interchange area, off the roadway (e.g., median, shoulder, roadside) and is not related to the use of or the entry onto a ramp. Examples:
 - A vehicle on the **Through Roadway** portion of the interchange area departs the roadway and overturns in the median.
 - A vehicle leaves the **Through Roadway** portion of the interchange area and strikes a vehicle parked on the shoulder.

Highway Safety Rationale:

This data element is important to understand and mitigate conflict points between traffic units (vehicle to vehicle and vehicle to people).

Implementation Suggestions:

The following are valid combinations of Subfields 1 and 2 and can be implemented in an electronic system to assist with data selection.

- If Subfield 1: Within Interchange Area equals **No**, then Subfield 2: Specific Location must equal one of the following.
 - **Non-Junction**
 - **Intersection or Related**
 - **Driveway Access or Related**
 - **Entrance or Exit Ramp or Related**
 - **Railway Grade Crossing**
 - **Crossover Related**
 - **Shared-Use Path or Trail**
 - **Unknown**
- If Subfield 1: Within Interchange Area equals **Yes**, then Subfield 2: Specific Location must equal one of the following.
 - **Intersection or Related**
 - **Driveway Access or Related**
 - **Entrance or Exit Ramp or Related**
 - **Crossover Related**
 - **Shared-Use Path or Trail**
 - **Acceleration or Deceleration Lane**
 - **Through Roadway**

- **Other Location Within an Interchange Area (median, shoulder, and roadside)**
- **Unknown**
- If Subfield 1: Within Interchange Area equals **Unknown**, then Subfield 2: Specific Location must equal one of the following:
 - **Intersection or Related**
 - **Driveway Access or Related**
 - **Entrance or Exit Ramp or Related**
 - **Crossover Related**
 - **Shared-Use Path or Trail**
 - **Unknown**

Validation Rules:

- If RELATION TO JUNCTION Subfield 1: Within Interchange Area = **No**, then Subfield 2: Specific Location must = **Non-Junction, Intersection or Related, Driveway Access or Related, Entrance or Exit Ramp or Related, Railway Grade Crossing, Crossover Related, Shared-Use Path or Trail, or Unknown.**
- If RELATION TO JUNCTION Subfield 1: Within Interchange Area = **Yes**, then Subfield 2: Specific Location must = **Intersection or Related, Driveway Access or Related, Entrance or Exit Ramp or Related, Crossover Related, Shared-Use Path or Trail, Acceleration or Deceleration Lane, Through Roadway, Other Location Within an Interchange Area (median, shoulder, and roadside), or Unknown.**
- If RELATION TO JUNCTION Subfield 1: Within Interchange Area = **Unknown**, then Subfield 2: Specific Location must = **Intersection or Related, Driveway Access or Related, Entrance or Exit Ramp or Related, Crossover Related, Shared-Use Path or Trail, or Unknown.**

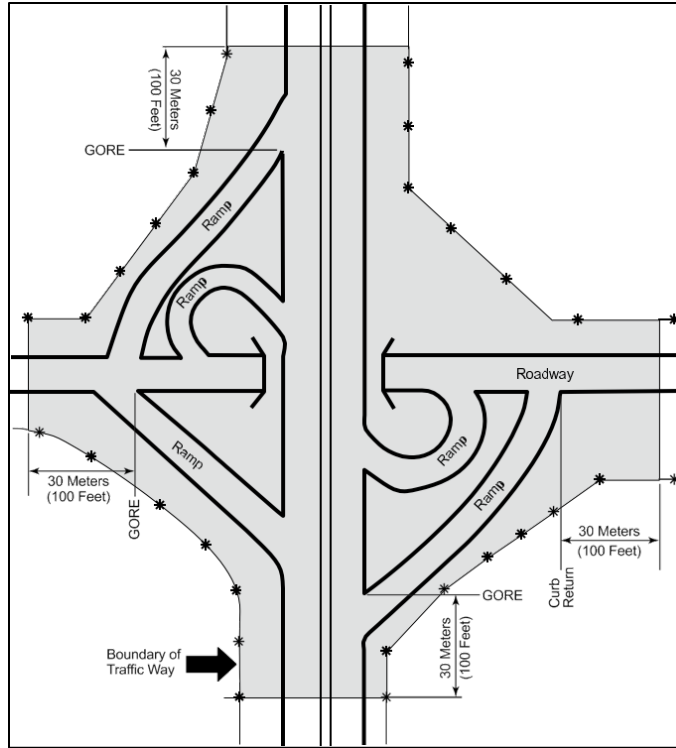


Figure 6. Diagram of an interchange. Source: ANSI D.16-2017 Manual on Classification of Motor Vehicle Traffic Crashes, 8th Edition

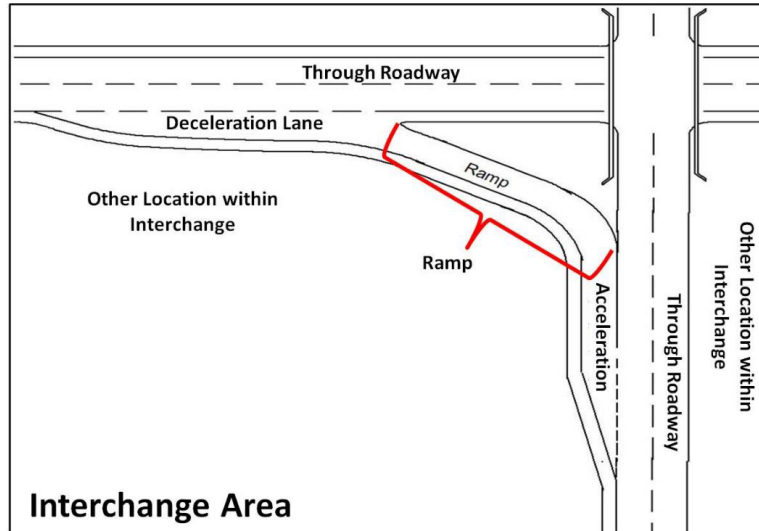


Figure 7. Diagram of an interchange area. Source: 2023 FARS/CRSS Coding and Validation Manual

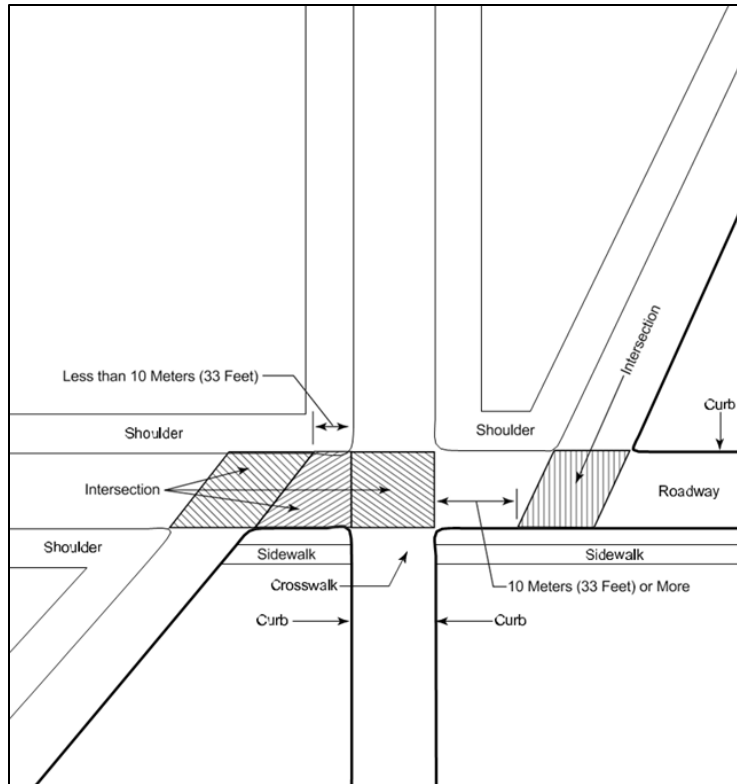


Figure 8. Diagram of an intersection. Source: ANSI D.16-2017 Manual on Classification of Motor Vehicle Traffic Crashes, 8th Edition

Alignment Considerations for RELATION TO JUNCTION

1. Be aware that the MMUCC element is looking for the location of the [FIRST HARMFUL EVENT](#) of the entire crash with respect to a junction. Events after the FIRST HARMFUL EVENT are not considered in this element. If the State element considers events at any other time during the crash events, the State element does not align with the MMUCC element.
2. To successfully align with Subfield 1: Within Interchange Area, the State must have a similar data element or subfield indicating whether the crash occurred within an [interchange](#) area or not.
3. Note that if the State has a data element indicating whether a crash is an intersection crash, it cannot be used to align with Subfield 1, because an intersection and an [interchange](#) are not the same thing. See [Figure 6. Diagram of an interchange](#) and [Figure 8. Diagram of an intersection](#).
4. To align Subfield 2, be cautious of similar terms used by the State. For example, a State may have an attribute “Railway Grade Crossing” that may not align with the MMUCC attribute **Railway Grade Crossing**. To use the MMUCC attribute, the [FIRST HARMFUL EVENT](#) must occur within the at-grade crossing of the trafficway and railroad. The State’s definition may include the at-grade crossing of the trafficway and railroad, but also crashes related to the crossing. Because of the differences in definitions, the State attribute does not align with the MMUCC attribute.

5. The State can align if they use synonymous terminology for specific locations. For example, a State can use “On/Off Ramp” instead of Entrance or Exit Ramp if the definitions are the same.

C13. Type of Intersection

Element Definition:

Allows separation of various intersection types when the location of the [FIRST HARMFUL EVENT](#) is in an intersection or related to the use of an intersection.

Attribute Values:

Select one

- [Not an Intersection](#)
- [T-Intersection](#)
- [Y-Intersection](#)
- [L-Intersection](#)
- [Four-Leg Intersection](#)
- [Five or More Legs and Not Circular](#)
- [Circular Intersection \(e.g., Roundabout, Traffic Circle\)](#)
- [Other Intersection Type](#)
- Unknown

Remarks:

The attribute selected should be based on the location of the [FIRST HARMFUL EVENT](#) and is only applicable to intersection or intersection-related crashes; therefore, if [RELATION TO JUNCTION](#) does not equal **Intersection or Related**, then select the attribute [Not an Intersection](#). See [Figure 9. Intersection examples](#) for examples of intersection types.

- **Not an Intersection** - is used when [RELATION TO JUNCTION](#) Subfield 2 equals **Non-Junction, Acceleration or Deceleration Lane, Crossover-Related, Driveway Access or Related, Entrance or Exit Ramp or Related, Railway Grade Crossing, Shared-Use Path or Trail, Through Roadway, Other Location Within an Interchange Area (median, shoulder, and roadside)**, or **Unknown**.
- **T-Intersection** – used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the intersection is where two roadways connect in a perpendicular manner and one roadway does not continue across the other roadway. The roadways form a “T.”
- **Y-Intersection** – used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the intersection is where three roadways connect and none of the roadways continue across the other roadways. The roadways form a “Y.”
- **L-Intersection** – used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the intersection is a two-armed intersection in which one road intersects with another road but neither road extends beyond the other road. The roadways form an “L.”

- **Four-Leg Intersection** – used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the two roadways cross or connect.
- **Five or More Legs and Not Circular** - used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the intersection is where more than two roadways cross or connect.
- **Circular Intersection (e.g., Roundabout, Traffic Circle)** - used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the intersection of roads is where motor vehicles must travel around a circle to continue on the same road or leave on any intersecting road.
- **Other Intersection Type** - is used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the intersection design is not captured under one of the other attributes. For example, a restricted crossing U-turn (RCUT), see [Figure 10. Example of an unsignalized RCUT intersection.](#)

Highway Safety Rationale:

This data element is important to understand and mitigate conflict points between traffic units (vehicle to vehicle and vehicle to people).

Implementation Suggestions:

If [RELATION TO JUNCTION](#) Subfield 2: Specific Location equals **Non-Junction, Acceleration or Deceleration Lane, Crossover-Related, Driveway Access or Related, Entrance or Exit Ramp or Related, Railway Grade Crossing, Shared-Use Path or Trail, Through Roadway, Other Location Within an Interchange Area (median, shoulder, and roadside), or Unknown**, then autofill TYPE OF INTERSECTION with **Not an Intersection**.

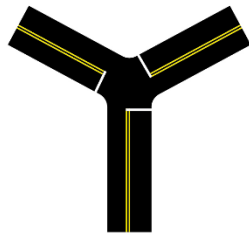
Validation Rules:

None

Alignment Considerations for TYPE OF INTERSECTION:

1. Be aware that the MMUCC element is looking for the location of the [FIRST HARMFUL EVENT](#) of the entire crash, with respect to an intersection. Events after the FIRST HARMFUL EVENT are not considered in this element. If the State element considers events at any other time during the crash events, the State element does not align with the MMUCC element.

8. Data Element: Type of Intersection



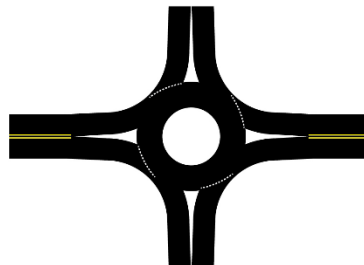
Y-Intersection



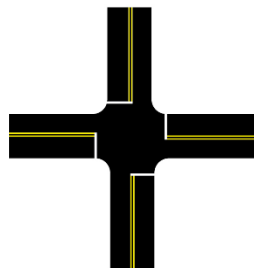
T-Intersection



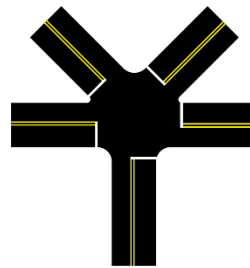
L-Intersection



Circular Intersection
(e.g., Roundabout, Traffic Circle)



Four-Leg Intersection



Five or More Legs and Not Circular

Figure 9. Intersection examples

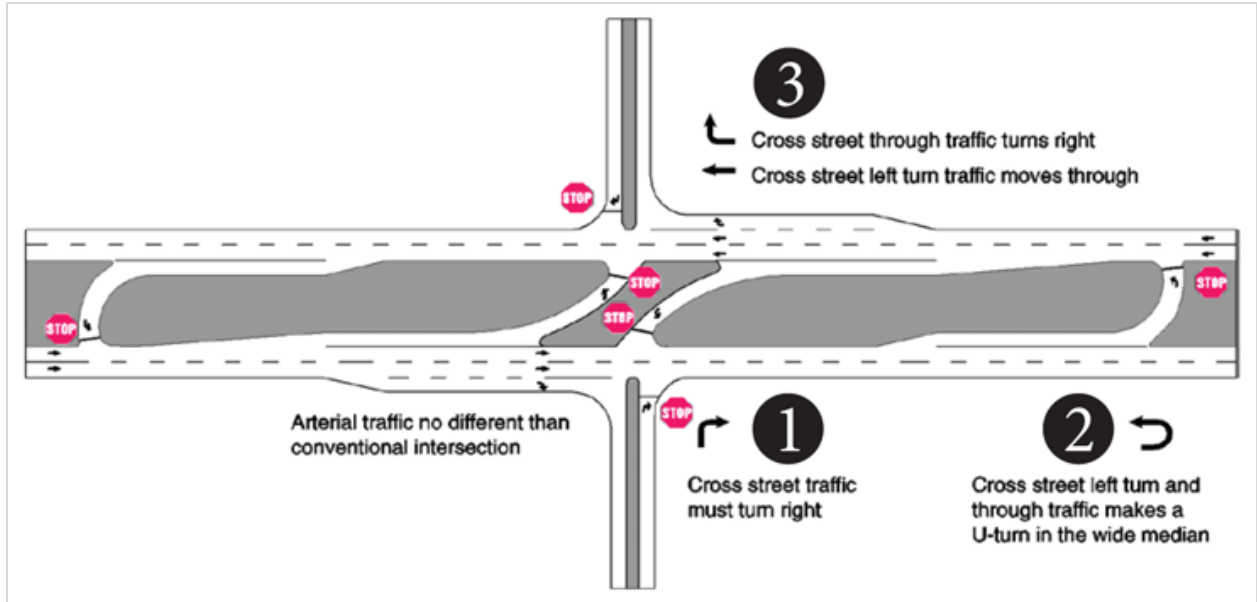


Figure 10. Example of an unsignalized RCUT intersection. Source: FHWA

C14. School-Bus-Related

Element Definition:

Indicates whether a school bus or motor vehicle functioning as a school bus for a school-related purpose is directly or indirectly involved in the crash.

Attribute Values:

Select one:

- No
- Yes

Remarks:

The “school bus,” with or without a passenger on board, must be directly involved as a contact motor vehicle or indirectly involved as a noncontact motor vehicle (e.g., child struck when boarding or alighting from the school bus, two vehicles colliding as the result of the stopped school bus).

For this data element, a school bus or motor vehicle functioning as a school bus is a motor vehicle authorized by a school or school district for the transportation of any school pupil at or below the 12th-grade level to or from a public or private school or school-related activity.

NHTSA considers any preprimary, primary, or secondary school, including private and parochial schools, a “school” for purposes of NHTSA’s school bus regulations. The definition of “school” in the context of NHTSA’s school bus regulations does not differentiate between private and public schools.

NHTSA interprets “school” in the context of its regulations not to include daycares, childcare centers, or preschools, including Head Start programs. The school bus requirements do not apply to the transportation of post-secondary school students such as college students, adult education participants, or post-high school vocational students. Organizations providing religious instruction, such as Sunday school, are not considered “schools” under NHTSA’s school bus regulations. Athletic teams that have no connection with a school are also not considered schools.

A school-related event is any activity sponsored by a school, whether on or off school grounds. These may include sports events, band concerts, field trips, and competitions such as debate or chess tournaments.

Highway Safety Rationale:

This data element is important to determine where and how school bus operations affect overall traffic safety.

Implementation Suggestions:

If at least one vehicle has BUS USE equal to **School**, then autofill SCHOOL-BUS-RELATED with **Yes**.

Validation Rules:

None

Alignment Considerations for SCHOOL-BUS-RELATED

1. The State must have a similar element at the crash level. Having “School Bus” as a vehicle body type will not align to **Yes**.

C15. Work Zone

Element Definition:

A crash that occurs in or related to a construction, maintenance, or utility work zone, whether workers were present at the time of the crash or not.

Attribute Values:

Subfield 1: Work Zone Type (select one)

- [None](#)
- [Construction](#)
- [Maintenance](#)
- [Utility](#)
- [Work Zone, Type Unknown](#)

Subfield 2: Location of the Crash (select one)

- [Before the First Work Zone Warning Sign](#)
- [Advance Warning Area](#)
- [Transition Area](#)
- [Activity Area](#)
- [Termination Area](#)
- [Not Applicable \(Not Within or Related to a Work Zone\)](#)

Subfield 3: Work Zone Description (This is a multi-selection Subfield. Allow a minimum system capability of two selections (see [Implementation Suggestions](#)).)

- [Lane Closure](#)
- [Lane Shift](#)
- [Crossover](#)
- [Work on Shoulder or Median](#)
- [Intermittent or Moving Work](#)
- [Other Type of Work Zone](#)
- [Not Applicable \(Not Within or Related to a Work Zone\)](#)

Subfield 4: Workers Present (select one)

- No
- Yes
- [Not Applicable \(Not Within or Related to a Work Zone\)](#)
- Unknown

Subfield 5: Law Enforcement Present (select one)

- No
- Yes
- [Not Applicable \(Not Within or Related to a Work Zone\)](#)
- Unknown

Remarks:

Work zone crashes may also include those involving motor vehicles slowed or stopped because of the work zone, even if the [FIRST HARMFUL EVENT](#) occurred before the first warning sign. See [Figure 11. Diagram of a work zone area](#) for a diagram of the work zone area.

This data element needs to be collected at the scene because work zones are temporary or moving operations that are not recorded in permanent road inventory files.

The use of these codes does not imply that the crash was caused by the construction, maintenance, or utility activity.

Work Zone:

A work zone is defined as an area of a trafficway where construction, maintenance, or utility work activities are identified by warning signs/signals/indicators, including those on transport devices (e.g., signs, flashing lights, channelizing devices, barriers, pavement markings, flagmen, warning signs, and arrow boards mounted on the vehicles in a mobile maintenance activity) that mark the beginning and end of a construction, maintenance, or utility work activity. It extends from the first warning sign, signal, or flashing lights to the END ROAD WORK sign or the last traffic control device pertinent for that work activity. Work zones also include roadway sections where there is ongoing, moving (mobile) work activity such as lane line painting or roadside mowing only if the beginning of the ongoing, moving (mobile) work activity is designated by warning signs or signals.

Work Zone Crash:

A work zone crash is a [motor vehicle traffic crash](#) in which the [FIRST HARMFUL EVENT](#) occurs within the boundaries of a work zone or on an approach to or exit from a work zone, resulting from an activity, behavior, or control related to the movement of the traffic units through the work zone.

See the [ANSI D.16-2017](#) definitions of “Work Zone” and “Work Zone Crash” for inclusions and exclusions.

Subfield 1: Work Zone Type

- **None** - used when there is no indication that the crash is a work zone crash as defined above.
- **Construction** - used when there is long-term stationary construction such as building a new bridge, adding travel lanes to the roadway, extending an existing trafficway, etc. Highway construction includes construction of appurtenances, such as guardrails or ditches, surveying activity, installation of utilities within the right-of-way, etc.

- **Maintenance** - used when there are work activities, including moving work activities, such as striping the roadway, median and roadside grass mowing or landscaping, pothole repair, snowplowing, etc., where there are warning signs or signals marking the beginning of the moving work area.
- **Utility** - used when there is short-term stationary work such as repairing or maintaining electric, gas, water lines, or traffic signals. The utility company must perform the work.
- **Work Zone, Type Unknown** - used when there is insufficient information to distinguish between [Construction](#), [Maintenance](#), or [Utility](#).

Subfield 2: Location of the Crash

- **Before the First Work Zone Warning Sign** – the [FIRST HARMFUL EVENT](#) was located before the first work zone warning sign.
- **Advance Warning Area** – the [FIRST HARMFUL EVENT](#) was located after the first warning sign but before the transition area.
- **Transition Area** – the [FIRST HARMFUL EVENT](#) was located before the activity area, where lanes are shifted or tapered for lane closure, moving traffic out of its normal path.
- **Activity Area** – the [FIRST HARMFUL EVENT](#) was located adjacent to actual work area, whether workers and equipment were present or not.
- **Termination Area** – the [FIRST HARMFUL EVENT](#) was located after the activity area but before traffic resumes normal conditions.
- **Not Applicable (Not Within or Related to a Work Zone)** – (Subfields 2-5) is used when this crash was not within or related to a work zone.

Subfield 3: Work Zone Description

- **Lane Closure** – one or more lanes of traffic are temporarily closed to accommodate this work zone.
- **Lane Shift** – one or more lanes of traffic are temporarily shifted to accommodate this work zone.
- **Crossover** – one or more traffic lanes are temporarily transferred across a median away from an adjacent work zone.
- **Work on Shoulder or Median** – the work activity is on or involves the shoulder or median.
- **Intermittent or Moving Work** – temporary work activity that may move or shift frequently.
- **Other Type of Work Zone** – The work zone involves something other than a [Crossover](#), [Lane Shift](#), [Lane Closure](#), [Intermittent or Moving Work](#), or [Work on Shoulder or Median](#).

Highway Safety Rationale:

This data element is important to assess the impact of trafficway work activity on the safety of workers and the traveling public and evaluate Work Zone Traffic Control Plans.

Implementation Suggestions:

- If **None** is selected for Subfield 1, then autofill Subfields 2-5 with **Not Applicable (Not Within or Related to a Work Zone)**.
- Although the minimum system capability requirement for Subfield 3 is two selections, NHTSA recommends this as a “Select All That Apply” Subfield.

Validation Rules:

If WORK_ZONE = **None**, then Subfields 2, 3, 4, and 5 must = **Not Applicable (Not Within or Related to a Work Zone)**.

Alignment Considerations for WORK_ZONE

1. If the State has a checkbox to indicate “Yes” if checked and “No” if not checked, neither align to the MMUCC data element. See [Uniformity Alignment Rule 5](#) for more information.

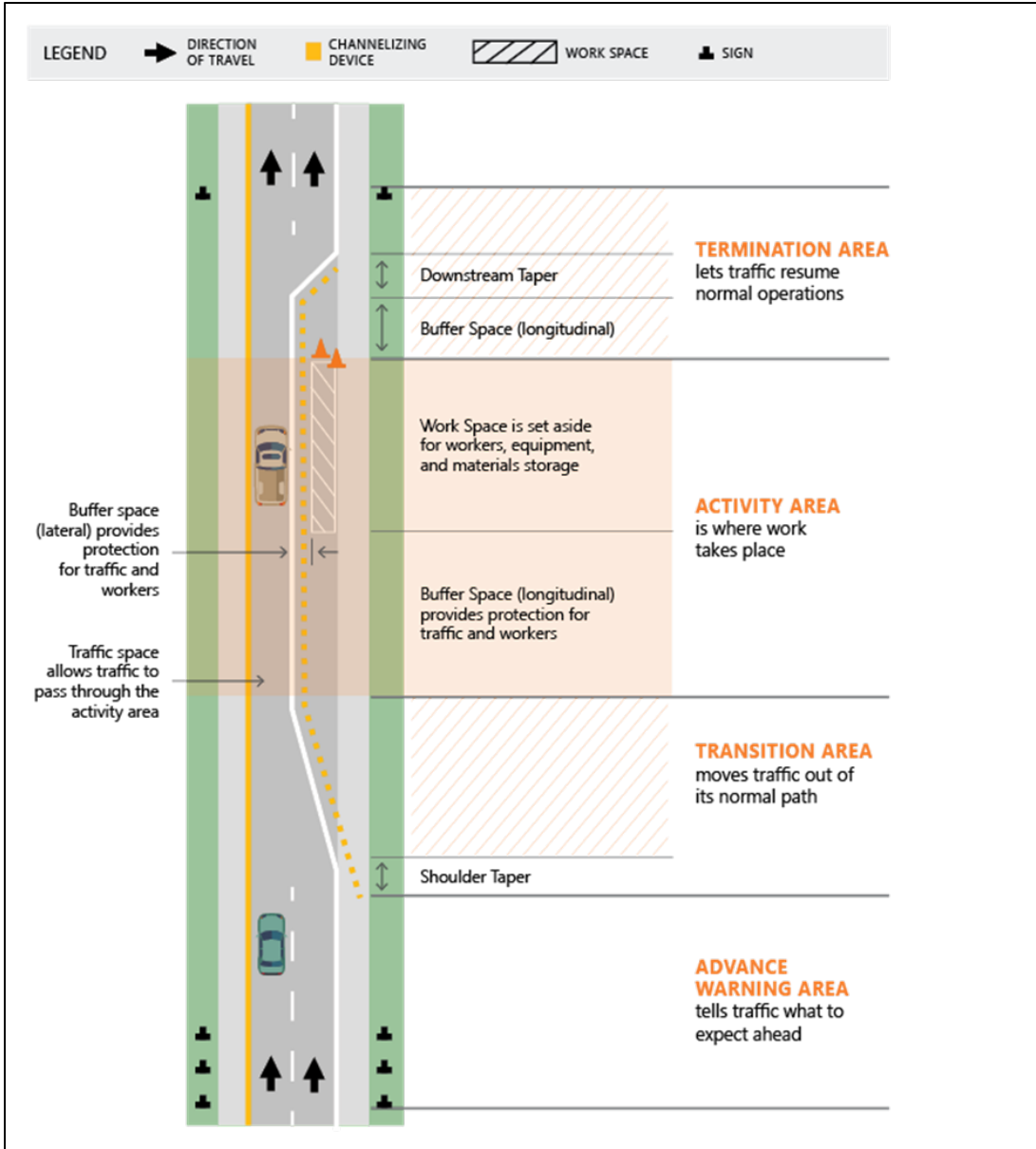


Figure 11. Diagram of a work zone area

C16. Secondary Crash

Element Definition:

Identifies if this crash was related to a prior (primary) crash.

Attribute Values:

Subfield 1: Secondary Crash (select one)

- No
- Yes

Subfield 2: Primary Crash Case Number (Specify)

- Case Number

Remarks:

“Secondary Crashes” are defined beginning with the time of detection of the primary crash where this crash occurs either:

- within the primary crash scene or
- within the queue or backup, including the opposite direction, resulting from the primary crash.

If this crash is a secondary crash, the case number of the primary crash must be identified in Subfield 2. Report number, case number, or agency case number may be used.

This data element is looking for crashes that are secondary to another prior (primary) crash. If this crash is secondary to something other than a crash (e.g., backups due to normal congestion, debris in the roadway, disabled vehicles, other non-crash traffic incidents) do NOT use the attribute **Yes**. For these examples, see the data element [RELATED FACTORS – CRASH LEVEL](#) to see if any of the attributes fit the situation.

Highway Safety Rationale:

This information is necessary for State and FHWA’s TIM performance measurement for secondary crashes.

Implementation Suggestions:

None

Validation Rules:

- If Subfield 1 = **Yes**, then Subfield 2 must not = null.
- If Subfield 1 = **No**, then Subfield 2 must = null.

Alignment Considerations for SECONDARY CRASH

None

C17. Related Factors – Crash Level

Element Definition:

Identifies factors related to this crash.

Attribute Values:

This is a multi-selection data element. Allow a minimum system capability of two selections (see [Implementation Suggestions](#)).

- [None](#)

Group 1: Place Related

- [Related to a Bus Stop](#)
- [Toll Booth or Plaza-Related](#)
- [Railroad-Related](#)
- [Within Designated School Zone](#)
- [Unstabilized Situation Began and All Harmful Events Occurred Off the Roadway](#)

Group 2: Road Related

- [Obstructed Crosswalks](#)
- [Obstruction in Roadway](#)
- [Surface Under Water](#)
- [Surface Collapsed \(e.g., washed out, caved-in, sink hole, road slippage\)](#)
- [Other Maintenance or Construction-Created Condition](#)

Group 3: Incident Related

- [Police Pursuit Involved](#)
- [Emergency-Vehicle-Related](#)
- [Traffic Incident \(Other Than a Crash\)](#)
- [Stalled or Disabled Vehicle](#)
- [Non-Occupant Struck Vehicle](#)

Group 4: Noncontact Vehicle Related

- [Distracted Driver of a Noncontact Vehicle](#)
- [Aggressive Driving by Noncontact Vehicle Driver](#)
- [Road Rage by Noncontact Vehicle Driver](#)

Group 5: Other and Unknown

- [Other \(explain in narrative\)](#)
- [Unknown](#)

Remarks:

- **None** – used when none of the related factors are applicable for this crash.

Group 1: Place Related

- **Related to a Bus Stop** - used when the crash was related to the use of a location set aside for, or customarily used for, boarding and disembarking passengers onto or from a bus of any kind (e.g., pedestrian collisions involving vehicles maneuvering around a bus stopped for boarding or disembarking passengers, pedestrians walking to a bus stop, or pedestrians running across traffic lanes to a bus stop).
- **Toll Booth or Plaza-Related** – the crash occurred at or in the vicinity of a toll booth (manned or unmanned) or a toll plaza. These are crashes that occur in the upstream approach to the toll booth or plaza area and continues as the approach area (where the toll road begins to widen) leading up to the toll booths and in the departure area where the road begins to narrow leading back to the normal number of lanes comprising the toll road downstream departure area. See [Figure 12. Diagram of a toll booth or plaza](#).
- **Railroad-Related** – the crash occurred at or in the vicinity of railroad tracks, station, or depot and were somehow relevant in this crash. Examples: a vehicle stopped at a rail crossing is rear-ended by another vehicle, a vehicle travels under a railroad bridge and something falls from a train above onto the vehicle below, a vehicle crossing tracks is struck by a train. If the [FIRST HARMFUL EVENT](#) occurs in the at-grade crossing of the trafficway and railroad, also see [RELATION TO JUNCTION Railway Grade Crossing](#).
- **Within Designated School Zone** - used when the crash occurred in an area signed or marked as a “School Zone.” This may or may not be [SCHOOL-BUS-RELATED](#). “School Zones” are zones near or at a school that exist during months and hours when zone signing is in effect.
- **Unstabilized Situation Began and All Harmful Events Occurred Off the Roadway** - used when the [unstabilized situation](#) began within the trafficway but off the roadway (travel lanes), and all harmful events occurred off the roadway. Examples:
 - A vehicle stopped on the roadside begins to accelerate to enter the roadway (travel lanes) and runs into a ditch and overturns.
 - A vehicle is driving along the roadside and strikes a tree stump.
 - A vehicle strikes a pedestrian while driving down the road shoulder.
 - A vehicle strikes a traffic sign while driving in a grassy median.

Group 2: Road Related

- **Obstructed Crosswalks** - used when crosswalks were in the vicinity of the crash but were not available because they were somehow obstructed. For example, due to construction, people, stopped motor vehicles, or other objects preventing their use.
- **Obstruction in Roadway** – A blockage in the [roadway](#), such as that caused by a fallen tree or a large boulder.
- **Surface Under Water** - used when the roadway surface is under water beyond normal accumulation (i.e., depth of water). Also use this attribute when the roadway is permanently under water (i.e., fords).
- **Surface Collapsed (e.g., washed out, caved-in, sink hole, road slippage)** - is used when the roadway had previously collapsed due to prior events associated with the environment (flooding, earthquakes, etc.).
- **Other Maintenance or Construction-Created Condition** - is used for inadequate maintenance of the roadway (e.g., potholes, ruts in roadway) or conditions related to construction activity (e.g., addition of barricades, change in traffic patterns, merging lanes).

Group 3: Incident Related

- **Police Pursuit Involved** - used when a police pursuit had been initiated by the police and was active at the time of the crash. This attribute is also used when a pursuit had been initiated and terminated, but the pursuit action is still related to the crash. This applies for both air and ground pursuing vehicles. To identify the driver or drivers involved in the pursuit, please see [RELATED FACTORS—DRIVER LEVEL](#) for [Fleeing or Evading Law Enforcement](#) and [Police Officer in Pursuit](#).

Definition of Police Pursuit: A pursuit is an event that is initiated when a law enforcement officer, operating an authorized emergency vehicle, gives notice to stop (either through the use of visual or audible emergency signals or a combination of emergency devices) to a motorist who the officer is attempting to apprehend, and that motorist fails to comply with the signal by either maintaining speed, increasing speed, or taking other evasive action to elude the officer's continued attempts to stop the motorist. A pursuit is terminated when the motorist stops, or when the attempt to apprehend is discontinued by the officer or at the direction of a competent authority.

- **Emergency-Vehicle-Related** - used when a crash was related to the presence of an emergency vehicle (or vehicles) or incident response vehicle (or vehicles) engaged in an emergency operation or incident response at the time of the crash. Emergency vehicles include police cars, ambulances, fire trucks, etc. Incident response vehicles include safety service patrol vehicles, tow trucks, highway help vehicles, etc. These vehicles may be contact or noncontact vehicles in the crash engaged in a response either with or without lights and/or sirens.

Services such as escorting a funeral procession, providing traffic control assistance at a work zone, or for a motorcade or parade would NOT qualify as emergency or incident responses.

Noncontact Example:

- A vehicle moves over to allow an ambulance on an emergency response to pass and strikes a pedestrian.

Contact Example:

- An ambulance on an emergency response travels through an intersection and is struck by another motor vehicle.
- **Traffic Incident (Other Than a Crash)** – An unplanned randomly occurring traffic event that adversely effects normal traffic operations (e.g., spilled cargo).
- **Stalled or Disabled Vehicle** - is used when a stalled or mechanically disabled vehicle was related to the crash. It includes both contact and noncontact vehicles that are stalled or disabled for mechanical reasons not due to crash-related damage. Examples:
 - A pedestrian is struck when walking from their stalled vehicle.
 - A vehicle is stalled in the travel lanes causing another vehicle to lose control and crash.
 - A vehicle runs out of fuel or loses its charge and stops, unable to exit the travel lanes, and is hit by another vehicle.
- **Non-Occupant Struck Vehicle** - used when a non-occupant (e.g., pedestrian, bicyclist, person on personal conveyance) “struck” or “ran into” a motor vehicle (usually the side or back of the vehicle). This does not include non-occupants who are struck in the vehicle’s path of travel. Examples:
 - A bicyclist runs into the mirror of a parked car and falls into the path of a motor vehicle in-transport.
 - A runner collides with the side of a vehicle that comes to a sudden stop and the runner is subsequently struck by another vehicle.

Group 4: Noncontact Vehicle Related

- **Distracted Driver of a Noncontact Vehicle** - is used when the driver of a noncontact vehicle (“phantom vehicle”) was distracted and that distraction was related to this crash.
- **Aggressive Driving by Noncontact Vehicle Driver** - is used when a noncontact vehicle, which is somehow related to this crash, was operated with disregard for safety and endangers themselves, other drivers, or property. Moving violation offenses associated with this behavior can include speeding, tailgating, suddenly changing lanes without warning, cutting off other drivers, and failing to yield the right of way. If the driver of the noncontact vehicle was also exhibiting road rage behaviors, see attribute [Road Rage by Noncontact Vehicle Driver](#). For contact vehicles, see [RELATED FACTORS—DRIVER LEVEL](#) attributes [Aggressive Driving](#) and [Road Rage](#).
- **Road Rage by Noncontact Vehicle Driver** - used when the driver of a noncontact vehicle related to this crash, exhibited “road rage” driving behavior (extreme aggression or anger intending to cause harm to others). Note that a deliberate act that results in a harmful event (or events) is not an [unstabilized situation](#) and thus is excluded from being

considered a crash. To qualify as a crash there must be an unstabilized situation (unintended event) and at least one harmful event that is separate from or beyond what was intended by the deliberate act. If the driver of the noncontact vehicle was also driving aggressively, see attribute [Aggressive Driving by Noncontact Vehicle Driver](#). For contact vehicles, see [RELATED FACTORS—DRIVER LEVEL](#) attributes [Road Rage](#) and [Aggressive Driving](#). Examples:

- One driver forces another driver off the roadway, and that deliberate act subsequently results in the involvement of another vehicle not associated with the deliberate act.
- One driver gets out of their vehicle at a traffic light with intent to injure another driver. The driver being attacked flees and strikes another vehicle.

Group 5: Other and Unknown

- **Other (explain in narrative)** – used when something other than the listed attributes for this data element applies to this crash. If this attribute is used, explain the details in the narrative section of the crash report.
- **Unknown** – used when it cannot be determined if any of the attributes for this data element apply to this crash.

Highway Safety Rationale:

This data element is important to identify unusual or special conditions for identifying and evaluating traffic safety behavioral and infrastructure programs.

Implementation Suggestions:

- Although the minimum system capability requirement for this data element is two selections, NHTSA recommends this as a “Select All That Apply” data element.
- If [SPECIAL USE](#) equals **Fire Truck, Ambulance, Law Enforcement, or Other Emergency Services Vehicle** for any vehicle in this crash, then autofill [RELATED FACTORS – CRASH LEVEL](#) with **Emergency-Vehicle-Related**.
- If [RELATION TO JUNCTION](#) equals **Railway Grade Crossing**, then autofill [RELATED FACTORS – CRASH LEVEL](#) with **Railroad-Related**.
- If the user selects **Other (explain in narrative)**, the State may wish to create a popup window requiring the user to enter an explanation that is then added to the Narrative section.
- The attribute groupings are suggestions for nested drop-down lists. The State should organize the attributes in a way that is meaningful to the State’s users. See [Chapter 11: Designing User-Centered Crash Reporting Systems](#) for more information.

Validation Rules:

If [RELATED FACTORS – CRASH LEVEL](#) = **None**, then only that code and no other must be coded.

Alignment Considerations for RELATED FACTORS - CRASH LEVEL

None

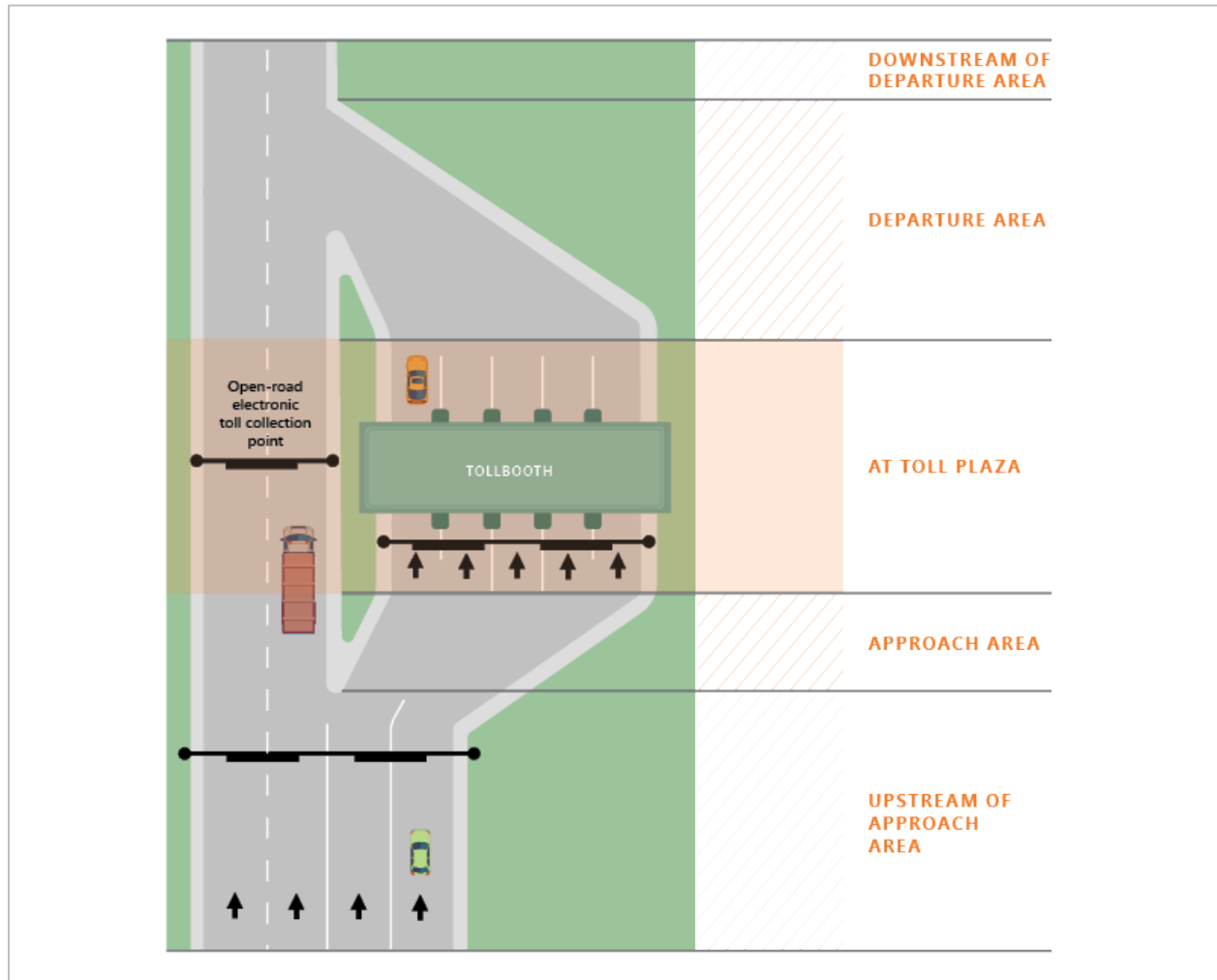


Figure 12. Diagram of a toll booth or plaza

C18. Route Number or Road Name

Element Definition:

The signed route number or road name for the road on which the crash occurred.

Attribute Values:

Specify:

- Actual Route Number or Road Name
- Unknown

Remarks:

Enter the route number or road name where the FIRST HARMFUL EVENT occurred or if the FIRST HARMFUL EVENT was after a roadway departure, where the unstabilized situation began.

Highway Safety Rationale:

The route number or road name at the crash location is critical for problem identification, safety analysis, prevention programs, and engineering evaluations. Without a corresponding route number or name, GPS coordinates cannot identify associated routes at grade separations or where GPS accuracy is limited.

Implementation Suggestions:

- Use standard [USPS abbreviations](#) for the street name suffix (e.g., AVE, BLVD, CT, FWY).
- ROUTE NUMBER OR ROAD NAME can be used in conjunction with other data elements from the crash report to retrieve information from other traffic records data systems. See [Chapter 10: Traffic Records Data Integration](#) for details.
- States should set up an interface between the crash and roadway data systems to permit police officers the opportunity to select the route number or name from a drop-down list to ensure accuracy. A secondary option is to have the State's crash data system check whether the route number or name is consistent with the [GLOBAL POSITION \(LATITUDE, LONGITUDE\)](#) identified (i.e., it can 'snap' to anywhere along the route).
- For states that have an interface between the crash report and the State's roadway data system, NHTSA recommends that the user identify the correct road using that interface.
- For states that do not have an interface between the crash report and State's roadway data system, NHTSA recommends that the user identify the correct road using posted signage for route number or name.

Validation Rules:

None

Alignment Considerations for ROUTE NUMBER OR ROAD NAME

None

Chapter 5: Vehicle Data Elements

The motor vehicle data elements describe the characteristics, events, and consequences of the contact motor vehicles directly involved in the crash. Data elements in this chapter are given the element identifier V (e.g., V1, V2, V3).

- [V1. Motor Vehicle Number](#)
- [V2. Vehicle Identification Number](#)
- [V3. Motor Vehicle Unit Type](#)
- [V4. Vehicle Owner and Address](#)
- [V5. Motor Carrier or Responsible Entity Identification](#)
- [V6. Type of Motor Carrier or Responsible Entity](#)
- [V7. Motor Carrier or Responsible Entity Name and Address](#)
- [V8. Motor Vehicle Registration State or Country](#)
- [V9. Motor Vehicle License Plate Number](#)
- [V10. Motor Vehicle Make](#)
- [V11. Motor Vehicle Model Year](#)
- [V12. Motor Vehicle Model](#)
- [V13. Motor Vehicle Body Type Category](#)
- [V14. Power Unit Gross Vehicle Weight Rating](#)
- [V15. Cargo Body Type \(Power Unit Only\)](#)
- [V16. Hazardous Materials](#)
- [V17. Vehicle Trailing](#)
- [V18. Trailer VIN](#)
- [V19. Trailer Body Type](#)
- [V20. Total Occupants in Motor Vehicle](#)
- [V21. Special Use](#)
- [V22. Bus Use](#)
- [V23. Emergency Response](#)
- [V24. Motor Vehicle Posted or Statutory Speed Limit](#)
- [V25. Trafficway Flow](#)
- [V26. Median Barrier Presence](#)
- [V27. Number of Open Lanes in Vehicle's Environment](#)
- [V28. Roadway Alignment](#)
- [V29. Roadway Grade](#)
- [V30. Roadway Surface Condition](#)
- [V31. Traffic Control Device](#)
- [V32. Device Functioning](#)
- [V33. Vehicle Status Prior to Critical Event](#)
- [V34. Initial Contact Point](#)
- [V35. Damaged Areas](#)
- [V36. Extent of Damage](#)
- [V37. Sequence of Events](#)
- [V38. Most Harmful Event for This Motor Vehicle](#)
- [V39. Hit-and-Run](#)
- [V40. Vehicle Towed](#)
- [V41. Contributing Circumstances, Motor Vehicle](#)
- [V42. Vehicle Underride or Override](#)
- [V43. Fire Occurrence](#)
- [V44. Related Factors – Vehicle Level](#)

V1. Motor Vehicle Number

Element Definition:

Motor vehicle number assigned to uniquely identify each motor vehicle involved in the crash.

Attribute Values:

Specify one:

- Sequential Number

Remarks:

Complete this element for all motor vehicles. This number is not assigned to [non-motorists](#).

Highway Safety Rationale:

This data element uniquely identifies each motor vehicle unit involved in the crash. It also permits occupants to be assigned to the appropriate motor vehicle.

Implementation Suggestions:

The State may wish to include this **Vehicle Number** in the Driver information to link the driver to the appropriate Vehicle record.

Validation Rules:

None

Alignment Considerations for MOTOR VEHICLE NUMBER

None

V2. Vehicle Identification Number

Element Definition:

A unique combination of 17 alphanumeric characters assigned to a specific motor vehicle designated by the manufacturer.

Attribute Values:

Specify one:

- [Any Alphanumeric Characters – Actual VIN](#)
- [No VIN Required, Not a Vehicle for Road Use](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles.

- **Any Alphanumeric Characters – Actual VIN** – record the VIN for this motor vehicle.
- **No VIN Required, Not a Vehicle for Road Use** - is used when the vehicle is not required to have a VIN as per 49 CFR Part 565 AND there is no VIN data available (e.g., ATVs, off-road motorcycles, farm tractors, go-carts). If VIN data is available enter the VIN as provided. You should not expect a VIN if the vehicle is not one of the following: passenger cars, multipurpose passenger vehicles, trucks, buses, trailers (including trailer kits), incomplete vehicles, low-speed vehicles, and motorcycles (see 49 CFR Part 565).
- **Unknown** – The VIN for this motor vehicle cannot be determined.

Highway Safety Rationale:

This data element is important to identify specific motor vehicle design characteristics and occupant protection systems for effectiveness evaluations. This element is also essential for VIN decoders, vehicle registration files, and other State traffic records data integration purposes.

Implementation Suggestions:

- Where VIN decoding software is used, check for a valid check digit.
- To decode the VIN, NHTSA encourages States to use the [Product Information Catalog and Vehicle Listing \(vPIC\)](#), which uses data provided by the manufacturer from 49 CFR Part 565.
- VIN can be used in conjunction with other data elements on the crash report to retrieve information from other traffic records data systems. See [Chapter 10: Traffic Records Data Integration](#) for details.
- For most vehicles with model year 1981 or greater, there will be 17 VIN characters. A State may wish to implement a warning that if [MOTOR VEHICLE MODEL YEAR](#) is 1981 or newer, then VEHICLE IDENTIFICATION NUMBER should be 17 characters.

There could be exceptions to this rule, so making this warning rule overridable is recommended when applicable.

- VINs for U.S. on-road vehicles 1981 and later should not include the letters I, O, or Q.
- Use barcode scanners to auto-populate this information and limit human error from manual data entry.

Validation Rules:

None

Alignment Considerations for VEHICLE IDENTIFICATION NUMBER:

None

V3. Motor Vehicle Unit Type

Element Definition:

The type of unit that applies to this motor vehicle at the time it became an involved vehicle in the crash.

Attribute Values:

Select one:

- [Motor Vehicle In-Transport](#)
- [Parked Motor Vehicle](#)
- [Working Motor Vehicle](#) (Highway Construction, Maintenance, or Utility Only)

Remarks:

Complete this element for all motor vehicles. Remember, you must have at least one **Motor Vehicle In-Transport** involved in the crash for this to be a reportable case. If a working motor vehicle is parked while performing its work (e.g., a bucket truck is parked on the shoulder while a worker is working on utility lines), select [Working Motor Vehicle \(Highway Construction, Maintenance, Utility Only\)](#). If that same vehicle is not performing its work, then select [Parked Motor Vehicle](#).

- **Motor Vehicle In-Transport** – A motor vehicle is any motorized (mechanically or electrically powered) road vehicle not operated on rails. When applied to motor vehicles, “[in-transport](#)” refers to being in motion or on a [roadway](#) (travel lanes). Includes: motor vehicle in traffic on a highway, driverless motor vehicle in motion, motionless motor vehicle abandoned on a roadway, disabled motor vehicle on a roadway, etc.
- **Parked Motor Vehicle** – ANSI D.16-2017 defines a parked motor vehicle as a motor vehicle not in-transport, other than a [working motor vehicle](#), that is not in motion and not located on the [roadway](#) (travel lanes). In roadway lanes used for travel during some periods and for parking during other periods, a parked motor vehicle is considered [in-transport](#) during periods when parking is forbidden. This attribute includes any stopped motor vehicle where the entirety of the vehicle’s primary outline as defined by the four sides of the vehicle (e.g., tires, bumpers, fenders) and load, if any, is not within the roadway.
- **Working Motor Vehicle (Highway Construction, Maintenance, or Utility Only)** – ANSI D.16-2017 defines a working motor vehicle as a motor vehicle in the act of performing construction, maintenance, or utility work related to the [trafficway](#). The “work” may be located within open or closed portions of the trafficway, and the vehicle performing these activities can be within or outside the trafficway boundaries. A working motor vehicle at the time of the [unstabilized situation](#) is not considered “in-transport.”

Highway Safety Rationale:

This data element is critical for vehicle classification and to properly identify motor vehicle traffic crashes. Other data elements rely heavily on the coding of this data element.

Implementation Suggestions:

None

Validation Rules:

MOTOR VEHICLE UNIT TYPE must = **Motor Vehicle In-Transport** for at least one vehicle in the crash.

Alignment Considerations for MOTOR VEHICLE UNIT TYPE

1. A State attribute “Construction Equipment” or similar does not align with the MMUCC attribute **Working Motor Vehicle**. A **Working Motor Vehicle** must be (1) a motor vehicle (not just equipment) and (2) in the act of performing construction, maintenance, or utility work related to the [trafficway](#) at the time of the crash. Similarly, a State vehicle body type of “Construction Equipment” alone is insufficient to align with the MMUCC attribute **Working Motor Vehicle**.

V4. Vehicle Owner and Address

Element Definition:

The name and address of the owner of this vehicle.

Attribute Values:

Subfield 1: Name or Entity (Specify)

- Name or Entity
- Unknown

Subfield 2: Address (Specify)

- Address
- Unknown

Remarks:

Complete this element for all motor vehicles.

Highway Safety Rationale:

This data element is used in tracking vehicle damage history, vehicle ownership and responsibility, and documenting out-of-State vehicles. This element can be used for data integration with the State vehicle registration files and helpful in crash investigation.

Implementation Suggestions:

- The State may wish to have a “Same as Driver” radio button or checkbox, which automatically fills this element with the information entered in the driver’s name and address fields.
- Auto-populate the information for in-State vehicles using an interface with the State’s vehicle registration system. See [Chapter 10: Traffic Records Data Integration](#) for more details.
- Use barcode scanners to auto-populate information from vehicle registrations for out-of-State vehicles.
- ANSI State FIPS and USPS Codes are provided by the [U.S. Census Bureau](#). Border States may wish to collect the name of individual Canadian Provinces or Mexican States. ISO 3166 Country Codes are provided by the [International Organization for Standardization](#).
- The State should implement either the ANSI State FIPS codes or the USPS abbreviations. The State should not use both.

Validation Rules:

None

Alignment Considerations for VEHICLE OWNER AND ADDRESS

1. If the State has a “Same as Driver” radio button or checkbox, which automatically populates this element with the information entered in the driver’s NAME OF PERSON INVOLVED and DRIVER ADDRESS elements, then this *may* align with MMUCC. However, if what is populated confirms rather than duplicates the name and address, then this will not align with MMUCC (e.g., checkbox = “Yes” or the words “Same as Driver”).

V5. Motor Carrier or Responsible Entity Identification

Element Definition:

The identification number (or numbers) of the business entity, individual, partnership, corporation, or organization responsible for the transportation of people or property.

Attribute Values:

Subfield 1: [U.S. DOT Number](#) (select one)

- [Not Applicable](#)
- [None](#)
- [Actual Number](#)
- [Unknown](#)

Subfield 2: [MC or MX \(ICC\) Number](#) (select one)

- [Not Applicable](#)
- [None](#)
- [Actual Number](#)
- [Unknown](#)

Subfield 3: [State or Country Number](#) (select one)

- [Not Applicable](#)
- [None](#)
- [Actual Number](#)
- [Unknown](#)

Subfield 4: [Issuing State or Country](#) (select one)

- [Not Applicable](#)
- Actual State or Country
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. If this vehicle does not fit the qualifying criteria for this data element, use the attribute [Not Applicable](#).

The following are qualifying motor vehicles for this data element, regardless of ownership or use:

- A vehicle pulling a trailer with GCWR greater than 10,000 lb.
- A single vehicle with a GVWR greater than 10,000 lb.

- A vehicle with nine or more seats including the driver.
- A vehicle displaying a hazardous materials placard.

It is possible that a vehicle could have a U.S. DOT Number, an MC or MX (ICC) number, and a State issued number. All available identification numbers should be collected.

- **Not Applicable** – The vehicle does not fit into the criteria for a qualifying vehicle for this data element. In such a case, select **Not Applicable** for each subfield of this data element.
- **None** - The vehicle fits into the criteria for a qualifying vehicle for this data element; however, the vehicle does not have an identification number for this subfield.
- **Actual Number** – record the identification number for the Motor Carrier or Responsible Entity in the appropriate subfield.
- **Unknown** – The vehicle fits into the criteria for a qualifying vehicle for this data element; however, the information for this subfield is unknown.

Subfield 1: U.S. DOT Number – The U.S. DOT Number is an assigned number sequence required by FMCSA for all interstate carriers. Federal regulations require that almost all trucks operating across State lines (i.e., interstate carriers) have identification numbers. The U.S. DOT also assigns numbers to some intrastate carriers. Not all commercial motor vehicles have U.S. DOT numbers. Record the U.S. DOT Number for the responsible carrier as it appears on the side of the vehicle (power unit) or with the operator’s paperwork.

Subfield 2: MC or MX (ICC) Number – Operating authority granted by FMCSA may be a Motor Carrier (MC) number or Mexico-domiciled entity (MX) number to operate across the U.S.-Mexico Border. These numbers are granted depending upon the type of operation a company may conduct and the cargo it may carry.

The Interstate Commerce Commission (ICC) formerly regulated entities involved in interstate transportation from 1887 to 1995. The ICC was the official governing body that issued an MC identification number. Although the ICC ceased in 1995, some long-established entities may still have an ICC identification number.

Subfield 3: State or Country Number – This identification number is issued by a public utility commission, a public service commission, or some other State agency to vehicles that operate either in interstate commerce or only within that State. Some States do not regulate the motor carrier industry. Trucks and buses that operate strictly within such States (i.e., intrastate) may not have numbers. If a State or Country identification number is entered in Subfield 3, then Subfield 4 must be completed to identify which State or Country issued the identification number.

Subfield 4: Issuing State or Country – the State or Country that issued the identification number specified in Subfield 3. If Subfield 3 equals **Not Applicable** or **None**, then Subfield 4 must equal **Not Applicable**.

See [Figure 13. Determining responsible carrier, FMCSA visor card \(front\)](#) and [Figure 14. Determining responsible carrier, FMCSA visor card \(back\)](#) for reference.

Highway Safety Rationale:

Required by FMCSA’s Title 49 CFR 390. The FMCSA has the authority to fine and sanction unsafe interstate (and some intrastate) motor carriers. A key method to identify potentially unsafe

motor carriers is to collect crash data by the identification number and name. The identification number is a key element for carrier identification in the FMCSA databases for crash and other carrier information.

Implementation Suggestions:

- If **Not Applicable** or **None** is selected for Subfield 3, then autofill Subfield 4 with **Not Applicable**.
- If electronic crash data collection software is used then a local or remote retrieval from a carrier database, or CVIEW (Commercial Vehicle Information Exchange Window) would assist in identifying the responsible entity of a U.S. DOT number. For CVIEW information, contact FMCSA.
- ANSI State FIPS and USPS Codes are provided by the [U.S. Census Bureau](#). Border States may wish to collect the name of individual Canadian Provinces or Mexican States. ISO 3166 Country Codes are provided by the [International Organization for Standardization](#).
- The State should implement either the ANSI State FIPS codes or the USPS abbreviations. The State should not use both.

Validation Rules:

If Subfield 3 = **Not Applicable** or **None**, then Subfield 4 must = **Not Applicable**.

Alignment Considerations for MOTOR CARRIER OR RESPONSIBLE ENTITY IDENTIFICATION:

None

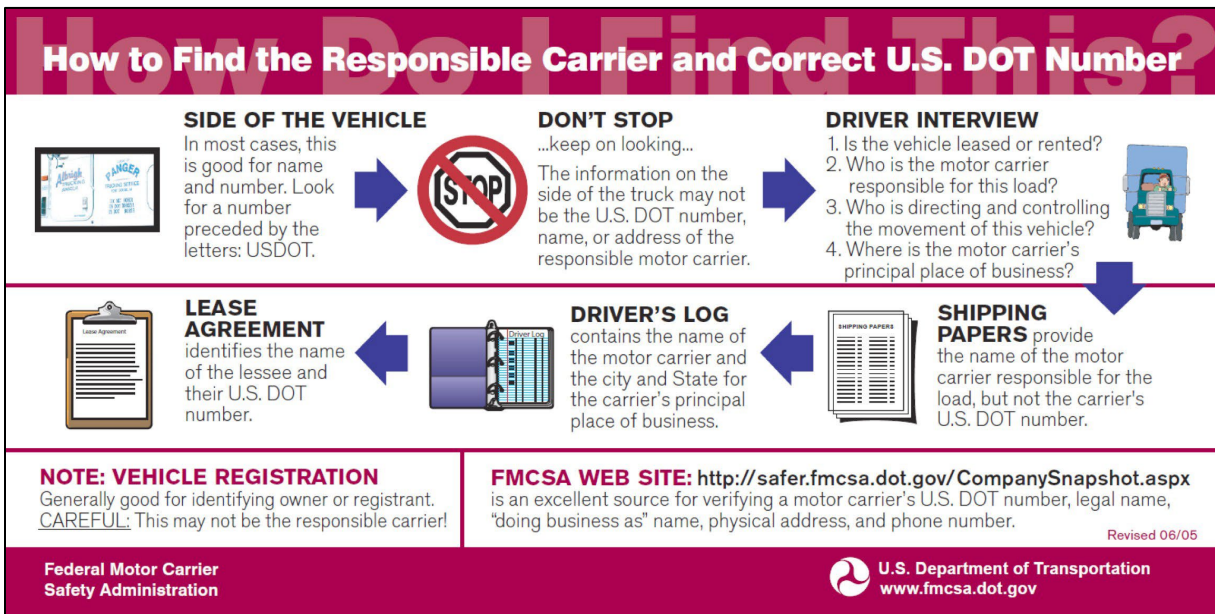


Figure 13. Determining responsible carrier, FMCSA visor card (front)

How Do I Find This?

<p>EXAMPLE 1: John Smith owns his own truck tractor, operating under John Smith Trucking. He contracts with White Manufacturing to take one of its trailers loaded with its goods from New York to Los Angeles.</p> <p>Who is the Motor Carrier: A. John Smith? B. White Manufacturing?</p>	<p>EXAMPLE 2: John Smith, driving his truck tractor, utilizes a cargo broker, K&S Trucking, to obtain goods from Intermodal Inc. shipping company for his return trip back to New York.</p> <p>Who is the Motor Carrier: A. John Smith? B. K&S Trucking? C. Intermodal Inc.?</p>
<p style="text-align: center;">➔</p> <p style="text-align: center;">John Smith is the motor carrier, because he is the entity that has agreed to carry this particular load.</p>	<p style="text-align: center;">➔</p> <p style="text-align: center;">John Smith is the motor carrier, because K&S transferred the responsibility of the load to John Smith.</p>
<p>EXAMPLE 3: John Smith, driving his truck tractor, leases his services to Polyester Chemical Company. Polyester directs Smith to deliver a semi-trailer from New York to St. Louis.</p> <p>Who is the Motor Carrier: A. John Smith? B. Polyester?</p>	<p>EXAMPLE 4: John Smith is driving a tractor/semi-trailer owned and operated by ABC Trucking.</p> <p>Who is the Motor Carrier: A. John Smith? B. ABC Trucking?</p>
<p style="text-align: center;">➔</p> <p style="text-align: center;">The lease agreement between Polyester and Mr. Smith makes Polyester the motor carrier responsible for the load.</p>	<p style="text-align: center;">➔</p> <p style="text-align: center;">ABC Trucking is the motor carrier. John Smith is just a driver for ABC Trucking.</p>
<p>EXAMPLE 5: John Smith is driving a tractor owned by ABC Trucking, which has been leased to XYZ Trucking. XYZ uses the tractor to pull XYZ trailers in its regular shipping service.</p>	<p>Who is the Motor Carrier: A. John Smith? B. ABC Trucking? C. XYZ Trucking?</p>
	<p style="text-align: center;">➔</p> <p style="text-align: center;">In this case XYZ is the motor carrier, because XYZ is directing the carrying of the load.</p>
<p>Federal Motor Carrier Safety Administration</p>	<p style="text-align: right;"> U.S. Department of Transportation www.fmcsa.dot.gov </p>

Figure 14. Determining responsible carrier, FMCSA visor card (back)

V6. Type of Motor Carrier or Responsible Entity

Element Definition:

The type of business entity, individual, partnership, corporation, or organization responsible for the transportation of people or property.

Attribute Values:

Select one:

- [Not Applicable](#)
- [Interstate Motor Carrier](#)
- [Intrastate Motor Carrier](#)
- [Government](#)
- [Other Truck or Bus](#) (e.g., rental truck for personal use)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. If this vehicle does not fit the qualifying criteria for this data element, use the attribute [Not Applicable](#).

The following are qualifying motor vehicles for this data element, regardless of ownership or use:

- A vehicle pulling a trailer with GCWR greater than 10,000 lb.
- A single vehicle with a GVWR greater than 10,000 lb.
- A vehicle with nine or more seats including the driver.
- A vehicle displaying a hazardous materials placard.

- **Not Applicable** – The vehicle does not fit into the criteria for a qualifying vehicle for this data element.
- **Interstate Motor Carrier** – used if this is a motor carrier that is registered with FMCSA to operate across State lines and issued a U.S. DOT number.
- **Intrastate Motor Carrier** – used if this is a motor carrier that is not registered with FMCSA to operate across State lines. They may or may not have a U.S. DOT number.
- **Government** – used for a government vehicle whether it is operated by the local, State, or Federal government (e.g., county-owned school buses, city-owned transit buses, fire trucks, military vehicles, State-owned highway maintenance truck). In most circumstances, the government-owned vehicle will not have a U.S. DOT Number.
- **Other Truck or Bus (e.g., rental truck for personal use)** – used for personal use of a rental vehicle (e.g., U-Haul, Ryder, Penske) that is over 10,000 lb GVWR / GCWR and

operated by a private individual for non-commercial purposes. In these situations, the rental company is not the carrier and should not be recorded.

- **Unknown** – The vehicle fits into the criteria for a qualifying vehicle for this data element; however, the information for this data element is unknown.

Highway Safety Rationale:

Required by the Federal Motor Carrier Safety Administration (FMCSA) Title 49 CFR 390. The FMCSA has the authority to fine and sanction unsafe interstate (and some intrastate) motor carriers. A key method to identify potentially unsafe motor carriers is to collect crash data by the identification number and name. The identification number is a key element for carrier identification in the FMCSA databases for crash and other carrier information.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for TYPE OF MOTOR CARRIER OR RESPONSIBLE ENTITY

None

V7. Motor Carrier or Responsible Entity Name and Address

Element Definition:

The name and address of the business entity, individual, partnership, corporation, or organization responsible for the transportation of people or property.

Attribute Values:

Subfield 1: Motor Carrier or Responsible Entity Name (Specify)

- [Not Applicable](#)
- Name
- [Unknown](#)

Subfield 2: Motor Carrier or Responsible Entity Address (Specify)

- [Not Applicable](#)
- Address
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. If the vehicle does not fit into any of the qualifying criteria use the attribute [Not Applicable](#) for each subfield of this data element. **Not Applicable** should only be selected for privately owned and operated motor vehicles.

The following are qualifying motor vehicles for this data element, regardless of ownership or use:

- A vehicle pulling a trailer with GCWR greater than 10,000 lb.
- A single vehicle with a GVWR greater than 10,000 lb.
- A vehicle with nine or more seats including the driver.
- A vehicle displaying a hazardous materials placard.

Many carriers around the country have the same or similar names, so the complete name is very important for FMCSA to match this crash to a valid carrier listed in the Motor Carrier Management Information System (MCMIS). Do not put partial names or abbreviations. Record the complete Carrier Name or "DBA" (Doing Business As) Name of the entity responsible for the trip on which the crash occurs.

The owner is not always the responsible entity. Crash manuals and training should emphasize how to identify the responsible entity. See [Figure 13. Determining responsible carrier, FMCSA visor card \(front\)](#) and [Figure 14. Determining responsible carrier, FMCSA visor card \(back\)](#) for reference.

- **Not Applicable** – The vehicle does not fit into the criteria for a qualifying vehicle for this data element. In such a case, select **Not Applicable** for each subfield of this data element.

- **Unknown** – The vehicle fits into the criteria for a qualifying vehicle for this data element; however, the information for this subfield is unknown.

Highway Safety Rationale:

Required by the Federal Motor Carrier Safety Administration (FMCSA) Title 49 CFR 390. The FMCSA has the authority to fine and sanction unsafe interstate (and some intrastate) motor carriers. A key method to identify potentially unsafe motor carriers is to collect crash data by the name and address of the company. The street address allows FMCSA to visit carriers and conduct reviews of compliance with the Federal Motor Carrier Safety Regulations and provides a crosscheck for the correct identity of the carrier.

Implementation Suggestions:

- If all four subfields of [MOTOR CARRIER OR RESPONSIBLE ENTITY IDENTIFICATION](#) equal **Not Applicable**, then autofill both subfields of this element with **Not Applicable**.
- If Subfield 1 equals **Not Applicable**, then autofill Subfield 2 with **Not Applicable**.
- The State may wish to have a “Same as Owner” radio button or checkbox, which automatically fills this element with the information entered in the Vehicle Owner’s name and address fields.
- ANSI State FIPS and USPS Codes are provided by the [U.S. Census Bureau](#). Border States may wish to collect the name of individual Canadian Provinces or Mexican States. ISO 3166 Country Codes are provided by the [International Organization for Standardization](#).
- The State should implement either the ANSI State FIPS codes or the USPS abbreviations. The State should not use both.

Validation Rules:

If Subfield 1 = **Not Applicable**, then Subfield 2 must = **Not Applicable**.

Alignment Considerations for MOTOR CARRIER OR RESPONSIBLE ENTITY NAME AND ADDRESS:

1. If the State has a “Same as Owner” radio button or checkbox, which automatically populates this element with the information entered in VEHICLE OWNER AND ADDRESS, then this *may* align with MMUCC. However, if what is populated confirms rather than duplicates the name and address, then this will not align with MMUCC (e.g., checkbox = “Yes” or the words “Same as Owner”).

V8. Motor Vehicle Registration State or Country

Element Definition:

The State, commonwealth, territory, Indian Nation, U.S. Government, foreign country, etc., issuing the license plate displayed on the motor vehicle.

Attribute Values:

Select or Specify one:

- [Registration Not Required](#)
- ANSI State FIPS Codes or USPS Abbreviations
- [Native American Indian Nation](#)
- [No Registration](#)
- [Multiple State Registration](#)
- [U.S. Government Tags \(includes military\)](#)
- [Canada](#)
- [Mexico](#)
- [Other Foreign Country](#)
- Unknown

Remarks:

Complete this element for all motor vehicles.

- **Registration Not Required** - used for vehicles that are not required to be registered. This is State-specific based on State vehicle registration requirements.
- **Native American Indian Nation** – used for vehicles registered in a Native American Indian Nation.
- **No Registration** – used for vehicles required by State law to be registered and are NOT registered.
- **Multiple State Registration** - used for vehicles registered in more than one State under a valid reciprocal agreement (such as the International Registration Plan [IRP]).
- **U.S. Government Tags (includes military)** - used to indicate the license was issued by the U.S. Government, such as military or State Department Foreign Service.
- **Canada** – used for vehicles registered in any Canadian Province.
- **Mexico** – used for vehicles registered in any Mexican State.
- **Other Foreign Country** – used for vehicles registered in a foreign country other than Canada or Mexico.

Highway Safety Rationale:

This data element is used in tracking in-State and out-of-State vehicles. This element can be used for data integration with the State vehicle registration files and helpful in crash investigation.

Implementation Suggestions:

- ANSI State FIPS and USPS Codes are provided by the [U.S. Census Bureau](#). Border States may wish to collect the name of individual Canadian Provinces or Mexican States. ISO 3166 Country Codes are provided by the [International Organization for Standardization](#).
- The State should implement either the ANSI State FIPS codes or the USPS abbreviations. The State should not use both.

Validation Rules:

None

Alignment Considerations for MOTOR VEHICLE REGISTRATION STATE OR COUNTRY

None

V9. Motor Vehicle License Plate Number

Element Definition:

The alphanumeric identifier or other characters, exactly as displayed, on the license plate or tag affixed to the motor vehicle.

Attribute Values:

Specify one:

- [No License Plate](#)
- [License Plate Number](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles.

- **No License Plate** - this vehicle did not have a license plate when required or plates are not required for this type of vehicle.
- **License Plate Number** – Record the permanent or temporary license plate number for this vehicle. For combination vehicles, the MOTOR VEHICLE LICENSE PLATE NUMBER is obtained from the power unit.
- **Unknown** – The license plate number for this motor vehicle cannot be determined.

Highway Safety Rationale:

This data element is used for integration between the crash and motor vehicle registration files and to document the vehicle involved in the crash.

Implementation Suggestions:

- MOTOR VEHICLE LICENSE PLATE NUMBER can be used in conjunction with other data elements on the crash report to retrieve information from other traffic records data systems. See [Chapter 10: Traffic Records Data Integration](#) for details.
- Officers should verify that information pulled from a vehicle registration interface is accurate for the vehicle on scene.

Validation Rules:

None

Alignment Considerations for MOTOR VEHICLE LICENSE PLATE NUMBER

None

V10. Motor Vehicle Make

Element Definition:

The manufacturer-assigned name applied to a group of motor vehicles.

Attribute Values:

Specify one or select **Unknown:**

- [Make](#)
- Unknown

Remarks:

Complete this element for all motor vehicles.

- **Make** - Name assigned by motor vehicle manufacturer (e.g., Ford, Chevrolet, Toyota).

Highway Safety Rationale:

This data element is used in evaluation, research, and crash comparison purposes.

Implementation Suggestions:

- Verify MOTOR VEHICLE MAKE against the VIN and in-State vehicle registration.
- To decode the VIN, NHTSA encourages States to use the [Product Information Catalog and Vehicle Listing \(vPIC\)](#), which uses data provided by the manufacturer from 49 CFR Part 565.

Validation Rules:

None

Alignment Considerations for MOTOR VEHICLE MAKE:

None

V11. Motor Vehicle Model Year

Element Definition:

The year assigned to a motor vehicle by the manufacturer.

Attribute Values:

Specify one or select **Unknown:**

- [Actual Four Digit Model Year](#)
- Unknown

Remarks:

Complete this element for all motor vehicles.

- **Actual Four Digit Model Year** – Year as assigned by motor vehicle manufacturer.

Highway Safety Rationale:

This data element is used in evaluation, research, and crash comparison purposes.

Implementation Suggestions:

- Verify MOTOR VEHICLE MODEL YEAR against the VIN and in-State vehicle registration.
- To decode the VIN, NHTSA encourages states to use the [Product Information Catalog and Vehicle Listing \(vPIC\)](#), which uses data provided by the manufacturer from 49 CFR Part 565.

Validation Rules:

None

Alignment Considerations for MOTOR VEHICLE MODEL YEAR:

None

V12. Motor Vehicle Model

Element Definition:

The manufacturer-assigned name denoting a family of motor vehicles within a make that have a degree of similarity in construction, such as body, chassis, etc.

Attribute Values:

Specify one or select **Unknown**:

- [Model](#)
- Unknown

Remarks:

Complete this element for all motor vehicles.

- **Model** – Assigned by motor vehicle manufacturer (e.g., F-150, Silverado, Camry).

Highway Safety Rationale:

This data element is used in evaluation, research, and crash comparison purposes.

Implementation Suggestions:

- MOTOR VEHICLE MODEL should be verified against the VIN in States without freeform fields.
- To decode the VIN, NHTSA encourages States to use the [Product Information Catalog and Vehicle Listing \(vPIC\)](#), which uses data provided by the manufacturer from 49 CFR Part 565.

Validation Rules:

None

Alignment Considerations for MOTOR VEHICLE MODEL:

None

V13. Motor Vehicle Body Type Category

Element Definition:

The category indicating the general configuration or shape of a motor vehicle distinguished by characteristics such as number of doors, rows of seats, windows, or roof line.

Attribute Values:

Subfield 1: Body Type Category (select one)

Group 1: Passenger Vehicles

- [Passenger Car](#)
- [Sport Utility Vehicle](#)
- [Minivan or Van \(up to 8 seats\)](#)
- [Motor Home or Recreational Vehicle](#)

Group 2: Large Passenger Seating Vehicles (nine or more seats, including the driver)

(Complete Subfield 2)

- [Limousine](#) (Complete Subfield 2)
- [Passenger Van](#) (Complete Subfield 2)
- [School Bus](#) (Complete Subfield 2)
- [Transit Bus](#) (Complete Subfield 2)
- [Motorcoach](#) (Complete Subfield 2)
- [Other Large Passenger or Bus](#) (Complete Subfield 2)

Group 3: Trucks

- [Cargo Van](#)
- [Pickup Truck](#)
- [Single-Unit Truck \(2 axles and GVWR > 10,000 lb\)](#)
- [Single-Unit Truck \(3 or more axles\)](#)
- [Truck-Tractor, With or Without Trailers \(bobtail, semi, doubles, or triples\)](#)
- [Truck, Unknown Type](#)

Group 4: Not Designed Primarily for Road Use (Construction, Farm Equipment, Off-road Vehicles)

- [Construction Equipment \(e.g., backhoe, bulldozer, forklift\)](#)
- [Farm Equipment \(e.g., tractor, combine harvester\)](#)
- [All-Terrain Vehicle or All-Terrain Cycle \(ATV or ATC\)](#)
- [Golf Cart](#)

- [Snowmobile](#)
- [Multipurpose Off-Highway Utility Vehicle \(MOHUV\) or Recreational Off-Highway Vehicle \(ROV\)](#)
- [Low-Speed Vehicle](#)

Group 5: Motorcycle and Moped

- [Moped](#)
- [2-Wheeled Motorcycle](#)
- [3-Wheeled Motorcycle \(trike\)](#)
- [Autocycle](#)

Group 6: Other and Unknown

- [Other \(no large passenger or trucks allowed here\)](#)
- Unknown

Subfield 2: Number of Seats, including driver (applicable only for Body Types in Group 2 noted above)

- 9-14
- 15
- 16+

Remarks:

Complete this element for all motor vehicles. [Personal conveyances](#)—such as skateboards, motorized toy cars, and wheelchairs—are not considered motor vehicles.

See [Figure 15. FMCSA reportable crashes, visor card \(front\)](#), [Figure 16. FMCSA reportable crashes, visor card \(back\)](#), and [Figure 17. Motor vehicle body type examples](#) for information on reportable criteria for FMCSA.

Group 1: Passenger Vehicles

- **Passenger Car** – motor vehicles used primarily for carrying passengers.
- **Sport Utility Vehicle** – A motor vehicle other than a motorcycle or bus consisting primarily of a transport device designed for carrying 10 or fewer people, and generally considered a multi-purpose vehicle that is designed to have off-road capabilities. These vehicles are generally 4-wheel-drive (4x4) and have increased ground clearance. A utility vehicle has a GVWR of 10,000 lb or less. Utility vehicles with wheelbases greater than 88 inches are classified by overall width. The wheelbase and overall width should be rounded to the nearest inch. Sizes range from mini, small, midsize, full-size, and large. Four-wheel automobiles are not considered utility vehicles.
- **Minivan or Van (up to 8 seats)** - down-sized cargo or passenger unibody vans. If this vehicle has more than 8 seats, see [Passenger Van](#).

- **Motor Home or Recreational Vehicle** – A van where a frame-mounted recreational unit is added behind the driver or cab area or mounted on a bus or truck chassis suitable to live in and drive across the country.

Group 2: Large Passenger Seating Vehicles (nine or more seats, including the driver)

If the vehicle has a body type in Group 2, then complete Subfield 2: Number of Seats, including driver.

- **Limousine** – a vehicle typically driven by a chauffeur with a partition between the driver’s compartment and the passenger’s compartment. Stretch limos, limo buses (also known as party buses), sedan limos, SUV limos, convertible limos, and all other types of limos would also be coded as Limousine. If this attribute is selected, Subfield 2 must be completed to capture the number of seats.
- **Passenger Van** – a box-shaped vehicle designed to move nine or more passengers including the driver. These vehicles are identifiable by their enclosed cargo or passenger area and relatively short (or non-existent) hood. If this attribute is selected, Subfield 2 must be completed to capture the number of seats.
- **School Bus** - a bus designed to carry passengers to and from educational facilities and/or related functions. The vehicles are characteristically painted yellow and clearly identified as school buses. Use this attribute regardless of whether the vehicle is owned by a school system or a private company. Also use this attribute for school buses converted for other uses (e.g., church bus). If this attribute is selected, Subfield 2 must be completed to capture the number of seats.
- **Transit Bus** – A bus sold for public transportation provided by, or on behalf of a State or local government, equipped with a stop-request system, and is not an over-the-road bus. An “over-the-road bus” means a bus is characterized by an elevated passenger deck located over a baggage compartment. If this attribute is selected, Subfield 2 must be completed to capture the number of seats.
- **Motorcoach** – A bus with a GVWR of 11,793 kg (26,000 lb) or greater, 16 or more designated seating positions including the driver, and at least two rows of passenger seats, rearward of the driver’s seating position, that are forward-facing or can convert to forward-facing without the use of tools. Motorcoach includes buses sold for intercity, tour, and commuter bus service, but does not include a school bus, or an urban transit bus sold for operation as a common carrier in urban transportation along a fixed route with frequent stops. If this attribute is selected, Subfield 2 must be completed to capture the number of seats.
- **Other Large Passenger or Bus** - a vehicle designed or converted to carry nine or more people, including the driver, not described by the attributes [Limousine](#), [Passenger Van](#), [School Bus](#), [Transit Bus](#), or [Motorcoach](#). Examples include a specialized tour bus, a mini-bus, or bus-based motor home. If this attribute is selected, Subfield 2 must be completed to capture the number of seats.

Group 3: Trucks

- **Cargo Van** – any van where the area behind the driver or cab is designed for transporting cargo or operated for general commercial use.
- **Pickup Truck** - a single-unit straight truck with a pickup body style. May have a removable or retractable roof. Includes light, medium, and heavy pickup body styles.
- **Single-Unit Truck (2 axles and GVWR > 10,000 lb)** – a power unit that includes a permanently mounted cargo body (also called a straight truck) that has only two axles and a GVWR of over 10,000 lb. When counting axles on a single-unit truck, include raised axles.
- **Single-Unit Truck (3 or more axles)** – a power unit that includes a permanently mounted cargo body (also called a straight truck) that has three or more axles. When counting axles on a single-unit truck, include raised axles.
- **Truck-Tractor, With or Without Trailers (bobtail, semi, doubles, or triples)** - a fifth-wheel-equipped tractor-trailer power unit. The number of trailing units is not a consideration. Without a trailer, it is sometimes called a bobtail.
- **Truck, Unknown Type** - used when it is known that this vehicle is a truck, but there is insufficient data to classify the vehicle further.

Group 4: Not Designed Primarily for Road Use

(Construction, Farm Equipment, Off-Road Vehicles)

- **Construction Equipment (e.g., backhoe, bulldozer, forklift)** – construction equipment other than trucks propelled by a motor, such as bulldozer, road grader, etc.
- **Farm Equipment (e.g., tractor, combine harvester)** - farming implements other than trucks propelled by a motor (e.g., farm tractors, combines). This attribute is not under 49 CFR Part 565 regulation. Farm equipment are off-road vehicles and do not require VINs.
- **All-Terrain Vehicle or All-Terrain Cycle (ATV or ATC)** – used for off-road recreational vehicles. ATVs and ATCs have 3 or 4 wheels, a saddle-type seat, and handlebars for steering (no steering wheel).
- **Golf Cart** – a self-propelled vehicle not designed primarily for operation on roadways. A golf cart has a design speed of less than 20 miles per hour, at least 3 wheels in contact with the ground, and an empty weight of under 1,300 lb.
- **Snowmobile** - a vehicle designed to operate over snow, propelled by a motor.
- **Multipurpose Off-Highway Utility Vehicle (MOHUV) or Recreational Off-Highway Vehicle (ROV)** – vehicles intended to be used on terrain similar to that on which all-terrain vehicles (ATVs) are used. MOHUVs or ROVs are designed to travel on 4 or more wheels. They are distinguished from ATVs by the presence of a steering wheel instead of a handlebar for steering, bench or bucket seats for the driver and passenger(s) instead of straddle seating, and foot controls for throttle and braking instead of levers located on the handlebar. In addition, ROVs have a rollover protective system (ROPS) and restraint systems. MOHUVs can have maximum speeds from 25 mph to 50 mph and ROVs have a

maximum speed greater than 30 mph. MOHUVs with maximum speeds above 30 mph meet the definition of an ROV.

- **Low-Speed Vehicle** – a motor vehicle with 4 or more wheels whose top speed is greater than 20 miles per hour, but not greater than 25 miles per hour. LSVs are required to have basic items of safety equipment: headlamps, stop lamps, turn signal lamps, tail lamps, reflex reflectors, parking brake, windshields of either type AS-1 or type AS-5 glazing, rearview mirrors, seat belts, and VINs .

Group 5: Motorcycle and Moped

- **Moped** - used when the motor vehicle is a speed-limited motor-driven cycle capable of moving either by pedaling or by a motor. NOTE: This does not include motorized bicycles, ridden by non-motorists (see [NON-MOTORIST DEVICE TYPE](#)).
- **2-Wheeled Motorcycle** – an open (no enclosed body) motor vehicle propelled by a motor, having a seat or a saddle for the use of its operator, and designed to travel on not more than 2 wheels in contact with the ground (excluding an attached trailer or sidecar).
- **3-Wheeled Motorcycle (trike)** – an open (no enclosed body) motor vehicle propelled by a motor, having a seat or a saddle for the use of its operator, and designed to travel on not more than 3 wheels in contact with the ground (excluding an attached trailer or sidecar).
- **Autocycle** – a large motorcycle with 1 rear wheel and 2 front wheels, with either a saddle and handlebars or a seat (or seats) and a steering wheel, which can be fully enclosed, partially enclosed, or unenclosed.

Group 6: Other and Unknown

- **Other (no large passenger or trucks allowed here)** - used when the motor vehicle in question does not qualify for any of the listed body types. If the vehicle is an Other type of passenger vehicle or truck, see [Other Large Passenger or Bus](#) or [Truck, Unknown Type](#).

Highway Safety Rationale:

This data element is important to identify the specific type of motor vehicle involved in the crash for evaluation, research, and crash comparison purposes. The Federal Motor Carrier Safety Administration (FMCSA) analyzes crashes involving one or more of the following criteria: vehicles with a GVWR greater than 10,000 lb, any motor vehicle designed primarily to transport nine or more people including the driver, and vehicles carrying hazardous materials to identify safety risks and develop and evaluate safety countermeasures.

Implementation Suggestions:

The attribute groupings are suggestions for nested drop-down lists. The State should organize the attributes in a way that is meaningful to the State's users. See [Chapter 11: Designing User-Centered Crash Reporting Systems](#) for more information.

Validation Rules:

None

Alignment Considerations for MOTOR VEHICLE BODY TYPE CATEGORY

- Note that this MMUCC element describes body type, not vehicle use. If a State only lists vehicle uses (e.g., “School Bus,” “Transit Bus”), this is not an acceptable alignment to similar sounding MOTOR VEHICLE BODY TYPE CATEGORY attributes.

Truck and Bus Crashes Reportable to FMCSA

REPORT A TRAFFIC CRASH IF IT INVOLVES...

<p>Any truck that has a gross vehicle weight rating (GVWR) of more than 10,000 pounds or a gross combination weight rating (GCWR) of more than 10,000 pounds used on public highways</p>	OR	<p>Any motor vehicle with seating to transport nine (9) or more people, including the driver's seat</p>	OR	<p>Any motor vehicle displaying a hazardous materials placard (regardless of weight)</p>
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...AND RESULTS IN

<p>A fatality: <u>any</u> person(s) killed in or outside of <u>any</u> vehicle (truck, bus, car, etc.) involved in the crash or who dies within 30 days of the crash as a result of an injury sustained in the crash</p>	OR	<p>An injury: <u>any</u> person(s) injured as a result of the crash who immediately receives medical treatment away from the crash scene</p>	OR	<p>A tow-away: <u>any</u> motor vehicle (truck, bus, car, etc.) disabled as a result of the crash and transported away from the scene by a tow truck or other vehicle</p>
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Revised 06/05

Federal Motor Carrier Safety Administration U.S. Department of Transportation
www.fmcsa.dot.gov

Figure 15. FMCSA reportable crashes, visor card (front)

Crashes involving commercial motor vehicles and some non-commercial motor vehicles must be reported on a State's crash report and to the FMCSA. A commercial motor vehicle is any motor vehicle that is used on a trafficway for the transportation of goods, property, or people in interstate or intrastate commerce.

<p>INCLUDED:</p> <p>Here are some examples of commercial and non-commercial operations that, when involved in a crash, should be included if they meet the criteria on the front of this card.</p> <p>Examples:</p> <ol style="list-style-type: none"> A trucking company or individual owner/operator hauling the goods of a business for a fee. A manufacturing company hauling its own products to retail stores, or a retail store delivering products to its buyers. A farm hauling its produce to market. A motorcoach, airport shuttle, or hotel-owned shuttle bus or limousine service transporting passengers. A government-owned truck or bus. A school bus transporting students to/from school or school-related activities. A rented or leased truck used to transport either commercial or personal goods. A truck or truck tractor owned and operated for commerce being used for a personal trip or to transport personal goods. 	<p>EXCLUDED:</p> <p>Here are some examples of non-commercial operations that, when involved in a crash, should <u>not</u> be included.</p> <p>Examples:</p> <ol style="list-style-type: none"> A non-commercial horse owner transporting hay bales from his pasture on one side of the road to his stables on the other side of the road in a truck with a GVWR greater than 10,000 pounds. A homeowner carrying recyclables to a drop-off point in a personally owned pickup truck with a GVWR greater than 10,000 pounds. A family of 10 persons taking a trip in the family's 12-person van. A personally owned pickup truck hauling a boat, horse or utility trailer with a GCWR greater than 10,000 pounds not operating in commerce or as part of a business. A family operating a personally owned and registered recreational vehicle or motor home.
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Figure 16. FMCSA reportable crashes, visor card (back)







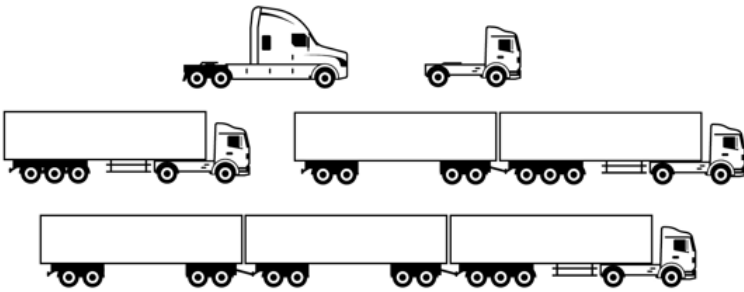

<p>Cargo Van</p> 	<p>Passenger Van</p> 
<p>Single-Unit Truck (2 axles and GVWR > 10,000 lbs.)</p> 	<p>Single-Unit Truck (3 or more axles)</p> 
<p>Pickup Truck</p> 	<p>Limo</p> 
<p>Truck Tractor, with or without trailers (Bobtail, Semi, Doubles, Triples)</p> 	
<p>School Bus, Transit Bus, Motorcoach, or Other Large Passenger or Bus</p> 	

Figure 17. Motor vehicle body type examples

V14. Power Unit Gross Vehicle Weight Rating

Element Definition:

The value specified by the manufacturer as the recommended maximum loaded weight of a single motor vehicle.

Attribute Values:

Select one:

- [Light \(10,000 lb or less GVWR\)](#)
- [Medium \(10,001 – 26,000 lb GVWR\)](#)
- [Heavy \(greater than 26,000 lb GVWR\)](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. See [Figure 15. FMCSA reportable crashes, visor card \(front\)](#) and [Figure 16. FMCSA reportable crashes, visor card \(back\)](#) for information on reportable criteria for FMCSA.

- **Light (10,000 lb or less GVWR)** – used for vehicles with a GVWR of 10,000 lb or less.
- **Medium (10,001 – 26,000 lb GVWR)** – used for vehicles with a GVWR from 10,001 to 26,000 lb.
- **Heavy (greater than 26,000 lb GVWR)** – used for vehicles with a GVWR greater than 26,000 lb.
- **Unknown** – used when the GVWR information cannot be determined.

Highway Safety Rationale:

The Federal Motor Carrier Safety Administration (FMCSA) analyzes crashes involving one or more of the following criteria: vehicles with a GVWR greater than 10,000 lb, any motor vehicle designed primarily to transport nine or more people including the driver, and vehicles carrying hazardous materials to identify safety risks and develop and evaluate safety countermeasures.

Implementation Suggestions:

- If using electronic crash collection software, then VIN decoding can assist with identifying the power unit's GVWR.
- To decode the VIN, NHTSA encourages States to use the [Product Information Catalog and Vehicle Listing \(vPIC\)](#), which uses data provided by the manufacturer from 49 CFR Part 565.
- In addition to collecting the GVWR, the state should consider separately collecting the GCWR for FMCSA reporting requirements.

Validation Rules:

None

Alignment Considerations for POWER UNIT GROSS VEHICLE WEIGHT RATING:

1. If a State uses the GVWR class system decoded by NHTSA's [Product Information Catalog and Vehicle Listing \(vPIC\)](#), these can be translated to, and aligned with, the MMUCC attributes.

V15. Cargo Body Type (Power Unit Only)

Element Definition:

The primary cargo-carrying capability of this vehicle.

Attribute Values:

Select one:

- [Not Applicable](#) (motor vehicle 10,000 lb or less, not displaying hazardous materials placard)
- [No Cargo Body](#) (bobtail, fire truck, tow truck, light motor vehicle with hazardous materials placard, etc.)
- [Bus](#)
- [Auto Transporter](#)
- [Cargo Tank](#)
- [Concrete Mixer](#)
- [Dump](#)
- [Flatbed](#)
- [Garbage or Refuse](#)
- [Grain, Chip, or Gravel](#)
- [Log](#)
- [Van or Enclosed Box](#)
- [Other \(carrying capability not listed, pickup 10,001 lb or more, etc.\)](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. Trailer types are captured separately under the element [TRAILER BODY TYPE](#). Refer to [Figure 18. Cargo body type examples](#) for chart displaying examples of cargo body types. If the vehicle does not fit into any of the qualifying criteria below, use the attribute [Not Applicable](#).

The following are qualifying motor vehicles for this data element, regardless of ownership or use:

- A vehicle pulling a trailer with GCWR greater than 10,000 lb.
- A single vehicle with a GVWR greater than 10,000 lb.
- A vehicle with nine or more seats including the driver.
- A vehicle displaying a hazardous materials placard.

This data element provides additional information about the motor vehicle, including all major cargo body types. The information it provides can be important in helping FMCSA make decisions on regulatory strategies for different types of motor vehicles. See [Figure 15. FMCSA reportable crashes, visor card \(front\)](#) and [Figure 16. FMCSA reportable crashes, visor card \(back\)](#) for information on reportable criteria for FMCSA.

- **Not Applicable (motor vehicle 10,000 lb or less, not displaying hazardous materials placard)** - The vehicle does not fit into the criteria for a qualifying vehicle for this data element.
- **No Cargo Body (bobtail, fire truck, tow truck, light motor vehicle with hazardous materials placard, etc.)** - used for any medium or heavy vehicle that fits into the qualifying criteria for this data element and does not have cargo carrying capability on its own (i.e., it would need a trailer or other attachment to carry cargo). This attribute also includes light trucks and passenger vehicles displaying a hazardous materials placard (i.e., without a placard, light trucks and passenger vehicles should be coded [Not Applicable](#)). Examples include truck tractors (with or without trailers), sign trucks, fire trucks, tow trucks, construction equipment, farm equipment, a minivan or van with a hazardous materials placard, etc.
- **Bus** – a motor vehicle with seating for transporting nine or more people including the driver, not including vans owned and operated for personal use.
- **Auto Transporter** – a cargo body type specifically designed to transport two or more fully assembled automobiles. Single-unit flatbed tow-trucks hauling cars DO NOT qualify (see [Flatbed](#)).
- **Cargo Tank** – a single-unit truck with a cargo body designed to transport dry bulk (fly, ash, etc.), liquid bulk (gasoline, milk, etc.) or gas bulk (propane, etc.).
- **Concrete Mixer** – a single-unit truck with a cargo body designed with a rotating drum for mixing cement, sand, gravel, or other substances to make concrete.
- **Dump** – a cargo body type that can be tilted or otherwise manipulated to discharge its load by gravity.
- **Flatbed** – a single-unit truck whose cargo body is without sides or roof, with or without readily removable stakes that may be tied together with chains, slats, or panels. This includes trucks transporting containerized loads.
- **Garbage or Refuse** – a single-unit truck with a cargo body specifically designed to collect and transport garbage and refuse. This includes both conventional rear-loading and over-the-top bucket-loading garbage trucks. Also includes recycle trucks and roll-off style garbage trucks.
- **Grain, Chip, or Gravel** – a single-unit truck with a bed designed to carry these or other similar bulk commodities with a rear discharge and not designed to tilt and dump (see [Dump](#)).
- **Log** – a single-unit truck with a cargo body type with a fixed middle beam and side support posts specifically designed for carrying logs.

- **Van or Enclosed Box** – a single-unit truck with an enclosed body integral to the frame of the motor vehicle.
- **Other (carrying capability not listed, pickup 10,001 lb or more, etc.)** - used when the vehicle fits into the qualifying criteria for this data element, but it does not fit into any of the other attributes for this data element. Examples include pickups greater than 10,000 lb with or without a trailer and motor homes.
- **Unknown** - the vehicle fits into the criteria for a qualifying vehicle for this data element; however, the information for this data element is unknown.

Highway Safety Rationale:

The FMCSA analyzes crashes involving one or more of the following criteria: vehicles with a GVWR greater than 10,000 lb, any motor vehicle designed primarily to transport nine or more people including the driver, and vehicles carrying hazardous materials to identify safety risks and develop and evaluate safety countermeasures.

Implementation Suggestions:

- The VIN could be used to collect this information, but officers should always verify that the VIN matches the vehicle.
- If [POWER UNIT GROSS VEHICLE WEIGHT RATING](#) equals **Light (10,000 lb or less GVWR)** and [HAZARDOUS MATERIALS](#) Subfields 1 and 2 both equal **No**, then autofill CARGO BODY TYPE (POWER UNIT ONLY) with **Not Applicable (motor vehicle 10,000 lb or less, not displaying hazardous materials placard)**.
- If [POWER UNIT GROSS VEHICLE WEIGHT RATING](#) equals **Medium (10,001 – 26,000 lb GVWR)** or **Heavy (Greater than 26,000 lb GVWR)** and [MOTOR VEHICLE BODY TYPE CATEGORY](#) Subfield 1 equals **Pickup Truck**, then autofill CARGO BODY TYPE (POWER UNIT ONLY) with **Other (carrying capability not listed, pickup 10,001 lb or more, etc.)**.
- If [MOTOR VEHICLE BODY TYPE CATEGORY](#) Subfield 1 equals **Truck-Tractor, With or Without Trailers (bobtail, semi, doubles, or triples)**, then autofill CARGO BODY TYPE (POWER UNIT ONLY) with **No Cargo Body (bobtail, fire truck, tow truck, light motor vehicle with hazardous materials placard, etc.)**.

Validation Rules:

None

Alignment Considerations for CARGO BODY TYPE (POWER UNIT ONLY):

1. Note that the power unit and the trailing unit are collected separately, new in this MMUCC 6th edition. If the State collects only the entire combination unit (power unit and trailing unit together), then this does not align with MMUCC.






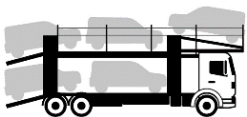
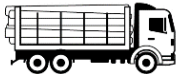




<p>No Cargo Body</p> 		
<p>Bus</p> 		<p>Grain, Chip, or Gravel</p> 
<p>Cargo Tank</p> 	<p>Van/Enclosed Box</p> 	
<p>Auto Transporter</p> 	<p>Log</p> 	<p>Garbage/Refuse</p> 
<p>Dump</p> 	<p>Concrete Mixer</p> 	<p>Flatbed</p> 

Figure 18. Cargo body type examples

V16. Hazardous Materials

Element Definition:

Indication of the hazardous materials identification and class being transported by the motor vehicle, and whether [hazardous materials](#) were released.

Attribute Values:

Subfield 1: [Hazardous Materials Present](#) (select one)

- No
- Yes

Subfield 2: [Placard](#) (select one)

- No
- Yes
- Unknown

Subfield 3: [4-Digit Hazardous Materials Identification Number](#) (Specify)

- Not Applicable
- 4-digit Hazardous Materials ID
- Unknown

Subfield 4: [Hazardous Materials Class](#) (select one)

- Not Applicable
- 1 – Explosives
- 2 – Gases
- 3 – Flammable and combustible liquids
- 4 – Flammable materials
- 5 – Oxidizer and organic peroxide
- 6 – Poisons
- 7 – Radioactive
- 8 – Corrosive
- 9 – Miscellaneous
- Unknown

Subfield 5: [Release of Hazardous Materials](#) (select one)

- Not Applicable
- No

- Yes
- Unknown if Released

Remarks:

Complete this element for all motor vehicles. See [Figure 15. FMCSA reportable crashes, visor card \(front\)](#) and [Figure 16. FMCSA reportable crashes, visor card \(back\)](#) for information on reportable criteria for FMCSA.

A hazardous material is any substance or material that has been determined by the U.S. Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and that has been so designated under regulations of the U.S. DOT.

Guideline for recording hazardous materials if the State collects fewer hazardous material occurrences than are on a vehicle:

- If a hazardous material spill has occurred and you know which material was released, always record that material;
- If more than one hazardous materials at different classes (1-9), report the material from [Figure 21. § 172.504 \(e\) Placarding Tables. Table 1 to Paragraph \(e\)](#) and its associated 4-digit UN number before materials in [Figure 22. § 172.504 \(e\) Placarding Tables. Table 2 to Paragraph \(e\)](#). Table 1 includes Hazard Class/Divisions 1.1, 1.2, 1.3, 2.3, 4.3, 5.2, 6.1, 7;
- If more than one hazardous materials of the same class, report the material in greatest quantity.

Refer to [Figure 19. Nine classes of hazardous materials, FMCSA visor card \(front\)](#) and [Figure 20. Reporting hazardous materials information, FMCSA visor card \(back\)](#) for charts displaying hazardous materials classes and reporting information.

- **Hazardous Materials Present** – indicates whether the vehicle was carrying hazardous materials at the time of the crash. Do not include fuel or oil carried by the vehicle for its own use.
- **Hazardous Materials Placard** – A hazardous materials placard is a sign required to be affixed to any motor vehicle transporting quantities of [hazardous materials](#) in quantities above the thresholds established by the U.S. Department of Transportation, or other authorized entity. This placard identifies the hazard class division number, 4-digit hazardous material identification number or name of the hazardous material being transported.
- **4-Digit Hazardous Materials Identification Number** – this number may be on a placard, in an orange panel, or on a white square-on-point configuration. Proper shipping name or names, if displayed, are marked on the transport vehicle or shipping package. See [Figure 19. Nine classes of hazardous materials, FMCSA visor card \(front\)](#) and [Figure 20. Reporting hazardous materials information, FMCSA visor card \(back\)](#) for more information on locating and reporting this number.

- **Hazardous Materials Class** - the hazardous materials class number, indicated on the placard or from the shipping papers. See [Figure 19. Nine classes of hazardous materials, FMCSA visor card \(front\)](#) and [Figure 20. Reporting hazardous materials information, FMCSA visor card \(back\)](#) for more information on locating and reporting this number. There may be more than one hazardous materials class on the transport vehicle, and in these cases the DANGEROUS placard may be displayed. This is NOT a representation of a hazardous materials class, but an indication that two or more [Figure 22. § 172.504 \(e\) Placarding Tables. Table 2 to Paragraph \(e\)](#) materials are present. There may be two or more placards displayed in cases where the hazardous materials regulations require either the display of specific placards for primary hazards ([Figure 21. § 172.504 \(e\) Placarding Tables. Table 1 to Paragraph \(e\)](#)), or subsidiary hazards per 172.505.
- **Release of Hazardous Materials** - indicates whether any hazardous cargo was released. This includes if any hazardous materials were released inside the cargo body but did not escape the cargo compartment. For example, as a result of a crash, barrels containing hazardous materials fall over inside an enclosed box trailer, spilling their contents inside the trailer. Do not include fuel or oil carried by the vehicle for its own use that has been released.

Highway Safety Rationale:

The Federal Motor Carrier Safety Administration (FMCSA) analyzes crashes involving one or more of the following criteria: vehicles with a GVWR greater than 10,000 lb, any motor vehicle designed primarily to transport nine or more people including the driver, and vehicles carrying hazardous materials to identify safety risks and develop and evaluate safety countermeasures. FMCSA devotes special attention to motor carriers that transport hazardous materials, including calculating risk assessments, determining response methods, imposing tighter regulations, and conducting compliance reviews on a higher percentage of hazardous materials carriers. Obtaining high quality data on crashes involving vehicles carrying hazardous materials and whether hazardous materials are spilled during the crashes helps FMCSA focus law enforcement efforts.

Implementation Suggestions:

- If Subfields 1 and 2 both equal **No**, then autofill Subfields 3-5 with **Not Applicable**.
- States could provide [Figure 19. Nine classes of hazardous materials, FMCSA visor card \(front\)](#) and [Figure 20. Reporting hazardous materials information, FMCSA visor card \(back\)](#) as links in the crash system to assist officers.
- Although the minimum system capability requirement for Subfields 3 and 4 is one selection per subfield, States should consider collecting all hazardous materials identification numbers and classes that are on a vehicle.

Validation Rules:

- If HAZARDOUS MATERIALS Subfields 1 and 2 both = **No**, then Subfields 3-5 must = **Not Applicable**.
- If HAZARDOUS MATERIALS Subfield 1 or Subfield 2 = **Yes**, then Subfields 3-5 must not = **Not Applicable**.

Alignment Considerations for HAZARDOUS MATERIALS:

None

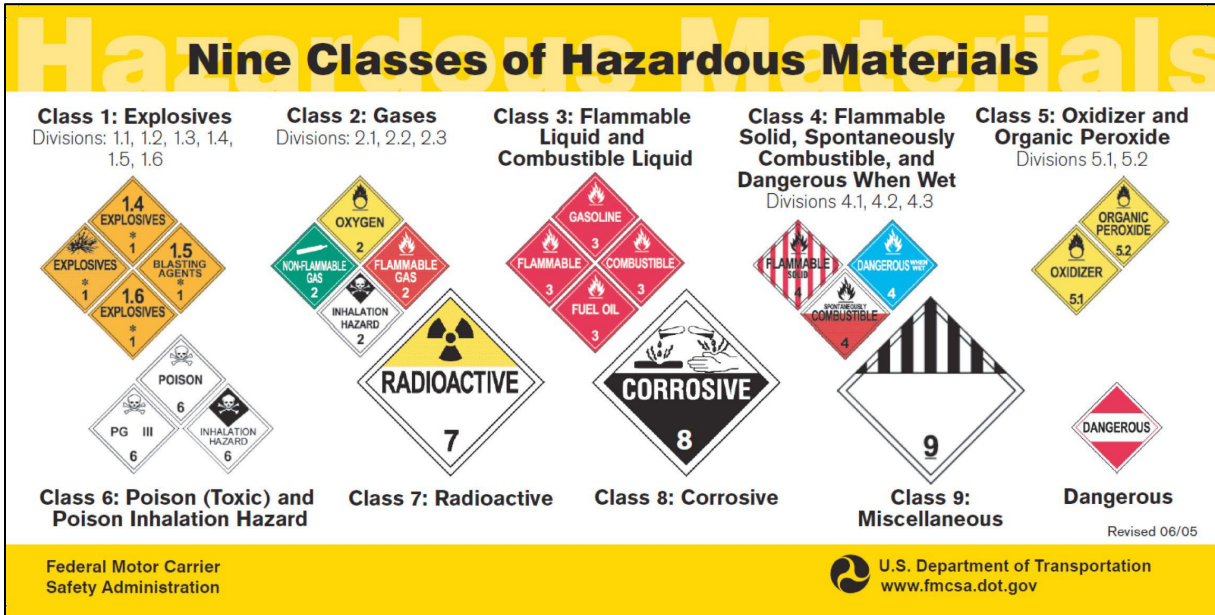


Figure 19. Nine classes of hazardous materials, FMCSA visor card (front)

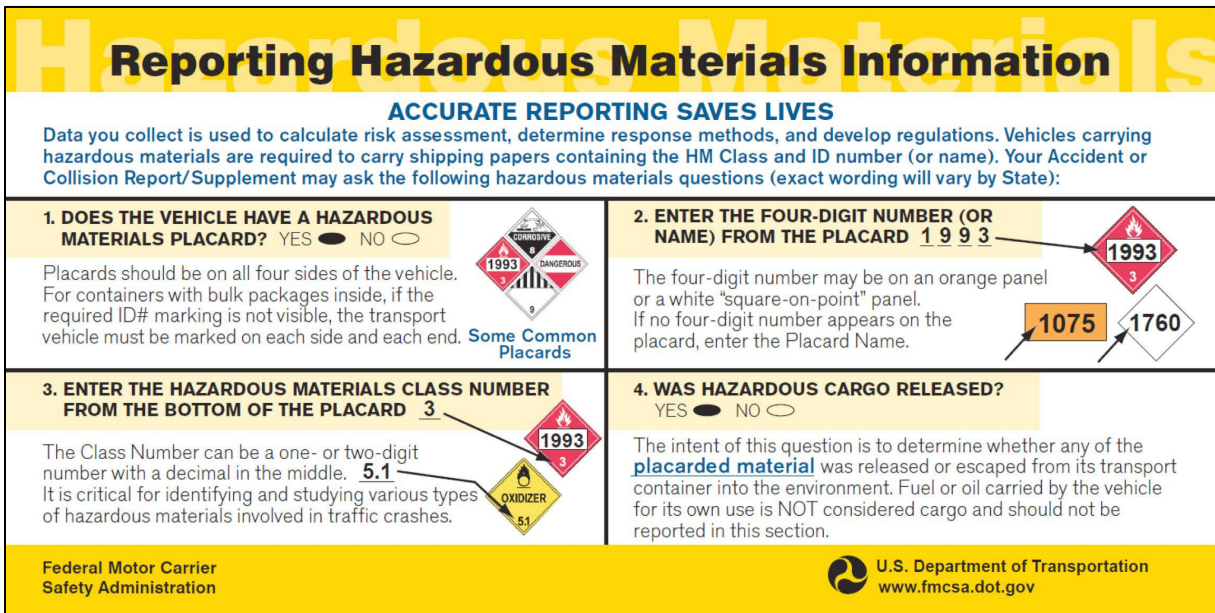


Figure 20. Reporting hazardous materials information, FMCSA visor card (back)

Category of material (Hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (§)
1.1	EXPLOSIVES 1.1	172.522
1.2	EXPLOSIVES 1.2	172.522
1.3	EXPLOSIVES 1.3	172.522
2.3	POISON GAS	172.540
4.3	DANGEROUS WHEN WET	172.548
5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled)	ORGANIC PEROXIDE	172.552
6.1 (material poisonous by inhalation (see § 171.8 of this subchapter))	POISON INHALATION HAZARD	172.555
7 (Radioactive Yellow III label only)	RADIOACTIVE ¹	172.556

¹ RADIOACTIVE placards are also required for: All shipments of unpackaged LSA-I material or SCO-I; all shipments required by §§ 173.427, 173.441, and 173.457 of this subchapter to be operated under exclusive use; and all closed vehicles used in accordance with § 173.443(d).

Figure 21. § 172.504 (e) Placarding Tables. Table 1 to Paragraph (e). Source: [49 CFR 172.504\(e\)](#)

Category of material (hazard class or division number and additional description, as appropriate)	Placard name	Placard design section reference (§)
1.4	EXPLOSIVES 1.4	172.523
1.5	EXPLOSIVES 1.5	172.524
1.6	EXPLOSIVES 1.6	172.525
2.1	FLAMMABLE GAS	172.532
2.2	NON-FLAMMABLE GAS	172.528
3	FLAMMABLE	172.542
Combustible liquid	COMBUSTIBLE	172.544
4.1	FLAMMABLE SOLID	172.546
4.2	SPONTANEOUSLY COMBUSTIBLE	172.547
5.1	OXIDIZER	172.550
5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled)	ORGANIC PEROXIDE	172.552
6.1 (other than material poisonous by inhalation)	POISON	172.554
6.2	NONE	
8	CORROSIVE	172.558
9	CLASS 9 (see § 172.504(f) (9))	172.560

Figure 22. § 172.504 (e) Placarding Tables. Table 2 to Paragraph (e). Source: [49 CFR 172.504\(e\)](#)

V17. Vehicle Trailing

Element Definition:

Identifies whether this vehicle had any attached trailing units or was towing another motor vehicle.

Attribute Values:

Select one:

- [No Trailers](#)
- [One Trailer](#)
- [Two Trailers](#)
- [Three or More Trailers](#)
- [Yes, Number of Trailers Unknown](#)
- [Vehicle Towing Another Motor Vehicle – Fixed Linkage](#)
- [Vehicle Towing Another Motor Vehicle – Non-Fixed Linkage](#)
- [Trailing Unit Other Than a Trailer or Another Motor Vehicle](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. See [Figure 15. FMCSA reportable crashes, visor card \(front\)](#) and [Figure 16. FMCSA reportable crashes, visor card \(back\)](#) for information on reportable criteria for FMCSA.

Trailing unit applies to any device connected to a motor vehicle by a hitch, including tractor-trailer combinations, a single-unit truck pulling a trailer, a boat trailer hitched onto a motor vehicle, another motor vehicle being towed, or something other than a trailer or motor vehicle (e.g., generator, woodchipper), etc.

- **No Trailers** – This vehicle was not pulling or towing a wheeled unit.
- **One Trailer** – This vehicle was pulling one trailer.
- **Two Trailers** - This vehicle was pulling two [trailing units](#).
- **Three or More Trailers** - This vehicle was pulling three or more [trailing units](#).
- **Yes, Number of Trailers Unknown** – used when it is known that there was at least one trailer, but the number of trailers cannot be determined.
- **Vehicle Towing Another Motor Vehicle – Fixed Linkage** – used to identify that a vehicle was towing another motor vehicle connected by a fixed linkage. The towed vehicle will have two or more wheels on the ground. This will most commonly apply to drive-away or tow-away tow trucks. These are vehicles equipped with a mechanism designed to be attached to a towed vehicle (e.g., hoist). This attribute would also be used for saddle-mounted towed vehicles. An example of a saddle-mount unit would be a

bobtail towing one or more other bobtails. This attribute does not apply to vehicles towed by being loaded on a flatbed or auto transporter.

- **Vehicle Towing Another Motor Vehicle – Non-Fixed Linkage** - used to identify that a vehicle was towing another motor vehicle connected by a non-fixed linkage. A non-fixed linkage includes ropes, chains, or cables.
- **Trailing Unit Other Than a Trailer or Another Motor Vehicle** - used when this vehicle was pulling or towing a wheeled unit that is something other than a trailer or another motor vehicle (e.g., generator, woodchipper, log splitter).
- **Unknown** – used when it is unknown if this motor vehicle was pulling or towing any attached [trailing units](#).

Highway Safety Rationale:

The Federal Motor Carrier Safety Administration (FMCSA) analyzes crashes involving one or more of the following criteria: vehicles with a GVWR greater than 10,000 lb, any motor vehicle designed primarily to transport nine or more people including the driver, and vehicles carrying hazardous materials to identify safety risks and develop and evaluate safety countermeasures.

Implementation Suggestions:

- If **No Trailers** is selected, then autofill [TRAILER VIN](#) with **No Trailing Units** for all three subfields and autofill [TRAILER BODY TYPE](#) with **No Trailer** for all three subfields.
- If **One Trailer** is selected, then autofill [TRAILER VIN](#) Subfields 2 and 3 with **No Trailing Units** and autofill [TRAILER BODY TYPE](#) Subfields 2 and 3 with **No Trailer**.
- If **Two Trailers** is selected, then autofill [TRAILER VIN](#) Subfield 3 with **No Trailing Units** and autofill [TRAILER BODY TYPE](#) Subfield 3 with **No Trailer**.

Validation Rules:

None

Alignment Considerations for VEHICLE TRAILING:

None

V18. Trailer VIN

Element Definition:

A unique combination of alphanumeric characters assigned to each trailer designated by the manufacturer.

Attribute Values:

Subfield 1: First Trailer (Select or Specify 1)

- [No trailing units](#)
- [No VIN Required, Not a Vehicle for Road Use](#)
- [Any Alphanumeric Characters – Actual VIN](#)
- [Unknown \(information unavailable\)](#)

Subfield 2: Second Trailer (Select or Specify 1)

- [No trailing units](#)
- [No VIN Required, Not a Vehicle for Road Use](#)
- [Any Alphanumeric Characters – Actual VIN](#)
- [Unknown \(information unavailable\)](#)

Subfield 3: Third Trailer (Select or Specify 1)

- [No trailing units](#)
- [No VIN Required, Not a Vehicle for Road Use](#)
- [Any Alphanumeric Characters – Actual VIN](#)
- [Unknown \(information unavailable\)](#)

Remarks:

Complete this element for all motor vehicles. The Trailer VIN is the manufacturer-assigned number permanently affixed to a trailer.

- **No Trailing Units** – This motor vehicle did not have any trailing units or did not have additional trailing units.
- **No VIN Required, Not a Vehicle for Road Use** - is used when the trailer is not required to have a VIN as per 49 CFR Part 565 Requirements for Trailer Manufacturers. This attribute should only be used for homemade or custom trailers not manufactured for sale to the public.
- **Any Alphanumeric Characters – Actual VIN** – record the VIN for this trailer or towed motor vehicle.
- **Unknown (information unavailable)** – The VIN for this trailing unit cannot be determined.

Highway Safety Rationale:

This element is important to identify specific trailer design characteristics for effectiveness evaluations. This element is also essential for VIN decoders, vehicle registration files, and other State traffic records data integration purposes. The Federal Motor Carrier Safety Administration (FMCSA) analyzes crashes involving one or more of the following criteria: vehicles with a GVWR greater than 10,000 lb, any motor vehicle designed primarily to transport nine or more people including the driver, and vehicles carrying hazardous materials to identify safety risks and develop and evaluate safety countermeasures.

Implementation Suggestions:

- If the element [VEHICLE TRAILING](#) equals **No Trailers**, then autofill this element with **No Trailing Units** for all three subfields.
- If the element [VEHICLE TRAILING](#) equals **One Trailer**, then autofill this element's Subfields 2 and 3 with **No Trailing Units**.
- If the element [VEHICLE TRAILING](#) equals **Two Trailers**, then autofill this element's Subfield 3 with **No Trailing Units**.
- To decode the VIN, NHTSA encourages States to use the [Product Information Catalog and Vehicle Listing \(vPIC\)](#), which uses data provided by the manufacturer from 49 CFR Part 565.

Validation Rules:

None

Alignment Considerations for TRAILER VIN:

None

V19. Trailer Body Type

Element Definition:

The primary cargo carrying capability of this trailer.

Attribute Values:

Subfield 1: First Trailer (select one)

- [No Trailer](#)
- [Towed Vehicle](#)
- [Box or Van Enclosed Trailer](#)
- [Flatbed or Platform Trailer](#)
- [Grain, Chip, or Gravel Trailer](#)
- [Dump Trailer](#)
- [Tank Trailer](#)
- [Mixer Trailer](#)
- [Intermodal Container Chassis or Trailer](#)
- [Logging Trailer](#)
- [Pole Trailer](#)
- [Auto Transporter](#)
- [House Trailer](#)
- [Utility Trailer](#)
- [Boat Trailer](#)
- [Camping or Travel Trailer](#)
- [Live Animal Trailer](#)
- [Other Trailer](#)
- [Unknown Trailer Body Type](#)

Subfield 2: Second Trailer (select one)

- [No Trailer](#)
- [Towed Vehicle](#)
- [Box or Van Enclosed Trailer](#)
- [Flatbed or Platform Trailer](#)
- [Grain, Chip, or Gravel Trailer](#)
- [Dump Trailer](#)

- [Tank Trailer](#)
- [Mixer Trailer](#)
- [Intermodal Container Chassis or Trailer](#)
- [Logging Trailer](#)
- [Pole Trailer](#)
- [Auto Transporter](#)
- [House Trailer](#)
- [Utility Trailer](#)
- [Boat Trailer](#)
- [Camping or Travel Trailer](#)
- [Live Animal Trailer](#)
- [Other Trailer](#)
- [Unknown Trailer Body Type](#)

Subfield 3: Third Trailer (select one)

- [No Trailer](#)
- [Towed Vehicle](#)
- [Box or Van Enclosed Trailer](#)
- [Flatbed or Platform Trailer](#)
- [Grain, Chip, or Gravel Trailer](#)
- [Dump Trailer](#)
- [Tank Trailer](#)
- [Mixer Trailer](#)
- [Intermodal Container Chassis or Trailer](#)
- [Logging Trailer](#)
- [Pole Trailer](#)
- [Auto Transporter](#)
- [House Trailer](#)
- [Utility Trailer](#)
- [Boat Trailer](#)
- [Camping or Travel Trailer](#)
- [Live Animal Trailer](#)

- [Other Trailer](#)
- [Unknown Trailer Body Type](#)

Remarks:

Complete this element for all motor vehicles. Power units are captured separately under the element [CARGO BODY TYPE \(POWER UNIT ONLY\)](#). Refer to [Figure 23. Trailer body type examples](#) for chart displaying examples of trailer body types. See [Figure 15. FMCSA reportable crashes, visor card \(front\)](#) and [Figure 16. FMCSA reportable crashes, visor card \(back\)](#) for information on reportable criteria for FMCSA.

- **No Trailer** – This motor vehicle did not have any trailing units or did not have additional trailing units.
- **Towed Vehicle** – used when the trailing unit was a motor vehicle connected by a fixed or non-fixed linkage.
- **Box or Van Enclosed Trailer** – a trailer with an enclosed body integral to the frame of the trailer.
- **Flatbed or Platform Trailer** – a trailer type without sides or roof, with or without readily removable stakes that may be tied together with chains, slats, or panels. This includes trailers transporting containerized loads.
- **Grain, Chip, or Gravel Trailer** – a trailer body type used for hauling these or other similar bulk commodities. They may be referred to as “open hoppers” or “belly dumps.”
- **Dump Trailer** – a trailer type that can be tilted or otherwise manipulated to discharge its load by gravity.
- **Tank Trailer** – a trailer type designed to transport dry bulk (fly, ash, etc.), liquid bulk (gasoline, milk, etc.) or gas bulk (propane, etc.).
- **Mixer Trailer** – a trailer type designed with a rotating drum for mixing cement, sand, gravel, or other substances.
- **Intermodal Container Chassis or Trailer** - a trailer specifically designed to have a rail or ship container mounted directly on the chassis or trailer. These should not be confused with [Box or Van Enclosed Trailer](#). Intermodal containers may also be mounted on a flatbed trailer, in which case use the attribute [Flatbed or Platform Trailer](#).
- **Logging Trailer** – a trailer type with a fixed middle beam and side support posts specifically designed for carrying logs.
- **Pole Trailer** – a trailer designed to be attached to the towing vehicle by means of a reach or pole, or by being boomed or otherwise secured to the towing motor vehicle, and ordinarily used for carrying property of a long or irregular shape.
- **Auto Transporter** – a trailer body type specifically designed to transport two or more fully assembled automobiles.
- **House Trailer** – A trailer type specifically designed for carrying a house or a mobile or modular home.

- **Utility Trailer** – A small trailer designed primarily to be drawn behind a passenger car or pickup truck for domestic and utility purposes, has an open-top, and is used for hauling light loads.
- **Boat Trailer** - A trailer designed with cradle-type mountings to transport a boat and configured to permit launching of the boat from the rear of the trailer.
- **Camping or Travel Trailer** - A trailer designed as temporary living quarters for recreational, camping, or travel use.
- **Live Animal Trailer** – a trailer designed specifically for transporting live animals (e.g., livestock, zoo animals, insects, horses, aquatic animals).
- **Other Trailer** – The trailer body type is not identified by the other attributes for this data element.
- **Unknown Trailer Body Type** – The body type of this trailer cannot be determined.

Highway Safety Rationale:

This element is important to identify specific trailer design characteristics for effectiveness evaluations. The Federal Motor Carrier Safety Administration (FMCSA) analyzes crashes involving one or more of the following criteria: vehicles with a GVWR greater than 10,000 lb, any motor vehicle designed primarily to transport nine or more people including the driver, and vehicles carrying hazardous materials to identify safety risks and develop and evaluate safety countermeasures.

Implementation Suggestions:

- If the element [VEHICLE TRAILING](#) equals **No Trailers**, then autofill this element with **No Trailer** for all three subfields.
- If the element [VEHICLE TRAILING](#) equals **One Trailer**, then autofill this element's Subfields 2 and 3 with **No Trailer**.
- If the element [VEHICLE TRAILING](#) equals **Two Trailers**, then autofill this element's Subfield 3 with **No Trailer**.

Validation Rules:

None

Alignment Considerations for TRAILER BODY TYPE

1. Note that the power unit and the trailing unit are collected separately, new in this MMUCC 6th edition. If the State collects only the entire combination unit (power unit and trailing unit together), then this does not align with MMUCC.


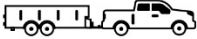


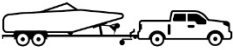
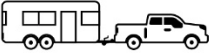





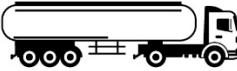


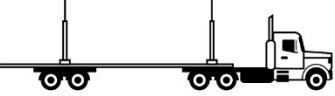
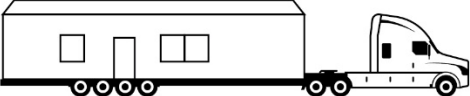
<p>Utility Trailer</p> 	<p>Dump Trailer</p> 	
<p>Box or Van Enclosed Trailer</p>  		<p>Boat Trailer</p> 
<p>Camping/Travel Trailer</p> 	<p>Live Animal Trailer</p> 	
<p>Auto Transporter Trailer</p> 	<p>Grain/Chip/Gravel Trailer</p> 	
<p>Mixer Trailer</p> 	<p>Intermodal Container Chassis/Trailer</p> 	
<p>Tank Trailer</p> 	<p>Flatbed or Platform Trailer</p> 	
<p>Logging Trailer</p> 	<p>Pole Trailer</p> 	
<p>House Trailer</p> 		

Figure 23. Trailer body type examples

V20. Total Occupants in Motor Vehicle

Element Definition:

The total number of injured and uninjured occupants in this motor vehicle involved in the crash, including people in or on the motor vehicle at the time of the crash.

Attribute Values:

Specify one:

- Total number of injured and uninjured occupants including the driver
- Unknown

Remarks:

Complete this element for all motor vehicles. Zero is an acceptable number.

Highway Safety Rationale:

This element is important for evaluating the effectiveness of countermeasures that prevent or reduce injury and injury severity.

Implementation Suggestions:

None

Validation Rules:

TOTAL OCCUPANTS IN MOTOR VEHICLE should = the total number of person records for this vehicle.

Alignment Considerations for TOTAL OCCUPANTS IN MOTOR VEHICLE:

1. If a State only collects injured occupants and electronically derives the count of these injured occupants to populate the total number of occupants in the vehicle, then this does not align with MMUCC.

V21. Special Use

Element Definition:

The type of authorized special use being served by this motor vehicle regardless of whether the use is marked on the vehicle or aligns to the body type, at the time of the crash. For example, a 15-Passenger van being used as a school bus.

Attribute Values:

Select one:

- [No Special Use](#)
- [Vehicle Used for School Transport](#)
- [Vehicle Used for School-Related Activity](#)
- [Fire Truck](#)
- [Trafficway Construction, Maintenance, or Utility](#)
- [USPS Mail Carrier](#)
- [Other Package Delivery Vehicle \(e.g., UPS, DHL, FedEx, Amazon\)](#)
- [Military](#)
- [Ambulance](#)
- [Law Enforcement](#)
- [Other Emergency Services Vehicle](#)
- [Safety Service Patrols – Incident Response](#)
- [Towing – Incident Response](#)
- [Other Incident Response](#)
- [Truck Operating With Crash Attenuator Equipment](#)
- [Taxi](#)
- [Motor Vehicle in Service for Electronic Ride-hailing](#)
- [Rental or Car-Share Vehicle](#)
- [Rental Truck \(Over 10,000 lb\)](#)
- Unknown

Remarks:

Complete this element for all motor vehicles.

- **No Special Use** - this vehicle was not being used for any of the identified special use attributes at the time of the crash.

- **Vehicle Used for School Transport** – A motor vehicle authorized by a school or school district for the transportation of any school pupil at or below the 12th-grade level to or from a public or private school. If this vehicle was used to transport passengers to or from a school-related activity, see [Vehicle Used for School-Related Activity](#). See additional remarks about school buses under [SCHOOL-BUS-RELATED](#).
- **Vehicle Used for School-Related Activity** - A motor vehicle authorized by a school or school district for the transportation to or from a school-related activity, sponsored by a school, whether on or off school grounds. These may include sports events, band concerts, field trips, and competitions such as debate or chess tournaments. If this vehicle was used to transport passengers to or from school, see [Vehicle Used for School Transport](#). See additional remarks about school buses under [SCHOOL-BUS-RELATED](#).
- **Fire Truck** – a readily identifiable vehicle specially designed and equipped for the purposes of providing fire, hazmat, medical, and extrication services. This attribute includes medium and heavy vehicles such as engines, pumpers, ladder, platform aerial apparatus, heavy rescue vehicles, water tenders or tankers, brush or wilderness firefighting vehicles, etc. The fire truck is presumed to be in special use at all times, although not necessarily in “emergency use.”
- **Trafficway Construction, Maintenance, or Utility** – used for any vehicle whose function is designed to conduct improvements to a roadway, perform authorized maintenance, or provide utility services.
- **USPS Mail Carrier** - this vehicle was a U.S. Postal Service authorized mail carrier at the time of the crash. This includes personal vehicles being used as rural USPS-authorized mail carriers. This attribute excludes [Other Package Delivery Vehicles \(e.g., UPS, DHL, FedEx, Amazon\)](#).
- **Other Package Delivery Vehicle (e.g., UPS, DHL, FedEx, Amazon)** - this vehicle was a parcel delivery vehicle at the time of the crash. This attribute excludes [USPS Mail Carrier](#) vehicles.
- **Military** - used for any vehicle that is operated for any of the Armed Forces purposes regardless of body type. This attribute includes military police vehicles, military ambulances, military hearses, and military fire vehicles.
- **Ambulance** – used for any readily identifiable (lights or markings) vehicles with separated driver’s and patient compartments and designed to transport sick or injured people. The ambulance is presumed to be in special use at all times, although not necessarily in “emergency use.”
- **Law Enforcement** – a vehicle equipped with police emergency devices (lights and siren) owned or subsidized by any local, county, State, or Federal government entity. A law enforcement vehicle is presumed to be in special use at all times, although not necessarily in “emergency use.” Vehicles not owned by a government entity that are used by law enforcement officers (e.g., undercover) are excluded.
- **Other Emergency Services Vehicle** – used for any readily identified (lights and markings) vehicles that do not meet the criteria for [Ambulance](#), [Fire Truck](#), [Safety](#)

[Service Patrols-Incident Response](#), [Towing-Incident Response](#), or [Other Incident Response](#) and are specifically designed and equipped to respond to fire, hazmat, medical, and extrication incidents. This attribute includes light vehicles such as sedans, vans, SUVs, pickups, trucks, motorcycles, etc. This attribute includes vehicles that have been dispatched to an incident or have initiated operation in a non-emergency mode and are not transporting passengers, such as patients or suspects. An example of an **Other Emergency Services Vehicle** is a fire chief's unit, commonly an SUV.

NOTE on Incident Response Vehicles: An incident response vehicle is a vehicle typically equipped with a variety of tools, emergency medical equipment, traffic cones and control signs, absorbent material (for responding to spills), emergency and work lighting. These multi-purpose response units assist law enforcement, fire, and rescue personnel with trafficway incident management. A traffic incident scene is the scene of any unplanned traffic event that adversely affects normal traffic operations. Examples include disabled vehicles, traffic backups, or spilled cargo.

- **Safety Service Patrols – Incident Response** – vehicles that provide short-term emergency response management to traffic incidents, commonly resulting from crashes, debris, or disabled vehicles, intended to promote safe movement of people and commerce, and reduce traffic delays and congestion. To use this attribute, this vehicle must have been responding to a traffic incident at the time of its involvement in the crash. See [NOTE on Incident Response Vehicles](#).
- **Towing – Incident Response** – used for any type of tow truck involved in the crash while providing tow service at a traffic incident scene. The tow truck does not need to have a vehicle in tow at the time of the crash to use this attribute. To use this attribute, this vehicle must have been responding to a traffic incident at the time of its involvement in the crash. Tow trucks involved in crashes under any other circumstances are not included in this attribute. See [NOTE on Incident Response Vehicles](#).
- **Other Incident Response** - used for incident response vehicles excluding [Safety Service Patrols - Incident Response](#) and [Towing - Incident Response](#). Vehicles responding to clean up spills are examples of this. To use this attribute, this vehicle must have been responding to a traffic incident at the time of its involvement in the crash. See [NOTE on Incident Response Vehicles](#).
- **Truck Operating With Crash Attenuator Equipment** - this vehicle was specially equipped with devices to absorb impacts from collisions and was in use as a crash attenuator at the time of the crash ([MOTOR VEHICLE UNIT TYPE](#) must equal [Working Motor Vehicle](#)).
- **Taxi** - used when this vehicle was operated during this trip (at the time of the crash) on a “fee-for-hire” basis to transport people. Most of these vehicles will be marked and formally registered as taxis; however, vehicles that are used as taxis, even though they are not registered, are included here. For vehicles affiliated with a transportation network company, see [Motor Vehicle in Service for Electronic Ride-Hailing](#). Passengers do not have to be present at the time of the crash. Taxis and drivers that are off duty at the time of the crash are coded as [No Special Use](#). If it is unknown whether the taxi is on-duty or not, code as Taxi. This attribute also applies for limousines on a “fee-for-hire” basis.

- **Motor Vehicle in Service for Electronic Ride-hailing** – a transportation network company (TNC) (sometimes known as mobility service providers or MSPs) connects, via websites and mobile apps, paying passengers with drivers who provide such passengers with transportation on the driver’s non-commercial vehicle. If this motor vehicle was rented and/or part of a shared mobility service (TNC) to provide customers with the vehicle only (no driver included), then see [Rental or Car-Share Vehicle](#).
- **Rental or Car-Share Vehicle** - used when this motor vehicle was rented and/or part of a shared mobility service (transportation network company) to provide customers with the vehicle only (no driver included) at the time of the crash. Examples may include rental vehicles, car-sharing, or other on-demand motor vehicle transportation services on an as-needed basis. If this vehicle included a driver to provide passengers with transportation in the driver’s non-commercial vehicle, see [Motor Vehicle in-Service for Electronic Ride-hailing](#). If the vehicle is a rental truck over 10,000 lb, see [Rental Truck \(Over 10,000 lb\)](#).
- **Rental Truck (Over 10,000 lb)** - the vehicle was being used as a rental vehicle at the time of the crash. This attribute is intended for rental trucks in use by private citizens, not for uses by commercial concerns as part of regular business. For example, a homeowner rents a truck to move their belongings. The [MOTOR VEHICLE BODY TYPE CATEGORY](#) for this vehicle must be **Cargo Van, Pickup Truck, Single-Unit Truck (2 axles and GVWR > 10,000 lb), Single-Unit Truck (3 or more axles), Truck-Tractor, With or Without Trailers (bobtail, semi, doubles, or triples), or Truck, Unknown Type**. The [POWER UNIT GROSS VEHICLE WEIGHT RATING](#) for this vehicle must be **Medium (10,001 – 26,000 lb GVWR), Heavy (greater than 26,000 lb GVWR), or Unknown**.

Highway Safety Rationale:

This element is important to identify and evaluate the crash outcome for vehicles serving specific functions.

Implementation Suggestions:

If **No Special Use** is selected, then autofill all three subfields of [EMERGENCY RESPONSE](#) with **Not Applicable**.

Validation Rules:

None

Alignment Considerations for SPECIAL USE

None

V22. Bus Use

Element Definition:

The common type of bus service this vehicle was being used for at the time of the crash or the primary use for the bus if not in service at the time of the crash.

Attribute Values:

Select one:

- [Not a Bus](#)
- [Childcare or Daycare](#)
- [School](#)
- [Intercity](#)
- [Charter or Tour](#)
- [Transit or Commuter](#)
- [Shuttle](#)
- [Personal Use](#)
- [Bus, Unknown Use](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. If the [MOTOR VEHICLE BODY TYPE CATEGORY](#) Subfield 1: Body Type Category does not equal **Passenger Van, School Bus, Transit Bus, Motorcoach, Other Large Passenger or Bus**, or **Unknown**, then select [Not a Bus](#).

- **Not a Bus** – a vehicle that does not have a bus body type and is not being used as a bus in the crash. This should be used for vehicles with less than nine seats including the driver and personal-use vans with nine or more seats including the driver.
- **Childcare or Daycare** – used when the bus was used to transport passengers to or from a childcare or daycare facility.
- **School** – Any public or private school or district, or contracted carrier operation on behalf of the entity, providing transportation for K-12 pupils. See additional remarks under [SCHOOL-BUS-RELATED](#).
- **Intercity** – used when a company provides long-distance passenger transportation between cities over fixed routes with regular schedules (e.g., Greyhound bus service between major cities) for compensation. Buses are any motor vehicle with seats to transport nine or more people, including the driver seat, but not including vans owned and operated for personal use.

- **Charter or Tour** – used when a company provides transportation on a for-hire basis and demand-response basis, usually round-trip service for a tour group or outing, regardless of if the function is consistent with the [MOTOR VEHICLE BODY TYPE CATEGORY](#). Buses are any motor vehicle with seats to transport nine or more people including the driver but not including vans owned and operated for personal use.
- **Transit or Commuter** – a government entity or private company providing passenger transportation over fixed, scheduled routes, within primarily urban geographical areas (e.g., inner-city mass transit bus service.) Buses are any motor vehicle with seats to transport nine or more people including the driver but not including vans owned and operated for personal use.
- **Shuttle** – used when the bus transports people from airports, hotels, rental car companies, and business facility to facility. Examples also include private companies providing transportation services for their own employees, non-governmental organizations (such as churches and non-profit groups), and non-educational units of government (such as departments of corrections). Buses are any motor vehicle with seats to transport nine or more people including the driver but not including vans owned and operated for personal use.
- **Personal Use** – used when the bus was for personal or private use. For example, a bus with seats removed to allow for personal or private hauling of cargo (instead of passengers), or a musical group in a bus with the interior remodeled with home-like conveniences.
- **Bus, Unknown Use** – used when this vehicle was a bus, but there is not enough information to determine the appropriate BUS USE attribute.
- **Unknown** – used when it cannot be determined if the vehicle was a bus.

Highway Safety Rationale:

This element is important to identify and evaluate the crash outcome for specific bus functions.

Implementation Suggestions:

If the [MOTOR VEHICLE BODY TYPE CATEGORY](#) Subfield 1: Body Type Category does not equal **Passenger Van, School Bus, Transit Bus, Motorcoach, Other Large Passenger or Bus,** or **Unknown**, then autofill BUS USE with **Not a Bus**.

Validation Rules:

None

Alignment Considerations for BUS USE:

None

V23. Emergency Response

Element Definition:

Subfield 1 indicates operation of any motor vehicle that is legally authorized by a government authority to respond to emergencies with or without the use of emergency warning equipment, such as a police vehicle, fire truck, or ambulance while engaged in such response. Subfield 2 indicates the use of emergency warning equipment in this vehicle, such as lights or sirens. Subfield 3 indicates if the vehicle was transporting non-emergency people, such as patients or arrestees.

Attribute Values:

Subfield 1: Engaged in Emergency Response (select one)

- [Not Applicable](#)
- No
- Yes
- Unknown

Subfield 2: Emergency Warning Equipment in Use (select one)

- [Not Applicable](#)
- No
- Yes
- Unknown

Subfield 3: Transporting Non-Emergency Person(s) (e.g., patients, arrestees) (select one)

- [Not Applicable](#)
- No
- Yes
- Unknown

Remarks:

Complete this element for all motor vehicles.

- **Not Applicable** – used when this motor vehicle is not a vehicle that is legally authorized by a government authority to respond to emergencies.

Highway Safety Rationale:

This element is important to guide development and evaluation of training and other countermeasures to reduce the number of crashes involving emergency vehicle response.

Implementation Suggestions:

- If Subfield 1 equals **Not Applicable**, then autofill Subfields 2 and 3 with **Not Applicable**.
- If [SPECIAL USE](#) is coded **No Special Use, Vehicle Used for School Transport, Trafficway Construction, Maintenance, or Utility, USPS Mail Carrier, Other Package Delivery Vehicle, Truck Operating With Crash Attenuator Equipment, Taxi, Motor Vehicle in Service for Electronic Ride-hailing, Rental or Car-Share Vehicle, or Rental Truck over 10,000 lb**, then autofill all three subfields of EMERGENCY RESPONSE with **Not Applicable**.

Validation Rules:

None

Alignment Considerations for EMERGENCY RESPONSE:

None

V24. Motor Vehicle Posted or Statutory Speed Limit

Element Definition:

The posted or statutory speed limit for this motor vehicle, just prior to this vehicle's involvement in the crash.

Attribute Values:

Select or Specify one:

- Posted or Statutory Speed Limit (mph)
- [Not Applicable](#)
- Unknown

Remarks:

Complete this element for all motor vehicles. If a State collects this element for the entire crash and not per vehicle, the State should NOT then derive this element per vehicle from the crash level information.

For vehicles departing the trafficway prior to their critical event, the trafficway selected for classification is the one the vehicle departed. If this vehicle is in a junction just prior to its critical event, the roadway selected for classification is the one it is on before entering the junction.

Note: Refer to the highway speed limit that is operational at the time and place of the crash whether physically displayed or not. Do not confuse advisory signs on entrance or exit ramps or near intersections with the actual legal maximum speed limit. Disregard advisory or other speed signs since they do not indicate the legal speed limit. If a State has a statute that uniformly reduces the maximum allowable speed limit within or near a construction zone, then code the indicated reduced speed limit, if known.

When coding the MOTOR VEHICLE POSTED OR STATUTORY SPEED LIMIT for roadways with two different speed limits (for north and southbound lanes or east and westbound lanes), use the speed limit for the direction of travel for this vehicle where its critical event begins.

When a roadway has a different speed limit for different types of vehicles, code the MOTOR VEHICLE POSTED OR STATUTORY SPEED LIMIT that is applicable to the vehicle based on its [MOTOR VEHICLE BODY TYPE CATEGORY](#). Example:

A rural Interstate highway has a speed limit of 65 mph for passenger cars, but the same road has a 55-mph speed limit for heavy trucks and buses.

- Circumstance 1: A single-vehicle (passenger car) crash.
 - Speed Limit = 65 mph
- Circumstance 2: A single-vehicle (heavy truck or bus) crash.
 - Speed Limit = 55 mph

- Circumstance 3: A two-vehicle crash, (passenger car and heavy truck or bus) crash.
 - Speed Limit for the passenger car = 65 mph
 - Speed Limit for the heavy truck or bus = 55 mph

- **Not Applicable** - used when there is no posted speed limit and no law that governs the maximum speed you can drive (dirt roads, private roads open to the public). Also use this attribute in cases when this vehicle is entering a trafficway but was not on a trafficway prior to its critical event or when the vehicle was in a driveway access prior to its event.

Highway Safety Rationale:

This element is important for evaluating the effectiveness of countermeasures that prevent or reduce the frequency and severity of crashes.

Implementation Suggestions:

For most States, speed limits are in 5-mph increments. States may wish to implement increments by 5 mph in the data entry.

Validation Rules:

MOTOR VEHICLE POSTED OR STATUTORY SPEED LIMIT should be divisible by 5 with no remainder.

Alignment Considerations for MOTOR VEHICLE POSTED OR STATUTORY SPEED LIMIT:

1. If the data is not collected per vehicle, the State will not receive credit. The element cannot be derived from an overall crash level data element. For example, if a State contains an element “Posted Speed Limit” on the crash level, but not specified for each vehicle, then this does not align with the MMUCC element.

V25. Trafficway Flow

Element Definition:

Identifies whether the trafficway associated with this vehicle serves one-way or two-way traffic, just prior to this vehicle's involvement in the crash.

Attribute Values:

Select one:

- [One-Way](#)
- [Two-Way](#)
- [Two-Way With a Continuous Left-Turn Lane](#)
- [Non-Trafficway or Driveway Access](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. Enter the value that best describes the trafficway flow just prior to this vehicle's involvement in this crash. For vehicles departing the trafficway just prior to their involvement, use the trafficway that the vehicle departed. If this vehicle is in a junction just prior to its involvement, use the trafficway the vehicle was on before entering the junction.

A channelized lane should be considered a turn lane of the roadway it is part of, not a separate one-way roadway. Therefore, crashes occurring in a channelized lane should not be coded as on a separate trafficway but should reflect the trafficway the vehicle was on before entering the channel.

- **One-Way** - is used whenever the trafficway is undivided and traffic flows in one direction (e.g., one-way streets). Do NOT use this attribute for one side of a divided trafficway (see [Two-Way](#)).
- **Two-Way** – used whenever the trafficway flows in both directions. This includes undivided (e.g., a centerline) and divided trafficways (i.e., there is a median). If the trafficway is two-way, but includes a continuous left turn lane, see [Two-Way With a Continuous Left Turn Lane](#).
- **Two-Way With a Continuous Left Turn Lane** – used whenever the trafficway flows in both directions and includes an undivided center lane that facilitates left turns by traffic from both directions. Continuous left-turn lanes are NOT considered painted medians.
- **Non-Trafficway or Driveway Access** – used when this vehicle was not on a trafficway or was in a driveway access prior to this vehicle's involvement in this crash.
- **Unknown** – used whenever the flow of traffic for the trafficway this vehicle was on just prior to its involvement in the crash cannot be determined.

Highway Safety Rationale:

This element is used in classifying crashes and identifying infrastructure characteristics to inform traffic safety improvements.

Implementation Suggestions:

If TRAFFICWAY FLOW is coded **Non-Trafficway or Driveway Access**, then auto-populate ROADWAY ALIGNMENT, ROADWAY GRADE, and ROADWAY SURFACE CONDITION with **Non-Trafficway or Driveway Access**.

Validation Rules:

None

Alignment Considerations for TRAFFICWAY FLOW:

1. This MMUCC element is collected per vehicle. If the State collects this information on the Crash level (i.e., for the overall crash area), then this does not align with the MMUCC element.

V26. Median Barrier Presence

Element Definition:

Identifies whether the trafficway associated with this vehicle included a median barrier, just prior to this vehicle's involvement in the crash.

Attribute Values:

Select one:

- [Not Applicable \(no median, e.g., centerline, two-way left-turn lane\)](#)
- [Median Without a Traffic Barrier \(e.g., grass, vegetation, flush or painted > 4', curb\)](#)
- [Median With Traffic Barrier \(e.g., guardrail, cable barrier, concrete barrier\)](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. If this vehicle departed the trafficway just prior to its involvement in this crash, select the median barrier presence of the trafficway that the vehicle departed. If this vehicle is in a junction just prior to its involvement in this crash, select the median barrier presence for the roadway the vehicle was on before entering the junction.

A median is the area of a divided trafficway between parallel roads separating travel in opposite directions. The principal functions of a median are to provide the desired freedom from interference of opposing traffic, to provide a recovery area for out-of-control vehicles, to provide a stopping area in case of emergencies, and to minimize headlight glare. Medians may be depressed, raised, or flush. Flush medians can be as little as four feet wide between roadway edge lines. Painted roadway edge lines four or more feet wide denote medians. Medians of lesser width must have a barrier to be considered a median. Continuous left-turn lanes are not considered medians.

- **Not Applicable (no median, e.g., centerline, two-way left-turn lane)** – the trafficway associated with this vehicle was not physically divided by a median. Examples include one-way trafficways, two-way trafficways with a centerline, two-way trafficways without painted lines, or two-way trafficways with a center left-turn lane. Any flush or painted markings on the roadway less than 4 feet wide are not medians.
- **Median Without a Traffic Barrier (e.g., grass, vegetation, flush or painted > 4', curb)** – the trafficway associated with this vehicle is physically divided with a median; however, the median is unprotected by a traffic barrier (e.g., vegetation, gravel, paved medians, trees, water, embankments, painted medians greater than 4 feet, and ravines that separate a trafficway [i.e., all non-manufactured barriers]). Note: Curbs alone are not traffic barriers; therefore, raised curbed medians DO NOT constitute a positive barrier in and by themselves. Without a positive barrier, curbed medians are examples of **Median Without a Traffic Barrier**. The unprotected medians can be of any width; however, painted, paved, flush areas must be at least four feet in width to constitute a median strip. Continuous left-turn lanes are not considered medians (see [Not Applicable](#)).

- **Median With Traffic Barrier (e.g., guardrail, cable barrier, concrete barrier)** - the trafficway associated with this vehicle is physically divided with a median and the division is protected by any concrete, metal, or other type of longitudinal barrier (i.e., all manufactured barriers). For underpass support structures and bridge rails acting as a barrier, use this attribute. Traffic barrier refers to a physical structure such as a guardrail, a concrete safety barrier, or a rock wall that has the primary function of preventing cross-median travel by deflecting and redirecting vehicles along the roadway on which they were traveling. Therefore, trees, curbing, rumble strips, and drain depressions are not barriers (see [Median Without a Traffic Barrier](#)).
- **Unknown** – It cannot be determined if the trafficway associated with this vehicle was physically divided by a median with or without a traffic barrier.

Highway Safety Rationale:

This element is used in classifying crashes and identifying infrastructure characteristics to inform traffic safety improvements.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for MEDIAN BARRIER PRESENCE:

1. This MMUCC element is collected per vehicle. If the State collects this information on the Crash level (i.e., for the overall crash area), then this does not align with the MMUCC element.

V27. Number of Open Lanes in Vehicle's Environment

Element Definition:

Total number of open lanes in this motor vehicle's environment, just prior to this vehicle's involvement in the crash, including through lanes, turn lanes, acceleration or deceleration lanes, HOT or HOV lanes, or any other lanes.

Attribute Values:

Select one or specify number of lanes

- [Enter Number of Lanes](#)
- [Non-Trafficway \(e.g., parking lot, private driveway\)](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. Count all open lanes in this vehicle's environment. If turn bays, acceleration, deceleration, or center two-way left turn lanes exist and are physically located within the cross section of the roadway, and these lanes are the most representative of the vehicle's environment just prior to the vehicle's involvement in the crash, then they are to be included in the number of lanes.

If traffic flows in both directions without a median or separator (e.g., centerline, two-way left turn lane, rural road without lane lines), count the number of lanes in both directions. If the trafficway has a median, separator, or channel dividing the traffic flow, count only the number of lanes for the portion on which this vehicle was traveling.

Because a channelized lane is separated, it should not be included unless it is preceded by a turn bay or turn lane and this bay or lane is felt to be most representative of the vehicle's environment just prior to its critical event. See [Figure 24. Example of counting lanes around a channelized lane](#).

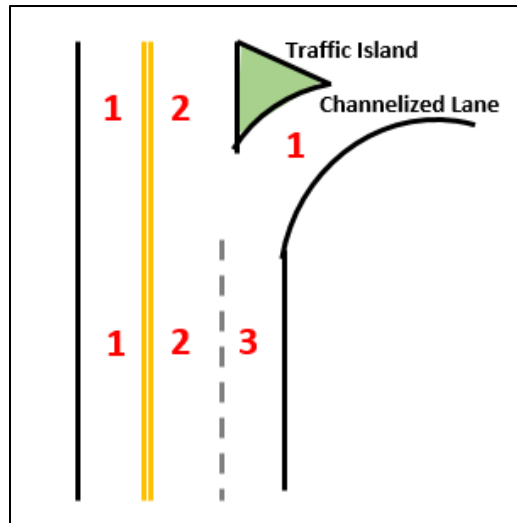


Figure 24. Example of counting lanes around a channelized lane

The number of lanes counted does not include any of which are rendered unusable by restriction of the right-of-way (e.g., closed due to construction). See [Figure 25. Example of counting lanes around a closed portion of the trafficway](#).

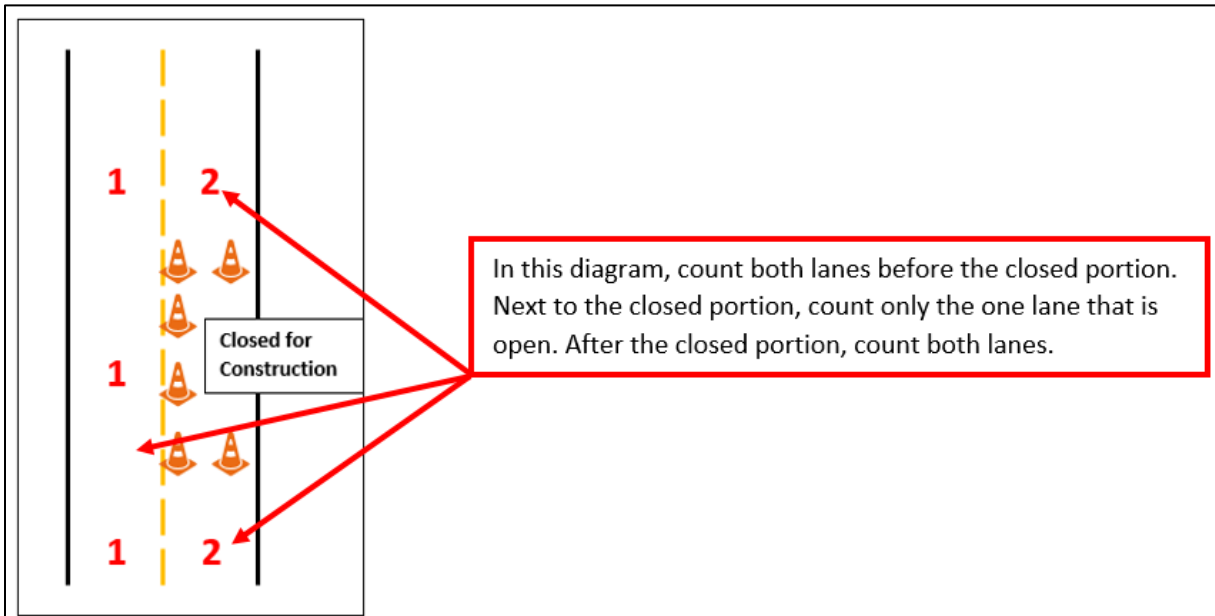


Figure 25. Example of counting lanes around a closed portion of the trafficway

If the **MEDIAN BARRIER PRESENCE** is **Median Without a Traffic Barrier** or **Median With Traffic Barrier**, only the open lanes on the roadway that THIS vehicle was originally traveling on are counted (see [Figure 26. Example of counting lanes in a trafficway with a median](#)).

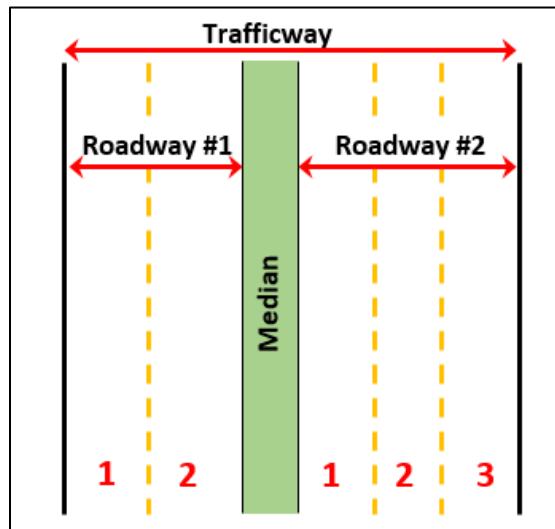


Figure 26. Example of counting lanes in a trafficway with a median

If the **TRAFFICWAY FLOW** is **Two-Way With a Continuous Left-Turn Lane**, all open lanes are counted (see [Figure 27. Example of counting lanes in a trafficway with a continuous left-turn lane](#)). Reminder: continuous left-turn lanes are NOT medians.

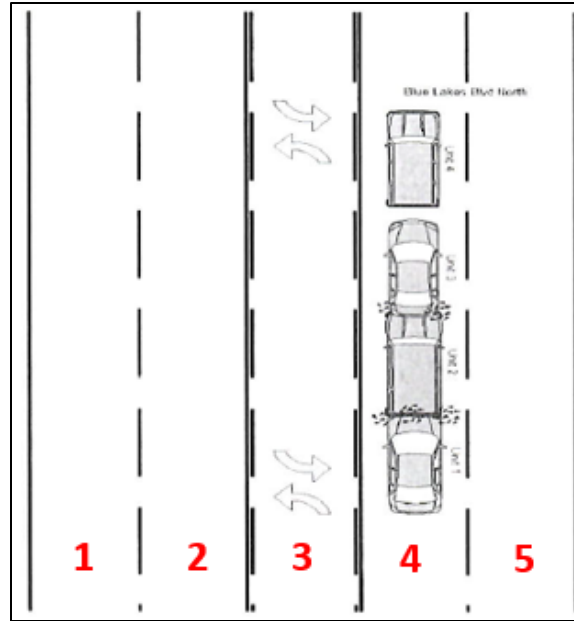


Figure 27. Example of counting lanes in a trafficway with a continuous left-turn lane

If this vehicle departed the trafficway just prior to its critical event, count the number of open lanes in the trafficway that the vehicle departed. If this vehicle is in a junction just prior to its critical event, count the number of open lanes in the roadway the vehicle was on before entering the junction.

- **Enter Number of Lanes** – enter the number of lanes for the roadway on which this vehicle was traveling just prior to its involvement in this crash.
- **Non-Trafficway (e.g., parking lot, private driveway)** – used when this vehicle was not on a trafficway just prior to this vehicle’s involvement in this crash.
- **Unknown** – the number of lanes in the roadway on which this vehicle was traveling just prior to its involvement in this crash cannot be determined.

Highway Safety Rationale:

This element is used in classifying crashes and identifying infrastructure characteristics to inform traffic safety improvements.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for NUMBER OF OPEN LANES IN VEHICLE'S ENVIRONMENT:

1. This MMUCC element is collected per vehicle. If the State collects this information on the Crash level (i.e., for the overall crash area), then this does not align with the MMUCC element.

V28. Roadway Alignment

Element Definition:

The geometric or layout characteristics of the [roadway](#) in the direction of travel for this vehicle, just prior to this vehicle's involvement in the crash.

Attribute Values:

Select one:

- [Straight](#)
- [Curve Left](#)
- [Curve Right](#)
- [Non-Trafficway or Driveway Access](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. If this vehicle departed the trafficway just prior to its involvement in this crash, select the alignment of the trafficway that the vehicle departed. If this vehicle is in a junction just prior to its involvement in this crash, select the alignment for the roadway the vehicle was on before entering the junction.

- **Straight** – used when the roadway on which this vehicle was traveling did not curve to the left or right just prior to the vehicle's involvement in this crash.
- **Curve Left** – used when the roadway on which this vehicle was traveling curved to the left just prior to the vehicle's involvement in this crash.
- **Curve Right** - used when the roadway on which this vehicle was traveling curved to the right just prior to the vehicle's involvement in this crash.
- **Non-Trafficway or Driveway Access** - used when this vehicle was not on a trafficway or was in a driveway access prior to this vehicle's involvement in this crash.
- **Unknown** – used when the roadway alignment (i.e., straight, curve left, or curve right) on which this vehicle was traveling just prior to the vehicle's involvement in this crash cannot be determined.

Highway Safety Rationale:

This element is used in classifying crashes and identifying infrastructure characteristics to inform traffic safety improvements.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for ROADWAY ALIGNMENT

1. This MMUCC element is collected per vehicle. If the State collects this information on the Crash level (i.e., for the overall crash area), then this does not align with the MMUCC element.

V29. Roadway Grade

Element Definition:

The inclination characteristics of the [roadway](#) in the direction of travel for this vehicle, just prior to this vehicle's involvement in the crash.

Attribute Values:

Select one:

- [Level](#)
- [Uphill](#)
- [Hillcrest](#)
- [Downhill](#)
- [Sag \(bottom\)](#)
- [Non-Trafficway or Driveway Access](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. See [Figure 28. Roadway grade](#) for an illustration of the attributes. If this vehicle departed the trafficway just prior to its involvement in this crash, select the grade of the trafficway that the vehicle departed. If this vehicle is in a junction just prior to its involvement in this crash, select the grade for the roadway the vehicle was on before entering the junction.

- **Level** - used when the roadway on which this vehicle was traveling was neither uphill nor downhill just prior to this vehicle's involvement in this crash.
- **Uphill** – used when the roadway on which this vehicle was traveling was ascending just prior to this vehicle's involvement in this crash.
- **Hillcrest** – used when the roadway on which this vehicle was traveling was the top of a hill just prior to this vehicle's involvement in this crash.
- **Downhill** – used when the roadway on which this vehicle was traveling was descending just prior to this vehicle's involvement in this crash.
- **Sag (bottom)** – used when the roadway on which this vehicle was traveling was the bottom of a hill just prior to this vehicle's involvement in this crash.
- **Non-Trafficway or Driveway Access** - used when this vehicle was not on a trafficway or was in a driveway access just prior to this vehicle's involvement in this crash.
- **Unknown** - used when the roadway grade (i.e., level, uphill, hillcrest, downhill, or sag) on which this vehicle was traveling just prior to this vehicle's involvement in this crash cannot be determined.

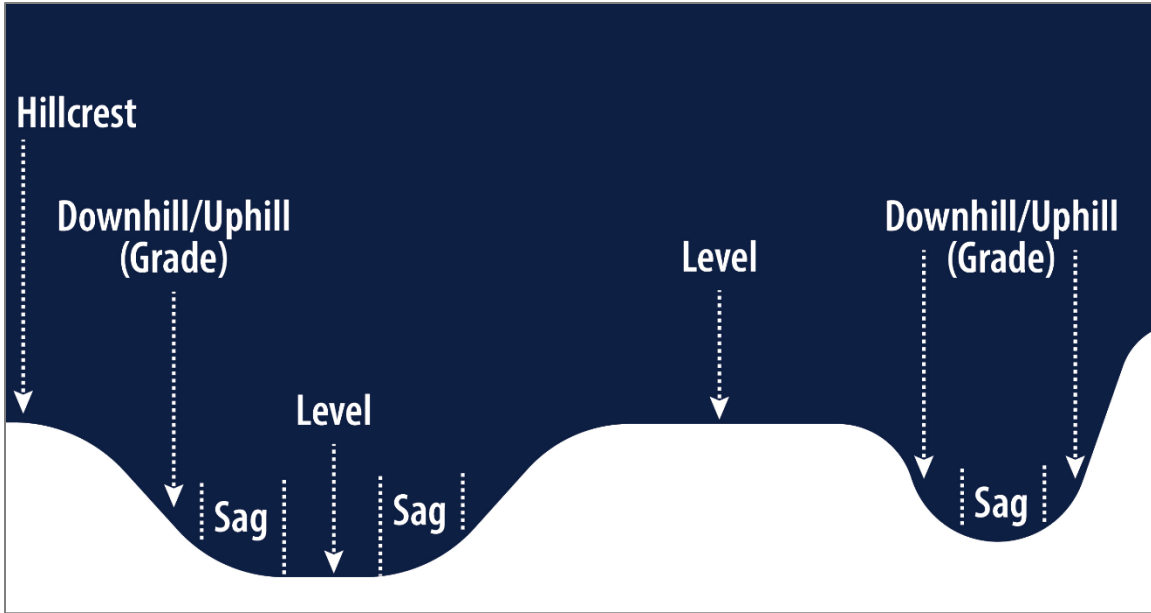


Figure 28. Roadway grade

Highway Safety Rationale:

This element is used in classifying crashes and identifying infrastructure characteristics to inform traffic safety improvements.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for ROADWAY GRADE

1. This MMUCC element is collected per vehicle. If the State collects this information on the Crash level (i.e., for the overall crash area), then this does not align with the MMUCC element.

V30. Roadway Surface Condition

Element Definition:

The [roadway](#) surface condition for this vehicle, just prior to this vehicle's involvement in the crash.

Attribute Values:

Select one:

- [Dry](#)
- [Ice or Frost](#)
- [Mud, Dirt, or Gravel](#)
- [Oil](#)
- [Sand](#)
- [Slush](#)
- [Snow](#)
- [Water \(standing or moving\)](#)
- [Wet](#)
- [Non-Trafficway or Driveway Access](#)
- [Other](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. If this vehicle departed the trafficway just prior to its involvement in this crash, select the roadway surface condition of the trafficway that the vehicle departed. If this vehicle is in a junction just prior to its involvement in this crash, select the roadway surface condition for the roadway the vehicle was on before entering the junction.

- **Dry** - used when the roadway surface on which this vehicle was traveling just prior to this vehicle's involvement in this crash was free from moisture or liquid. A road made of sand or dirt would be coded as **Dry** under normal conditions, not **Sand**, or **Mud, Dirt, or Gravel**.
- **Ice or Frost** - used when the roadway surface on which this vehicle was traveling just prior to this vehicle's involvement in this crash had frozen water on it.
- **Mud, Dirt, or Gravel** - used when the roadway surface on which this vehicle was traveling just prior to this vehicle's involvement in this crash had mud, dirt, or gravel on it. Do not use this attribute to describe the surface type of the roadway by design (see [Dry](#)).
- **Oil** - used when the roadway surface on which this vehicle was traveling just prior to this vehicle's involvement in this crash had oil on it (including fuel spilled on the roadway).

- **Sand** - used when the roadway surface on which this vehicle was traveling just prior to this vehicle's involvement in this crash had sand on the roadway as a result of sand blown by wind or sand discharged on the roadway by highway trucks. Do not use this attribute to describe the surface type of the roadway by design (see [Dry](#)).
- **Slush** – used when the roadway surface on which this vehicle was traveling just prior to this vehicle's involvement in this crash had accumulated snow or ice that had partially melted.
- **Snow** - used when the roadway surface on which this vehicle was traveling just prior to this vehicle's involvement in this crash was covered with snow.
- **Water (standing or moving)** - used when the roadway surface on which this vehicle was traveling just prior to this vehicle's involvement in this crash was covered with standing or moving water. This includes flooding. If the surface was wet, without standing or moving water, see [Wet](#).
- **Wet** - used when the roadway surface on which this vehicle was traveling just prior to this vehicle's involvement in this crash was wet from rain or melted snow. If the water was standing or moving, see [Water \(standing or moving\)](#).
- **Non-Trafficway or Driveway Access**- used when this vehicle was not on a trafficway or was in a driveway access just prior to this vehicle's involvement in this crash.
- **Other** - used when the roadway surface conditions on which this vehicle was traveling is not described by any of the other attributes for this data element.
- **Unknown** - used when the roadway surface condition on which this vehicle was traveling cannot be determined just prior to this vehicle's involvement in this crash.

Highway Safety Rationale:

This element is used in classifying crashes and identifying infrastructure characteristics to inform traffic safety improvements.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for ROADWAY SURFACE CONDITION:

1. This MMUCC element is collected per vehicle. If the State collects this information on the Crash level (i.e., for the overall crash area), then this does not align with the MMUCC element.

V31. Traffic Control Device

Element Definition:

The traffic control device (TCD) applicable to this motor vehicle, just prior to this vehicle's involvement in the crash.

Attribute Values:

Select one:

- [No Traffic Controls](#)
- [Person \(e.g., flagger, crossing guard, law enforcement\)](#)
- [Cones, Barrels, or Other Channelizing Devices](#)
- [Other](#)
- [Unknown](#)

Group 1: Signs

- [Stop Sign](#)
- [Yield Sign](#)
- [Railroad Crossing Sign](#)
- [School Zone Sign or Device](#)
- [Work Zone Reduced Speed Limit](#)
- [Warning Sign \(not railroad crossing\)](#)
- [Other Regulatory Sign](#)
- [Regulatory Sign, Type Unknown](#)

Group 2: Signals

- [Traffic Control Signal](#)
- [Flashing Traffic Control Signal](#)
- [Lane Use Control Signal](#)
- [Railroad Flashing-Light Signal With Gates](#)
- [Railroad Flashing-Light Signal Without Gates](#)
- [Other Traffic Signal](#)
- [Unknown Traffic Signal](#)

Remarks:

Complete this element for all motor vehicles. Functionality of the device is captured separately under [DEVICE FUNCTIONING](#).

If this vehicle departed the trafficway just prior to its involvement in this crash, select the traffic control device of the trafficway that the vehicle departed. If this vehicle is in a junction just prior to its involvement in this crash, select the traffic control device for the roadway the vehicle was on before entering the junction.

Select the type of device whether the device was functioning or not. If a device is known to be missing, select the attribute for the type of device and under [DEVICE FUNCTIONING](#) select **Device Not Functioning or Device Functioning Improperly**.

A traffic control that is out (e.g., due to a power failure), should still be selected, unless a temporary control (e.g., stop sign, police officer) has been inserted, in which case the temporary control should be selected.

If more than one device is present, select the device most related to this crash, with one exception. The attribute [Person \(e.g., flagger, crossing guard, law enforcement\)](#) takes precedence over the entire list when a traffic control person and another traffic control device are present.

- **No Traffic Controls** – used if, at the time of the crash there was no intent to control (regulate or warn) vehicle traffic. Use the attribute **No Traffic Controls** when a traffic control is deactivated (e.g., traffic signal that emits no signals) during certain times of the day and was deactivated at the time of the crash. Also use the attribute **No Traffic Controls** for a traffic control that has just been installed and not yet activated.
- **Person (e.g., flagger, crossing guard, law enforcement)** - used when the directions of a traffic control person applied to this vehicle at the time of the crash. A traffic control person is an officially designated person (e.g., police officer, crossing guard, flagger), that is in the act of controlling both vehicular and non-motorist traffic. **Person** takes precedence over the entire list when a traffic control person and another traffic control device are present.
- **Cones, Barrels, or Other Channelizing Devices** – devices to warn road users of conditions created by activities in or near the roadway and to guide road users. Includes cones, tubular markers, vertical panels, drums (barrels), barricades, and longitudinal channelizing devices. Channelizing devices provide for smooth and gradual vehicular traffic flow from one lane to another, onto a bypass or detour, or into a narrower traveled way.
- **Other** – used when the traffic control device in this vehicle’s environment just prior to this vehicle’s involvement in this crash was something other than the listed attributes for this data element. If the traffic control device was a regulatory sign, see [Other Regulatory Sign](#). If the traffic control device was a traffic signal, see [Other Traffic Signal](#).
- **Unknown** - used when it cannot be determined whether a traffic control device was in this vehicle’s environment just prior to this vehicle’s involvement in this crash.

Group 1: Signs

- **Stop Sign** – An eight-sided red sign with “STOP” on it, requiring motor vehicles to come to a full stop and look for on-coming traffic before proceeding with caution.
- **Yield Sign** – Three-sided signs that require motor vehicles to give way to other vehicles.
- **Railroad Crossing Sign** – includes the sign commonly identified as a crossbuck sign (see [Figure 29. Railroad crossbuck sign](#)) that requires road users to yield the right-of-way to rail traffic at a highway-rail grade crossing. Also use **Railroad Crossing Sign** for a crossbuck assembly with a YIELD or STOP sign on the crossbuck sign support. If the sign has flashing lights and/or other signals, use [Railroad Flashing-Light Signal With Gates](#) or [Railroad Flashing-Light Signal Without Gates](#) as appropriate. This attribute also includes railroad warning signs.



Figure 29. Railroad crossbuck sign. Source: MUTCD

- **School Zone Sign or Device** – signs or devices that change the speed limit on roads adjacent to schools on school days, give advance warning of a school, and/or warn of children crossing the road.
- **Work Zone Reduced Speed Limit** - A “Work Zone” plaque may be mounted above a speed limit sign to emphasize that a reduced speed limit is in effect within a temporary traffic control zone. An “End Work Zone Speed Limit” sign may be installed at the end of the reduced speed limit zone. A “Fines Higher,” “Fines Double,” or “\$XX Fine” plaque may be mounted below the Speed Limit sign if increased fines are imposed for traffic violations within the temporary traffic control zone. Individual signs and plaques for work zone speed limits and higher fines may be combined into a single sign or may be displayed as an assembly of signs and plaques.
- **Warning Sign (not railroad crossing)** – a sign intended to warn traffic of existing or potentially hazardous conditions on or adjacent to a road. For railroad crossing warning signs, see the attribute [Railroad Crossing Sign](#).
- **Other Regulatory Sign** - used when the traffic control sign that best describes the traffic controls in this vehicle’s environment just prior to this vehicle’s involvement in this crash was a regulatory sign other than the listed regulatory sign attributes for this data element. An example is a No Passing sign.

- **Regulatory Sign, Type Unknown** - used when a known regulatory traffic control sign was in this vehicle's environment just prior to this vehicle's involvement in this crash, but the type of regulatory sign cannot be determined.

Group 2: Signals

- **Traffic Control Signal** – Controls traffic movements by illuminating systematically, a green, yellow, or red light or by flashing a single-color light.
- **Flashing Traffic Control Signal** – a traffic control signal that is flashing or a single-light flashing red or yellow.
- **Lane Use Control Signal** - used for lane control electronic devices (i.e., overhead lights or “X” indicating lane open or closed for rush hour lanes, bridges, or at tollbooths).
- **Railroad Flashing-Light Signal With Gates** - a powered traffic control system that alerts road users of the approach or presence of rail traffic on at-grade crossings. These systems may include two- or four-quadrant gate systems, automatic gates, flashing-light signals, traffic control signals, actuated blank-out and variable message signs, or other traffic control devices. The signal need not be activated at the time of the crash.
- **Railroad Flashing-Light Signal Without Gates** - a powered traffic control system that alerts road users of the approach or presence of rail traffic on at-grade crossings. These systems may include flashing-light signals, traffic control signals, actuated blank-out and variable message signs, or other traffic control devices. The signal need not be activated at the time of the crash.
- **Other Traffic Signal** - used when the traffic control signal that best describes the traffic controls in this vehicle's environment just prior to this vehicle's involvement in this crash was something other than the listed traffic control signal attributes for this data element.
- **Unknown Traffic Signal** - used when a known traffic control signal was in this vehicle's environment just prior to this vehicle's involvement in this crash, but the type of traffic control signal cannot be determined.

Highway Safety Rationale:

This element is used in classifying crashes and identifying infrastructure characteristics to inform traffic safety improvements and evaluate device effectiveness.

Implementation Suggestions:

- If TRAFFIC CONTROL DEVICE equals **No Traffic Controls**, then autofill [DEVICE FUNCTIONING](#) with **No Controls**.
- The attribute groupings are suggestions for nested drop-down lists. The State should organize the attributes in a way that is meaningful to the State's users. See [Chapter 11: Designing User-Centered Crash Reporting Systems](#) for more information.

Validation Rules:

None

Alignment Considerations for TRAFFIC CONTROL DEVICE:

1. This MMUCC element is collected per vehicle. If the State collects this information on the Crash level (i.e., for the overall crash area), then this does not align with the MMUCC element.

V32. Device Functioning

Element Definition:

Identifies whether the traffic control device recorded for this vehicle in the data element [TRAFFIC CONTROL DEVICE](#) was functioning properly just prior to this vehicle's involvement in the crash.

Attribute Values:

Select one:

- [No Controls](#)
- [Device Functioning Properly](#)
- [Device Not Functioning, Functioning Improperly, or Missing](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles.

This data element cannot be collected through linkage to the State's roadway system. If a signal is not flashing, it may not necessarily be considered inoperative. The unit may still be functioning correctly, but not in the time it is supposed to be flashing (e.g., flashing School Zone Sign or Device during school hours).

- **No Controls** – used when **No Traffic Controls** is selected for the data element [TRAFFIC CONTROL DEVICE](#).
- **Device Functioning Properly** - used when the device selected in [TRAFFIC CONTROL DEVICE](#) was functioning as designed at the time of the crash.
- **Device Not Functioning, Functioning Improperly, or Missing** - used when the device selected in [TRAFFIC CONTROL DEVICE](#) was not functioning as designed or was missing at the time of the crash. Examples include signal burned out, sign knocked down, sign twisted, sign or signal obscured by vegetation, sign or signal missing, traffic control person not paying attention.
- **Unknown** – used when it cannot be determined whether the device selected in [TRAFFIC CONTROL DEVICE](#) was functioning properly, not functioning, functioning improperly, or missing at the time of crash.

Highway Safety Rationale:

This element is used to determine the operability of the device identified in [TRAFFIC CONTROL DEVICE](#), to inform traffic safety improvements and evaluate device effectiveness.

Implementation Suggestions:

- If **No Traffic Controls** is selected for the data element [TRAFFIC CONTROL DEVICE](#), then autofill DEVICE FUNCTIONING with **No Controls**.

Validation Rules:

None

Alignment Considerations for DEVICE FUNCTIONING:

1. This MMUCC element is collected per vehicle. If the State collects this information on the Crash level (i.e., for the overall crash area), then this does not align with the MMUCC element.

V33. Vehicle Status Prior to Critical Event

Element Definition:

The controlled maneuver for this motor vehicle, just prior to this vehicle's involvement in the crash.

Attribute Values:

Select one:

- [Going Straight](#)
- [Turning Left](#)
- [Turning Right](#)
- [Making U-Turn](#)
- [Negotiating a Curve](#)
- [Changing Lanes](#)
- [Passing or Overtaking Another Vehicle](#)
- [Merging \(other than from a parking position\)](#)
- [Backing Up \(other than for parking position\)](#)
- [Parked](#)
- [Leaving a Parking Position](#)
- [Entering a Parking Position](#)
- [Decelerating](#)
- [Accelerating](#)
- [Starting](#)
- [Stopped](#)
- [Lane Splitting or Filtering](#)
- [Other \(explain in narrative\)](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles.

- **Going Straight** - used when this vehicle's path of travel was straight ahead without any attempted or intended changes. The coding of this attribute is not always dependent on the roadway alignment (e.g., a vehicle that travels straight in a curved roadway without any attempt by the driver to negotiate the curve).

- **Turning Left** - used when this vehicle was moving forward and turned left, changing lanes from one roadway to a different roadway (e.g., from or to a driveway, parking lot, or intersection). Excludes situations where the vehicle was leaving a parking position (see [Leaving a Parking Position](#)).
- **Turning Right** - used when this vehicle was moving forward and turned right, changing lanes from one roadway to a different roadway (e.g., from or to a driveway, parking lot, or intersection). Excludes situations where the vehicle was leaving a parking position (see [Leaving a Parking Position](#)).
- **Making U-Turn** – used when this vehicle was moving forward making a U-turn on the trafficway. Excludes situations where the vehicle was leaving a parking position (see [Leaving a Parking Position](#)).
- **Negotiating a Curve** - used when this vehicle was continuing along a road that curved to the right or left. If the vehicle traveled straight in a curved roadway without any attempt by the driver to negotiate the curve, then use the attribute [Going Straight](#).
- **Changing Lanes** – Shift from one traffic lane to another traffic lane while moving in the same direction.
- **Passing or Overtaking Another Vehicle** – used when this vehicle was traveling straight ahead and was in the process of passing or overtaking another vehicle on the left or right.
- **Merging (other than from a parking position)** - used when this vehicle was moving forward and merging from the left or right into a traffic lane (e.g., roadway narrows, exit or entrance ramps).
- **Backing Up (other than for parking position)** – used when this vehicle was intentionally traveling backwards within the trafficway. Vehicles backing into or from a driveway are included in this attribute. If the backward movement is unintentional (e.g., the vehicle rolls or drifts backward) do not use this attribute (use [Other \(explain in narrative\)](#)). Also, do not use this attribute if the vehicle was backing into or out of a parking space (see [Entering a Parking Position](#) or [Leaving a Parking Position](#), respectively).
- **Parked** –ANSI D.16-2017 defines a parked motor vehicle as a motor vehicle not in-transport, other than a [working motor vehicle](#), that is not in motion and not located on the [roadway](#) (travel lanes). In roadway lanes used for travel during some periods and for parking during other periods, a parked motor vehicle is considered [in-transport](#) during periods when parking is forbidden. This attribute includes any stopped motor vehicle where the entirety of the vehicle’s primary outline as defined by the four sides of the vehicle (e.g., tires, bumpers, fenders) and load, if any, is not within the roadway. To use this attribute, the [MOTOR VEHICLE UNIT TYPE](#) for this motor vehicle must be **Parked Motor Vehicle**.
- **Leaving a Parking Position** - used when this vehicle was entering the travel lane from a parking area adjacent to the traffic lanes (i.e., in the process of leaving the parking position). This attribute includes vehicles that were previously stopped or parked on the shoulder, roadside, median, etc. For vehicles backing from a driveway, use attribute [Backing Up \(other than for parking position\)](#).

- **Entering a Parking Position** - used when this vehicle was leaving the travel lane to a parking area adjacent to the traffic lanes (i.e., in the process of parking). This attribute includes vehicles that are stopping or parking on the shoulder, roadside, median, etc. For a vehicle backing into a driveway use [Backing Up \(other than for parking position\)](#).
- **Decelerating** – used when this vehicle was traveling straight ahead within the road portion of the trafficway and was decelerating.
- **Accelerating** – used when this vehicle was traveling straight ahead within the road portion of the trafficway and was accelerating.
- **Starting** – used when this vehicle was in the process of starting forward from a stopped position and intending to proceed straight ahead within the road portion of the trafficway (e.g., start up from traffic signal).
- **Stopped** – used when this vehicle was stopped (not moving) within the roadway portion of the trafficway (i.e., travel lanes). Examples include motor vehicles legally stopped for a stop sign or signal, motor vehicles stopped prior to initiating a turn, motor vehicles stopped in traffic due to a slowdown in traffic ahead, motor vehicles illegally stopped in a traffic lane (e.g., “double parked”), and disabled motor vehicles in the travel lane. A vehicle stopped in traffic may or may not have a driver and the vehicle’s engine may or may not be running.
- **Lane Splitting or Filtering** - Lane splitting is when a motorcycle travels between clearly marked lanes for traffic traveling in the same direction. Lane filtering is when a motorcycle travels between or next to stopped motor vehicles to get to the front of the queue (typically at a signalized intersection). This attribute takes precedence over all others for this element and is limited to [MOTOR VEHICLE BODY TYPE CATEGORY](#) attributes [2-Wheeled Motorcycle](#) and [Moped](#). For example, if a motorcycle was passing or overtaking another vehicle AND lane splitting or filtering, select **Lane Splitting or Filtering**.
- **Other (explain in narrative)** – used when the controlled maneuver for this motor vehicle just prior to this vehicle’s involvement in the crash is something other than the listed attributes for this data element. If this attribute is used, explain the details in the narrative section of the crash report.
- **Unknown** – used when controlled maneuver for this motor vehicle just prior to this vehicle’s involvement in the crash cannot be determined.

Highway Safety Rationale:

When used in combination with [SEQUENCE OF EVENTS](#), this element identifies what the vehicle was doing prior to the unstabilized situation. This is important in analyzing crash causation.

Implementation Suggestions:

- If [MOTOR VEHICLE UNIT TYPE](#) equals **Parked Motor Vehicle**, then autofill this element with the attribute **Parked**.
- If the user selects **Other (explain in narrative)**, the State may wish to create a popup window requiring the user to enter an explanation that is then added to the Narrative section.

Validation Rules:

None

Alignment Considerations for VEHICLE STATUS PRIOR TO CRITICAL EVENT

1. If the State combines this element and ATTEMPTED AVOIDANCE MANEUVER as one element, then both elements will not align with MMUCC.

V34. Initial Contact Point

Element Definition:

The approximate contact point on this vehicle associated with this vehicle's first harmful event.

Attribute Values:

Select one:

- [Non-Collision](#)
- [\(Clock Point\) 01](#)
- [\(Clock Point\) 02](#)
- [\(Clock Point\) 03](#)
- [\(Clock Point\) 04](#)
- [\(Clock Point\) 05](#)
- [\(Clock Point\) 06](#)
- [\(Clock Point\) 07](#)
- [\(Clock Point\) 08](#)
- [\(Clock Point\) 09](#)
- [\(Clock Point\) 10](#)
- [\(Clock Point\) 11](#)
- [\(Clock Point\) 12](#)
- [Top](#)
- [Undercarriage](#)
- [Cargo Loss or Object or Person Set-in-Motion](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. If the vehicle is a combination vehicle (power unit and at least one trailer), the power unit and/or trailer (or trailers) are considered when determining the INITIAL CONTACT POINT.

The INITIAL CONTACT POINT refers to the area of the vehicle that was contacted and does not depend upon the vehicle's angle, position, or direction of force (e.g., contact to a grille is still contact at clock point 12 even if it was caused by sliding sideways past a utility pole), or any damage to the vehicle itself (e.g., a vehicle may strike a pedestrian with clock point 01 causing injury to the pedestrian but no damage to the vehicle).

If the first harmful event for this vehicle does not involve a collision (e.g., **Rollover or Overturn, Fire or Explosion**), then select **Non-Collision** (refer to glossary for **Non-Collision Harmful Events**).

If the first harmful event for this vehicle involves striking another vehicle, person, or property (a collision event) by a load or cargo that falls from or is propelled by the vehicle, then select the attribute **Cargo Loss or Object or Person Set-in-Motion**.

If the vehicle is not at the scene for the officer to assess the INITIAL CONTACT POINT, then select the attribute **Unknown**, unless subsequently discovered.

Refer to **Figure 30. Clock point diagrams for different types of motor vehicles**.

- **Non-Collision** – used when this vehicle’s first harmful event in its **SEQUENCE OF EVENTS** is a non-collision harmful event, i.e., **Rollover or Overturn; Cargo or Equipment Loss, Shift, or Damage (harmful); Fell or Jumped From Motor Vehicle; Fire or Explosion; Immersion, Full or Partial; Jackknife (harmful to this vehicle); Thrown or Falling Object; Pavement Surface Irregularity (ruts, potholes, grates, etc.); or Other Non-Collision**. Hitting the ground during a non-collision crash is not considered an “impact” for this data element. If the only event for a vehicle is a non-collision harmful event, the INITIAL CONTACT POINT is **Non-Collision**. If following a non-collision harmful event, a vehicle has a collision event, the INITIAL CONTACT POINT is still **Non-Collision**.
- **Clock Points 01-12** - refer to the points on a clock (see **Figure 30. Clock point diagrams for different types of motor vehicles**). The clock points extend to the entire length of the power unit and any attached trailer (or trailers). If the load of a vehicle extends outside of the vehicle's profile, select the clock point that best describes the impact point. For example, lumber extending out of the back of a pickup truck bed would be clock point **06** for the pickup truck.
- **Top** – non-horizontal impacts to the hood, windshield, roof, rear window, trunk deck, and to the top of trailing units. For horizontal impacts, select the most appropriate **Clock Point 01-12**.
- **Undercarriage** - non-horizontal impacts to the underside of the vehicle or swiping or snagging of undercarriage components (e.g., axles, exhaust system). For horizontal tire or wheel impacts, select the most appropriate **Clock Point 01-12**.
- **Cargo Loss or Object or Person Set-in-Motion** – used for a vehicle when its first harmful event in its **SEQUENCE OF EVENTS** involves striking another vehicle, person, or property (a collision event) by the vehicle’s cargo, an object, or a person that falls from or is propelled by the vehicle. For example, select **Cargo Loss or Object or Person Set-in-Motion** for a log truck if logs fall from the truck onto the top of a vehicle in an adjacent lane, while the vehicle struck by the logs should be coded for the area where the logs struck (i.e., **Top**).
- **Unknown** – used when the approximate contact point on this vehicle associated with this vehicle’s first harmful event cannot be determined.

Highway Safety Rationale:

This element is important for evaluating crash causation, injury severity, vehicle design, and restraint and other safety system design and effectiveness.

Implementation Suggestions:

- Use clickable clock point diagrams for data collectors to select the appropriate attribute.
- If this vehicle's first harmful event in its [SEQUENCE OF EVENTS](#) is a non-collision harmful event (i.e., **Rollover or Overturn; Cargo or Equipment Loss, Shift, or Damage (harmful); Fell or Jumped From Motor Vehicle; Fire or Explosion; Immersion, Full or Partial; Jackknife (harmful to this vehicle); Thrown or Falling Object; Pavement Surface Irregularity (ruts, potholes, grates, etc.); or Other Non-Collision**), then autofill INITIAL CONTACT POINT with **Non-Collision**.

Validation Rules:

None

Alignment Considerations for INITIAL CONTACT POINT

1. The State should provide guidance that if the vehicle is a combination vehicle (power unit and at least one trailer), the power unit and/or trailer (or trailers) are considered when determining the INITIAL CONTACT POINT.
2. A State clock point diagram may be used to report INITIAL CONTACT POINT and [DAMAGED AREAS](#), if the former is unambiguously identified. A State clock point diagram may contain more than the recommended 12 points (if those points can align to the MMUCC 12-point diagram), but the State clock point diagram may not contain fewer points to align to MMUCC.

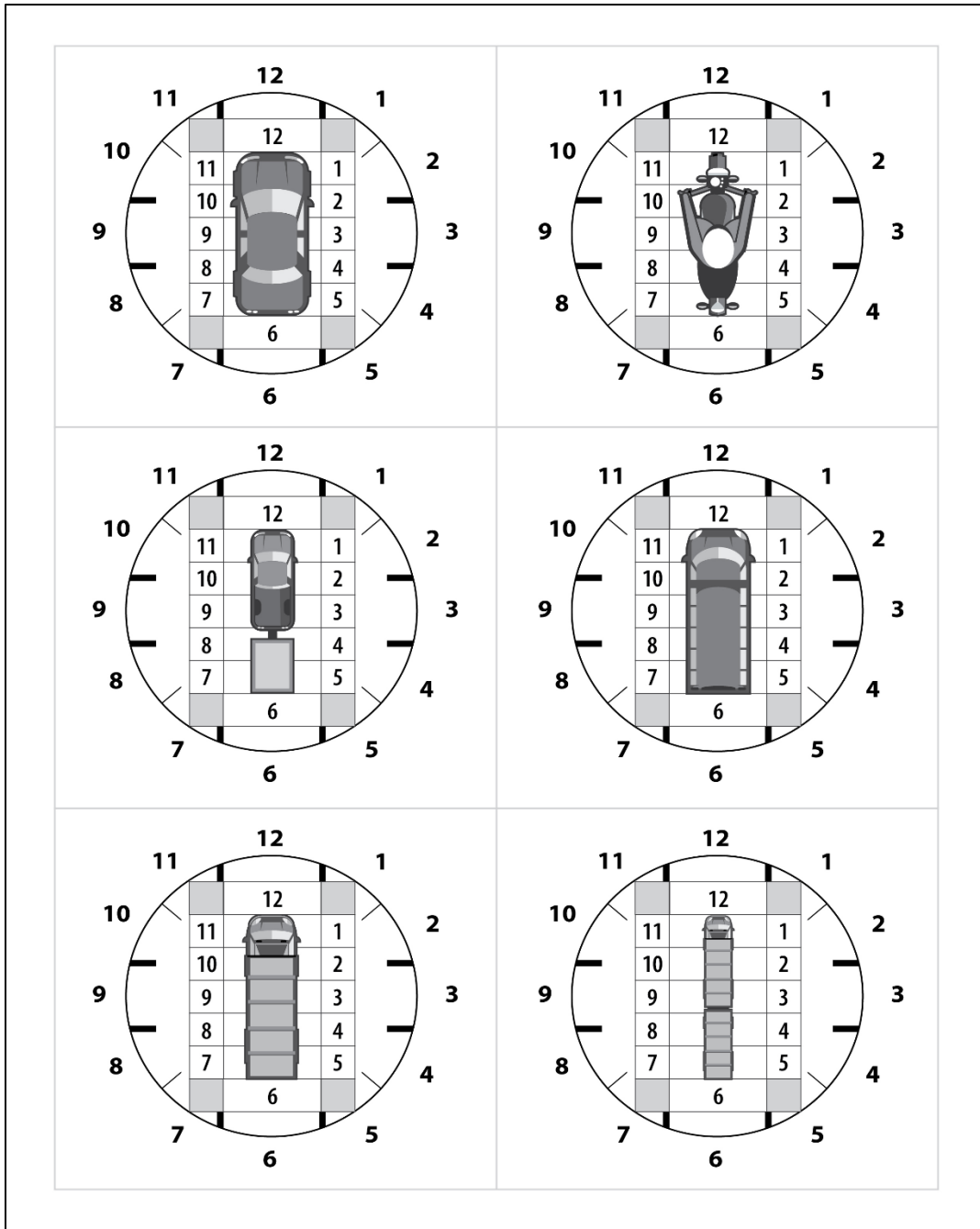


Figure 30. Clock point diagrams for different types of motor vehicles

V35. Damaged Areas

Element Definition:

Identifies all areas damaged on the vehicle as a result of this crash.

Attribute Values:

This is a multi-selection data element. Allow a minimum system capability of two selections (see [Implementation Suggestions](#)).

- [No Damage](#)
- [\(Clock Point\) 01](#)
- [\(Clock Point\) 02](#)
- [\(Clock Point\) 03](#)
- [\(Clock Point\) 04](#)
- [\(Clock Point\) 05](#)
- [\(Clock Point\) 06](#)
- [\(Clock Point\) 07](#)
- [\(Clock Point\) 08](#)
- [\(Clock Point\) 09](#)
- [\(Clock Point\) 10](#)
- [\(Clock Point\) 11](#)
- [\(Clock Point\) 12](#)
- [Top](#)
- [Undercarriage](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. If the vehicle is a combination vehicle (power unit and at least one trailer), the power unit and/or trailer (or trailers) are considered when determining the damaged areas.

If the vehicle is not at the scene for the officer to assess the location of damaged area(s), then code the attribute [Unknown](#), unless subsequently discovered.

Refer to [Figure 30. Clock point diagrams for different types of motor vehicles](#) for clock point diagrams.

- **No Damage** - the vehicle did not sustain any damage as a result of this crash. Pre-existing defects or maintenance conditions that may have contributed to the crash should be captured under [CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#).

- **Clock Points 01-12** - refer to the points on a clock (see [Figure 30. Clock point diagrams for different types of motor vehicles](#)). The clock points extend to the entire length of the power unit and any attached trailer (or trailers). If the load of a vehicle extends outside of the vehicle's profile, select the clock point that best describes the damage. For example, lumber extending out of the back of a pickup truck bed would be clock point **06** for the pickup truck.
- **Top** – includes damage to the hood, windshield, roof, rear window, trunk deck, and to the top of trailing units.
- **Undercarriage** - includes damage to the underside of the vehicle, including tires, wheels, axles, exhaust system, etc.
- **Unknown** – used when it cannot be determined where or if this vehicle was damaged in this crash.

Highway Safety Rationale:

This element is important for evaluating injury severity and vehicle design. This information is necessary for FMCSA crash selection criteria.

Implementation Suggestions:

- Although the minimum system capability requirement for this data element is two selections, NHTSA recommends this as a “Select All That Apply” data element.
- Use clickable clock point diagrams for officers to select the appropriate attribute(s).
- Provide an option to “Select All Areas” on the clickable clock point diagram to save time.
- If DAMAGED AREAS equals **No Damage**, then autofill [EXTENT OF DAMAGE](#) with **No Damage**.

Validation Rules:

None

Alignment Considerations for DAMAGED AREAS

1. The State should provide guidance that if the vehicle is a combination vehicle (power unit and at least one trailer), the power unit and/or trailer (or trailers) are considered when determining the damaged areas.
2. A State clock point diagram may be used to report both [INITIAL CONTACT POINT](#) and DAMAGED AREAS, if the former is unambiguously identified. A State clock point diagram may contain more than the recommended 12 points (if those points can align to the MMUCC 12-point diagram), but the State clock point diagram may not contain fewer points to align to MMUCC.
3. If the State does not carry a clock point diagram but codes damaged areas, it must allow for coding 14 areas (12-points plus **Top** and **Undercarriage**) as in DAMAGED AREAS to fully align.

4. States that record the most damaged area without allowing officers to record all damaged areas will not align with the MMUCC element.

V36. Extent of Damage

Element Definition:

Identifies the extent to which the damage identified in [DAMAGED AREAS](#) affects the vehicle's operability rather than the cost to repair.

Attribute Values:

Select one:

- [No Damage](#)
- [Minor Damage](#)
- [Functional Damage](#)
- [Disabling Damage](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles. If the vehicle is a combination vehicle (power unit and at least one trailer), the power unit and/or trailer (or trailers) are considered when determining the extent of damage. If the vehicle is not at the scene for the officer to assess the extent of damage, then use the attribute [Unknown](#), unless subsequently discovered.

- **No Damage** – The vehicle did not sustain any damage as a result of this crash. Pre-existing defects or maintenance conditions that may have contributed to the crash should be captured under [CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#).
- **Minor Damage** – Damage that does not affect the operation of or disable the motor vehicle.
- **Functional Damage** – Damage that is not disabling but affects operation of the motor vehicle or its parts.
- **Disabling Damage** – Damage that precludes departure of the motor vehicle from the scene of the crash in its usual daylight-operating manner after simple repairs. As a result, the motor vehicle had to be towed, carried from crash scene, or assisted by an emergency motor vehicle.
- **Unknown** – used when the extent of damage as a result of this crash not known

Highway Safety Rationale:

This element is important for evaluating injury severity and vehicle design. This information is necessary for FMCSA crash selection criteria.

Implementation Suggestions:

If [DAMAGED AREAS](#) equals **No Damage**, then autofill EXTENT OF DAMAGE with **No Damage**.

Validation Rules:

None

Alignment Considerations for EXTENT OF DAMAGE

1. To align with this element, the State must capture the overall extent of damage for each motor vehicle. States may have a similar element, such as “Vehicle Deformity for Most Damaged Area” that *may* not align with this element due to inconsistent definitions.
2. The State should provide guidance that if the vehicle is a combination vehicle (power unit and at least one trailer), the power unit and/or trailer (or trailers) are considered when determining the extent of damage.

V37. Sequence of Events

Element Definition:

Events in sequence related to this motor vehicle, including non-harmful events, non-collision harmful events, and collision events.

Attribute Values:

This is a multi-selection data element. Allow a minimum system capability of four selections (see [Implementation Suggestions](#)).

Group 1: Non-Harmful Events

- [Cross Centerline](#)
- [Cross Median](#)
- [End Departure \(T-intersection, dead-end, etc.\)](#)
- [Downhill Runaway](#)
- [Equipment Failure \(blown tire, brake failure, etc.\)](#)
- [Ran Off Roadway Left](#)
- [Ran Off Roadway Right](#)
- [Ran Off Roadway – Direction Unknown](#)
- [Non-Harmful Swaying Trailer or Jackknife](#)
- [Cargo or Equipment Loss or Shift \(non-harmful\)](#)
- [Re-Entering Roadway](#)
- [Separation of Units](#)
- [Vehicle Went Airborne](#)

Group 2: Non-Collision Harmful Events

- [Rollover or Overtake](#)
- [Cargo or Equipment Loss, Shift, or Damage \(harmful\)](#)
- [Fell or Jumped From Motor Vehicle](#)
- [Fire or Explosion](#)
- [Immersion, Full or Partial](#)
- [Jackknife \(harmful to this vehicle\)](#)
- [Thrown or Falling Object](#)
- [Pavement Surface Irregularity \(ruts, potholes, grates, etc.\)](#)
- [Other Non-Collision](#)

Group 3: Collision With Motor Vehicle

- [Motor Vehicle In-Transport](#)
- [Parked Motor Vehicle](#)
- [Working Motor Vehicle](#)

Group 4: Collision With Non-Fixed Object

- [Non-Motorist](#)
- [Live Animal](#)
- [Ridden Animal or Animal-Drawn Conveyance](#)
- [Railroad Vehicle](#)
- [Road Vehicle on Rails](#)
- [Strikes Object at Rest That Had Fallen From Motor Vehicle In-Transport](#)
- [Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport](#)
- [Other Object \(not fixed\)](#)
- [Unknown Object Not Fixed](#)

Group 5: Collision With Fixed Object

- **Subgroup 1: Bridge Parts**
 - [Bridge Overhead Structure](#)
 - [Bridge Pier or Support](#)
 - [Bridge Rail \(includes parapet\)](#)
- **Subgroup 2: Structures**
 - [Building](#)
 - [Wall](#)
- **Subgroup 3: Traffic Barriers and Parts**
 - [Cable Barrier](#)
 - [Concrete Traffic Barrier](#)
 - [Guardrail Face](#)
 - [Guardrail End](#)
 - [Impact Attenuator or Crash Cushion](#)
 - [Other Traffic Barrier](#)
- **Subgroup 4: Posts, Poles, and Supports**
 - [Traffic Sign or Support](#)
 - [Traffic Signal or Support](#)

- [Utility Pole or Light Support](#)
- [Other Post, Pole, or Other Supports](#)
- **Subgroup 5: Other Trafficway Components**
 - [Culvert](#)
 - [Curb](#)
 - [Ditch](#)
 - [Embankment](#)
- **Subgroup 6: Other Specific Fixed Objects**
 - [Boulder](#)
 - [Ground](#)
 - [Tree \(standing only\)](#)
 - [Shrubbery](#)
 - [Snowbank](#)
 - [Fence](#)
 - [Mailbox](#)
 - [Fire Hydrant](#)
- **Subgroup 7: Other and Unknown**
 - [Other Fixed Object](#)
 - [Unknown Fixed Object](#)

Group 6: Unknown

- [Unknown](#)
- [Harmful Event, Details Unknown](#)

Remarks:

Complete this element for all motor vehicles.

A non-harmful event is an event that does not produce injury or damage.

A non-collision harmful event is a [harmful event](#) that does not involve a collision.

A collision event is a harmful event that involves the collision of a [motor vehicle in-transport](#) with another motor vehicle, a non-fixed object, or a fixed object.

Group 1: Non-Harmful Events

- **Cross Centerline** - used when a vehicle crosses over the centerline of a two-way, undivided trafficway. The centerline must be delineated with paint or raised markers. This is also used for unstabilized situations involving vehicles that depart from their initial travel lane and enter the continuous left-turn lane, having a harmful event that is

located within the marked boundaries of the continuous left-turn lane. This attribute also applies to vehicles that traverse the continuous left-turn lane area, having a harmful event that is located in the opposing travel lane(s).

- **Cross Median** - used when a vehicle departs its roadway, traverses the median, and enters the shoulder or travel lanes on the opposite side of a divided highway.
- **End Departure (T-intersection, dead-end, etc.)** - used when the vehicle leaves the roadway by traveling straight through the top of a [T-intersection](#) of a two-way trafficway or top of an intersecting one-way roadway. This code should also apply to vehicles traveling off the end of dead-end roadways or into the barrier of a closed trafficway.
- **Downhill Runaway** - used when a vehicle cannot decelerate on a downhill grade due to vehicle malfunction. This does not apply to a vehicle that cannot slow down due to lack of surface friction (e.g., due to ice or snow).
- **Equipment Failure (blown tire, brake failure, etc.)** - describes when a component of a vehicle fails (e.g., blown tires, brake failures). This is not used to describe damage from a collision event.
- **Ran Off Roadway Left** – used if any part of the vehicle runs off the left side of the roadway (travel lanes).
- **Ran Off Roadway Right** – used if any part of the vehicle runs off the right side of the roadway (travel lanes).
- **Ran Off Roadway - Direction Unknown** – used if any part of the vehicle runs off the roadway (travel lanes), but the direction (left or right) cannot be determined.
- **Non-Harmful Swaying Trailer or Jackknife** – a condition that occurs to a combination vehicle while in motion. The condition reflects a loss of control of the vehicle by the driver in which the trailer (or trailers) yaws from its normal straight-line path behind the power unit. The event by itself does not cause damage to the vehicle or injury to its occupants. If the event caused damage or injury, see [Jackknife \(harmful to this vehicle\)](#).
- **Cargo or Equipment Loss or Shift (non-harmful)** - refers specifically to the loss or shift of items carried on or in a motor vehicle or its trailing unit, which does not cause damage and/or injury to the vehicle, its occupants, its parts, trailing unit, or the cargo itself. For example, a cargo tank driver swerves or over-corrects causing liquid in the tank to slosh and overtake vehicle control causing the vehicle to rollover. In this case, the cargo shift was not harmful on its own, but led to the harmful event [Rollover or Overturn](#).
- **Re-Entering Roadway** - used when a vehicle that departed the roadway portion of the trafficway returns to the same roadway (e.g., a motor vehicle in-transport runs off the roadway right, strikes the guardrail face, then re-enters the roadway and collides with another motor vehicle in-transport). This attribute should not be used if a vehicle departs the roadway and enters a different roadway. For example, do NOT use the attribute **Re-**

Entering Roadway when a motor vehicle in-transport runs off the roadway left, crosses the median, and enters the roadway on the other side of the median.

- **Separation of Units** – used when a trailing unit separates from its power unit or another trailing unit. This applies to truck tractors with at least one trailer, single-unit trucks with at least one trailer, and other vehicles pulling at least one trailer (e.g., car pulling a boat or motor home).
- **Vehicle Went Airborne** – used when the vehicle left the ground (excludes vehicles leaving the ground during a rollover event). Examples: the vehicle drove off a cliff, the vehicle was launched into the air after striking another vehicle or after traversing a berm.

Group 2: Non-Collision Harmful Events

- **Rollover or Overturn** – used when a motor vehicle rotates (rolls over) at least one quarter turn onto its side or end. For motorcycles, laying the motorcycle down on its side is sufficient to use this attribute as a harmful event if damage or injury is produced.
- **Cargo or Equipment Loss, Shift, or Damage (harmful)** – refers specifically to the loss or shift of items carried on or in a motor vehicle or its trailing unit, causing damage and/or injury to the vehicle, its occupants, its parts, trailing unit, or the cargo itself. Harm can be measured in loss of monetary value from unrecoverable cargo loss as well as physical damage. For example: (1) A pickup truck brakes rapidly to avoid a collision. This causes a piece of lumber in the pickup bed to smash through the rear window. (2) Unsecured cargo shifts inside a box truck and bursts through the wall of the trailer. (3) Pallets of beehives on a flatbed truck fall off the truck on a sharp curve causing the hives to open and the bees to fly away.

Do not use this attribute if the cargo or equipment loss or shift on its own does not cause damage or injury (i.e., not a harmful event). Instead, see the non-harmful event [Cargo or Equipment Loss or Shift \(non-harmful\)](#). For example, a cargo tank driver swerves or over-corrects causing liquid in the tank to slosh and overtake vehicle control causing the vehicle to rollover. In this case, the cargo shift was not harmful on its own, but led to the harmful event [Rollover or Overturn](#).

- **Fell or Jumped From Motor Vehicle** – used when an occupant of this vehicle falls or jumps (not suicide) from the vehicle causing injury. For example, an occupant of a motor vehicle in-transport leans against the car door, it opens, and the occupant falls out; or a person riding on a vehicle's exterior (hood, roof, running board, etc.) falls or jumps, and is injured by the fall. If an occupant falls or jumps from a vehicle and is struck by that vehicle, use this attribute.
- **Fire or Explosion** – a fire or explosion that was the cause or result of the crash. A fire or explosion is a non-collision harmful event.
- **Immersion, Full or Partial** – occurs when a motor vehicle enters a body of water and results in injury or damage. This attribute would also be used if the vehicle came to rest in water and the depth cannot be ascertained.
- **Jackknife (harmful to this vehicle)** – a condition that occurs to a combination vehicle while in motion. The condition reflects a loss of control of the vehicle by the driver in

which the trailer (or trailers) yaws from its normal straight-line path behind the power unit, striking the power unit, or other trailers, causing damage to the power unit or trailer. **Jackknife (harmful to this vehicle)** should only be coded as a harmful event if there is clear indication of damage to the jackknifed vehicle or injury to its occupants caused by the jackknife. If the jackknife was not harmful to this vehicle, see attribute [Non-Harmful Swaying Trailer or Jackknife](#).

- **Thrown or Falling Object** – a non-collision harmful event where any object is thrown (intentionally or unintentionally) and impacts an [in-transport](#) motor vehicle, or falls onto, into, or in the path of an in-transport motor vehicle. This excludes contacts made by loads or objects set in-motion by a motor vehicle (see [Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport](#)).
- **Pavement Surface Irregularity (ruts, potholes, grates, etc.)** - used when the surface irregularity is on a paved surface. Other examples include indication of contact with a dip, depression, low spot, trough, etc. If the impact is with a surface irregularity not on a paved surface, use [Ground](#). For a vehicle that “bottoms out” on the paved surface (causing damage) due to speed, but not because of a pavement surface irregularity, use the attribute [Other Non-Collision](#).
- **Other Non-Collision** – a non-collision event not captured by other non-collision event attributes. For example, driving off a cliff where damage is not the result of an overturn or a collision with a fixed object, an unbelted passenger hits their head on the roof of a vehicle and is injured when the vehicle travels over a sharp dip in the road, situations where a passenger is sickened or dies due to carbon monoxide fumes leaking from a motor vehicle in-transport.

Group 3: Collision with Motor Vehicle

- **Motor Vehicle In-Transport** – A motor vehicle is any motorized (mechanically or electrically powered) road vehicle not operated on rails. When applied to motor vehicles, “[in-transport](#)” refers to being in motion or on a [roadway](#) (travel lanes). Includes: motor vehicle in traffic on a highway, driverless motor vehicle in motion, motionless motor vehicle abandoned on a roadway, disabled motor vehicle on a roadway, etc.
- **Parked Motor Vehicle** – ANSI D.16-2017 defines a parked motor vehicle as a motor vehicle not in-transport, other than a [working motor vehicle](#), that is not in motion and not located on the [roadway](#) (travel lanes). In roadway lanes used for travel during some periods and for parking during other periods, a parked motor vehicle is considered [in-transport](#) during periods when parking is forbidden. This attribute includes any stopped motor vehicle where the entirety of the vehicle’s primary outline as defined by the four sides of the vehicle (e.g., tires, bumpers, fenders) and load, if any, is not within the roadway.
- **Working Motor Vehicle** – ANSI D.16-2017 defines a working motor vehicle as a motor vehicle in the act of performing construction, maintenance, or utility work related to the [trafficway](#). The “work” may be located within open or closed portions of the trafficway, and the vehicle performing these activities can be within or outside the trafficway boundaries. A working motor vehicle at the time of the [unstabilized situation](#) is not considered “in-transport.”

Group 4: Collision With Non-Fixed Object

- **Non-Motorist** – Any person who is not an occupant of a motor vehicle. This includes pedestrians, bicyclists, other cyclists, and occupants of non-motor vehicle transport devices.
- **Live Animal** – used for collisions with domesticated or wild live animals that are not themselves being used as transportation or to draw a wagon, cart, or other transport device. Use **Live Animal** if it cannot be determined if the struck animal is alive, dead, or if it was being ridden or drawing a transport device. If the animal was deceased prior to the crash, then use [Other Object \(not fixed\)](#).
- **Ridden Animal or Animal-Drawn Conveyance** - used for any type of animal being ridden at the time of the crash or any device being drawn by an animal (e.g., wagon, carriage, sleigh).
- **Railroad Vehicle** – any land vehicle (train, engine) that is (1) designed primarily for, or in use for, moving people or property from one place to another on rails and (2) not in use on a land way other than a railroad.
 - Includes: Railroad trains, streetcar, trolley, or light rail on private way, railroad maintenance vehicles operating on rails.
 - Excludes: Streetcar or trolley operating on trafficway (see [Road Vehicle on Rails](#)).
- **Road Vehicle on Rails** - any land vehicle on rails designed to operate primarily within a trafficway.
 - Includes: Streetcar, trolley, or light rail operating on trafficway.
 - Excludes: Railroad trains, railroad maintenance vehicles operating on rails, or streetcar, trolley, or light rail operating on a private way (see [Railroad Vehicle](#)); streetcar, trolley, or electric bus operating on tires.
- **Strikes Object at Rest That Had Fallen From Motor Vehicle In-Transport** – used when a [motor vehicle in-transport](#) impacts a non-fixed object at rest that is known to have been the cargo or part of another motor vehicle in-transport. For example, a motor vehicle in-transport strikes a mattress that fell from another motor vehicle in-transport and was at-rest in the roadway. Do not use this attribute:
 - If the cargo or debris was at rest as a result of a prior crash, use attribute [Other Object \(not fixed\)](#).
 - For vehicle occupants who are ejected or fall from a motor vehicle in-transport (e.g., a motorcycle operator falling from a motorcycle). For people falling from a motor vehicle, see non-collision event [Fell or Jumped From Motor Vehicle](#).
 - For impacts involving two motor vehicles in-transport resulting from cargo, people, or objects set-in-motion. See [Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport](#).
 - For at-rest detached trailers (e.g., a detached semi-trailer). See attribute [Other Object \(not fixed\)](#).

- **Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport** – used when the injury- or damage-producing event is two motor vehicles in-transport making contact by something set-in-motion by one or both of the vehicles.

Examples:

- Logs fall off or come loose from an in-transport truck (see [Cargo or Equipment Loss or Shift \(non-harmful\)](#)) and the logs strike another motor vehicle in-transport traveling behind the truck causing injury or damage.
- A tire blows out on a motor vehicle in-transport (see [Equipment Failure \(blown tire, brake failure, etc.\)](#)) and pieces of the tire fly up and strike another motor vehicle in-transport causing injury or damage.
- A motor vehicle in-transport strikes a rock in the roadway producing injury or damage (see [Other Object \(not fixed\)](#)) and propels the rock into another motor vehicle in-transport causing injury or damage.
- A motorcycle rider loses control of the motorcycle that overturns (see [Rollover or Overturn](#)) and the rider is propelled into another motor vehicle in-transport causing injury or damage.

This attribute does not apply when the cargo, people, or objects set-in-motion by an in-transport motor vehicle strikes something other than another in-transport motor vehicle. In this case, use the applicable harmful event attribute for the thing struck by the cargo, person, or object set-in-motion. Examples:

- If cargo falls from an in-transport truck (see [Cargo or Equipment Loss or Shift \(non-harmful\)](#)) and the cargo strikes a parked motor vehicle, use the attribute [Parked Motor Vehicle](#).
- If a motor vehicle in-transport strikes a rock in the roadway producing injury or damage (see [Other Object \(not fixed\)](#)), and propels the rock into a pedestrian, use the attribute [Non-Motorist](#).
- If a motorcycle rider loses control of the motorcycle that overturns (see [Rollover or Overturn](#)) and the rider is propelled into a standing tree, use the attribute [Tree \(standing only\)](#).
- **Other Object (not fixed)** – used when a motor vehicle in-transport strikes a non-fixed object that is known NOT to have been the cargo or part of another motor vehicle in-transport, or when it is UNKNOWN whether the object was the cargo or part of another motor vehicle in-transport (i.e., objects such as a dead body, animal carcass, construction cones or barrels, an unattached trailer, a bicycle without a rider, downed tree limbs or power lines, or debris from a prior crash). For objects that have become separated from a motor vehicle in-transport not as a result of a prior crash, use attribute [Strikes Object at Rest That Had Fallen From Motor Vehicle In-Transport](#).
- **Unknown Object Not Fixed** - used when the event involves an object that is known to be not fixed but the specific object cannot be determined.

Group 5: Collision With Fixed Object

- **Bridge Overhead Structure** – any part of a bridge that is over the reference or subject [roadway](#). In crash reporting, this typically refers to the beams or other structural elements supporting a bridge deck.
- **Bridge Pier or Support** – support for a bridge structure including the ends (abutments).
- **Bridge Rail (includes parapet)** – barrier attached to a bridge deck or a bridge parapet to restrain motor vehicles, pedestrians, or other users.
- **Building** – roofed and walled structure built for permanent use. The type of construction material used is not of interest, nor is the use of the building.
- **Wall** - primarily vertical structure composed of concrete, metal, timber, or stone that is not part of a [Building](#) or a [Fence](#) but typically is used for retaining earth, abating noise, and separating areas. Also included as **Wall** are headwalls (or endwalls) that are sometimes provided on culvert ends principally to protect the sides of the embankment around the culvert opening against erosion. This does not include wingwalls, which are attached to ends of bridge abutments and extend back at an angle from the roadway. Wingwalls should be coded as [Bridge Pier or Support](#).
- **Cable Barrier** – flexible barrier system that uses several cables typically supported by steel posts. These can be used on the [roadside](#) or as a median barrier. These barriers are designed to help lessen impact or keep vehicles within the confines of the [road](#).
- **Concrete Traffic Barrier** – longitudinal traffic barrier constructed of concrete and located on the outside of the [road](#) surface, in a median, or in [gore](#) areas. This includes all temporary concrete barriers regardless of location (e.g., temporary barrier on a bridge being used to control traffic during bridge repair or construction).
- **Guardrail Face** – surface area of the guardrail other than the end. Its function is to redirect the vehicle back onto the roadway. See [Figure 1. Guardrail face and guardrail end](#). **Guardrail End** – the end of the guardrail, with or without treatment. See [Figure 1. Guardrail face and guardrail end](#). **Impact Attenuator or Crash Cushion** – a device for controlling the absorption of energy released during vehicle collision (crash cushion). Its most common application involves the protection of fixed roadside objects such as bridge piers, elevated gores at exit ramps, etc. Examples include barrels filled with water or sand, and plastic collapsible structures. See [Figure 2. Impact attenuator or crash cushion](#). Source: FHWA
- **Other Traffic Barrier** – longitudinal barriers other than guardrails, [concrete traffic barriers](#), or [cable barriers](#). They may be composed of material such as wood or rock.
- **Traffic Sign or Support** – used when the post supporting a traffic sign, or the sign itself, is hit by a motor vehicle in-transport. This includes mile marker posts and elevated signs.
- **Traffic Signal or Support** – used when the post supporting a traffic signal, or the signal itself, is hit by a motor vehicle in-transport. Use **Traffic Signal or Support** for a railroad crossing arm or gate.

- **Utility Pole or Light Support** – constructed for the primary function of supporting an electric line, telephone line, or other electrical or electronic transmission line or cable. This includes the support poles for roadway lighting.
- **Other Post, Pole, or Other Supports** – used for posts other than [traffic signs](#), [traffic signals](#), [utility poles, or light supports](#) (e.g., reflectors on poles alongside of roadway, parking meters, flag poles). For mailbox posts, use [Mailbox](#). For fence posts, use [Fence](#).
- **Culvert** – used when the vehicle strikes a manmade drain or channel crossing under a road, sidewalk, etc., resulting in injury or damage.
- **Curb** – used when the vehicle strikes a raised edge or border to a [roadway](#), resulting in injury or damage. Curbs may be constructed of concrete, asphalt, or wood and typically have a face height of less than 9 inches.
- **Ditch** – used when the vehicle strikes a trench used for drainage purposes, resulting in injury or damage. A ditch ends where a [culvert](#) begins and resumes on the opposite side of the culvert.
- **Embankment** – used when the vehicle strikes a raised structure to hold back water, to carry a roadway, or the result of excavation or washout (including erosion) that may be faced with earth (or rock, stone, or concrete), resulting in injury or damage. An **Embankment** can usually be differentiated from a [Wall](#) by its incline, whereas a wall is usually vertical. However, there are exceptions to this, such as a retaining wall that may be inclined or a vertical embankment that is caused by a natural event such as a washout.

In crashes involving a field approach or driveway crossing, use attribute **Embankment** when no specific components (e.g., culverts or ditches) are identified.

- **Boulder** - a rock of sufficient mass that when struck by a motor vehicle moves very little and remains basically intact. It may be considered as a fixed object.
- **Ground** - used when the impact is with an earthen or paved surface off this vehicle's roadway. For example, free falls or vaults from the road surface to the ground. If the impact is with a surface irregularity (e.g., ruts, potholes) not on a paved surface, use **Ground**. If the impact is with a pavement surface irregularity, use [Pavement Surface Irregularity \(ruts, potholes, grates, etc.\)](#). **Ground** should not be used when the harmful event is [Rollover or Overturn](#).
- **Tree (standing only)** – Tree is upright and in the ground. A standing tree is a fixed object as opposed to a fallen tree that is a moveable object.
- **Shrubbery** - vegetation usually of a woody multi-stemmed variety and in most instances is low growing rather than tall. May also be called bushes. Some common examples are boxwood, hawthorn, and mountain laurel.
- **Snowbank** - used when snowfall and/or road plowing creates essentially fixed barriers of snow and/or ice that are not snow-covered earth or rock embankments.
- **Fence** - a barrier constructed to prevent escape or intrusion or to mark a boundary. A fence can be made of wood, metal, stone, etc., and includes the fence posts and gates.

- **Mailbox** - a residence or business mail or newspaper box including the post. A cluster of mailboxes is included in this attribute. This attribute does not include USPS mailboxes, which are typically blue and are for general public use. For a USPS mailbox, use the attribute [Other Fixed Object](#).
- **Fire Hydrant** - the roadside device used by fire departments to provide water for fighting fires. Usually made of steel, these devices are also referred to as fire plugs or fire standpipes in some areas.
- **Other Fixed Object** – used when the object is fixed (considered a permanent structure) and is not described by any of the other fixed object attributes. This attribute excludes collisions with curbing that forms raised islands, medians, or separators (see [Curb](#)).
Examples:
 - Bus shelters
 - Pedestrian walkways
 - Toll booths
 - Guy wires supporting utility poles
 - USPS Mailbox for public use

Other examples include property damage to standing crops, yards, and other vegetation (excluding [Shrubbery](#), [Tree \(standing only\)](#), and [Ground](#)).

- **Unknown Fixed Object** - used when the event involves an object that is known to be fixed but the specific object cannot be determined.

Group 6: Unknown

- **Unknown** – an event occurred, but it cannot be determined if the event was harmful or not harmful.
- **Harmful Event, Details Unknown** - a harmful event occurred, but the classification (non-collision, collision with a motor vehicle, fixed object, or non-fixed object) was unknown.

Highway Safety Rationale:

This element is important for use in combination with [VEHICLE STATUS PRIOR TO CRITICAL EVENT](#) and [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#) for understanding crash causation and identifying traffic safety countermeasures.

Implementation Suggestions:

- Although the minimum system capability requirement for this data element is four selections, NHTSA recommends this as a “Select All That Apply” data element with the chronological sequence preserved.
- The attribute groupings are suggestions for nested drop-down lists. The State should organize the attributes in a way that is meaningful to the State’s users. See [Chapter 11: Designing User-Centered Crash Reporting Systems](#) for more information.

- If this vehicle’s first harmful event in its SEQUENCE OF EVENTS is a non-collision harmful event, i.e., **Rollover or Overturn; Cargo or Equipment Loss, Shift, or Damage (harmful); Fell or Jumped From Motor Vehicle; Fire or Explosion; Immersion, Full or Partial; Jackknife (harmful to this vehicle); Thrown or Falling Object; Pavement Surface Irregularity (ruts, potholes, grates, etc.); or Other Non-Collision**, then autofill [INITIAL CONTACT POINT](#) with **Non-Collision**.
- At least one SEQUENCE OF EVENTS for this vehicle must equal the [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#).

Validation Rules:

None

Alignment Considerations for SEQUENCE OF EVENTS

1. Consider the following when mapping to the “Other” attributes. See [Uniformity Alignment Rules 10-13](#) for more information on “Other” attributes.
 - a. To align with the attribute **Other Non-Collision**, the State must possess all other attributes in Group 2: Non-Collision Harmful Events.
 - b. To align with attribute **Other Object (not fixed)**, the State must possess all other attributes in Group 4: Collision With Non-Fixed Object.
 - c. To align with attribute **Other Traffic Barrier**, the State must possess all other attributes in Group 5: Collision With Fixed Object, Subgroup 3: Traffic Barriers and Parts.
 - d. To align with attribute **Other Post, Pole, or Other Supports**, the State must possess all other attributes in Group 5: Collision With Fixed Object, Subgroup 4: Posts, Poles, and Supports.
 - e. To align with attribute **Other Fixed Object**, the State must possess all other attributes in Group 5: Collision With Fixed Object.

V38. Most Harmful Event for This Motor Vehicle

Element Definition:

The event that resulted in the most severe injury or, if no injury, the greatest property damage involving this motor vehicle.

Attribute Values:

Select one:

Group 1: Non-Collision Harmful Events

- [Rollover or Overturn](#)
- [Cargo or Equipment Loss, Shift, or Damage \(harmful\)](#)
- [Fell or Jumped From Motor Vehicle](#)
- [Fire or Explosion](#)
- [Immersion, Full or Partial](#)
- [Jackknife \(harmful to this vehicle\)](#)
- [Thrown or Falling Object](#)
- [Pavement Surface Irregularity \(ruts, potholes, grates, etc.\)](#)
- [Other Non-Collision](#)

Group 2: Collision with Motor Vehicle

- [Motor Vehicle In-Transport](#)
- [Parked Motor Vehicle](#)
- [Working Motor Vehicle](#)

Group 3: Collision With Non-Fixed Object

- [Non-Motorist](#)
- [Live Animal](#)
- [Ridden Animal or Animal-Drawn Conveyance](#)
- [Railroad Vehicle](#)
- [Road Vehicle on Rails](#)
- [Strikes Object at Rest That Had Fallen From Motor Vehicle In-Transport](#)
- [Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport](#)
- [Other Object \(not fixed\)](#)
- [Unknown Object Not Fixed](#)

Group 4: Collision With Fixed Object

- **Subgroup 1: Bridge Parts**
 - [Bridge Overhead Structure](#)
 - [Bridge Pier or Support](#)
 - [Bridge Rail \(includes parapet\)](#)
- **Subgroup 2: Structures**
 - [Building](#)
 - [Wall](#)
- **Subgroup 3: Traffic Barriers and Parts**
 - [Cable Barrier](#)
 - [Concrete Traffic Barrier](#)
 - [Guardrail Face](#)
 - [Guardrail End](#)
 - [Impact Attenuator or Crash Cushion](#)
 - [Other Traffic Barrier](#)
- **Subgroup 4: Posts, Poles, and Supports**
 - [Traffic Sign or Support](#)
 - [Traffic Signal or Support](#)
 - [Utility Pole or Light Support](#)
 - [Other Post, Pole, or Other Supports](#)
- **Subgroup 5: Other Trafficway Components**
 - [Culvert](#)
 - [Curb](#)
 - [Ditch](#)
 - [Embankment](#)
- **Subgroup 6: Other Specific Fixed Objects**
 - [Boulder](#)
 - [Ground](#)
 - [Tree \(standing only\)](#)
 - [Shrubbery](#)
 - [Snowbank](#)
 - [Fence](#)

- [Mailbox](#)
- [Fire Hydrant](#)
- **Subgroup 7: Other and Unknown**
 - [Other Fixed Object](#)
 - [Unknown Fixed Object](#)

Group 5: Unknown

- [Harmful Event, Details Unknown](#)

Remarks:

Complete this element for all motor vehicles.

A non-collision harmful event is a [harmful event](#) that does not involve a collision.

A collision event is a harmful event that involves the collision of a [motor vehicle in-transport](#) with another motor vehicle, a non-fixed object, or a fixed object.

Group 1: Non-Collision Harmful Events

- **Rollover or Overturn** – used when a motor vehicle rotates (rolls over) at least one quarter turn onto its side or end. For motorcycles, laying the motorcycle down on its side is sufficient to use this attribute as a harmful event if damage or injury is produced.
- **Cargo or Equipment Loss, Shift, or Damage (harmful)** – refers specifically to the loss or shift of items carried on or in a motor vehicle or its trailing unit, causing damage and/or injury to the vehicle, its occupants, its parts, trailing unit, or the cargo itself. Harm can be measured in loss of monetary value from unrecoverable cargo loss as well as physical damage. For example: (1) A pickup truck brakes rapidly to avoid a collision. This causes a piece of lumber in the pickup bed to smash through the rear window. (2) Unsecured cargo shifts inside a box truck and bursts through the wall of the trailer. (3) Pallets of beehives on a [flatbed](#) truck fall off the truck on a sharp curve causing the hives to open and the bees to fly away.

Do not use this attribute if the cargo or equipment loss or shift on its own does not cause damage or injury (i.e., not a harmful event). Instead, see the SEQUENCE OF EVENTS non-harmful event [Cargo or Equipment Loss or Shift \(non-harmful\)](#). For example, a cargo tank driver swerves or over-corrects causing liquid in the tank to slosh and overtake vehicle control causing the vehicle to rollover. In this case, the cargo shift was not harmful on its own, but led to the harmful event [Rollover or Overturn](#).

- **Fell or Jumped From Motor Vehicle** – used when an occupant of this vehicle falls or jumps (not suicide) from the vehicle causing injury. For example, an occupant of a motor vehicle in-transport leans against the car door, it opens, and the occupant falls out; or a person riding on a vehicle’s exterior (hood, roof, running board, etc.) falls or jumps, and is injured by the fall. If an occupant falls or jumps from a vehicle and is struck by that vehicle, use this attribute.
- **Fire or Explosion** – A fire or explosion that was the cause or result of the crash. A fire or explosion is a non-collision harmful event.

- **Immersion, Full or Partial** – occurs when a motor vehicle enters a body of water and results in injury or damage. This attribute would also be used if the vehicle came to rest in water and the depth cannot be ascertained.
- **Jackknife (harmful to this vehicle)** – a condition that occurs to a combination vehicle while in motion. The condition reflects a loss of control of the vehicle by the driver in which the trailer (or trailers) yaws from its normal straight-line path behind the power unit, striking the power unit, or other trailers, causing damage to the power unit or trailer. **Jackknife (harmful to this vehicle)** should only be coded as a harmful event if there is clear indication of damage to the jackknifed vehicle or injury to its occupants caused by the jackknife. If the jackknife was not harmful to this vehicle, see SEQUENCE OF EVENTS attribute [Non-Harmful Swaying Trailer or Jackknife](#).
- **Thrown or Falling Object** – a non-collision harmful event where any object is thrown (intentionally or unintentionally) and impacts an [in-transport](#) motor vehicle, or falls onto, into, or in the path of an in-transport motor vehicle. This excludes contacts made by loads or objects set in-motion by a motor vehicle (see [Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport](#)).
- **Pavement Surface Irregularity (ruts, potholes, grates, etc.)** - used when the surface irregularity is on a paved surface. Other examples include indication of contact with a dip, depression, low spot, trough, etc. If the impact is with a surface irregularity not on a paved surface, use [Ground](#). For a vehicle that “bottoms out” on the paved surface (causing damage) due to speed, but not because of a pavement surface irregularity, use the attribute [Other Non-Collision](#).
- **Other Non-Collision** – a non-collision event not captured by other non-collision event attributes. For example, driving off a cliff where damage is not the result of an overturn or a collision with a fixed object, an unbelted passenger hits their head on the roof of a vehicle and is injured when the vehicle travels over a sharp dip in the road, situations where a passenger is sickened or dies due to carbon monoxide fumes leaking from a motor vehicle in-transport.

Group 2: Collision With Motor Vehicle

- **Motor Vehicle In-Transport** – A motor vehicle is any motorized (mechanically or electrically powered) road vehicle not operated on rails. When applied to motor vehicles, “[in-transport](#)” refers to being in motion or on a [roadway](#) (travel lanes). Includes: motor vehicle in traffic on a highway, driverless motor vehicle in motion, motionless motor vehicle abandoned on a roadway, disabled motor vehicle on a roadway, etc.
- **Parked Motor Vehicle** – ANSI D.16-2017 defines a parked motor vehicle as a motor vehicle not in-transport, other than a [working motor vehicle](#), that is not in motion and not located on the [roadway](#) (travel lanes). In roadway lanes used for travel during some periods and for parking during other periods, a parked motor vehicle is considered [in-transport](#) during periods when parking is forbidden. This attribute includes any stopped motor vehicle where the entirety of the vehicle’s primary outline as defined by the four sides of the vehicle (e.g., tires, bumpers, fenders) and load, if any, is not within the roadway.

- **Working Motor Vehicle** – ANSI D.16-2017 defines a working motor vehicle as a motor vehicle in the act of performing construction, maintenance, or utility work related to the [trafficway](#). The “work” may be located within open or closed portions of the trafficway, and the vehicle performing these activities can be within or outside the trafficway boundaries. A working motor vehicle at the time of the [unstabilized situation](#) is not considered “in-transport.”

Group 3: Collision With Non-Fixed Object

- **Non-Motorist** – Any person who is not an occupant of a motor vehicle. This includes pedestrians, bicyclists, other cyclists, and occupants of non-motor vehicle transport devices.
- **Live Animal** – used for collisions with domesticated or wild live animals that are not themselves being used as transportation or to draw a wagon, cart, or other transport device. Use **Live Animal** if it cannot be determined if the struck animal is alive, dead, or if it was being ridden or drawing a transport device. If the animal was deceased prior to the crash, then use [Other Object \(not fixed\)](#).
- **Ridden Animal or Animal-Drawn Conveyance** - used for any type of animal being ridden at the time of the crash or any device being drawn by an animal (e.g., wagon, carriage, sleigh).
- **Railroad Vehicle** – any land vehicle (train, engine) that is (1) designed primarily for, or in use for, moving people or property from one place to another on rails and (2) not in use on a land way other than a railroad.
 - Includes: Railroad trains, streetcar, trolley, or light rail on private way, railroad maintenance vehicles operating on rails.
 - Excludes: Streetcar or trolley operating on trafficway (see [Road Vehicle on Rails](#)).
- **Road Vehicle on Rails** - any land vehicle on rails designed to operate primarily within a trafficway.
 - Includes: Streetcar, trolley, or light rail operating on trafficway.
 - Excludes: Railroad trains, railroad maintenance vehicles operating on rails, or streetcar, trolley, or light rail operating on a private way (see [Railroad Vehicle](#)); streetcar, trolley, or electric bus operating on tires.
- **Strikes Object at Rest That Had Fallen From Motor Vehicle In-Transport** – used when a [motor vehicle in-transport](#) impacts a non-fixed object at rest that is known to have been the cargo or part of another motor vehicle in-transport. For example, a motor vehicle in-transport strikes a mattress that fell from another motor vehicle in-transport and was at-rest in the roadway. Do not use this attribute:
 - If the cargo or debris was at rest as a result of a prior crash, use attribute [Other Object \(not fixed\)](#).

- For vehicle occupants who are ejected or fall from a motor vehicle in-transport (e.g., a motorcycle operator falling from a motorcycle). For people falling from a motor vehicle, see non-collision event [Fell or Jumped From Motor Vehicle](#).
- For impacts involving two motor vehicles in-transport resulting from cargo, people, or objects set-in-motion. See [Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport](#).
- For at-rest detached trailers (e.g., a detached semi-trailer). See attribute [Other Object \(not fixed\)](#).
- **Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport** – used when the injury- or damage-producing event is two motor vehicles in-transport making contact by something set-in-motion by one or both of the vehicles. Examples:

- Logs fall off or come loose from an in-transport truck (see SEQUENCE OF EVENTS non-harmful event [Cargo or Equipment Loss or Shift \(non-harmful\)](#)) and the logs strike another motor vehicle in-transport traveling behind the truck causing injury or damage.
- A tire blows out on a motor vehicle in-transport (see SEQUENCE OF EVENTS non-harmful event [Equipment Failure \(blown tire, brake failure, etc.\)](#)) and pieces of the tire fly up and strike another motor vehicle in-transport causing injury or damage.
- A motor vehicle in-transport strikes a rock in the roadway producing injury or damage (see [Other Object \(not fixed\)](#)) and propels the rock into another motor vehicle in-transport causing injury or damage.
- A motorcycle rider loses control of the motorcycle that overturns (see [Rollover or Overturn](#)) and the rider is propelled into another motor vehicle in-transport causing injury or damage.

This attribute does not apply when the cargo, people, or objects set-in-motion by an in-transport motor vehicle strikes something other than another in-transport motor vehicle. In this case, use the applicable harmful attribute for the thing struck by the cargo, person, or object set-in-motion. Examples:

- If cargo falls from an in-transport truck (see SEQUENCE OF EVENTS non-harmful event [Cargo or Equipment Loss or Shift \(non-harmful\)](#)) and the cargo strikes a parked motor vehicle, use the attribute [Parked Motor Vehicle](#).
- If a motor vehicle in-transport strikes a rock in the roadway producing injury or damage (see [Other Object \(not fixed\)](#)) and propels the rock into a pedestrian, use the attribute [Non-Motorist](#).
- If a motorcycle rider loses control of the motorcycle that overturns (see [Rollover or Overturn](#)) and the rider is propelled into a standing tree, use the attribute [Tree \(standing only\)](#).
- **Other Object (not fixed)** – used when a motor vehicle in-transport strikes a non-fixed object that is known NOT to have been the cargo or part of another motor vehicle in-

transport, or when it is UNKNOWN whether the object was the cargo or part of another motor vehicle in-transport (i.e., objects such as a dead body, animal carcass, construction cones or barrels, an unattached trailer, a bicycle without a rider, downed tree limbs or power lines, or debris from a prior crash). For objects that have become separated from a motor vehicle in-transport not as a result of a prior crash, use attribute [Strikes Object at Rest That Had Fallen From Motor Vehicle In-Transport](#).

- **Unknown Object Not Fixed** - used when the event involves an object that is known to be not fixed but the specific object cannot be determined.

Group 4: Collision With Fixed Object

- **Bridge Overhead Structure** – any part of a bridge that is over the reference or subject [roadway](#). In crash reporting, this typically refers to the beams or other structural elements supporting a bridge deck.
- **Bridge Pier or Support** – support for a bridge structure including the ends (abutments).
- **Bridge Rail (includes parapet)** – barrier attached to a bridge deck or a bridge parapet to restrain motor vehicles, pedestrians, or other users.
- **Building** – roofed and walled structure built for permanent use. The type of construction material used is not of interest, nor is the use of the building.
- **Wall** - primarily vertical structure composed of concrete, metal, timber, or stone that is not part of a [Building](#) or a [Fence](#) but typically is used for retaining earth, abating noise, and separating areas. Also included as **Wall** are headwalls (or endwalls) that are sometimes provided on culvert ends principally to protect the sides of the embankment around the culvert opening against erosion. This does not include wingwalls, which are attached to ends of bridge abutments and extend back at an angle from the roadway. Wingwalls should be coded as [Bridge Pier or Support](#).
- **Cable Barrier** – flexible barrier system that uses several cables typically supported by steel posts. These can be used on the [roadside](#) or as a median barrier. These barriers are designed to help lessen impact or keep vehicles within the confines of the [road](#).
- **Concrete Traffic Barrier** – longitudinal traffic barrier constructed of concrete and located on the outside of the [road](#) surface, in a median, or in [gore](#) areas. This includes all temporary concrete barriers regardless of location (e.g., temporary barrier on a bridge being used to control traffic during bridge repair or construction).
- **Guardrail Face** – surface area of the guardrail other than the end. Its function is to redirect the vehicle back onto the roadway. See [Figure 1. Guardrail face and guardrail end](#). **Guardrail End** – the end of the guardrail, with or without treatment. See [Figure 1. Guardrail face and guardrail end](#). **Impact Attenuator or Crash Cushion** – a device for controlling the absorption of energy released during vehicle collision (crash cushion). Its most common application involves the protection of fixed roadside objects such as bridge piers, elevated gores at exit ramps, etc. Examples include barrels filled with water or sand, and plastic collapsible structures. See [Figure 2. Impact attenuator or crash cushion](#).
Source: FHWA

- **Other Traffic Barrier** – longitudinal barriers other than guardrails, [concrete traffic barriers](#), or [cable barriers](#). They may be composed of material such as wood or rock.
- **Traffic Sign or Support** – used when the post supporting a traffic sign, or the sign itself, is hit by a motor vehicle in-transport. This includes mile marker posts and elevated signs.
- **Traffic Signal or Support** – used when the post supporting a traffic signal, or the signal itself, is hit by a motor vehicle in-transport. Use **Traffic Signal or Support** for a railroad crossing arm or gate.
- **Utility Pole or Light Support** – constructed for the primary function of supporting an electric line, telephone line, or other electrical or electronic transmission line or cable. This includes the support poles for roadway lighting.
- **Other Post, Pole, or Other Supports** – used for posts other than [traffic signs](#), [traffic signals](#), [utility poles](#), or [light supports](#) (e.g., reflectors on poles alongside of roadway, parking meters, flag poles). For mailbox posts, use [Mailbox](#). For fence posts, use [Fence](#).
- **Culvert** – used when the vehicle strikes a manmade drain or channel crossing under a road, sidewalk, etc., resulting in injury or damage.
- **Curb** – used when the vehicle strikes a raised edge or border to a [roadway](#), resulting in injury or damage. Curbs may be constructed of concrete, asphalt, or wood and typically have a face height of less than 9 inches.
- **Ditch** – used when the vehicle strikes a trench used for drainage purposes, resulting in injury or damage. A ditch ends where a [culvert](#) begins and resumes on the opposite side of the culvert.
- **Embankment** – used when the vehicle strikes a raised structure to hold back water, to carry a roadway, or the result of excavation or washout (including erosion) that may be faced with earth (or rock, stone, or concrete), resulting in injury or damage. An **Embankment** can usually be differentiated from a [Wall](#) by its incline, whereas a wall is usually vertical. However, there are exceptions to this, such as a retaining wall that may be inclined or a vertical embankment that is caused by a natural event such as a washout.
In crashes involving a field approach or driveway crossing, use attribute **Embankment** when no specific components (e.g., culverts or ditches) are identified.
- **Boulder** - a rock of sufficient mass that when struck by a motor vehicle moves very little and remains basically intact. It may be considered as a fixed object.
- **Ground** - used when the impact is with an earthen or paved surface off this vehicle's roadway. For example, free falls or vaults from the road surface to the ground. If the impact is with a surface irregularity (e.g., ruts, potholes) not on a paved surface, use **Ground**. If the impact is with a pavement surface irregularity, use [Pavement Surface Irregularity \(ruts, potholes, grates, etc.\)](#). **Ground** should not be used when the harmful event is [Rollover or Overturn](#).
- **Tree (standing only)** – Tree is upright and in the ground. A standing tree is a fixed object as opposed to a fallen tree that is a moveable object.

- **Shrubbery** - vegetation usually of a woody multi-stemmed variety and in most instances is low growing rather than tall. May also be called bushes. Some common examples are boxwood, hawthorn, and mountain laurel.
- **Snowbank** - used when snowfall and/or road plowing creates essentially fixed barriers of snow and/or ice that are not snow-covered earth or rock embankments.
- **Fence** - a barrier constructed to prevent escape or intrusion or to mark a boundary. A fence can be made of wood, metal, stone, etc., and includes the fence posts and gates.
- **Mailbox** - a residence or business mail or newspaper box including the post. A cluster of mailboxes is included in this attribute. This attribute does not include USPS mailboxes, which are typically blue and are for general public use. For a USPS mailbox, use the attribute [Other Fixed Object](#).
- **Fire Hydrant** - the roadside device used by fire departments to provide water for fighting fires. Usually made of steel, these devices are also referred to as fire plugs or fire standpipes in some areas.
- **Other Fixed Object** – used when the object is fixed (considered a permanent structure) and is not described by any of the other fixed object attributes. This attribute excludes collisions with curbing that forms raised islands, medians, or separators (see [Curb](#)).
Examples:
 - Bus shelters
 - Pedestrian walkways
 - Toll booths
 - Guy wires supporting utility poles
 - USPS Mailbox for public use

Other examples include property damage to standing crops, yards, and other vegetation (excluding [Shrubbery](#), [Tree \(standing only\)](#), and [Ground](#)).

- **Unknown Fixed Object** - used when the event involves an object that is known to be fixed but the specific object cannot be determined.

Group 5: Unknown

- **Harmful Event, Details Unknown** - a harmful event occurred, but the classification (non-collision, collision with a motor vehicle, fixed object, or non-fixed object) was unknown.

Highway Safety Rationale:

This element is important for use in combination with [SEQUENCE OF EVENTS](#) for understanding crash causation and identifying traffic safety countermeasures.

Implementation Suggestions:

- The MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE must equal at least one [SEQUENCE OF EVENTS](#) for this vehicle.

- A drop-down menu should only include the harmful event attributes the user selected in the [SEQUENCE OF EVENTS](#) for this vehicle.
- The attribute groupings are suggestions for nested drop-down lists. The State should organize the attributes in a way that is meaningful to the State’s users. See [Chapter 11: Designing User-Centered Crash Reporting Systems](#) for more information.

Validation Rules:

None

Alignment Considerations for MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE:

1. Consider the following when mapping to the “Other” attributes. See [Uniformity Alignment Rules 10 to 13](#) for more information on “Other” attributes.
 - a. To align with the attribute **Other Non-Collision**, the State must possess all other attributes in Group 1: Non-Collision Harmful Events.
 - b. To align with attribute **Other Object (not fixed)**, the State must possess all other attributes in Group 3: Collision With Non-Fixed Object.
 - c. To align with attribute **Other Traffic Barrier**, the State must possess all other attributes in Group 4: Collision With Fixed Object, Subgroup 3: Traffic Barriers and Parts.
 - d. To align with attribute **Other Post, Pole, or Other Supports**, the State must possess all other attributes in Group 4: Collision With Fixed Object, Subgroup 4: Posts, Poles, and Supports.
 - e. To align with attribute **Other Fixed Object**, the State must possess all other attributes in Group 4: Collision With Fixed Object.

V39. Hit-and-Run

Element Definition:

Refers to cases where the [motor vehicle in-transport](#) is a contact vehicle in the crash and either the vehicle or the driver departs the scene without the driver stopping to render aid or report the crash.

Attribute Values:

Select one:

- [No](#)
- [Yes](#)

Remarks:

Complete this element for all motor vehicles.

- **No** - used if there is no reason to believe a hit-and-run occurred involving this vehicle or its driver.
- **Yes** - used when it has been determined that this vehicle's driver left the scene with or without their vehicle.

Highway Safety Rationale:

This element is important for identifying and tracking the frequency of these unlawful situations. Several data elements rely upon the completion of this element for crashes in which the vehicle and/or the driver of the vehicle are unknown.

Implementation Suggestions:

None

Validation Rules:

HIT-AND-RUN should not = **Yes** for more than one vehicle record.

Alignment Considerations for HIT-AND-RUN

1. A State that has a checkbox to indicate "Yes" if checked and "No" if not checked *may* align to the MMUCC attribute **Yes**, but not the MMUCC attribute **No**. See [Uniformity Alignment Rule 5](#) for more information.

V40. Vehicle Towed

Element Definition:

Identifies whether the vehicle was towed or carried from the scene of the crash.

Attribute Values:

Select one:

- [Not Towed](#)
- [Towed](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles.

Towing includes vehicles carried from the scene on a flatbed tow truck. Towing assistance without removal of the vehicle from the scene, such as pulling a vehicle out of a ditch, is not considered “towed” for the purposes of this data element.

If the vehicle is a combination vehicle (power unit and at least one trailer), the power unit and/or trailer (or trailers) are considered when determining tow status. If the power unit or trailer of a combination unit was towed from the scene, consider this vehicle as [Towed](#).

- **Not Towed** - used when this vehicle was not removed from the scene of this crash by tow truck or other vehicle.
- **Towed** - used when this vehicle has been removed from the scene of this crash by tow truck or other vehicle. Pulling a vehicle out of a ditch by itself does not justify the use of this attribute. For example, if a vehicle was removed from a ditch and was then driven away, use [Not Towed](#).
- **Unknown** – used when it cannot be determined how this vehicle was removed from the scene of the crash.

Highway Safety Rationale:

This element is important to identify whether the motor vehicle (or any trailing units) was removed from the scene of the crash. This information is necessary for FMCSA crash selection criteria.

Implementation Suggestions:

A vehicle towed due to disabling damage can be determined by combining this field with [EXTENT OF DAMAGE](#) (see [1.7.1 FMCSA Threshold](#) for more information).

Validation Rules:

None

Alignment Considerations for VEHICLE TOWED

1. A State that has a checkbox to indicate “Yes” if checked and “No” if not checked *may* align to the MMUCC attribute **Towed**, but not the MMUCC attribute **Not Towed**. See [Uniformity Alignment Rule 5](#) for more information.

V41. Contributing Circumstances, Motor Vehicle

Element Definition:

Pre-existing motor vehicle defects or maintenance conditions that may have contributed to the occurrence or severity of the crash.

Attribute Values:

This is a multi-selection data element. Allow a minimum system capability of two selections (see [Implementation Suggestions](#)).

- [None](#)
- [Brake System](#)
- [Exhaust System](#)
- [Body or Doors](#)
- [Steering](#)
- [Powertrain](#)
- [Suspension](#)
- [Tires](#)
- [Wheels](#)
- [Headlights](#)
- [Signal Lights](#)
- [Other Lights](#)
- [Windows or Windshield](#)
- [Mirrors](#)
- [Wipers](#)
- [Truck Coupling, Trailer Hitch, or Safety Chains](#)
- [Safety Systems](#)
- [Other \(explain in narrative\)](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles.

- **None** – This vehicle did not have any pre-existing defects or maintenance conditions that may have contributed to the occurrence or severity of the crash.
- **Brake System** - used when any pre-existing defects or maintenance conditions of any part of the vehicle's brake system may have contributed to the occurrence or severity of

the crash. The brake system slows or stops the rotation of the wheels. This includes the parking brake.

- **Exhaust System** - used when any pre-existing defects or maintenance conditions of any part of the vehicle's exhaust system may have contributed to the occurrence or severity of the crash. The exhaust system describes a system of pipes that guide the vehicle's exhaust gases away from the engine. This includes the exhaust manifold, headers, muffler, catalytic converter, tailpipe, etc.
- **Body or Doors** - used when any pre-existing defects or maintenance conditions of the vehicle's body or doors may have contributed to the occurrence or severity of the crash, including the panels mounted to the frame of the vehicle, trunk, hood, tailgate, rear doors of cargo vans, etc.
- **Steering** – used when any pre-existing defects or maintenance conditions of any part of the vehicle's steering mechanism may have contributed to the occurrence or severity of the crash, including the tie rod ends, kingpins, power steering components, and ball joints.
- **Powertrain** – used when any pre-existing defects or maintenance conditions of any part of the vehicle's powertrain components may have contributed to the occurrence or severity of the crash. Examples are universal joints, drive shaft, and transmission. This also includes engine, differential, and stuck throttles.
- **Suspension** – used when any pre-existing defects or maintenance conditions of any part of the vehicle's suspension components may have contributed to the occurrence or severity of the crash. These include springs, shock absorbers, struts, and control arms.
- **Tires** – used when any pre-existing defects (e.g., lost or losing re-tread) or maintenance conditions (e.g., one or more bald tires) of the vehicle's tires may have contributed to the occurrence or severity of the crash. If the contributing factor is of the wheel (e.g., a lug nut comes off), then use [Wheels](#).
- **Wheels** – used when any pre-existing defects or maintenance conditions of the vehicle's wheels may have contributed to the occurrence or severity of the crash, including the loss of lug nuts.
- **Headlights** - used when any pre-existing defects or maintenance conditions of the vehicle's headlights may have contributed to the occurrence or severity of the crash.
- **Signal Lights** - used when any pre-existing defects or maintenance conditions of the vehicle's signal lights may have contributed to the occurrence or severity of the crash.
- **Other Lights** - used when any pre-existing defects or maintenance conditions of any other light (i.e., not the [Headlights](#) or [Signal Lights](#)) may have contributed to the occurrence or severity of the crash. This includes missing or inoperative taillights on the vehicle or trailer.
- **Windows or Windshield** - used when any pre-existing defects or maintenance conditions of the windows or windshield may have contributed to the occurrence or severity of the crash, such as improper tinting or cracks.

- **Mirrors** - used when any pre-existing defects or maintenance conditions of the vehicle's mirrors may have contributed to the occurrence or severity of the crash, including switches, wires, glass, sockets, heating elements, actuator, circuits, motors, etc.
- **Wipers** - used when any pre-existing defects or maintenance conditions of the vehicle's wipers may have contributed to the occurrence or severity of the crash, including the wiper blades, motor, switches, washer fluid, washer fluid hose, reservoir, pump, nozzle, connectors, etc.
- **Truck Coupling, Trailer Hitch, or Safety Chains** - used when any pre-existing defects or maintenance conditions of the vehicle's truck coupling, trailer hitch, or safety chains may have contributed to the occurrence or severity of the crash. This includes a defective or improper trailer hitch.
- **Safety Systems** - used when any pre-existing defects or maintenance conditions of any part of the vehicle's safety systems may have contributed to the occurrence or severity of the crash. This includes if the air bags failed to deploy or deployed inappropriately. Also, use this attribute for a seat belt failure, such as webbing that was excessively worn or came unlatched. Do NOT use this attribute for improper restraint use (see [RESTRAINT SYSTEM USE](#) Subfield 2: Indication of Restraint System Misuse).
- **Other (explain in narrative)** - used when pre-existing defects or maintenance conditions of any other part of the vehicle may have contributed to the occurrence or severity of the crash, including an electric vehicle battery, horn, defog system, air conditioner, heater, etc. If this attribute is used, explain the details in the narrative section of the crash report.
- **Unknown** - used when it cannot be determined if the vehicle had any pre-existing defects or maintenance conditions that may have contributed to the occurrence or severity of the crash.

Highway Safety Rationale:

This element is important for determining the significance of pre-existing vehicle defects and maintenance conditions, to identify the need for improvements in manufacturing, and investigate potential consumer alerts.

Implementation Suggestions:

Although the minimum system capability requirement for this data element is two selections, NHTSA recommends this as a "Select All That Apply" data element.

Validation Rules:

None

Alignment Considerations for CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE

None

V42. Vehicle Underride or Override

Element Definition:

Indicates whether this vehicle experienced an underride or override with another vehicle during the crash. An underride refers to this motor vehicle sliding under another motor vehicle during a crash. An override refers to this motor vehicle riding up over another motor vehicle during a crash. Either can occur with a parked or working motor vehicle.

Attribute Values:

Select one:

- [None or Not Applicable](#)
- [Underride](#)
- [Override](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles, regardless of the [MOTOR VEHICLE BODY TYPE CATEGORY](#). **Underride** or **Override** events require two vehicles.

When coding this element, try to assess the outcome for each vehicle in a vehicle-to-vehicle collision—if this vehicle went under another vehicle during the events of the crash, then this vehicle is coded as [Underride](#) while the other vehicle is coded as [Override](#).

Consider all vehicle-to-vehicle collision events, if any, for this motor vehicle in the crash. If a vehicle is involved in both an underride and an override, code the event that occurred first for this vehicle. A vehicle that becomes airborne and/or overturns and lands on top of another vehicle is not considered an underride or override event.

- **None or Not Applicable** - used when:
 - In a multi-vehicle crash, this vehicle does not underride or override any other motor vehicle in the crash.
 - In a multi-vehicle crash, this vehicle does not have a vehicle-to-vehicle collision event (i.e., [SEQUENCE OF EVENTS](#) attributes for this motor vehicle do not include **Motor Vehicle In-Transport, Parked Motor Vehicle, or Working Motor Vehicle**),
 - In a single vehicle crash, an underride or override cannot occur (i.e., underride or override events require two vehicles).
- **Underride** - used when this motor vehicle traveled or was pushed under another motor vehicle (including a parked or working motor vehicle) during the crash. This attribute is also used for this motor vehicle when another motor vehicle passes over it.

An example of an underride is a passenger vehicle striking the rear end or the side of a truck-tractor with a semi-trailer attached and coming to a stop under the trailer. In this example, the passenger vehicle is the underriding vehicle and the truck-tractor with a semi-trailer attached is overriding.

Underride events can occur at any plane of contact and at any angle. It is possible in an underride for a motor vehicle to pass under the other motor vehicle and emerge from the other side.

- **Override** - used when this motor vehicle traveled or rode up over another motor vehicle (including a parked or working motor vehicle) during the crash. This attribute is also used for this motor vehicle when another motor vehicle passes under it.

An example of an override is a truck-tractor with a semi-trailer attached striking the front end or rear end of a passenger vehicle and coming to a stop on top of it. In this example, the truck-tractor with a semi-trailer attached is the overriding vehicle, and the passenger vehicle is the underriding vehicle.

Override events can occur at any plane of contact and at any angle. It is possible in an override for a motor vehicle to completely pass over another motor vehicle.

- **Unknown** - used when this vehicle has at least one vehicle-to-vehicle collision event (i.e., [SEQUENCE OF EVENTS](#) attributes for this vehicle include **Motor Vehicle In-Transport**, **Parked Motor Vehicle**, or **Working Motor Vehicle**) and it is unknown if an underride or override occurred for this vehicle.

Highway Safety Rationale:

This element is important to evaluate countermeasure effectiveness, tracking crash outcomes, and to support NHTSA and FMCSA safety programs.

Implementation Suggestions:

- If the number of vehicles involved in the crash equals one, then autofill VEHICLE UNDERRIDE OR OVERRIDE with **None or Not Applicable**.
- If this vehicle does not have any vehicle-to-vehicle collision events (i.e., [SEQUENCE OF EVENTS](#) attributes do not include **Motor Vehicle In-Transport**, **Parked Motor Vehicle**, or **Working Motor Vehicle**), then autofill VEHICLE UNDERRIDE OR OVERRIDE with **None or Not Applicable**.

Validation Rules:

- If the number of vehicles involved in the crash equals one, then VEHICLE UNDERRIDE OR OVERRIDE must equal **None or Not Applicable** for that vehicle.
- If the number of vehicles involved in the crash is greater than one and VEHICLE UNDERRIDE OR OVERRIDE equals **Underride** for one vehicle, then VEHICLE UNDERRIDE OR OVERRIDE must equal **Override** for another vehicle in the crash.
- If the number of vehicles involved in the crash is greater than one and VEHICLE UNDERRIDE OR OVERRIDE equals **Override** for one vehicle, then VEHICLE UNDERRIDE OR OVERRIDE must equal **Underride** for another vehicle in the crash.

Alignment Considerations for VEHICLE UNDERRIDE OR OVERRIDE:

None

V43. Fire Occurrence

Element Definition:

Identifies whether a fire in any way related to the crash occurred in this vehicle.

Attribute Values:

Select one:

- [No](#)
- [Yes](#)

Remarks:

Complete this element for all motor vehicles. For the purposes of this element, “vehicle” is defined to mean the power unit plus any and all trailing units associated with the power unit. Note that chemical fires in electric vehicles may result in a delayed ignition or reignition. If this happens, select [Yes](#).

- **No** – used when there is no indication that this vehicle sustained fire damage. If it cannot be determined that a fire occurred in the vehicle as a result of the crash, select **No**.
- **Yes** – used when there is indication that this vehicle sustained fire damage. In a multi-vehicle crash where a fire occurs, only the vehicles sustaining fire damage should be coded as **Yes**. Fires that begin in a vehicle before the first impact may be coded **Yes**. In this case, if fire damage is produced, [Fire or Explosion](#) would be the [FIRST HARMFUL EVENT](#). If the [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#) is [Fire or Explosion](#), or a fire in the vehicle is produced by damage in the crash, then select **Yes**.

Highway Safety Rationale:

This element is important to understand damage associated with vehicular fires, identifying potential vehicle design concerns, and evaluating crash outcomes.

Implementation Suggestions:

- If [SEQUENCE OF EVENTS](#) values for this motor vehicle do not include **Fire or Explosion**, then autofill FIRE OCCURRENCE with **No**.
- If [SEQUENCE OF EVENTS](#) values for this motor vehicle includes **Fire or Explosion**, then autofill FIRE OCCURRENCE with **Yes**.

Validation Rules:

None

Alignment Considerations for FIRE OCCURRENCE:

None

V44. Related Factors – Vehicle Level

Element Definition:

Records factors related to this vehicle to identify and track ongoing or emerging issues associated with these vehicle characteristics.

Attribute Values:

This is a multi-selection data element. Allow a minimum system capability of two selections (see [Implementation Suggestions](#)).

- [None](#)
- [Vehicle Being Pushed by Non-Motorist](#)
- [Reconstructed or Altered Vehicle](#)
- [Adaptive Equipment](#)
- [Police, Fire, or EMS Vehicle Working at the Scene of an Emergency or Performing Other Traffic Control Activities](#)
- [Other Working Vehicle \(not construction, maintenance, utility, police, fire, or EMS vehicle\)](#)
- [Slide-in Camper](#)
- [Autonomous or Semi-Autonomous Vehicle](#)
- [Autonomous or Semi-Autonomous Driving Engaged](#)
- [Dolly Attached](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles.

- **None** – used when none of the related factors are applicable for this vehicle.
- **Vehicle Being Pushed by Non-Motorist** - used when this vehicle was being pushed by a non-motorist with or without a driver at the controls.
- **Reconstructed or Altered Vehicle** - used when this vehicle was either (1) not constructed by an original vehicle manufacturer or (2) is constructed by an original vehicle manufacturer but is significantly altered in some way with aftermarket modifications. These vehicles may or may not have a standard VIN, or the State may issue a number in place of the VIN for their registration. For a vehicle that has been modified with adaptive equipment for an operator with a disability or for other reasons such as mail carriers, driving instructors, etc., use [Adaptive Equipment](#). Examples:
 - The addition of enhanced performance engine chips or accessories,
 - Two vehicles are combined into one,

- Significant altering of suspension system (e.g., “monster trucks” or “low riders”),
- Hydraulic systems or tilted/canted wheels, or
- Glider kit.
- **Adaptive Equipment** - used when this vehicle is equipped with adaptive equipment for an operator with a disability or for other reasons such as mail carriers, driving instructors, etc. Examples:
 - Extended brake and/or gas pedals,
 - Special steering apparatus,
 - Hand brakes or accelerator, etc., or
 - Steering wheel and operator pedals on the right side.
- **Police, Fire, or EMS Vehicle Working at the Scene of an Emergency or Performing Other Traffic Control Activities** - used when this vehicle is an official law enforcement, fire, or EMS vehicle performing some work function related to working at the scene of an emergency or acting as traffic control. The vehicle does not need to be occupied at the time of the crash. Examples:
 - Police car, fire truck, or ambulance at the scene of a crash,
 - Fire truck at the scene of a fire,
 - Police car leading or trailing a convoy for a funeral,
 - Police car blocking the entrance to a parade route, or
 - Police car at a check point or work zone.
- **Other Working Vehicle (not construction, maintenance, utility, police, fire, or EMS vehicle)** - used when this vehicle is performing some other work activity at the time it was involved in the crash. The vehicle does not need to be occupied at the time of the crash. Examples:
 - Garbage truck picking up trash,
 - Personal pickup truck with a snow blade plowing snow,
 - UPS or postal vehicle stopped in the roadway while making a delivery,
 - Food delivery vehicle making a delivery, or
 - Personal vehicle making a delivery.
- **Slide-in Camper** – this vehicle had a slide-in camper, which is a unit that mounts within a pickup truck bed. Pickup truck bed caps, tonneau covers, or frame mounted campers are not applicable for this attribute.

- **Autonomous or Semi-Autonomous Vehicle** – this vehicle was equipped with Automated Driving System (ADS) or Advanced Driver Assistance System (ADAS) technology. The system need not be engaged at the time of the crash. If the system was engaged at the time of the crash also select [Autonomous or Semi-Autonomous Driving Engaged](#).
- **Autonomous or Semi-Autonomous Driving Engaged** – this vehicle’s Automated Driving System (ADS) or Advanced Driver Assistance System (ADAS) technology was engaged at the time of the crash or leading up to the crash. If this attribute is selected, then [Autonomous or Semi-Autonomous Vehicle](#) must also be selected.
- **Dolly Attached** – used when this vehicle has one or more dollies (converter or tow) attached to the power unit and/or a trailing unit. The dolly or dollies may be with or without a trailing unit.
- **Unknown** – used when it cannot be determined if any of the listed attributes for this data element apply to this vehicle.

Highway Safety Rationale:

This element is important to identify and track ongoing or emerging issues associated with these vehicle characteristics.

Implementation Suggestions:

Although the minimum system capability requirement for this data element is two selections, NHTSA recommends this as a “Select All That Apply” data element.

Validation Rules:

If any RELATED FACTORS – VEHICLE LEVEL equals **Autonomous or Semi-Autonomous Driving Engaged**, then at least one other RELATED FACTORS – VEHICLE LEVEL must equal **Autonomous or Semi-Autonomous Vehicle**.

Alignment Considerations for RELATED FACTORS – VEHICLE LEVEL:

None

Chapter 6: Driver Data Elements

The driver data elements describe the characteristics, actions, and consequences to the drivers involved in the crash. Data elements in this chapter are given the element identifier **D** (e.g., D1, D2, D3). The State should include the [MOTOR VEHICLE NUMBER](#) and [PERSON NUMBER](#) to link the Driver information to the appropriate Vehicle and Person records.

- [D1. Driver Presence](#)
- [D2. Driver Address](#)
- [D3. Driver License Jurisdiction](#)
- [D4. Driver License Number](#)
- [D5. Speeding-Related](#)
- [D6. Driver Distraction](#)
- [D7. Attempted Avoidance Maneuver](#)
- [D8. Driver's Vision Obscured by](#)
- [D9. Citations Issued](#)
- [D10. Related Factors – Driver Level](#)

D1. Driver Presence

Element Definition:

Identifies whether a driver was present in this vehicle at the time of the crash.

Attribute Values:

Select one:

- [No Driver Present or Not Applicable](#)
- [Yes](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicles.

- **No Driver Present or Not Applicable** - used when there is no person who was controlling this vehicle at the time of the crash. Also, use this attribute when [MOTOR VEHICLE UNIT TYPE](#) for this vehicle is a **Parked Motor Vehicle** or **Working Motor Vehicle**, regardless of the presence of an occupant in the driver's seat.
- **Yes** - used when there is a person who is physically controlling the vehicle at the time of the crash. Do not use this attribute for a child sitting in the driver's seat unless the child was in control of the vehicle. Hit-and-run drivers are included in this attribute. A driver under medical distress is included in this attribute. This attribute includes when it is known there was a driver, but it is unknown which occupant was the driver at the time of the crash.
- **Unknown** - used when it cannot be determined if there was a driver present in the vehicle at the time of the crash.

Highway Safety Rationale:

Several data elements rely upon the completion of this element for crashes in which the vehicle did not have a driver at the time of the crash.

Implementation Suggestions:

If **No Driver Present or Not Applicable** is selected, then the following data elements can be autofilled as follows:

- [DRIVER ADDRESS](#): **No Driver Present or Unknown if Driver Present**
- [DRIVER LICENSE JURISDICTION](#): Subfield 1: **Not Applicable**, Subfield 2: **Not Applicable**
- [DRIVER LICENSE NUMBER](#): **No Driver Present or Unknown if Driver Present**
- [SPEEDING-RELATED](#): **No**
- [DRIVER DISTRACTION](#): **No Driver Present or Unknown if Driver Present**

- [ATTEMPTED AVOIDANCE MANEUVER](#): **No Driver Present or Unknown if Driver Present**
- [DRIVER'S VISION OBSCURED BY](#): **No Driver Present or Unknown if Driver Present**
- [RELATED FACTORS – DRIVER LEVEL](#): **Not Applicable (no driver)**

Validation Rules:

None

Alignment Considerations for DRIVER PRESENCE:

1. Some States may include this data element at the vehicle level, which may be acceptable if the definitions match.

D2. Driver Address

Element Definition:

The address of the driver of this vehicle.

Attribute Values:

- [Address](#)
- [No Address](#)
- [No Driver Present or Unknown if Driver Present](#)
- [Address Unknown](#)

Remarks:

Complete this element for all drivers.

- **Address** – the physical address of this driver. A driver license may be used as the source, if present.
- **No Address** – this driver did not have a physical address.
- **No Driver Present or Unknown if Driver Present** - used when there was no driver in this vehicle or when it is unknown if there was a driver present in this vehicle at the time of the crash. [DRIVER PRESENCE](#) must equal **No Driver Present or Not Applicable**.
- **Address Unknown** – The address for this driver cannot be determined.

Highway Safety Rationale:

This element is used for data integration with the State driver registration files to document driver history and out-of-state drivers. It is also used for law enforcement activities and crash investigation.

Implementation Suggestions:

- If [DRIVER PRESENCE](#) equals **No Driver Present or Not Applicable**, then autofill this element with **No Driver Present or Unknown if Driver Present**.
- ANSI State FIPS and USPS Codes are provided by the [U.S. Census Bureau](#). Border States may wish to collect the name of individual Canadian Provinces or Mexican States. ISO 3166 Country Codes are provided by the [International Organization for Standardization](#).
- The State should implement either the ANSI State FIPS codes or the USPS abbreviations. The State should not use both.
- Interface with the State's driver database to autofill this information for In-State drivers based on the driver's license number or driver name.
- Allow officers to use scanners to collect this information for In-State or Out-of-State drivers.

Validation Rules:

None

Alignment Considerations for DRIVER ADDRESS

1. The State may report this data element for each person, which is acceptable when it is clear which person is the driver.

D3. Driver License Jurisdiction

Element Definition:

The geographic or political entity issuing a driver license to this person.

Attribute Values:

Subfield 1: Type (select one)

- [Not Licensed](#)
- [Canada](#)
- [Indian Nation](#)
- [International License \(other than Mexico or Canada\)](#)
- [Mexico](#)
- [U.S. State or Territory](#)
- [U.S. Government](#)
- [Not Applicable](#)
- [Unknown](#)

Subfield 2: ANSI State FIPS or ISO 3166 Country Code (Specify)

- [Not Licensed](#)
- [ANSI State FIPS or USPS Codes or ISO 3166-2 Country Codes](#)
- [Not Applicable](#)

Remarks:

Complete this element for all drivers.

Includes the States of the United States (including the District of Columbia and Territories), Indian Nations, U.S. Government, Canadian Provinces, and Mexican States (including the Distrito Federal), as well as other jurisdictions.

Subfield 1: Type

- **Not Licensed** – This driver did not have a valid driver’s license at the time of the crash.
- **Canada** – the driver’s license was issued by a Canadian authority.
- **Indian Nation** – the driver’s license was issued by a Federally recognized Indian tribe with sovereign authority to interact on a government-to-government basis directly with Federal agencies.
- **International License (other than Mexico or Canada)** – driver’s license issued by a country other than Canada or Mexico.
- **Mexico** – the driver’s license was issued by a Mexican authority.

- **U.S. State or Territory** – the driver’s license was issued by a U.S. State, U.S. Territory, or U.S.-owned outlying area.
- **U.S. Government** – the driver’s license was issued by the U.S. Government, such as military or State Department Foreign Service.
- **Not Applicable** – used when there was no driver in this vehicle. [DRIVER PRESENCE](#) must equal **No Driver Present or Not Applicable**.
- **Unknown** – used when the geographic or political entity issuing a driver license to this person cannot be determined.

Subfield 2: ANSI State FIPS or ISO 3166 Country Code

- **Not Licensed** - this driver did not have a valid driver’s license at the time of the crash.
- **ANSI State FIPS or USPS Codes, or ISO 3166-2 Country Codes** – specify either the ANSI State FIPS code or USPS code for driver licenses issued by the United States, or the ISO 3166-2 Country code for driver licenses issued by other countries. ANSI State FIPS and USPS Codes are provided by the [U.S. Census Bureau](#). ISO 3166 Country Codes are provided by the [International Organization for Standardization](#).
- **Not Applicable** - used when there was no driver in this vehicle. [DRIVER PRESENCE](#) must equal **No Driver Present or Not Applicable**.

Highway Safety Rationale:

This element is necessary to evaluate the effectiveness of various State licensing laws and document out-of-state drivers. This element is also critical in integrating the State crash and driver license files.

Implementation Suggestions:

- If [DRIVER PRESENCE](#) equals **No Driver Present or Not Applicable**, then autofill both subfields of this element with **Not Applicable**.
- If subfield 1 equals **Not Licensed**, then autofill subfield 2 with **Not Licensed**.
- The State should implement either the ANSI State FIPS codes or the USPS abbreviations. The State should not use both.

Validation Rules:

- If subfield 1 = **Not Licensed**, then subfield 2 must = **Not Licensed**.
- If subfield 1 = **Not Applicable**, then subfield 2 must = **Not Applicable**.

Alignment Considerations for DRIVER LICENSE JURISDICTION

None

D4. Driver License Number

Element Definition:

A unique set of alphanumeric characters assigned by the authorizing agent issuing a driver license to this person.

Attribute Values:

Specify:

- [Not Licensed](#)
- [License Number](#)
- [No Driver Present or Unknown if Driver Present](#)
- [Unknown](#)

Remarks:

Complete this element for all drivers. The [AAMVA D.20](#) is the national standard for driver licensing data fields. DRIVER LICENSE NUMBER should be used in conjunction with other data elements from the crash report to retrieve information from the State driver licensing file, including the license class, status, endorsements, and restrictions, which are critical for FMCSA reporting. See [Chapter 10: Traffic Records Data Integration](#) for details.

- **Not Licensed** – This driver did not have a valid driver’s license at the time of the crash.
- **License Number** – specify the unique set of alphanumeric characters issued to this driver on their driver license.
- **No Driver Present or Unknown if Driver Present** - used when there was no driver in this vehicle or when it is unknown if there was a driver present in this vehicle at the time of the crash. [DRIVER PRESENCE](#) must equal **No Driver Present or Not Applicable**.
- **Unknown** - the license number for this driver cannot be determined.

Highway Safety Rationale:

This element is critical in integrating the State crash and driver license files. It is also used for law enforcement activities and crash investigation.

Implementation Suggestions:

- DRIVER LICENSE NUMBER should be used in conjunction with other data elements from the crash report to retrieve information from the State driver licensing file, including the license class, status, endorsements, and restrictions, which are critical for FMCSA reporting. See [Chapter 10: Traffic Records Data Integration](#) for details.
- If [DRIVER PRESENCE](#) equals **No Driver Present or Not Applicable**, then autofill DRIVER LICENSE NUMBER with **No Driver Present or Unknown if Driver Present**.
- If [DRIVER LICENSE JURISDICTION](#) Subfields 1 and 2 equal **Not Licensed**, then autofill DRIVER LICENSE NUMBER with **Not Licensed**.

Validation Rules:

None

Alignment Considerations for DRIVER LICENSE NUMBER

None

D5. Speeding-Related

Element Definition:

The investigating officer indicates that the driver involved in the crash was speeding.

Attribute Values:

Select one:

- [No](#)
- [Yes, Racing](#)
- [Yes, Exceeded Speed Limit](#)
- [Yes, Too Fast for Conditions](#)
- [Unknown](#)

Remarks:

Complete this element for all drivers.

Note about attribute hierarchy: If more than one condition was present at the same time, select the attribute that is higher on the list. For example, if the driver was traveling too fast for conditions AND exceeding the speed limit, select **Yes, Exceeded Speed Limit**, because it is higher on the list than **Yes, Too Fast for Conditions**.

- **No** – The driver of this vehicle was not racing, exceeding the speed limit, or traveling too fast for conditions.
- **Yes, Racing** – When two or more motor vehicles are engaged in a speed-related competition on the [trafficway](#). This attribute takes precedence over [Yes, Exceeded Speed Limit](#) and [Yes, Too Fast for Conditions](#).
- **Yes, Exceeded Speed Limit** – When a motor vehicle is traveling above the posted or statutory speed limit on certain designated roadways and/or by certain types of vehicles (e.g., for trucks, buses, motorcycles, on bridge, at night, in school zone). This attribute takes precedence over [Yes, Too Fast for Conditions](#). If the driver was racing in addition to exceeding the speed limit, then select [Yes, Racing](#).
- **Yes, Too Fast for Conditions** – Traveling at a speed that was unsafe for the [road](#), weather, traffic, or other environmental conditions at the time. If the driver was also exceeding the speed limit, then select [Yes, Exceeded Speed Limit](#). If the driver was also racing, then select [Yes, Racing](#).
- **Unknown** – it cannot be determined if the driver of this vehicle was racing, exceeding the speed limit, or traveling too fast for conditions.

Highway Safety Rationale:

This data element is important to identify behavioral concerns and informs law enforcement activities and infrastructure design programs.

Implementation Suggestions:

If [DRIVER PRESENCE](#) equals **No Driver Present or Not Applicable**, then autofill SPEEDING-RELATED with **No**.

Validation Rules:

None

Alignment Considerations for SPEEDING-RELATED

1. If the State has a checkbox to indicate “Yes” if checked and “No” if not checked, neither align to the MMUCC data element. See [Uniformity Alignment Rule 5](#) for more information.

D6. Driver Distraction

Element Definition:

Identifies this driver's attention to driving prior to the driver's realization of an impending critical event or just prior to impact if realization of an impending critical event does not occur. This element reports on the presence of any distractions that may or may not have contributed to the crash. Distraction from the primary task of driving occurs when drivers divert their attention from the driving task to some other activity.

Attribute Values:

This is a multi-selection data element. Allow a minimum system capability of two selections (see [Implementation Suggestions](#)).

- [Not Distracted](#)
- [Texting or Manually Operating a Mobile Electronic Device](#)
- [Talking or Listening on Hands-Free Mobile Electronic Device](#)
- [Talking or Listening on Handheld Mobile Electronic Device](#)
- [Unknown Use of a Mobile Electronic Device](#)
- [Vehicle-Integrated Device or Controls](#)
- [Passenger\(s\)](#)
- [Other Inside Vehicle \(e.g., eating, smoking\)](#)
- [Other Outside Vehicle \(e.g., outside person, object, or event\)](#)
- [Distracted, Details Unknown](#)
- [No Driver Present or Unknown if Driver Present](#)
- [Unknown if Distracted](#)

Remarks:

Complete this element for all drivers. See also [RELATED FACTORS – DRIVER LEVEL](#) attribute [Careless Driving, Inattentive Operation, Improper Driving, or Driving Without Due Care](#) to capture if this driver exhibited any of these behaviors.

NOTE: "Presence" is not the same as an activity associated with the person or item. The driver needs to be engaged in some activity associated with the thing that is causing a distraction. Just having a mobile phone, sandwich, passenger, etc., in the vehicle isn't a distraction. The distraction is when the driver's attention is diverted from driving to using the phone, eating the sandwich, turning around to talk to a backseat passenger, etc. The source of the distraction doesn't have to be a contributing factor in the crash, but it does have to be in use, engaged, the person was doing it at the time, etc., for it to have been a distraction.

- **Not Distracted** - the driver was completely attentive to driving.
- **Texting or Manually Operating a Mobile Electronic Device** - used when the driver was dialing or text messaging (texting) on a mobile phone or mobile electronic device. Any manual button or control actuation on the device qualifies. This includes dialing or text messaging on any wireless e-mail device.
- **Talking or Listening on Hands-Free Mobile Electronic Device** - used when the driver was talking or listening on a “hands-free” or Bluetooth-enabled mobile phone or other electronic device.
- **Talking or Listening on Handheld Mobile Electronic Device** - used when the driver was talking or listening on a handheld mobile phone or other electronic device.
- **Unknown Use of a Mobile Electronic Device** – used when the driver was distracted from the driving task due to reaching for or using a mobile phone or other mobile electronic device, but it is unknown what they were doing with the device just prior to the crash.
- **Vehicle-Integrated Device or Controls** - used when the driver is distracted from the driving task while adjusting the climate controls, audio, headlights, interior lights, windows, door locks, mirrors, seat, seat belt, steering wheel, on-board navigational and/or infotainment system, etc.
- **Passenger(s)** - used when the driver was distracted by a passenger in this driver’s vehicle prior to realization of impending danger. Examples of passenger distraction include conversing with or looking at a passenger (e.g., baby or child in back seat). Excludes pets, see [Other Inside Vehicle \(e.g., eating, smoking\)](#).
- **Other Inside Vehicle (e.g., eating, smoking)** – used when the driver was distracted by something inside this vehicle other than a mobile electronic device, a passenger, or a vehicle-integrated device or control. For example, eating, drinking, smoking, shaving, a flying insect, a moving pet, etc. or involved in a related activity (e.g., lighting a cigarette, throwing out a used food wrapper, calming a restless dog).
- **Other Outside Vehicle (e.g., outside person, object, or event)** - used when the driver was distracted by an outside person, object, or event prior to realization of impending danger. Examples include animals on the roadside, a previous crash, or non-traffic related signs (e.g., advertisements, electronic billboards). Do not use this attribute for a person, object, or event that the driver has recognized and for which the driver has taken some action (e.g., avoiding a pedestrian on the roadway).
- **Distracted, Details Unknown** – It is known that this driver was distracted from the driving task, but specific distractions cannot be identified.
- **No Driver Present or Unknown if Driver Present** - used when there was no driver in this vehicle or when it is unknown if there was a driver present in this vehicle at the time of the crash. [DRIVER PRESENCE](#) must equal **No Driver Present or Not Applicable**.
- **Unknown if Distracted** – used when it cannot be determined if this driver was distracted at the time of the crash.

Highway Safety Rationale:

This data element is important to identify behavioral concerns and informs law enforcement activities, legislative actions, and vehicle design.

Implementation Suggestions:

- Although the minimum system capability requirement for this data element is two selections, NHTSA recommends this as a “Select All That Apply” data element.
- If [DRIVER PRESENCE](#) equals **No Driver Present or Not Applicable**, then autofill this element with **No Driver Present or Unknown if Driver Present**.

Validation Rules:

None

Alignment Considerations for DRIVER DISTRACTION:

1. The MMUCC element identifies distractions related to this driver at the time of the crash regardless of whether the distractions contributed to the crash. If the State’s element identifies only distractions that contributed to the crash, the amount of data the State collects for that element differs from the MMUCC guidance, indicating that the State data element is incomplete. See [Chapter 12, Section 12.4.2 MMUCC Completeness](#).

D7. Attempted Avoidance Maneuver

Element Definition:

Identifies movements or actions taken by the driver after the driver realizes there is an impending danger. This element assesses what the driver's action was in response to this realization.

Attribute Values:

Select one:

- [No Avoidance Maneuver](#)
- [Accelerating](#)
- [Accelerating and Steering Left](#)
- [Accelerating and Steering Right](#)
- [Braking](#)
- [Braking and Steering Left](#)
- [Braking and Steering Right](#)
- [Braking and Unknown Steering Direction](#)
- [Releasing Brakes](#)
- [Steering Left](#)
- [Steering Right](#)
- [Lay Down Motorcycle](#)
- [Other Actions \(explain in narrative\)](#)
- [No Driver Present or Unknown if Driver Present](#)
- [Unknown](#)

Remarks:

Complete this element for all drivers. When there was a known action (e.g., braking), but it cannot be determined whether there was more than one action (e.g., braking and steering left), default to the known action (e.g., braking).

- **No Avoidance Maneuver** – used when the driver did not attempt any evasive (pre-impact) maneuvers. Examples of when a driver may not attempt an avoidance maneuver:
 - The vehicle is stopped in traffic.
 - The driver did not have time to react.
 - The driver was asleep or unconscious.
 - The driver did not see or recognize there was anything to avoid.

- **Accelerating** – used when the driver sped up the vehicle in an attempt to avoid an impending danger. If the driver also steered the vehicle to the left while accelerating, use [Accelerating and Steering Left](#). If the driver also steered the vehicle to the right while accelerating, use [Accelerating and Steering Right](#).
- **Accelerating and Steering Left** - used when the driver sped up the vehicle and steered the vehicle to the left in an attempt to avoid an impending danger.
- **Accelerating and Steering Right** - used when the driver sped up the vehicle and steered the vehicle to the right in an attempt to avoid an impending danger.
- **Braking** – used when the driver applied the brakes in an attempt to avoid an impending danger. If the driver also steered the vehicle to the left while braking, use [Braking and Steering Left](#). If the driver also steered the vehicle to the right while braking, use [Braking and Steering Right](#). If the driver also steered the vehicle while braking, but the direction of the steer (left or right) cannot be determined, use [Braking and Unknown Steering Direction](#).
- **Braking and Steering Left** - used when the driver applied the brakes and steered the vehicle to the left in an attempt to avoid an impending danger.
- **Braking and Steering Right** - used when the driver applied the brakes and steered the vehicle to the right in an attempt to avoid an impending danger.
- **Braking and Unknown Steering Direction** - used when the driver applied the brakes and steered the vehicle in an attempt to avoid an impending danger, but the direction of the steer (left or right) cannot be determined.
- **Releasing Brakes** – used when the driver released the brakes in an attempt to avoid an impending danger.
- **Steering Left** – used when the driver steered the vehicle to the left in an attempt to avoid an impending danger. If the driver also applied the vehicle’s brakes while steering left, use [Braking and Steering Left](#). If the driver also sped up the vehicle while steering left, use [Accelerating and Steering Left](#).
- **Steering Right** - used when the driver steered the vehicle to the right in an attempt to avoid an impending danger. If the driver also applied the vehicle’s brakes while steering right, use [Braking and Steering Right](#). If the driver also sped up the vehicle while steering right, use [Accelerating and Steering Right](#).
- **Lay Down Motorcycle** – used when the driver of this vehicle intentionally laid the motorcycle down in an attempt to avoid an impending danger. This attribute may only be used for a driver of a [MOTOR VEHICLE BODY TYPE CATEGORY](#) attribute [2-Wheeled Motorcycle](#).
- **Other Actions (explain in narrative)** – used when the driver attempted some other avoidance maneuver other than the listed attributes for this data element. If this attribute is used, explain the details in the narrative section of the crash report.

- **No Driver Present or Unknown if Driver Present** - is used when there was no driver in this vehicle or when it is unknown if there was a driver present in this vehicle at the time of the crash. [DRIVER PRESENCE](#) must equal **No Driver Present or Not Applicable**.
- **Unknown** – used when it cannot be determined if the driver attempted any avoidance maneuvers in response to an impending danger.

Highway Safety Rationale:

This element identifies what the driver did in reaction to an impending danger, which is important in analyzing crash outcomes.

Implementation Suggestions:

- If the user selects **Other Actions (explain in narrative)**, the State may wish to create a popup window requiring the user to enter an explanation that is then added to the Narrative section.
- If [DRIVER PRESENCE](#) equals **No Driver Present or Not Applicable**, then autofill **ATTEMPTED AVOIDANCE MANEUVER** with **No Driver Present or Unknown if Driver Present**.

Validation Rules:

None

Alignment Considerations for ATTEMPTED AVOIDANCE MANEUVER

1. If the State combines this element and [VEHICLE STATUS PRIOR TO CRITICAL EVENT](#) as one element, then both elements will not align with MMUCC.

D8. Driver's Vision Obscured by

Element Definition:

This data element records impediments to a driver's visual field.

Attribute Values:

This is a multi-selection data element. Allow a minimum system capability of two selections (see [Implementation Suggestions](#)).

- [No Obstruction](#)
- [Rain, Snow, Fog, Smoke, Sand, or Dust](#)
- [Reflected Glare, Bright Sunlight, or Headlights](#)
- [Curve, Hill, or Other Roadway Design Feature](#)
- [Building, Billboard, or Other Structure](#)
- [Trees, Crops, or Vegetation](#)
- [In-Transport Motor Vehicle \(including load\)](#)
- [Not In-Transport Motor Vehicle \(parked or working\)](#)
- [Splash or Spray of Passing Vehicle](#)
- [Frost or Fog on Windshield](#)
- [Vehicle's Exterior Lighting System](#)
- [Obstruction Interior to the Vehicle](#)
- [External Mirrors](#)
- [Broken or Improperly Cleaned Windshield](#)
- [Obstructing Angles on This Vehicle](#)
- [Other Visual Obstruction](#)
- [No Driver Present or Unknown if Driver Present](#)
- [Unknown](#)

Remarks:

Complete this element for all drivers.

- **No Obstruction** - used when there is no indication of a visual obstruction for this driver.
- **Rain, Snow, Fog, Smoke, Sand, or Dust** - used when one or more of these conditions exist AND obstructed the view of the driver. Do not use this attribute when only the vehicle windshield was "fogged" or not properly cleaned (see [Frost or Fog on Windshield](#) or [Broken or Improperly Cleaned Windshield](#)).

- **Reflected Glare, Bright Sunlight, or Headlights** - used when one or more of these conditions obstructed the view of the driver.
- **Curve, Hill, or Other Roadway Design Feature** - used when any of these roadway features or design elements obstructed the view of the driver (e.g., including embankment, sag).
- **Building, Billboard, or Other Structure** - used when any of these manmade structures obstructed the view of the driver (e.g., including traffic signs, poles, signals).
- **Trees, Crops, or Vegetation** - used when any of these natural features obstructed the view of the driver.
- **In-Transport Motor Vehicle (including load)** - used when a vehicle that is in motion or stopped on the roadway obstructed the view of the driver. The vehicle may be but does not have to be a contact vehicle in the case.
- **Not In-Transport Motor Vehicle (parked or working)** - used when a vehicle [parked](#) in a designated parking area or space, stopped in an area off the roadway, or is a [working motor vehicle](#) obstructed the view of the driver. The vehicle may be but does not have to be a contact vehicle in the case.
- **Splash or Spray of Passing Vehicle** - used when this condition obstructed the view of the driver. The splash or spray can come from water or mud; however, the use of this attribute does not require it to be raining at the time of the crash.
- **Frost or Fog on Windshield** - the presence of frost or fog on the windshield obscured this driver's vision. This includes the defrost system being turned off or not operating properly.
- **Vehicle's Exterior Lighting System** - used when this driver's vision was obscured because the exterior lighting system (including headlights, fog lights, etc.) of the driver's vehicle was deficient in some way. This includes being turned off or not operating properly. This response should not be used to describe inadequate lighting systems of other vehicles (e.g., oncoming motor vehicles) or for inadequate highway lighting.
- **Obstruction Interior to the Vehicle** – used when this driver's vision was impaired because of a feature in the interior of their vehicle (including head restraint, rearview mirror, window stickers, sunshades, ornaments, windshield tinting).
- **External Mirrors** - used when an exterior mirror on this driver's vehicle created a visual obstruction.
- **Broken or Improperly Cleaned Windshield** – used when this condition obscured this driver's vision. For a “fogged” or “frosted” windshield, see [Frost or Fog on Windshield](#).
- **Obstructing Angles on This Vehicle** - used when the size or shape of a driver's own vehicle created a visual obstruction (including trailer, vehicle height, blind spot). Not to be confused with visual obstructions from other vehicles (see [In-Transport Motor Vehicle \(including load\)](#) or [Not In-Transport Motor Vehicle \(parked or working\)](#)) or a vehicle's interior components such as head restraints, sunshades, etc. (see [Obstruction Interior to the Vehicle](#)).

- **Other Visual Obstruction** - used when the driver’s vision was obscured by something other than the listed attributes for this data element. For example, an unattached trailer left on the road shoulder.
- **No Driver Present or Unknown if Driver Present** - used when there was no driver in this vehicle or when it is unknown if there was a driver present in this vehicle at the time of the crash. [DRIVER PRESENCE](#) must equal **No Driver Present or Not Applicable**.
- **Unknown** – used when it cannot be determined if anything obscured this driver’s vision.

Highway Safety Rationale:

This element is important to evaluate vehicle design features, infrastructure, and other factors that may limit a driver’s field of vision.

Implementation Suggestions:

- Although the minimum system capability requirement for this data element is two selections, NHTSA recommends this as a “Select All That Apply” data element.
- If [DRIVER PRESENCE](#) equals **No Driver Present or Not Applicable**, then autofill this element with **No Driver Present or Unknown if Driver Present**.

Validation Rules:

None

Alignment Considerations for DRIVERS VISION OBSCURED BY

None

D9. Citations Issued

Element Definition:

The violations, citations, or infractions of the State's vehicle code issued to this driver in this crash, regardless of whether the driver survived the crash.

Attribute Values:

This is a multi-selection data element. Allow a minimum system capability of two selections (see [Implementation Suggestions](#)).

- [None](#)
- [State Citation Code\(s\)](#)
- [Unknown](#)

Remarks:

Complete this element for all drivers.

- **None** used when no citations were issued to this driver.
- **State Citation Code(s)** – list the State citation code(s) issued to this driver.
- **Unknown** used when it cannot be determined if any citations were issued to this driver.

Highway Safety Rationale:

This element is important for evaluation of safety laws and enforcement practices. This information is important for integrating the State crash files with the State driver license, citation, and adjudication files.

Implementation Suggestions:

- Although the minimum system capability requirement for this data element is two selections, NHTSA recommends this as a “Select All That Apply” data element.
- Provide users with a searchable drop-down list of the State's citation codes.
- States are encouraged to collect as many additional citation codes as they deem appropriate and necessary.

Validation Rules:

If CITATIONS ISSUED does not = **None** or **Unknown**, then value must = a valid citation in the State citation tracking system.

Alignment Considerations for CITATIONS ISSUED:

None

D10. Related Factors – Driver Level

Element Definition:

Identifies factors related to this driver.

Attribute Values:

This is a multi-selection data element. Allow a minimum system capability of four selections (see [Implementation Suggestions](#)).

Group 1: No Driver, None, Unknown

- [Not Applicable \(no driver\)](#)
- [None](#)
- [Unknown](#)

Group 2: Police Related

- [Fleeing or Evading Law Enforcement](#)
- [Police Officer in Pursuit](#)

Group 3: Move-Over-Related

- [Attempted to Move Over or Slow Down as Required by Move Over Law](#)
- [Failed to Move Over or Slow Down as Required by Move Over Law](#)

Group 4: Maneuver or Movement Related

- [Looked But Did Not See](#)
- [Failure to Obey Traffic Control Devices](#)
- [Failed to Yield Right-of-Way](#)
- [Followed Too Closely](#)
- [Improper Passing](#)
- [Improper Turn](#)
- [Driving Wrong Way on One-Way Trafficway](#)
- [Driving on Wrong Side of Two-Way Trafficway](#)
- [Traveling on Prohibited Trafficways](#)
- [Illegal Driving on Shoulder, Median, Roadside, etc.](#)
- [Stopped in Roadway \(vehicle not abandoned\)](#)
- [Failed to Keep in Proper Lane](#)
- [Overcorrecting](#)
- [Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist, or Animal in Roadway, etc.](#)

Group 5: Behavior Related

- [Careless Driving, Inattentive Operation, Improper Driving, or Driving Without Due Care](#)
- [Operating the Vehicle in an Erratic, Reckless, or Negligent Manner](#)
- [Aggressive Driving](#)
- [Road Rage](#)

Group 6: Vehicle and Equipment Related

- [Overloading or Improper Loading of Vehicle with Passengers or Cargo](#)
- [Towing or Pushing Improperly](#)
- [Failure to Use Vehicle Lights Properly](#)
- [Operating Without Required Equipment](#)
- [Opening Door, Trunk, or Hatch into Traffic](#)
- [Driver Required to Use Interlock Device](#)

Group 7: Condition Related

- [Drowsy, Asleep, or Fatigued](#)
- [Ill \(sick\) or Fainted](#)
- [Physical Impairment](#)
- [Alcohol and/or Drug Test Refused](#)
- [Under the Influence of Medication, Drugs, and/or Alcohol](#)

Remarks:

Complete this element for all drivers. This data element is based on the judgment of the law enforcement officer investigating the crash and need not match [CITATIONS ISSUED](#).

Group 1: No Driver, None, Unknown

- **Not Applicable (no driver)** - used when there was no driver in this vehicle at the time of the crash. [DRIVER PRESENCE](#) must equal **No Driver Present or Not Applicable**.
- **None** - used when none of the related factors are applicable for this driver.
- **Unknown** - used when it cannot be determined if any of the attributes for this data element apply to this driver.

Group 2: Police Related

- **Fleeing or Evading Law Enforcement** - used to identify this person was trying to escape and/or avoid the police.
- **Police Officer in Pursuit** - used when this driver is a police officer engaged in a “pursuit” that is active at the time of crash. [SPECIAL FUNCTION](#) must be coded as [Law](#)

[Enforcement](#) for this person. Also see [RELATED FACTORS—CRASH LEVEL](#) attribute [Police Pursuit Involved](#).

Definition of Police Pursuit: A pursuit is an event that is initiated when a law enforcement officer operating an authorized emergency vehicle gives notice to stop (either through the use of visual or audible emergency signals or a combination of emergency devices) to a motorist whom the officer is attempting to apprehend, and that motorist fails to comply with the signal by either maintaining speed, increasing speed, or taking other evasive action to elude the officer's continued attempts to stop the motorist. A pursuit is terminated when the motorist stops, or when the attempt to apprehend is discontinued by the officer, or at the direction of a competent authority.

Group 3: Move-Over-Related

- **Attempted to Move Over or Slow Down as Required by Move Over Law** – This driver tried to move over or slow down when passing a stopped emergency or maintenance vehicle or personnel and this may have contributed to the crash. Whether the driver's actions were successful is not relevant. The stopped emergency or maintenance vehicle may or may not have been displaying flashing warning lights.
- **Failed to Move Over or Slow Down as Required by Move Over Law** - This driver did not try to move over or slow down when passing a stopped emergency or maintenance vehicle or personnel and this may have contributed to the crash. The stopped emergency or maintenance vehicle may or may not have been displaying flashing warning lights.

Group 4: Maneuver or Movement Related

- **Looked But Did Not See** - used when the driver is paying attention to driving (not distracted), but does not see the relevant vehicle, object, etc. This attribute should be used when a driver has an opportunity to take some action prior to impact, but the driver takes no action, and no distractions apply under [DRIVER DISTRACTION](#). Examples:
 - A driver looks before changing lanes but does not see another vehicle in the driver's "blind spot."
 - A driver looks before passing through an intersection but does not see a motorcycle crossing the intersection.
 - A driver looks before turning but does not see a pedestrian in the crosswalk.
- **Failure to Obey Traffic Control Devices** - used when this driver failed to obey an applicable traffic control device (sign or signal), traffic officer, or traffic safety zone laws (e.g., school zone, work zone). This attribute does NOT apply if this driver is in a police car, ambulance, or fire apparatus with active lights and/or sirens (also see [SPECIAL FUNCTION](#) for this person). If a driver stops as required but then fails to yield, use the attribute [Failed to Yield Right-of-Way](#) and not **Failure to Obey Traffic Control Devices**. For examples of traffic control devices, see [TRAFFIC CONTROL DEVICE](#).
- **Failed to Yield Right-of-Way** – driver failed to yield right-of-way to another motor vehicle or non-occupant as required.

- **Followed Too Closely** – this driver was positioned at a distance behind another motor vehicle or non-occupant that was too close to permit safe response to any change in movement or behavior by the other motor vehicle or non-occupant.
- **Improper Passing** - driver had completed or was passing in a way that was unsafe, poorly executed, or prohibited. Examples include unsafety passing on the right, passing a stopped school bus, or passing where prohibited by signs or pavement markings (i.e., mainly violations as designated by traffic controls).
- **Improper Turn** - driver completed or was making a turn that was unsafe, poorly executed, or prohibited.
- **Driving Wrong Way on One-Way Trafficway** - used when this driver was driving in the wrong direction on a one-way trafficway, whether intentional or unintentional. If this is a divided trafficway, although each side is “one-way,” driving against traffic should be captured in the attribute [Driving on Wrong Side of Two-Way Trafficway](#).
- **Driving on Wrong Side of Two-Way Trafficway** - used when this driver was established in and driving on the wrong side of the trafficway, whether intentional or unintentional. “Unintentional” means they may not be aware they are on the wrong side. For situations where a driver unintentionally crosses the centerline, see [Failed to Keep in Proper Lane](#). For situations where the vehicle is on the wrong side because of an improper passing maneuver, see [Improper Passing](#). Examples:
 - Driving the wrong way or on the wrong side of a divided trafficway.
 - Driving on the wrong side of an undivided trafficway.
 - Driving the wrong way in a circular intersection.
 - Driving on the left half of an approaching bridge or tunnel.
- **Traveling on Prohibited Trafficways** - used when this driver was driving on an open trafficway that prohibited travel for the kind of vehicle they were operating. For example, driving a moped on an interstate, driving a truck where prohibited, or operating a vehicle with hazardous materials cargo where prohibited. For trucks or slower vehicles using the left lane when prohibited, use [Failed to Keep in Proper Lane](#).
- **Illegal Driving on Shoulder, Median, Roadside, etc.** - used when this driver was intentionally driving illegally in a location off the roadway (e.g., shoulder, median, roadside). This attribute should not be used when the vehicle enters one of these locations as part of an avoidance maneuver or as a result of a critical or harmful event. Also do not use this value for a vehicle that leaves its lane at the direction of a flagman or police officer.
- **Stopped in Roadway (vehicle not abandoned)** - used when this driver stopped their vehicle in the roadway (travel lanes). It is intended to capture an unusual condition where a vehicle is stopped in the roadway with the driver present in the vehicle. If the driver has gotten out of the vehicle (i.e., not in the vehicle at the time of this crash), use the attribute [Not Applicable \(no driver\)](#). It includes both a driver in the process of stopping the vehicle and when a driver has completely stopped the vehicle. It excludes typical

stopping situations such as stopping in or for traffic, waiting to turn, or stopping for a traffic control. Examples:

- A vehicle disabled in a prior crash.
- A vehicle with a flat tire.
- A vehicle that stops for debris in the roadway
- **Failed to Keep in Proper Lane** – this driver did not maintain position in appropriate travel lane.
- **Overcorrecting** - used when this driver steered the wheel more than what was necessary to correct the vehicle's travel path, typically resulting in a loss of control.
- **Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist, or Animal in Roadway, etc.** – Defensive driver action to defend against an apparent danger in, on, or due to the condition of the [roadway](#) or the presence of a motor vehicle, object, non-motorist, or animal in the roadway to avoid a crash.

Group 5: Behavior Related

- **Careless Driving, Inattentive Operation, Improper Driving, or Driving Without Due Care** - used when this driver was exhibiting any of these behaviors. If this driver was also distracted, include the applicable distraction in [DRIVER DISTRACTION](#). If this driver also drove the vehicle aggressively, see [Aggressive Driving](#).
- **Operating the Vehicle in an Erratic, Reckless, or Negligent Manner** - used when the driver is engaged in a driving behavior with willful or wanton disregard for safety. If this driver also operated their vehicle aggressively, see [Aggressive Driving](#). Examples:
 - Driving erratically.
 - Erratic lane changing.
 - Suddenly changing speed.
 - Motorcyclist doing wheelies (aka "popping" wheelies)
- **Aggressive Driving** - used when the driver operated the vehicle with a disregard for safety and endangered themselves, other people, or property. Common violations include speeding, tailgating, suddenly changing lanes without warning, cutting off other drivers, and failing to yield the right of way. If this driver also exhibited road rage behavior, see [Road Rage](#).
- **Road Rage** - used when this driver exhibited road rage behavior. Road rage is when a driver experiences extreme aggression or anger intending to cause harm to others. Note that a deliberate act that results in a harmful event (or events) is not considered an unstabilized situation and thus is not a crash. A crash must have both an unstabilized situation (unintended event) and at least one harmful event that is separate from or beyond what was intended by the deliberate act. If this driver also operated their vehicle aggressively, see [Aggressive Driving](#). Examples of road rage driving behavior by a contact vehicle driver resulting in a motor vehicle traffic crash:

- One driver tries to force another driver off the roadway (deliberate act), and subsequently results in the two vehicles colliding. Another vehicle not associated with the deliberate act comes upon and strikes both vehicles (unintended event).
- A driver tailgating dangerously close intentionally nudges the bumper of the vehicle in front (deliberate act), resulting in the driver losing control, and striking a third vehicle in the opposing travel lanes (unintended event).

Group 6: Vehicle and Equipment Related

- **Overloading or Improper Loading of Vehicle with Passengers or Cargo** - used when this driver improperly loaded the vehicle occupants or cargo into or on the vehicle.
Examples:
 - The vehicle had more than three passengers in the front seat,
 - There were people riding on the exterior of the vehicle,
 - The vehicle was carrying occupants that were sitting or standing on the rails, tailgate of a pickup, or improperly sitting in the bed of a pickup,
 - More than one person secured in a belt restraint,
 - An unsecured or uncovered load violation,
 - The vehicle's trunk was open with extra-large cargo protruding,
 - The vehicle was overweight, over length, or illegally or improperly oversize.
- **Towing or Pushing Improperly** - used when this driver was operating the vehicle that was towing another vehicle with an improper connection (e.g., by rope or cable) or was pushing another vehicle in a dangerous manner (e.g., bumper to bumper).
- **Failure to Use Vehicle Lights Properly** - used when this driver failed to use the vehicle's external lights properly. Examples:
 - The driver failed to turn on the vehicle's headlights at night or in a tunnel.
 - The driver failed to turn on the motorcycle's headlights as required.
 - The driver failed to dim the vehicle's high beams.
 - The driver used fog lights when prohibited.
 - The driver was using aftermarket mounted floodlights.
- **Operating Without Required Equipment** - used when this driver was operating the vehicle without a required piece of equipment or with required equipment being inoperable. This does NOT include when an available restraint (e.g., seat belts, child restraints) or motorcycle helmet was not used (see [RESTRAINT SYSTEM USE](#) and [HELMET USE](#)). Examples:
 - The driver was operating the vehicle with defective or no lamps, brakes, mirrors, muffler, flares, wipers, horn, snow tires, chains, etc.
 - A driver failed to have extended side mirrors on the vehicle when required (e.g., when pulling a trailer).

- A driver driving in snow without snow tires on the vehicle when required.
- The driver was operating a vehicle where the seat belts have been removed.
- The driver failed to have a child safety seat (or seats) in the vehicle when required for the occupant (or occupants).
- A motorcycle rider did not have a helmet with them when required by law.
- The driver was operating a vehicle where an air bag (or air bags) was (or were) not reinstalled after a prior crash.
- **Opening Door, Trunk, or Hatch into Traffic** - used when this driver improperly opened a door, the trunk, or a hatch into traffic.
- **Driver Required to Use Interlock Device** - used for drivers whose licenses have been suspended or revoked for certain alcohol- or drug-related offenses who possess ignition interlock restricted licenses. These licenses permit them to drive if they use an ignition interlock device installed in their car that tests breath for alcohol consumption.

Group 7: Condition Related

- **Drowsy, Asleep, or Fatigued** – used when this driver was drowsy or asleep or was operating in a reduced physical or mental capacity due to weariness, medication, or other drugs.
- **Ill (sick) or Fainted** - used when this driver was ill (e.g., seizures, heart attack, vomiting) or lost consciousness. This attribute applies even if the source of the illness or loss of consciousness is alcohol or drug related.
- **Physical Impairment** – used when this driver had a physical impairment that isn't a listed attribute in this data element (e.g., this driver was impaired due to a previous injury).
- **Alcohol and/or Drug Test Refused** - used when this driver refused to take an alcohol and/or a drug test. Refusing a test does not necessarily mean that a test was not given. It is possible that after a refusal, the officer may have obtained a warrant or some other authorization to administer a test post-refusal. This includes when the person initially refuses and later consents. Because of this, it is possible to select **Alcohol and/or Drug Test Refused** and also record an actual test with results for the same person.
- **Under the Influence of Medication, Drugs, and/or Alcohol** – used when this driver was under the influence of medication, drugs, and/or alcohol.

Highway Safety Rationale:

This element is important to identify and track ongoing or emerging issues associated with these driver behaviors and other characteristics.

Implementation Suggestions:

- Although the minimum system capability requirement for this data element is four selections, NHTSA recommends this as a “Select All That Apply” data element.

- If [DRIVER PRESENCE](#) equals **No Driver Present or Not Applicable**, then autofill this element with **Not Applicable (no driver)**.
- The attribute groupings are suggestions for nested drop-down lists. The State should organize the attributes in a way that is meaningful to the State's users. See [Chapter 11: Designing User-Centered Crash Reporting Systems](#) for more information.

Validation Rules:

- If at least one RELATED FACTORS - DRIVER LEVEL = **Failed to Move Over or Slow Down as Required by Move Over Law**, then RELATED FACTORS - DRIVER LEVEL must not also = **Attempted to Move Over or Slow Down as Required by Move Over Law**.
- If at least one RELATED FACTORS - DRIVER LEVEL = **Attempted to Move Over or Slow Down as Required by Move Over Law**, then RELATED FACTORS - DRIVER LEVEL must not also = **Failed to Move Over or Slow Down as Required by Move Over Law**.
- If at least one RELATED FACTORS - DRIVER LEVEL = **Improper Turn**, then RELATED FACTORS - DRIVER LEVEL should also = **Failed to Yield Right-of-Way**.

Alignment Considerations for RELATED FACTORS - DRIVER LEVEL

None

Chapter 7: Person Data Elements

The person data elements describe the characteristics, actions, and consequences to the people involved in the crash. Data elements in this chapter are given the element identifier **P** (e.g., P1, P2, P3).

Complete these data elements for all people in the crash (all [PERSON TYPE](#) attributes).

- [P1. Person Number](#)
- [P2. Name of Person Involved](#)
- [P3. Date of Birth](#)
- [P4. Sex or Gender](#)
- [P5. Person Type](#)
- [P6. Special Function](#)
- [P7. Injury Status](#)
- [P8. Transported to First Medical Facility by](#)
- [P9. EMS Response Agency](#)
- [P10. Medical Facility Receiving Patient](#)
- [P11. EMS UUID](#)

Complete these data elements for all motor vehicle occupants ([PERSON TYPE](#) attributes **Driver of a Motor Vehicle In-Transport, Passenger of a Motor Vehicle In-Transport, Occupant of Motor Vehicle Not In-Transport, and Unknown Occupant Type in a Motor Vehicle In-Transport**).

- [P12. Occupant's Motor Vehicle Unit Number](#)
- [P13. Seating Position](#)
- [P14. Restraint Systems Use](#)
- [P15. Helmet Use](#)
- [P16. Air Bag Deployed](#)
- [P17. Ejection](#)

Complete these data elements for all drivers and non-motorists ([PERSON TYPE](#) attributes **Driver of a Motor Vehicle In-Transport; Bicyclist; Other Cyclist; Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying; Pedestrian on Personal Conveyance; Pedestrian in or on a Building; Occupant of a Non-Motor Vehicle Transport Device; and Unknown Type of Non-Motorist**).

- [P18. Law Enforcement Suspects Alcohol Involvement](#)
- [P19. Alcohol Test](#)
- [P20. Law Enforcement Suspects Drug Involvement](#)

P1. Person Number

Element Definition:

Identifies a number for the motor vehicle occupant in the motor vehicle they occupied, or for each non-motorist, in consecutive order.

Attribute Values:

- Assigned Number

Remarks:

Complete this element for all people in the crash (motor vehicle occupants and non-motorists).

Highway Safety Rationale:

This data element uniquely identifies each person involved in the crash and helps facilitate integration with other traffic records data systems.

Implementation Suggestions:

- This number can be computer-generated.
- The State may wish to include this PERSON NUMBER in the driver information to link the driver to the appropriate person record.

Validation Rules:

None

Alignment Considerations for PERSON NUMBER

None

P2. Name of Person Involved

Element Definition:

The full name of the person involved in the crash.

Attribute Values:

Specify or select **Unknown:**

- Name
- Unknown

Remarks:

Complete this element for all motor vehicle occupants and non-motorists. When possible, obtain this information from the driver license.

Highway Safety Rationale:

This data element helps facilitate integration with other traffic records data systems. It is also used for law enforcement activities and crash investigation.

Implementation Suggestions:

- NAME OF PERSON INVOLVED can be used in conjunction with other data elements from the crash report to retrieve information from other traffic records data systems. See [Chapter 10: Traffic Records Data Integration](#) for details.
- Collecting the person's name as three distinct fields can help data linkage with other datasets. Consider collecting separately:
 - Last Name
 - First Name
 - Middle Initial or Name

Validation Rules:

None

Alignment Considerations for NAME OF PERSON INVOLVED

None

P3. Date of Birth

Element Definition:

The year, month, and day of birth of the person involved in this crash.

Attribute Values:

Specify or select **Unknown**:

- Date of Birth
- Unknown

Remarks:

Complete this element for all motor vehicle occupants and non-motorists.

Highway Safety Rationale:

This data element is used for problem identification and to assess the effectiveness of behavioral traffic safety programs by age groups. This element also helps facilitate integration with other traffic records data systems.

Implementation Suggestions:

- Age can be derived using the DATE OF BIRTH and [CRASH DATE](#).
- DATE OF BIRTH can be used in conjunction with other data elements from the crash report to retrieve information from other traffic records data systems. See [Chapter 10: Traffic Records Data Integration](#) for details.
- The State may wish to have a calendar interface for the officer to select the date.
- The State may wish to store as ISO standard: yyyy-mm-dd.
- The State could separate Year, Month, and Day into subfields.

Validation Rules:

None

Alignment Considerations for DATE OF BIRTH

1. If the State separates Year, Month, and Day into subfields, this *may* align with the MMUCC element.
2. States *may* align to the MMUCC attribute **Unknown** if officers are instructed to indicate unknown values (e.g., “UNK,” “99”) in the text field. See [Uniformity Alignment Rule 14](#) for more information.

P4. Sex or Gender

Element Definition:

The sex or gender of the person involved in the crash.

Attribute Values:

Select one:

- Female
- Male
- Other (e.g., “X,” non-binary, not specified)
- Unknown

Remarks:

Complete this element for all motor vehicle occupants and non-motorists.

Highway Safety Rationale:

This data element is used for problem identification and to assess the effectiveness of behavioral traffic safety programs by sex or gender.

Implementation Suggestions:

- For in-State drivers, use a scanner to pull this information from the driver license or an interface with the State driver system.
- If auto filled by an interface or scan, make sure the field is editable to the officers.

Validation Rules:

None

Alignment Considerations for SEX OR GENDER

1. An open text field “Driver Sex” alone is insufficient. See [Uniformity Alignment Rule 6](#) for more information.

P5. Person Type

Element Definition:

The role of this person involved in the crash.

Attribute Values:

Select one:

Group 1: Motorist

- [Driver of a Motor Vehicle In-Transport](#)
- [Passenger of a Motor Vehicle In-Transport](#)
- [Occupant of Motor Vehicle Not In-Transport](#)
- [Unknown Occupant Type in a Motor Vehicle In-Transport](#)

Group 2: Non-Motorist²

- [Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying](#)
- [Bicyclist](#)
- [Other Cyclist](#)
- [Pedestrian on Personal Conveyance](#)
- [Pedestrian in or on a Building](#)
- [Occupant of a Non-Motor Vehicle Transport Device](#)
- [Unknown Type of Non-Motorist](#)

Remarks:

Complete this element for all motor vehicle occupants and non-motorists. An involved person in a crash must maintain PERSON TYPE during the crash. Once the [unstabilized situation](#) begins, a person cannot change PERSON TYPE until the situation stabilizes. For example, people ejected or who fall from a vehicle in this crash are still considered occupants for the duration of the unstabilized situation.

Group 1: Motorist

A motorist is any occupant of a motor vehicle, whether in-transport, parked, or working (see [MOTOR VEHICLE UNIT TYPE](#)). This includes drivers and passengers of motor vehicles in-transport, occupants of motor vehicles not in-transport (i.e., parked or working), and unknown occupants of motor vehicles in-transport.

² If a non-motorist attribute is selected, the [Non-Motorist Data Elements](#) must be completed.

- **Driver of a Motor Vehicle In-Transport** – occupant who is in actual physical control of a motor vehicle or, for an out-of-control motor vehicle, an occupant who was in control until control was lost.
- **Passenger of a Motor Vehicle In-Transport** – occupant of a motor vehicle in-transport other than the driver.
- **Occupant of a Motor Vehicle Not In-Transport** - used for any occupant of a motor vehicle not in-transport (i.e., [MOTOR VEHICLE UNIT TYPE](#) attributes [Parked Motor Vehicle](#) or [Working Motor Vehicle](#)) including someone sitting in the driver's seat position.
- **Unknown Occupant Type in a Motor Vehicle In-Transport** used when it cannot be determined if the person was the driver or passenger, but it is known that the person was an occupant of a motor vehicle in-transport.

Group 2: Non-Motorist

A non-motorist is any person who is not an occupant of a motor vehicle. This includes pedestrians, cyclists, occupants of non-motor vehicle transport devices, and unknown types of non-motorists.

- **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying** - used for all pedestrians except for those in or on [personal conveyances](#) and [in or on buildings](#). This attribute includes a person pushing a vehicle or being carried by another pedestrian.
- **Bicyclist** - any person on a device composed of 2 wheels held in a frame one behind the other, propelled by foot pedals, and steered with handlebars attached to the front wheel. This includes those solely propelled by human power and those that can be propelled by human power and/or a motor. This includes all people (operator and passengers) on a bicycle and a person being pulled by a bicycle (e.g., in a wagon or bike trailer).
- **Other Cyclist** – Non-motorist using a device propelled by pedaling (by foot, hand, or other adaptive means) other than a bicycle. Examples include unicycle, tricycle, pedal car, handcycle, which can be solely propelled by human power and those that can be propelled by human power and/or a motor.
- **Pedestrian on Personal Conveyance** - used for pedestrians using personal conveyances. A personal conveyance is a device used by a pedestrian for personal mobility assistance or recreation. These devices can be motorized or human powered, but not propelled by pedaling. Examples include rideable toys, skates, skateboards, baby carriage, Segway-style devices, wheelchair, mobility scooter. Also see element [NON-MOTORIST DEVICE TYPE](#).
- **Pedestrian in or on a Building** - used for a person inside of or on a building who is struck by a motor vehicle directly or by way of an object set-in-motion (e.g., crash debris as a vehicle penetrates a wall).
- **Occupant of a Non-Motor Vehicle Transport Device** - person riding in an animal-drawn conveyance, on an animal, or an injured occupant of a railway train, etc.

- **Unknown Type of Non-Motorist** - used when it cannot be determined which attribute describes the non-motorist at the time they became involved in the crash. An example would be if it is unknown if the person was on foot or on a skateboard at the time they were struck.

Highway Safety Rationale:

This data element is used for problem identification and to assess the effectiveness of behavioral traffic safety programs by specific classifications of people.

Implementation Suggestions:

The attribute groupings are suggestions for nested drop-down lists. The State should organize the attributes in a way that is meaningful to the State's users. See [Chapter 11: Designing User-Centered Crash Reporting Systems](#) for more information.

Validation Rules

None

Alignment Considerations for PERSON TYPE

1. Pay close attention to the State and MMUCC definitions, and do not map attributes based on name alone. For example, a State attribute "Pedestrian" may not have the same definition as the MMUCC attribute Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying.

P6. Special Function

Element Definition:

Identifies if this person involved in the crash was performing a unique function at the time of the crash.

Attribute Values:

Select one:

- [None](#)
- [Emergency Medical Service \(EMS\)](#)
- [Fire and Rescue](#)
- [Law Enforcement](#)
- [Towing and Recovery](#)
- [Safety Service Patrol](#)
- [Roadway Construction](#)
- [Roadway Maintenance](#)
- [Utility](#)
- [USPS Mail Carrier](#)
- [Other \(explain in narrative\)](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicle occupants and non-motorists. If the person was not performing any of these unique functions at the time of the crash select the attribute [None](#).

Some examples of activities that this person could have been doing when they became an involved person in this crash could include:

- directing traffic,
- setting or retrieving traffic cones,
- mowing the median as part of a road maintenance crew,
- conducting a traffic stop,
- traffic crash scene duties,
- assisting a disabled or abandoned vehicle ,
- incident response duties,
- driving a patient to an emergency medical facility,
- entering or exiting a vehicle,

- sitting in vehicle and writing a traffic ticket,
- delivering mail, or
- fixing power lines.
- **None** – at the time of the crash this person was not performing a unique function.
- **Emergency Medical Services (EMS)** – at the time of the crash this person was performing EMS duties. This includes emergency medical responder (EMR), emergency medical technician (EMT), or paramedic who provides the triage, treatment, and/or transport of crash victims.
- **Fire and Rescue** - at the time of the crash this person was performing fire and/or rescue duties. This includes providing aid by fighting fires, rescuing those involved in crashes from vehicles, and managing hazardous materials incidents.
- **Law Enforcement** – at the time of the crash this person was performing law enforcement duties. This includes directing traffic, conducting a traffic stop, traffic crash scene duties, assisting a disabled or abandoned vehicle, incident response duties, sitting in vehicle and writing a traffic ticket, etc.
- **Towing and Recovery** – at the time of the crash this person was performing towing and recovery duties, including tow service at a traffic incident scene, removing disabled vehicles or parts of vehicles, or parking enforcement.
- **Safety Service Patrol** - at the time of the crash this person was performing short-term emergency response management to traffic incidents, commonly resulting from crashes, debris, or disabled vehicles.
- **Roadway Construction** – at the time of the crash this person was performing roadway construction duties related to the [trafficway](#). This includes long-term stationary construction such as building a new bridge, adding travel lanes to the roadway, extending an existing trafficway, construction of appurtenances, such as guardrails or ditches, surveying activity, installation of utilities within the right-of-way, etc.
- **Roadway Maintenance** – at the time of the crash this person was performing roadway maintenance duties related to the [trafficway](#). This includes work activities such as striping the roadway, median and roadside grass mowing or landscaping, pothole repair, snowplowing, etc.
- **Utility** - at the time of the crash this person was performing stationary work such as repairing or maintaining electric, gas, telephone, cable, water lines, or traffic signals.
- **USPS Mail Carrier** – at the time of the crash this person was performing U.S. Postal Service (USPS) authorized mail carrier duties. This attribute excludes other delivery services (e.g., FedEx, UPS, Amazon).

- **Other (explain in narrative)** - at the time of the crash this person was performing some other unique function, other than the listed attributes for this data element. If this attribute is used, explain the details in the narrative section of the crash report.
- **Unknown** – at the time of the crash it is unknown if this person was performing a unique function.

Highway Safety Rationale:

The tracking of this information will assist State and FHWA’s Traffic Incident Management and Work Zone Safety teams in evaluating countermeasures designed for reducing traffic incidents involving these specific people.

Implementation Suggestions:

If the user selects **Other (explain in narrative)**, the State may wish to create a popup window requiring the user to enter an explanation which is then added to the Narrative section.

Validation Rules

None

Alignment Considerations for SPECIAL FUNCTION

None

P7. Injury Status

Element Definition:

The injury severity level for a person involved in a crash, using the KABCO scale.

Attribute Values:

Select one:

- [\(K\) Fatal Injury](#)
- [\(A\) Suspected Serious Injury](#)
- [\(B\) Suspected Minor Injury](#)
- [\(C\) Possible Injury](#)
- [\(O\) No Apparent Injury](#)

Remarks:

Complete this element for all motor vehicle occupants and non-motorists. The determination of which attribute to assign should be based on the latest information available at the time the report is completed, except as described below for fatal injuries.

Note: FHWA's Safety Performance Management Measures Final Rule (23 CFR 490) and NHTSA's Uniform Procedures for State Highway Safety Grants Program Interim Final Rule (23 CFR 1300) establish a national definition for States to report serious injuries per the MMUCC 5th edition (as updated) **Suspected Serious Injury (A)** attribute found in the INJURY STATUS element. The MMUCC 6th Edition version of this element is unchanged from the 5th Edition.

- **(K) Fatal Injury** - any injury that results in death within 30 days after the motor vehicle crash in which the injury occurred. If the person did not die at the scene but died within 30 days of the motor vehicle crash in which the injury occurred, the injury classification should be changed from the attribute previously assigned to the attribute **(K) Fatal Injury**.
- **(A) Suspected Serious Injury** - any injury other than fatal that results in one or more of the following.
 - Severe laceration resulting in exposure of underlying tissues, muscle, or organs or resulting in significant loss of blood
 - Broken or distorted extremity (arm or leg)
 - Crush injuries
 - Suspected skull, chest, or abdominal injury other than bruises or minor lacerations
 - Significant burns (second and third degree burns over 10 percent or more of the body)
 - Unconsciousness when taken from the crash scene
 - Paralysis

- **(B) Suspected Minor Injury** - any injury that is evident at the scene of the crash, other than fatal or serious injuries. Examples include lump on the head, abrasions, bruises, minor lacerations (cuts on the skin surface with minimal bleeding and no exposure of deeper tissue or muscle).
- **(C) Possible Injury** - any injury reported or claimed that is not a fatal, suspected serious, or suspected minor injury. Examples include momentary loss of consciousness, claim of injury, limping, or complaint of pain or nausea. Possible injuries are those that are reported by the person or are indicated by their behavior, but no wounds or injuries are readily evident.
- **(O) No Apparent Injury** - a situation where there is no reason to believe that the person received any bodily harm from the motor vehicle crash. There is no physical evidence of injury, and the person does not report any change in normal function.

Highway Safety Rationale:

This element is fundamental to crash outcome classification. It is used for problem identification, to assess the effectiveness of traffic safety programs, and to facilitate integration with other traffic records data systems.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for INJURY STATUS

1. To fully align with INJURY STATUS, States must capture the attribute **(A) Suspected Serious Injury** verbatim, including its definition, mutually exclusive of all other attributes. FHWA’s Safety Performance Management Measures Final Rule (23 CFR 490) and NHTSA’s Uniform Procedures for State Highway Safety Grants Program Interim Final Rule (23 CFR 1300) establish a national definition for States to report serious injuries per the MMUCC 5th edition (as updated) **Suspected Serious Injury (A)** attribute found in the INJURY STATUS element.
2. States are only considered compliant and aligned with the **(A) Suspected Serious Injury** definition requirements if they:
 - a. Maintain a statewide crash database capable of accurately aggregating the MMUCC 5th edition (as updated) INJURY STATUS attribute for **Suspected Serious Injury (A)**;
 - b. Ensure the State crash database, data dictionary, and crash report user manual employ the terminology and definitions for the MMUCC 5th edition (as updated) INJURY STATUS attribute **Suspected Serious Injury (A)**;
 - c. Ensure the police crash form employs the MMUCC 5th edition (as updated) INJURY STATUS attribute for **Suspected Serious Injury (A)**; and

- d. Ensure that the seven serious injury types specified in the **Suspected Serious Injury (A)** definition are not included in any of the other attributes listed.
3. States that align completely with the attribute **(A) Suspected Serious Injury** as detailed above but use synonymous terminology for the remaining attributes *may* be able to align (e.g., “Killed” to **(K) Fatal Injury**, “Non-Incapacitating Injury” to **(B) Suspected Minor Injury**, “Complaint of Pain” with **(C) Possible Injury**, and “No Injury” to **(O) No Apparent Injury**) if the definitions match MMUCC.

P8. Transported to First Medical Facility by

Element Definition:

Type of unit providing transport to the first medical facility receiving the patient.

Attribute Values:

Select one:

- [Not Transported for Treatment](#)
- [EMS Air](#)
- [EMS Ground](#)
- [EMS, Unknown if Air or Ground](#)
- [Law Enforcement](#)
- [Transported, Unknown Type](#)
- [Other](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicle occupants and non-motorists. Medical facility refers to an injury treatment facility (hospital, clinic, trauma center, etc.). The treatment facility is the first medical facility to which the person is taken. Use appropriate attribute, even if the person dies en route to the treatment facility. A morgue is not an injury treatment facility.

- **Not Transported for Treatment** - used for:
 - People not taken (or who do not go) to a medical treatment facility or hospital for treatment.
 - People who are declared dead on the scene
 - Uninjured person who rides along with an injured person to a treatment facility.
 - A person who did not go to a treatment facility directly from the scene but was later transported for injuries sustained in the crash.
- **EMS Air** - includes any air transport device. This attribute would be used any time air transport was used for this person. For example, if there is an indication that both air and ground transportation were used, use **EMS Air**.
- **EMS Ground** - used when this person was transported by ambulance or other medical ground service. This includes transport by local, State, Tribal, Territorial, Federally run, or for-profit ambulance or rescue squad vehicles.
- **EMS, Unknown if Air or Ground** - used when a person is transported to a treatment facility by EMS, but it is unknown if it was [EMS Air](#) or [EMS Ground](#).

- **Law Enforcement** – used when a person is transported to a treatment facility by a State, County, Local, or Tribal law enforcement agency vehicle.
- **Transported, Unknown Type** - used when the person was transported to a medical treatment facility, but the type of transport (i.e., EMS, law enforcement, or other) is not known.
- **Other** - used for any other type of transport for treatment, including by private citizens or individuals who drive themselves to the hospital or treatment facility.
- **Unknown** – used when it is unknown whether this person was taken (or went) to a medical treatment facility for treatment.

Highway Safety Rationale:

This element is important to trace patients from the crash scene to the first medical facility and facilitates integration with other traffic records data systems.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for TRANSPORTED TO FIRST MEDICAL FACILITY BY

None

P9. EMS Response Agency

Element Definition:

The agency identifier and run number of the EMS agency that responded to this crash and attended to this person.

Attribute Values:

Subfield 1: EMS Response Agency Identifier (Specify)

- Not Treated
- EMS Response Agency Identifier
- Unknown

Subfield 2: EMS Response Run Number (Specify)

- Not Treated
- EMS Response Run Number
- Unknown

Remarks:

Complete this element for all motor vehicle occupants and non-motorists.

- **EMS Response Agency Identifier** – Identifier for EMS agency that responded to the crash and attended to this person.
- **EMS Response Run Number** – The EMS run number for the EMS agency that responded to this crash and attended to this person. Usually documented on an EMS Run Report.

Highway Safety Rationale:

This element is important to trace patients through the healthcare system and facilitates integration with other traffic records data systems.

Implementation Suggestions:

This information could be obtained through data integration. See [Chapter 10: Traffic Records Data Integration](#) for more information.

Validation Rules:

None

Alignment Considerations for EMS RESPONSE AGENCY

None

P10. Medical Facility Receiving Patient

Element Definition:

Name of the first hospital, clinic, or trauma center that received the patient for treatment.

Attribute Values:

Specify:

- Not Transported
- Name of Medical Facility Receiving Patient
- Unknown

Remarks:

Complete this element for all motor vehicle occupants and non-motorists. Medical facility refers to an injury treatment facility (hospital, clinic, trauma center, etc.). The treatment facility is the first medical facility to which the person is taken. Use appropriate attribute, even if the person dies en route to the treatment facility. A morgue is not an injury treatment facility.

Highway Safety Rationale:

This element is important to trace patients from the crash scene to the first medical facility and facilitates integration with other traffic records data systems.

Implementation Suggestions:

- This information could be obtained through data integration. See [Chapter 10: Traffic Records Data Integration](#) for more information.
- Create a drop-down list of medical facilities in the State.

Validation Rules:

None

Alignment Considerations for MEDICAL FACILITY RECEIVING PATIENT

None

P11. EMS UUID

Element Definition:

The Universally Unique Identifier of the EMS patient care report for this person.

Attribute Values:

Allow a minimum system capability to collect four UUIDs per person (see [Implementation Suggestions](#)).

- Universally Unique Identifier(s) (UUID)

Remarks:

NEMSIS is a national effort to standardize the data collected by EMS agencies. The EMS UUID can serve as the key to linkage between crash data systems and injury surveillance data systems.

A UUID is auto-generated by EMS software when a new patient care report is created. The UUID represents the patient care report, not the patient. It is possible that two or more emergency medical services treat a patient; therefore, each emergency medical service will complete a new patient care report with a new UUID. For example, the fire department, the ground EMS agency, and the air ambulance agency would each fill out its own patient care report, and each of these reports will have a UUID. For this reason, it is recommended that all UUIDs be allowed for collection per person.

Any person who receives emergency medical services will have a patient care report with a UUID. Even an uninjured person who receives an EMS evaluation will have a patient care report with a UUID. A person who is neither evaluated nor receives any emergency medical services may not have a patient care report (e.g., an uninjured person who refuses an EMS evaluation or a person who is obviously deceased on the scene who does not require an EMS evaluation).

Highway Safety Rationale:

This data element is important to trace people receiving medical attention at the scene of the crash through the health care system and facilitate linkage of crash data with EMS data, including NEMSIS.

Implementation Suggestions:

- It is important to note that a UUID can only be auto-exported from the source EMS record and cannot be manually entered. The UUID is a 32-digit hexadecimal number, so it is not feasible for manual entry (e.g., *abdlf8db-817f-43cd-a3ae-41c89de15546*). This field resides in the header of the EMS record and auto-exports into other registries automatically for data linkage purposes.
- Use scanners to auto-populate the UUID (e.g., using a QR code).
- Although the minimum system capability requirement for this data element is four UUIDs per person, NHTSA recommends collecting all UUIDs generated per person.
- The EMS UUID is present in NEMSIS version 3.5.0 and higher and can be used in conjunction with other data elements on the crash report to retrieve information from

other traffic records data systems. See [Chapter 10: Traffic Records Data Integration](#) for details.

Validation Rules:

None

Alignment Considerations for EMS UUID

None

P12. Occupant's Motor Vehicle Unit Number

Element Definition:

The unique number assigned for this crash to the motor vehicle in which this person was an occupant.

Attribute Values:

Specify one:

- Number to indicate in which motor vehicle the occupant was located

Remarks:

Complete this element for all motor vehicle occupants. People ejected or who fall from a vehicle in this crash are still considered occupants for the duration of the [unstabilized situation](#).

Highway Safety Rationale:

This element is used to associate an occupant with the motor vehicle in which they were riding. This is important to evaluate crash outcomes and vehicle design (including occupant protection and other safety systems), and to help facilitate integration with other traffic records data systems.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for OCCUPANT'S MOTOR VEHICLE UNIT NUMBER

None

P13. Seating Position

Element Definition:

The location for this occupant in, on, or outside of the motor vehicle prior to the first event in the [SEQUENCE OF EVENTS](#).

Attribute Values:

Select one:

- Front Row, Left Side
- Front Row, Middle
- Front Row, Right Side
- Front Row, Other
- Front Row, Unknown
- Second Row, Left Side
- Second Row, Middle
- Second Row, Right Side
- Second Row, Other
- Second Row, Unknown
- Third Row, Left Side
- Third Row, Middle
- Third Row, Right Side
- Third Row, Other
- Third Row, Unknown
- Fourth Row, Left Side
- Fourth Row, Middle
- Fourth Row, Right Side
- Fourth Row, Other
- Fourth Row, Unknown
- [Enclosed Passenger or Cargo Area](#)
- [Unenclosed Passenger or Cargo Area](#)
- [Riding on Exterior of Vehicle \(non-trailing unit\)](#)
- [Sleeper Section of Cab \(truck\)](#)
- [Appended to a Motor Vehicle for Motion](#)

- [Trailing Unit](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicle occupants.

Refer to [Figure 31. Example seating positions for typical vehicle types](#) for diagram of common vehicle types, to include ambulance seating or positioning. **Front Row, Left Side** is usually the motor vehicle driver except for postal vehicles and some foreign vehicles.

- **Enclosed Passenger or Cargo Area** – used when an occupant is in the fifth or higher numbered seat row in an enclosed area where no defined seating exists or using a fold-down type seat in its folded-down position. This attribute is also used for bus passengers in undetermined seating (not driver) and for bus occupants who fall from an open door. This attribute is also used for people in the treatment compartment of an ambulance.
- **Unenclosed Passenger or Cargo Area** – used when an occupant is in the fifth or higher numbered seat row in an unenclosed area where no defined seating exists or is using a fold-down type seat in its folded-down position. Examples include passengers riding in an open pickup bed, on top of an open double-decker bus, etc.
- **Riding on Exterior of Vehicle (non-trailing unit)** – person riding on the exterior of a motor vehicle (on hood, roof, fender, running board, trunk, non-trailing unit, etc.). If this person was holding onto or attached to this motor vehicle for motion, see [Appended to a Motor Vehicle for Motion](#).
- **Sleeper Section of Cab (truck)** – used if the occupant’s vehicle is a medium or heavy truck and has a cab sleeper, and this occupant is in the sleeper section at the time of the crash.
- **Appended to a Motor Vehicle for Motion** - used when this person was appended to the motor vehicle at the time of the crash with the intention of using the motor vehicle’s motion to initiate movement or to gain propulsion, momentum, speed, etc. (e.g., “skitching”). The person may be appended by any means (e.g., hand grasp, tow rope) and could be using a non-motorist device (e.g., bicycle, skateboard, hoverboard, sled) at and during the time they appended to the motor vehicle for the purpose of motion. It must be clear that they were appended at the start of the crash. This attribute excludes people riding on the hood, roof, fender, running board, trunk, etc., which should be coded as SEATING POSITION [Riding on Exterior of Vehicle \(non-trailing unit\)](#). NOTE: If this person was attempting to append or had already let go of the motor vehicle, and it was clear that they were NOT appended at the start of the crash, then this person is a Non-Motorist and should be categorized as such.
- **Trailing Unit** – used when an occupant is in or on a trailing unit (i.e., [VEHICLE TRAILING](#), for this occupant’s vehicle must have one or more trailing units).
- **Unknown** – used when this person’s seating position in the vehicle cannot be determined.

Highway Safety Rationale:

This element is important to evaluate crash outcomes and vehicle design (including occupant protection and other safety systems).

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for SEATING POSITION

1. A diagram is acceptable for aligning if all MMUCC SEATING POSITION attributes are represented.

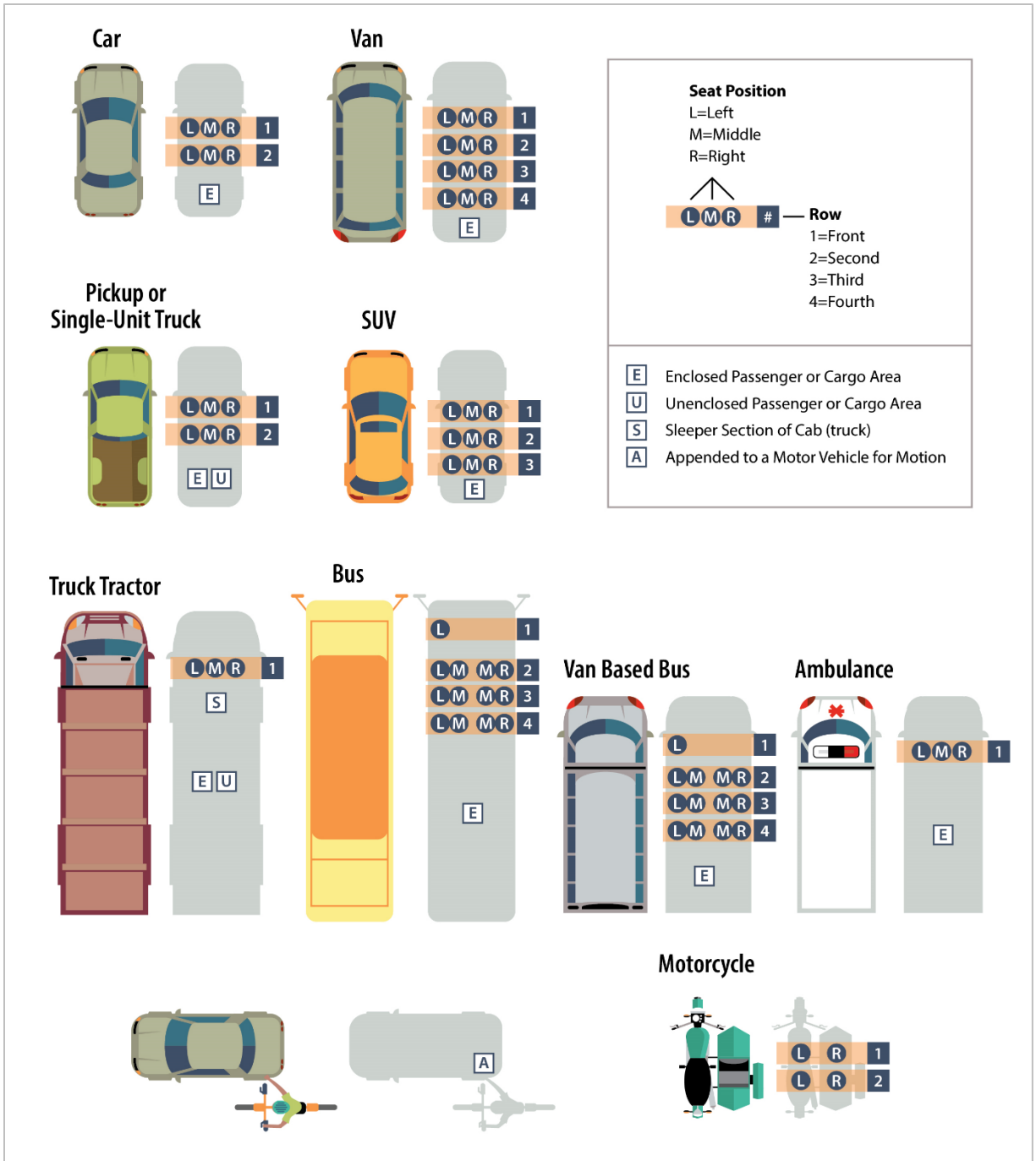


Figure 31. Example seating positions for typical vehicle types

P14. Restraint System Use

Element Definition:

The restraint equipment in use by the occupant and any indication of improper use of the available restraint system at the time of the crash.

Attribute Values:

Subfield 1: Type of Restraint System in Use (select one)

- [None Used or Not Applicable](#)
- [Shoulder and Lap Belt Used](#)
- [Lap Belt Only Used](#)
- [Shoulder Belt Only Used](#)
- [Booster Seat](#)
- [Child Restraint System – Forward-Facing](#)
- [Child Restraint System – Rear-Facing](#)
- [Child Restraint – Type Unknown](#)
- [Racing-Style Harness Used](#)
- [Restraint Used – Type Unknown](#)
- [Other](#)
- [Unknown](#)

Subfield 2: Indication of Restraint System Misuse (select one)

- [None Used or Not Applicable](#)
- [No Indication of Misuse](#)
- [Yes, Indication of Misuse](#)

Remarks:

Complete this element for all motor vehicle occupants.

Subfield 1: Type of Restraint System in Use

This subfield documents the restraint system used by this person. If this person did not use a restraint, or a restraint was not available for this person to use, select [None Used or Not Applicable](#). Any indication of restraint misuse is captured in [Subfield 2](#).

- **None Used or Not Applicable** - used when the occupant did not use a restraint. This includes situations where the occupant of that seat position did not use the available restraint, or that no restraint was available in the seat position of this occupant. Also use this attribute for people who are riding in the sleeper section of the cab of a truck, on the

exterior of the vehicle, appended to the vehicle for motion, and in unenclosed cargo areas, such as a bed of a pickup truck where a restraint would not be present to use. Also use this attribute for occupants of [MOTOR VEHICLE BODY TYPE CATEGORY Moped, 2-Wheeled Motorcycle, 3-Wheeled Motorcycle \(trike\), All-Terrain Vehicle or All-Terrain Cycle \(ATV or ATC\), or Snowmobile](#).

- **Shoulder and Lap Belt Used** – used when the occupant is restrained by a standard three-point shoulder belt and lap belt connected to a buckle. Also use this attribute when the occupant is using a belt-positioning device that works with a three-point harness.
- **Lap Belt Only Used** – use of only a lap seat belt either because the motor vehicle is equipped only with a lap belt or because the shoulder belt is not in use.
- **Shoulder Belt Only Used** – use of only a shoulder belt either because the motor vehicle is equipped only with a shoulder belt or because the lap belt is not in use.
- **Booster Seat** – used when a child passenger is seated in one of the following “belt-positioning” seats that positions a child on a vehicle seat to improve the fit of the child in a lap and shoulder seat belt system. This does not imply correct use or placement of the seat (see [Subfield 2](#)).
 - **Booster Seat With High Back:** provides neck and head support and is ideal for vehicles that don’t have head rests or high seat backs.
 - **Backless Booster Seat:** does not provide head and neck support. It is ideal for vehicles that have head rests.
 - **Combination Seat:** transitions from a forward-facing seat with a harness into a booster seat.
 - **All-in-One Seat:** can change from a rear-facing seat to a forward-facing seat (with a harness and tether) and to a booster seat as a child grows.
- **Child Restraint System – Forward-Facing** - used when a child passenger is seated in one of the following forward-facing child safety seats. This does not imply correct use or placement of the seat (see [Subfield 2](#)).
 - **Convertible Seat:** can change from a rear-facing seat to a forward-facing seat with a harness and tether.
 - **Combination Seat:** transitions from a forward-facing seat with a harness and tether into a booster seat.
 - **All-in-One Seat:** can change from a rear-facing seat to a forward-facing seat (with a harness and tether) and to a booster seat as a child grows.
- **Child Restraint System – Rear-Facing** - used when a child passenger is seated in one of the following rear-facing child safety seats. This does not imply correct use or placement of the seat (see [Subfield 2](#)).
 - **Infant car seat:** designed for newborns and small babies, the infant-only car seat is a small, portable seat that can only be used rear-facing.

- Convertible car seat: can change from a rear-facing seat to a forward-facing seat with a harness and tether. Because it can be used with children of various sizes, it allows for children to stay in the rear-facing position longer.
- All-in-One Seat: can change from a rear-facing seat to a forward-facing seat (with a harness and tether) and to a booster seat as a child grows. Because it can be used with children of various sizes, it allows for children to stay in the rear-facing position longer.
- **Child Restraint – Type Unknown** - used when a child passenger is seated in a child safety seat; however, the type used (e.g., forward, rear, booster) cannot be determined. This does not imply correct use or placement of the seat (see [Subfield 2](#)).
- **Racing-Style Harness Used** – used when the occupant restraint system in use consists of a five-point seat belt, four-point latch harness, three- to five-point race harness, off-road race harness, three-point non-retractable seat belt, or other similar device rather than a three-point shoulder and lap belt system.
- **Restraint Used – Type Unknown** - used when it is known that the occupant was using some type of restraint, but the type of restraint cannot be determined.
- **Other** – used when a restraint other than the listed attributes for this data element was being used at the time of the crash.
- **Unknown** – used when it cannot be determined if this occupant was using a restraint.

Subfield 2: Indication of Restraint System Misuse

This subfield indicates any misuse of the restraint system used by this person, selected in [Subfield 1](#). If this person did not use a restraint, select [None Used or Not Applicable](#).

- **None Used or Not Applicable** - used when [Subfield 1](#): Type of Restraint System in Use equals **None Used or Not Applicable** or **Unknown**.
- **No Indication of Misuse** - used when the occupant was properly using the restraints selected in [Subfield 1](#), or when the occupant was using the restraints, but it is unknown if the restraints were misused. Do not use this attribute when restraints were not used (see [None Used or Not Applicable](#)).
- **Yes, Indication of Misuse** - used when the occupant was misusing the restraints selected in [Subfield 1](#) at the time of the crash. Do not use this attribute when restraints were not used (see [None Used or Not Applicable](#)).

Highway Safety Rationale:

This element is important to evaluate crash outcomes, vehicle design, and child car seats.

Implementation Suggestions:

- If **None Used or Not Applicable** or **Unknown** are selected for Subfield 1, then autofill Subfield 2 with **None Used or Not Applicable**.
- If the [MOTOR VEHICLE BODY TYPE CATEGORY](#) for this person is an **All-Terrain Vehicle or All-Terrain Cycle (ATV or ATC), Snowmobile, Moped, 2-Wheeled**

Motorcycle, or 3-Wheeled Motorcycle (trike), then autofill both Subfield 1 and Subfield 2 of this element with **None Used or Not Applicable**.

Validation Rules:

If RESTRAINT SYSTEM USE Subfield 1: Type of Restraint System in Use = **None Used or Not Applicable** or **Unknown**, then Subfield 2: Indication of Restraint System Misuse must = **None Used or Not Applicable**.

Alignment Considerations for RESTRAINT SYSTEM USE:

None

P15. Helmet Use

Element Definition:

Records the type of helmet in use, and any indications of misuse of the helmet, by motor vehicle occupants of [MOTOR VEHICLE BODY TYPE CATEGORY All-Terrain Vehicle or All-Terrain Cycle \(ATV or ATC\)](#), **Snowmobile, Moped, Multipurpose Off-Highway Utility Vehicle (MOHUV) or Recreational Off-Highway Vehicle (ROV)**, **2-Wheeled Motorcycle, 3-Wheeled Motorcycle (trike)**, and **Autocycle** at the time of the crash.

Attribute Values:

Subfield 1: Helmet Use (select one)

- [Not Applicable](#)
- [No Helmet](#)
- [DOT-Compliant Motorcycle Helmet](#)
- [Helmet, Other Than DOT-Compliant Motorcycle Helmet](#)
- [Helmet, Unknown If DOT-Compliant](#)
- [Unknown if Helmet Worn](#)

Subfield 2: Indication of Helmet Misuse (select one)

- [None Used or Not Applicable](#)
- [No Indication of Misuse](#)
- [Yes, Indication of Misuse](#)

Remarks:

Complete this element for all motor vehicle occupants. Motorcycle helmets that are compliant with Federal Motor Vehicle Safety Standards typically weigh approximately 3 lb; have an inner liner of at least 1 inch-thick, firm polystyrene foam; have an inside label that states the manufacturer, model, and date of manufacture; and have a DOT sticker on the back of the helmet.

Occupants of motor vehicles such as autocycles, ROVs, and go-karts may use a belt restraint system along with a helmet. For occupants of these vehicles, record both [RESTRAINT SYSTEM USE](#) and HELMET USE.

Subfield 1: Helmet Use

This subfield documents the helmet used by this person. If this person did not use a helmet, select [No Helmet](#). Any indication of helmet misuse is captured in [Subfield 2](#).

- **Not Applicable** – used when this person was an occupant of a motor vehicle with a [MOTOR VEHICLE BODY TYPE CATEGORY Passenger Car, Sport Utility Vehicle, Mini-Van or Van \(up to 8 seats\), Motor Home or Recreational Vehicle, Limousine, Passenger Van, School Bus, Transit Bus, Motorcoach, Other Large Passenger or Bus, Cargo Van, Pickup Truck, Single-Unit Truck \(2 axles and GVWR > 10,000 lb\)](#),

Single-Unit Truck (3 or more axles), Truck-Tractor, With or Without Trailers (bobtail, semi, doubles, or triples), Truck, Unknown Type, Construction Equipment (e.g., backhoe, bulldozer, forklift), Farm Equipment (e.g., tractor, combine harvester), or Unknown.

- **No Helmet** - used when the occupant was not wearing a helmet of any kind.
- **DOT-Compliant Motorcycle Helmet** – used when the occupant was wearing a DOT-Compliant Motorcycle Helmet. Motorcycle helmets that are compliant with Federal Motor Vehicle Safety Standards typically weigh approximately 3 lb, have an inner liner at least one-inch thick of firm polystyrene foam, have an inside label that states the manufacturer, model, and date of manufacture, and have a DOT sticker on the back of the helmet. A DOT sticker alone is not sufficient evidence to indicate that the helmet is DOT-compliant, as counterfeit stickers have been found affixed to non-compliant helmets.
- **Helmet, Other Than DOT-Compliant Motorcycle Helmet** - used when the occupant was wearing a helmet that is not a DOT-compliant motorcycle helmet. Examples include bicycle helmets, skateboard helmets, and novelty helmets.
- **Helmet, Unknown if DOT-Compliant** – used when the occupant was wearing a helmet, but the investigating officer cannot determine if it was a DOT-compliant motorcycle helmet.
- **Unknown if Helmet Worn** – used when it cannot be determined if this occupant was wearing a helmet of any kind at the time of the crash.

Subfield 2: Indication of Helmet Misuse

This subfield indicates any misuse of the helmet used by this person, selected in [Subfield 1](#). If this person did not use a helmet, select [None Used or Not Applicable](#).

- **None Used or Not Applicable** - used when [Subfield 1](#): Helmet Use equals **Not Applicable, No Helmet, or Unknown if Helmet Worn**.
- **No Indication of Misuse** - used when the occupant was properly using the helmet selected in [Subfield 1](#), or when the occupant was using the helmet, but it is unknown if the helmet was misused. Using an inappropriate type of helmet (e.g., wearing a bicycle helmet while riding a motorcycle) is not by itself an indication of misuse. Do not use this attribute when a helmet was not used (see [None Used or Not Applicable](#)).
- **Yes, Indication of Misuse** - used when the occupant was misusing the helmet selected in [Subfield 1](#) at the time of the crash. Using an inappropriate type of helmet (e.g., wearing a bicycle helmet while riding a motorcycle) is not by itself an indication of misuse. Do not use this attribute when a helmet not used (see [None Used or Not Applicable](#)). An example of misuse is wearing the helmet backwards.

Highway Safety Rationale:

This element is important to evaluate crash outcomes, helmet design and effectiveness, and behavioral concerns. The element also informs law enforcement activities and legislative actions.

Implementation Suggestions:

- If **Not Applicable** or **No Helmet** is selected for Subfield 1, then autofill Subfield 2 with **None Used or Not Applicable**.
- If the [MOTOR VEHICLE BODY TYPE CATEGORY](#) for this person is **Passenger Car, Sport Utility Vehicle, Mini-Van or Van (up to 8 seats), Motor Home or Recreational Vehicle, Limousine, Passenger Van, School Bus, Transit Bus, Motorcoach, Other Large Passenger or Bus, Cargo Van, Pickup Truck, Single-Unit Truck (2 axles and GVWR > 10,000 lb), Single-Unit Truck (3 or more axles), Truck-Tractor, With or Without Trailers (bobtail, semi, doubles, or triples), Truck, Unknown Type, Construction Equipment (e.g., backhoe, bulldozer, forklift), Farm Equipment (e.g., tractor, combine harvester) or Unknown**, then autofill HELMET USE Subfield 1 with **Not Applicable** and HELMET USE Subfield 2 with **None Used or Not Applicable**.

Validation Rules:

- If HELMET USE Subfield 2: Indication of Helmet Misuse = **No Indication of Misuse** or **Yes, Indication of Misuse**, then HELMET USE Subfield 1: Helmet Use must = **DOT-Compliant Motorcycle Helmet, Helmet, Other Than DOT-Compliant Motorcycle Helmet, or Helmet, Unknown If DOT-Compliant**.
- If HELMET USE Subfield 1: Helmet Use = **Not Applicable, No Helmet, or Unknown if Helmet Worn**, then HELMET USE Subfield 2: Indication of Helmet Misuse must = **None Used or Not Applicable**.
- If HELMET USE Subfield 1: Helmet Use = **DOT-Compliant Motorcycle Helmet, Helmet, Other Than DOT-Compliant Motorcycle Helmet, or Helmet, Unknown If DOT-Compliant**, then HELMET USE Subfield 2: Indication of Helmet Misuse must = **No Indication of Misuse** or **Yes, Indication of Misuse**.

Alignment Considerations for HELMET USE

1. An attribute “Helmet” alone is insufficient to align to any of the helmet types in Subfield 1.

P16. Air Bag Deployed

Element Definition:

Deployment status of an air bag relative to the position in the vehicle for this occupant.

Attribute Values:

Select one:

- [Not Deployed or No Air Bag Available](#)
- [Curtain](#)
- [Front](#)
- [Side \(door or seatback\)](#)
- [Other \(knee, airbelt, etc.\)](#)
- [Combination](#)
- [Deployed-Unknown Location](#)
- [Deployment Unknown](#)

Remarks:

Complete this element for all motor vehicle occupants. See [Figure 32. Air bag diagram](#).

- **Not Deployed or No Air Bag Available** – used when no air bags deployed for this person in this seat position or there was no air bag available for this seat position (e.g., not equipped, not installed, prior deployment-not replaced).
- **Curtain** – used when the curtain air bag is out of its cover and protruding into driver or passenger compartment. The bag is fully or partially deflated or inflated. This attribute refers to a head only, side impact, or rollover air bag for outboard occupants. These are usually mounted in the roof rail above the side windows, deploying between the glazing and the occupant. These look like a curtain when deployed and are designed to help protect an adult's head in a side-impact or rollover crash. This includes a head impact curtain in a convertible car body type, which deploys upward from the door panel near the lower edge of the side glazing. A single curtain may cover one or all rows, or a vehicle may have one for the first row with another covering two or more rearward rows. Curtain airbags are sometimes called a rollover curtain, roof bag, roof-rail bag, roof curtain, anti-ejection curtain, or a safety canopy. These rollover curtains are a special type of side curtain air bag with sensors that measure vehicle tilting and protect occupants from injury and ejection during a rollover crash. Refer to [Figure 32. Air bag diagram](#).
- **Front** – used when the driver or front seat passenger air bag is out of its cover and protruding into driver compartment. The bag is fully or partially deflated or inflated. The driver frontal air bag is located in the hub of the steering wheel. The right front passenger frontal air bag is located in the dashboard (instrument panel). Refer to [Figure 32. Air bag diagram](#).

- **Side (door or seatback)** – used when an air bag on a side of the motor vehicle is out of its cover and protruding into occupant compartment. The bag is fully or partially deflated or inflated. This air bag is mounted in the outboard side of the seat or in the door. Side impact air bags located between [SEATING POSITION Front Row, Left Side](#) and [Front Row, Right Side](#) within the inboard seatbacks or center console designed to mitigate occupant versus occupant injury are also collected in this attribute. Refer to [Figure 32. Air bag diagram](#).
- **Other (knee, airbelt, etc.)** – used when a knee air bag, airbelt, or other air bag technology is deployed. If two or more air bags deploy for this seating position, use the attribute [Combination](#). Refer to [Figure 32. Air bag diagram](#). Examples include:
 - Inflatable Seat Belt/Airbelts – currently available for outboard passengers beyond the first row. Some airbelts will deploy in either front or side collisions.
 - Rear Impact Curtain – helps protect the last row occupants during a rearward impact.
 - Knee Air Bags/Knee Bolsters – deploys from the lower instrument panel/dashboard.
 - Anti-Slide/Anti-Submarine/Seat Cushion Air Bag – inflates in the seat cushion to help maintain the occupant’s seating position.
- **Combination** – used if two or more air bags of different types deployed for this person in this seat position.
- **Deployed - Unknown Location** - used if an air bag did deploy for this person in this seat position, but the origin of the air bag cannot be determined.
- **Deployment Unknown** – used when it cannot be determined if any air bag for this person in this seat position is out of its cover and protruding into occupant compartment.

Highway Safety Rationale:

This element is important to evaluate crash outcomes and vehicle design (including occupant protection and other safety systems).

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for AIR BAG DEPLOYED

1. If a State does not have the MMUCC attributes **Curtain** or **Other (knee, airbelt, etc.)**, but does have State attributes “Front” and “Side,” without a State definition do not assume that the State’s “Front” and “Side” match the MMUCC attributes **Front** and **Side (door, seatback)**. Because the Officer doesn’t have the option to code **Curtain** or **Other (knee, airbelt, etc.)** on the State crash form, it is likely that these are included in the State attributes “Front” and “Side.” This means that the State attributes “Front” and “Side” do not align with the MMUCC attributes **Front** and **Side (door, seatback)**.

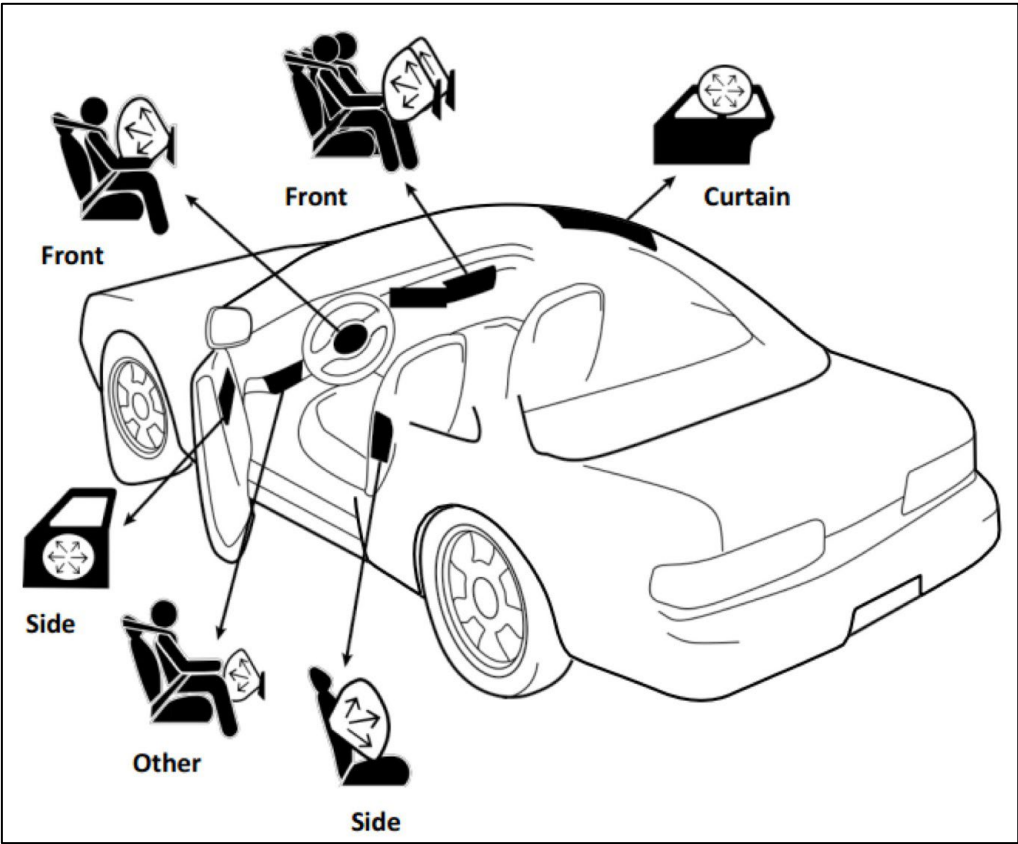


Figure 32. Air bag diagram

P17. Ejection

Element Definition:

Identifies if the occupant was completely or partially thrown from the interior of the motor vehicle as a result of this crash.

Attribute Values:

Select one:

- [Not Ejected](#)
- [Partially Ejected](#)
- [Totally Ejected](#)
- [Not Applicable](#)
- [Unknown](#)

Remarks:

Complete this element for all motor vehicle occupants. Ejection refers to situations where forces from a crash cause an occupant to be totally or partially thrown from the vehicle (including the bed of pickup trucks) during the course of the crash. This includes occupants of Jeeps, go-carts, snowmobiles, 3- or 4-wheel ATVs, 3-wheeled motorcycles and 3-wheeled autocycles.

Note: This data element excludes occupants of [MOTOR VEHICLE BODY TYPE CATEGORY 2-Wheeled Motorcycle](#) and **Moped** (i.e., select the attribute [Not Applicable](#)).

- **Not Ejected** – used when this occupant was not ejected, either partially or totally, from the vehicle as a result of this crash.
- **Partially Ejected** – used when some part but not all of this occupant’s body is at some time during the crash sequence thrown outside the occupant compartment as a result of this crash.
- **Totally Ejected** – used when this occupant’s body was thrown entirely outside the vehicle as a result of this crash. This includes occupants who are not initially in the seating compartment of the vehicle (e.g., in a pickup bed, on an open tailgate, on a convertible top boot). The occupant’s body may still be in contact with the vehicle.
- **Not Applicable** – used for people with [SEATING POSITION Riding on Exterior of Vehicle \(non-trailing unit\)](#) and **Appended to a Motor Vehicle for Motion**, and for occupants of [MOTOR VEHICLE BODY TYPE CATEGORY 2-Wheeled Motorcycle](#) and **Moped**.
- **Unknown** – used when it cannot be determined if this person was ejected, either partially or totally, from the vehicle as a result of this crash.

Highway Safety Rationale:

This element is important to evaluate crash outcomes and vehicle design (including occupant protection and other safety systems).

Implementation Suggestions:

- If the [MOTOR VEHICLE BODY TYPE CATEGORY](#) for this person is **Moped** or **2-Wheeled Motorcycle**, then autofill EJECTION with **Not Applicable**.
- If the [SEATING POSITION](#) for this person is **Riding on Exterior of Vehicle (non-trailing unit)** or **Appended to a Motor Vehicle for Motion**, then autofill EJECTION with **Not Applicable**.

Validation Rules:

None

Alignment Considerations for EJECTION

1. If the State has a checkbox to indicate “Yes” if checked and “No” if not checked, neither align to the MMUCC data element. See [Uniformity Alignment Rule 5](#) for more information.

P18. Law Enforcement Suspects Alcohol Involvement

Element Definition:

This data element reflects the judgment of law enforcement as to whether alcohol was suspected or not for this person.

Attribute Values:

Select one:

- [No, Alcohol Not Suspected](#)
- [Yes, Alcohol Suspected](#)
- [Unknown](#)

Remarks:

Complete this element for all drivers and non-motorists. The phrase “alcohol was suspected” means that alcohol was suspected to be present in the person or presumed to be present by law enforcement. Alcohol involvement is not an indication that alcohol was in any way a cause of the crash. Alcohol involvement should be indicated based on the judgment of law enforcement regardless of potential involvement of any drug.

- **No, Alcohol Not Suspected** – used when alcohol is not suspected to be present in this person at the time of the crash.
- **Yes, Alcohol Suspected** – used when alcohol is suspected to be present in this person at the time of the crash.
- **Unknown** – used when it cannot be determined if alcohol is suspected or not suspected to be present in this person at the time of the crash.

Highway Safety Rationale:

This data element is important to identify behavioral concerns and evaluate traffic safety countermeasure programs. It informs law enforcement activities and legislative actions and is essential to NHTSA’s impairment data imputation model.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for LAW ENFORCEMENT SUSPECTS ALCOHOL INVOLVEMENT

1. States cannot align with this element unless the reporting officer may unambiguously indicate whether they perceive alcohol to be involved. For example, the State may have a data element combining both alcohol and drug use together, such as “Alcohol/Drug Use Suspected,” which does not align to this MMUCC element unless it is possible to indicate whether alcohol or drug use or both are involved.
2. The MMUCC element identifies only the officer’s judgement as to whether alcohol was suspected to be present in this person at the time of the crash regardless of whether the alcohol presence contributed to the crash. If the State’s element identifies only if alcohol presence contributed to the crash, the amount of data the State collects for that element differs from the MMUCC guidance, indicating that the State data element is incomplete. See [Chapter 12, Section 12.4.2 MMUCC Completeness](#).
3. Similarly, the MMUCC element identifies only the officer’s judgement as to whether alcohol was suspected to be present in this person at the time of the crash regardless of whether the person was impaired. If the State’s element identifies only if the person was impaired, the amount of data the State collects for that element differs from the MMUCC guidance, indicating that the State data element is incomplete. See [Chapter 12, Section 12.4.2 MMUCC Completeness](#).

P19. Alcohol Test

Element Definition:

Identifies (1) if a chemical test for the presence of alcohol (ethanol) was given to this person, (2) the bodily tissue or fluid used to perform a chemical test for the presence of alcohol (ethanol) in this person, and (3) the result of a chemical test for the presence of alcohol (ethanol) in this person.

Attribute Values:

Subfield 1: Test Status (select one)

- [Test Not Given](#)
- [Test Given](#)
- [Unknown if Tested](#)

Subfield 2: Specimen Type (select one)

- [Test Not Given](#)
- [Blood](#)
- [Preliminary Breath Test \(PBT\)](#)
- [Evidential Breath](#)
- [Urine](#)
- [Other Specimen](#)
- [Unknown Specimen](#)
- [Unknown if Tested](#)

Subfield 3: Test Result (select one)

- [Test Not Given](#)
- [Actual Value](#)
- [Alcohol Test Performed, Results Unknown](#)
- [Positive Reading With No Actual Value](#)
- [Negative Reading With No Actual Value](#)
- [Unknown if Tested](#)

Remarks:

Complete this element for all drivers and non-motorists. Both positive and negative results should be collected and reported. If a driver refuses a test (whether they are ultimately tested or not), see [RELATED FACTORS – DRIVER LEVEL](#) attribute [Alcohol and/or Drug Test Refused](#).

Subfield 1: Test Status

- **Test Not Given** – used when an alcohol test was not performed on this person. If this attribute is selected, then Subfields 2 and 3 must also equal **Test Not Given**.
- **Test Given** – used when an alcohol test was performed on this person.
- **Unknown if Tested** - used when it cannot be determined if an alcohol test was performed on this person. If this attribute is selected, then Subfields 2 and 3 must also equal **Unknown if Tested**.

Subfield 2: Specimen Type

- **Test Not Given** – used when an alcohol test was not performed on this person. If this attribute is selected, then Subfields 1 and 3 must also equal **Test Not Given**.
- **Blood** - a blood sample may be identified as whole blood, blood plasma/serum, or blood clot. A blood sample that is taken as evidence and tested to determine whether a suspected impaired driver has used alcohol and/or another drug. If a lab report identifies a "blood test" it most likely refers to a test of whole blood, not tests of plasma/serum or of a blood clot.
- **Preliminary Breath Test (PBT)** - testing device not considered evidential, but merely as a tool to help determine whether alcohol is present. Some PBTs only indicate whether alcohol is present in the breath by “pass” (green) or “fail” (red) lights. Other PBTs indicate the approximate blood alcohol concentration in numbers. If the device is of evidential quality, see [Evidential Breath](#).
- **Evidential Breath** - used if the result is from an evidential breath test performed by a device on NHTSA’s Conforming Products List. Preliminary breath test devices (PBTs), also known as alcohol screening devices (ASDs), that are not considered evidential should be coded under [Preliminary Breath Test \(PBT\)](#).
- **Urine** – used when urine was the specimen type used to obtain a blood alcohol concentration for this person.
- **Other Specimen** – used when a type of test used to obtain a blood alcohol concentration for this person was a type other than the available attributes (e.g., liver, vitreous). This attribute would not apply to behavioral tests (field sobriety) or observations.
- **Unknown Specimen** – used when a specimen was used to obtain a blood alcohol concentration for this person, but the type of specimen cannot be determined. This attribute would not apply to behavioral tests (field sobriety) or observations.
- **Unknown if Tested** – used when it cannot be determined if an alcohol test was performed on this person. If this attribute is selected, then Subfields 1 and 3 must also equal **Unknown if Tested**.

Subfield 3: Test Result

- **Test Not Given** – used when an alcohol test was not performed on this person. If this attribute is selected, then Subfields 1 and 2 must also equal **Test Not Given**.
- **Actual Value** – report the actual value for this person (e.g., .005 g/dL).
- **Alcohol Test Performed, Results Unknown** – an alcohol content test was performed but the results were reported as unknown or pending and are unobtainable (includes a “Contaminated Sample” or “Insufficient Sample”). **Alcohol Test Performed, Results Unknown** can be used for any specimen type.
- **Positive Reading With No Actual Value** – can be used for any specimen type where the result is indicated to be positive without a numeric value to record and for any positive results reported from a liver test. This should only be used when a final test result is returned as “positive” with no actual result to record. This can occur when a screening test is used, and it is the only test result available. This attribute is also used for a positive blood alcohol concentration expressed as a range or as less than some specific value (e.g., less than .020g/dL).

Some portable (handheld) breath-test devices are only preliminary breath tests (PBTs) and indicate whether alcohol is present in the breath by positive (green) or negative (red) lights. Other portable breath test devices indicate the approximate blood alcohol concentration in numbers. When a PBT result only indicates “positive” for alcohol, with no actual blood alcohol concentration value, **Positive Reading With No Actual Value** should be used.

- **Negative Reading With No Actual Value** – can be used for any specimen type where the result is indicated to be negative without a numeric value to record and for any negative results reported from a liver test. This should only be used when a final test result is returned as “negative” with no actual result to record. This can occur when a screening test is used, and it is the only test result available.

Some portable (handheld) breath-test devices are only preliminary breath tests (PBTs) and indicate whether alcohol is present in the breath by positive (green) or negative (red) lights. Other portable breath test devices indicate the approximate blood alcohol concentration in numbers. When a PBT result only indicates “negative” for alcohol, with no actual blood alcohol concentration value, **Negative Reading With No Actual Value** should be used.

- **Unknown if Tested** - used when it cannot be determined if an alcohol test was performed on this person. If this attribute is selected, then Subfields 1 and 2 must also equal **Unknown if Tested**.

Highway Safety Rationale:

This data element is important to identify behavioral concerns and evaluate traffic safety countermeasure programs. It informs law enforcement activities and legislative actions.

Implementation Suggestions:

- If **Test Not Given** is selected for Subfield 1, then autofill Subfields 2 and 3 with **Test Not Given**.
- If **Unknown if Tested** is selected for Subfield 1, then autofill Subfields 2 and 3 with **Unknown if Tested**.
- Report actual test results as g/dL (North American standard) to three decimal places (e.g., .005 g/dL).
- ALCOHOL TEST information may be available through State data integration. See [Chapter 10: Traffic Records Data Integration](#).

Validation Rules:

- If ALCOHOL TEST Subfield 3: Test Result reports a test value, then Subfield 1: Test Status must = **Test Given** and Subfield 2: Specimen Type must = **Blood, Evidential Breath, Preliminary Breath Test (PBT), Urine, Other Specimen, or Unknown Specimen**.
- If ALCOHOL TEST Subfield 1: Test Status = **Test Given**, then Subfield 2: Specimen Type must = **Blood, Evidential Breath, Preliminary Breath Test (PBT), Urine, Other Specimen, or Unknown Specimen** and Subfield 3: Test Result must = an actual value, **Alcohol Test Performed, Results Unknown, Positive Reading With No Actual Value, or Negative Reading With No Actual Value**.
- If ALCOHOL TEST Subfield 1: Test Status = **Test Not Given**, then Subfield 2: Specimen Type must = **Test Not Given** and Subfield 3: Test Result must = **Test Not Given**.
- If ALCOHOL TEST Subfield 1: Test Status = **Unknown if Tested**, then Subfield 2: Specimen Type must = **Unknown if Tested** and Subfield 3: Test Result must = **Unknown if Tested**.

Alignment Considerations for ALCOHOL TEST

1. The State must capture the subfields and associated attributes to align with MMUCC. States may have separate data elements for each subfield, which is acceptable.
2. If a State collects alcohol testing and drug testing in one element, it does not align with this MMUCC element unless it is possible to unambiguously indicate whether the test was performed for alcohol presence or drug presence.

P20. Law Enforcement Suspects Drug Involvement

Element Definition:

This data element reflects the judgment of law enforcement as to whether drugs were suspected or not for this person.

Attribute Values:

Select one:

- [No, Drugs Not Suspected](#)
- [Yes, Drugs Suspected](#)
- [Unknown](#)

Remarks:

Complete this element for all drivers and non-motorists. The phrase “drugs were suspected” means that drugs were suspected to be present in the person or presumed to be present by law enforcement. This includes prescription and over-the-counter medications, as well as other legal or illegal substances (e.g., marijuana, cocaine, heroin). Drug involvement is not an indication that drug usage was in any way a cause of the crash. Drug involvement should be indicated based on the judgment of law enforcement regardless of potential involvement of alcohol.

- **No, Drugs Not Suspected** – used when drugs are not suspected to be present in this person at the time of the crash.
- **Yes, Drugs Suspected** – used when drugs are suspected to be present in this person at the time of the crash.
- **Unknown** - used when it cannot be determined if drugs are suspected or not suspected to be present in this person at the time of the crash.

Highway Safety Rationale:

This data element is important to identify behavioral concerns and evaluate traffic safety countermeasure programs. It informs law enforcement activities and legislative actions.

Implementation Suggestions:

In addition to collecting this data element, drug toxicology testing and results may be available through State data integration. See [Chapter 10: Traffic Records Data Integration](#) for details.

Validation Rules:

None

Alignment Considerations for LAW ENFORCEMENT SUSPECTS DRUG INVOLVEMENT

1. States cannot align to this element unless the reporting officer may unambiguously indicate whether they perceive drugs to be involved. For example, the State may have a

data element combining both alcohol and drug use together, such as “Alcohol/Drug Use Suspected,” which does not align with this MMUCC element unless it is possible to indicate whether alcohol or drug use or both are suspected.

2. The MMUCC element identifies only the officer’s judgement as to whether drugs were suspected to be present in this person at the time of the crash regardless of whether the drug presence contributed to the crash. If the State’s element identifies only if drug presence contributed to the crash, the amount of data the State collects for that element differs from the MMUCC guidance, indicating that the State data element is incomplete. See [Chapter 12, Section 12.4.2 MMUCC Completeness](#).
3. Similarly, the MMUCC element identifies only the officer’s judgement as to whether drugs were suspected to be present in this person at the time of the crash regardless of whether the person was impaired. If the State’s element identifies only if the person was impaired, the amount of data the State collects for that element differs from the MMUCC guidance, indicating that the State data element is incomplete. See [Chapter 12, Section 12.4.2 MMUCC Completeness](#).

Chapter 8: Non-Motorist Data Elements

The non-motorist data elements describe the characteristics and actions of the non-motorists involved in the crash. Data elements in this chapter are given the element identifier **NM** (e.g., NM1, NM2, NM3).

In addition to the relevant [Chapter 7: Person Data Elements](#), the non-motorist data elements should be completed for every crash-involved person who was NOT an occupant of a motor vehicle. These data elements must be completed for [PERSON TYPE](#) Group 2: Non-Motorist attributes **Bicyclist; Other Cyclist; Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying; Pedestrian on Personal Conveyance; Pedestrian in or on a Building; Occupant of a Non-Motor Vehicle Transport Device; and Unknown Type of Non-Motorist.**

- [NM1. Vehicle Number of Motor Vehicle Striking Non-Motorist](#)
- [NM2. Non-Motorist Status Prior to Critical Event](#)
- [NM3. Non-Motorist Distraction](#)
- [NM4. Non-Motorist Contributing Circumstances](#)
- [NM5. Non-Motorist at Intersection](#)
- [NM6. Non-Motorist in Crosswalk](#)
- [NM7. Non-Motorist Specific Location](#)
- [NM8. Non-Motorist Safety Equipment](#)
- [NM9. Non-Motorist Device Type](#)
- [NM10. Non-Motorist Traffic Control Device](#)

NM1. Vehicle Number of Motor Vehicle Striking Non-Motorist

Element Definition:

Number assigned to identify the first motor vehicle that struck the non-motorist in the crash.

Attribute Values:

Specify one:

- Vehicle number of the first Motor Vehicle to strike the non-motorist

Remarks:

Complete this element for all non-motorists.

Highway Safety Rationale:

This element is used to associate non-motorists with the motor vehicles with which they made contact. This is important to evaluate crash outcomes and vehicle design, to identify behavioral concerns, to inform law enforcement and legislative activities, and to assess infrastructure design programs.

Implementation Suggestions:

If only one motor vehicle is involved in the crash, autofill this element with that vehicle's [MOTOR VEHICLE NUMBER](#) (i.e., "1").

Validation Rules:

None

Alignment Considerations for VEHICLE NUMBER OF MOTOR VEHICLE STRIKING NON-MOTORIST:

None

NM2. Non-Motorist Status Prior to Critical Event

Element Definition:

The status of the non-motorist immediately prior to the crash.

Attribute Values:

This is a multi-selection data element. Allow a minimum system capability of two selections (see [Implementation Suggestions](#)).

- [Incident Responder Working](#)
- [Working \(not incident response\)](#)
- [Crossing](#)
- [Waiting to Cross](#)
- [Playing](#)
- [Disabled Vehicle Related \(working on, pushing, leaving, or approaching\)](#)
- [Stationary \(not moving\)](#)
- [Movement Against Traffic](#)
- [Movement with Traffic](#)
- [Entering or Exiting Parked or Stopped Vehicle](#)
- [Going to or from School \(Pre-K-12\)](#)
- [Other \(explain in narrative\)](#)
- [Unknown](#)

Remarks:

Complete this element for all non-motorists.

- **Incident Responder Working** - immediately prior to the crash, the non-motorist was part of an official response to an incident, such as a firefighter moving between an emergency vehicle and a crash involved vehicle. [SPECIAL FUNCTION](#) must be **Emergency Medical Service (EMS), Fire and Rescue, Law Enforcement, Towing and Recovery, or Safety Service Patrol** for this person.
- **Working (not incident response)** - immediately prior to the crash, the non-motorist was performing work, unrelated to incident response. Examples include construction, maintenance, or utility work, working as a crossing guard, delivering mail or packages, delivering food or groceries, operating a snow blower or lawn care equipment, etc.
- **Crossing** - immediately prior to the crash, the non-motorist was moving across the [roadway](#). The person can be in any location (e.g., in the roadway, on a center crossing island, stepping off a sidewalk). This includes if the person began to cross the roadway, stopped, and then was struck.

- **Waiting to Cross** - immediately prior to the crash, the non-motorist was waiting to cross the [roadway](#). If the person was not moving while waiting to cross, also use the attribute [Stationary \(not moving\)](#).
- **Playing** - immediately prior to the crash, the non-motorist was playing. Examples include playing with toys, basketball, street hockey, hopscotch, etc.
- **Disabled Vehicle Related (working on, pushing, leaving, or approaching)** - immediately prior to the crash, the non-motorist was performing activities related to a disabled or inoperative vehicle including working on it, pushing it, leaving it, or approaching it. For vehicles in a previous crash, it is not necessary to know the damage severity.
- **Stationary (not moving)** - immediately prior to the crash, the non-motorist was not moving. This includes standing, sitting, or lying still.
- **Movement Against Traffic** – immediately prior to the crash, the non-motorist was moving in the opposite direction of the flow of traffic (facing oncoming vehicles). This includes if the person stopped momentarily (e.g., to tie shoes, talk on mobile phone).
- **Movement With Traffic** – immediately prior to the crash, the non-motorist was moving in the same direction as the flow of traffic. This includes if the person stopped momentarily (e.g., to tie shoes, talk on mobile phone).
- **Entering or Exiting Parked or Stopped Vehicle** - immediately prior to the crash, the non-motorist was adjacent to a stopped or parked vehicle and in the process of getting into or had just exited that stopped or parked vehicle. Excludes non-motorists performing other actions such as crossing the roadway to or from a parked vehicle (see [Crossing](#) and [Waiting to Cross](#)) or other movements that occurred after the non-motorist exited the vehicle.
- **Going to or From School (Pre-K-12)** – immediately prior to the crash, the non-motorist was going to or from school for any reason. Examples include normal school attendance, school dance, sports practice, or extracurricular activities. This attribute includes students (pre-kindergarten through 12th-grade) or an adult supervising students.
- **Other (explain in narrative)** – immediately prior to the crash, the non-motorist was doing something other than the listed attributes for this data element. Examples include sitting on a park bench, gardening, watching television inside a house, painting a building, etc. If this attribute is used, explain the details in the narrative section of the crash report.
- **Unknown** – immediately prior to the crash, the status of the non-motorist was unknown.

Highway Safety Rationale:

This data element is important to evaluate crash outcomes, identify behavioral concerns, inform law enforcement and legislative activities, and to assess infrastructure design programs.

Implementation Suggestions:

- Although the minimum system capability requirement for this data element is two selections, NHTSA recommends this as a “Select All That Apply” data element.
- If the user selects **Other (explain in narrative)**, the State may wish to create a popup window requiring the user to enter an explanation that is then added to the Narrative section.

Validation Rules:

None

Alignment Considerations for NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT

1. If the State combines this element and [NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#) as one element, then both elements will not align with MMUCC.

NM3. Non-Motorist Distraction

Element Definition:

Identifies this non-motorist's attention prior to the non-motorist's involvement in this crash. This element reports on the presence of any distractions that may or may not have contributed to the crash. Distraction for a non-motorist occurs when a non-motorist's attention is diverted from the task of navigating in public to some other activity.

Attribute Values:

Select one:

- [Not Distracted](#)
- [Mobile-Electronic-Device-Related](#)
- [Other Distractions](#)
- [Unknown if Distracted](#)

Remarks:

Complete this element for all non-motorists.

NOTE: "Presence" is not the same as an activity associated with the person or item. The non-motorist needs to be engaged in some activity associated with the thing that is causing a distraction. Just having a mobile phone, sandwich, other non-motorist, etc., nearby isn't a distraction. The distraction is when the non-motorist's attention is diverted from the task of navigating in public to using the phone, eating the sandwich, turning to talk to another non-motorist, etc. The source of the distraction doesn't have to be a contributing factor in the crash, but it does have to be in use, engaged, the person was doing it at the time, etc., for it to have been a distraction.

- **Not Distracted** - used when this non-motorist was completely attentive to the task of navigating in public.
- **Mobile-Electronic-Device-Related** – used when this non-motorist was distracted by using a handheld or hands-free mobile electronic device (e.g., mobile phone, tablet, gaming device, GPS). Examples include talking or listening on a mobile device; texting, dialing, or other manipulation of a device; using navigation apps; playing a game; listening to music; etc.
- **Other Distractions** – used when this non-motorist was distracted by something other than using a mobile electronic device. Examples include, talking to another non-motorist or a vehicle occupant, playing, animal-related, eating or drinking, lighting a cigarette, reading a sign, using a snowblower, mowing grass, etc.
- **Unknown if Distracted** – used when it cannot be determined if this non-motorist was distracted at the time of the crash.

Highway Safety Rationale:

This data element is important to identify behavioral concerns, inform law enforcement activities and legislative actions, and evaluate traffic safety countermeasure programs.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for NON-MOTORIST DISTRACTION:

1. The MMUCC element identifies distractions related to this non-motorist at the time of the crash regardless of whether the distractions contributed to the crash. If the State's element identifies only distractions that contributed to the crash, the amount of data the State collects for that element differs from the MMUCC guidance, indicating that the State data element is incomplete. See [Chapter 12, Section 12.4.2 MMUCC Completeness](#).

NM4. Non-Motorist Contributing Circumstances

Element Definition:

The actions or circumstances of the non-motorist at the time of the crash that may have contributed to the crash.

Attribute Values:

This is a multi-selection data element. Allow a minimum system capability of two selections (see [Implementation Suggestions](#)).

- [None](#)
- [Dart or Dash](#)
- [Failure to Obey Traffic Sign, Signal, or Officer](#)
- [Failure to Yield Right-Of-Way](#)
- [Fleeing or Evading Law Enforcement](#)
- [Improper Passing](#)
- [Improper Turn or Merge](#)
- [Distracted](#)
- [In Roadway Improperly \(standing, lying, working, playing, etc.\)](#)
- [Not Visible \(dark clothing, no lighting, etc.\)](#)
- [Traveling Wrong Way](#)
- [Improper Crossing of Roadway or Intersection \(“jaywalking”\)](#)
- [Other \(explain in narrative\)](#)
- [Unknown](#)

Remarks:

Complete this element for all non-motorists. This data element is based on the judgment of the law enforcement officer investigating the crash.

- **None** – used when none of the other attributes are applicable for this person. If this attribute is used, no other attribute may be selected.
- **Dart or Dash** – Non-motorist suddenly entering from off the [roadway](#), including running, jogging, or stumbling, etc.
- **Failure to Obey Traffic Sign, Signal, or Officer** - used when the non-motorist failed to obey a traffic control device. Examples include a traffic sign, a traffic control device (including a pedestrian signal), a traffic officer, or a safety zone; or passing around railroad gates.
- **Failure to Yield Right-Of-Way** - used when the non-motorist failed to yield the right-of-way to other road users. Examples:

- failure to yield when exiting a driveway
- failure to yield at an intersection not controlled by a stop sign or flashing red lights
- a bicyclist that stopped at the stop sign but did not realize it was a two-way stop rather than a four-way stop control and proceeded into the intersection without yielding to traffic on the through trafficway
- **Fleeing or Evading Law Enforcement** - used to identify this person was trying to escape and/or avoid the police.
- **Improper Passing** - the non-motorist had completed or was passing in a way that was unsafe, poorly executed, or prohibited. A non-motorist may be passing a motor vehicle or another non-motorist. This attribute is only applicable to [PERSON TYPE Bicyclist](#), **Other Cyclist, Pedestrian on Personal Conveyance, Occupant of a Non-Motor Vehicle Transport Device**, and **Unknown Type of Non-Motorist**. Examples include unsafely passing on the right (when not in a bike lane), passing a stopped school bus, or passing where prohibited by signs or pavement markings (i.e., mainly violations as designated by traffic controls).
- **Improper Turn or Merge** - the non-motorist completed or was making a turn that was unsafe, poorly executed, or prohibited. This attribute is only applicable to [PERSON TYPE Bicyclist](#), **Other Cyclist, Pedestrian on Personal Conveyance, Occupant of a Non-Motor Vehicle Transport Device**, and **Unknown Type of Non-Motorist**. Examples of an improper turn include too wide right or left turns, making a right turn from the left lane, a left turn from the right lane, or unsafe U-turns. An example of an improper merge is when the bicycle lane ends and the bicyclist merges into the path of a vehicle without leaving sufficient space.
- **Distracted** - This person was inattentive, lost in thought, or distracted. Examples include using any electronic devices (e.g., mobile phone, video game, e-reader), using earbuds on a music player while jogging, chatting with a neighbor, caring for a baby in a stroller, admiring a garden, etc. If this attribute is selected, then [NON-MOTORIST DISTRACTION](#) must equal **Mobile-Electronic-Device-Related** or **Other Distractions**.
- **In Roadway Improperly (standing, lying, working, playing, etc.)** - occurs when a person was in the roadway in violation of applicable laws. Examples:
 - playing in the road before the vehicle arrived (the person must not have just run into the roadway, which would be coded [Dart or Dash](#));
 - in the street voluntarily, such as a civilian directing traffic at the scene of a crash;
 - attempting to hail a cab, flag down assistance, or flag down a transit bus between designated stops;
 - sitting, getting up, asleep or unconscious, kneeling, etc.
- **Not Visible (dark clothing, no lighting, etc.)** - used when the non-motorist was not visible to the motorist because of blocked views, insufficient lighting, or other reasons such as clothing that blends in with the surroundings at any time of the day (camouflage) or dark clothing in the rain at night.

- **Traveling Wrong Way** – the non-motorist was traveling in a direction other than required by statute.
- **Improper Crossing of Roadway or Intersection (“jaywalking”)** - used when a pedestrian or a person on a personal conveyance, either motorized or non-motorized, is engaged in crossing a road but is not doing so properly (i.e., not in a crosswalk). The person may be engaged in other activities such as the continuation of jogging, running, etc. This attribute should not be used in conjunction with [In Roadway Improperly \(standing, lying, working, playing, etc.\)](#).
- **Other (explain in narrative)** – used when the non-motorist’s contributing actions or circumstances at the time of the crash was something other than the listed attributes for this data element. If this attribute is used, explain the details in the narrative section of the crash report.
- **Unknown** - used when contributing circumstances for this person are unknown. If this attribute is used, no other attribute may be selected.

Highway Safety Rationale:

This data element is important to evaluate crash outcomes, identify behavioral concerns, inform law enforcement and legislative activities, and to assess infrastructure design programs.

Implementation Suggestions:

- Although the minimum system capability requirement for this data element is two selections, NHTSA recommends this as a “Select All That Apply” data element.
- If the attributes **None** or **Unknown** are selected, no other attribute can be selected.
- If the user selects **Other (explain in narrative)**, the State may wish to create a popup window requiring the user to enter an explanation that is then added to the Narrative section.

Validation Rules:

If NON-MOTORIST CONTRIBUTING CIRCUMSTANCES equals **None** or **Unknown**, only that one code and no other must be coded for this person.

Alignment Considerations for NON-MOTORIST CONTRIBUTING CIRCUMSTANCES

1. If the State combines this element and [NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#) as one element, then both elements will not align with MMUCC.

NM5. Non-Motorist at Intersection

Element Definition:

The location of the non-motorist with respect to an intersection at the time of the crash.

Attribute Values:

Select one:

- [No](#)
- [Yes](#)
- [Unknown if at Intersection](#)

Remarks:

Complete this element for all non-motorists. The element must be collected at the scene and cannot be collected through linkage to the State roadway system, because this MMUCC element identifies the location of the non-motorist with respect to the intersection at the time of the crash. For example, a State roadway file may show that an intersection is present, but the non-motorist may or may not have been in the intersection at the time of the crash.

- **No** – used when this non-motorist was not within the boundary of an intersection.
- **Yes** – used when this non-motorist was within the boundary of an intersection.
- **Unknown if at Intersection** – used when it cannot be determined if this non-motorist was within or outside the boundary of an intersection at the time of the crash.

Highway Safety Rationale:

This data element is important to evaluate crash outcomes, identify behavioral concerns, inform law enforcement and legislative activities, and to assess infrastructure design programs.

Implementation Suggestions:

Validation Rules:

None

Alignment Considerations for NON-MOTORIST AT INTERSECTION

None

NM6. Non-Motorist in Crosswalk

Element Definition:

The location of the non-motorist with respect to a crosswalk at the time of the crash.

Attribute Values:

Select one:

- [No](#)
- [Yes, Marked](#)
- [Yes, Unmarked](#)
- [Unknown if in Crosswalk](#)

Remarks:

Complete this element for all non-motorists. The element must be collected at the scene and cannot be collected through linkage to the State roadway system, because the MMUCC element identifies the location of the non-motorist with respect to a crosswalk at the time of the crash. For example, the State roadway file may show that a crosswalk is present, but the non-motorist may or may not have been in the crosswalk at the time of the crash.

- **No** – used when the non-motorist was not within a crosswalk.
- **Yes, Marked** – used when the non-motorist is in that portion of a roadway that is distinctly indicated for pedestrian crossing by lines or other markings on the surface of the roadway. It includes shared-use path crossings and crosswalks located in mid-blocks.
- **Yes, Unmarked** – used when the non-motorist is in that portion of a roadway within the prolongations of the sidewalk edges but there are no lines or other markings on the surface of the roadway (unmarked crosswalk). There must be a sidewalk or improved path present on at least one side of the leg of the trafficway that this person is crossing for there to be an unmarked crosswalk. If there are no sidewalks or improved paths, there are no unmarked crosswalks.
- **Unknown if in Crosswalk** – used when it cannot be determined if this non-motorist was in a crosswalk at the time of the crash.

Highway Safety Rationale:

This data element is important to evaluate crash outcomes, identify behavioral concerns, inform law enforcement and legislative activities, and to assess infrastructure design programs.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for NON-MOTORIST IN CROSSWALK

None

NM7. Non-Motorist Specific Location

Element Definition:

The location of the non-motorist with respect to the trafficway at the time of the crash.

Attribute Values:

Select one:

- [On Roadway \(travel lanes\) - No Special Lane Use](#)
- [In Bus Lane](#)
- [In Parking Lane or Zone](#)
- [In Painted Cycle Lane](#) (including sharrow markings and painted buffers)
- [In Physically Separated Cycle Lane \(e.g., curb, pylons\)](#)
- [On Shoulder](#)
- [On Median](#)
- [Pedestrian Refuge Island or Traffic Island](#)
- [Driveway Access](#)
- [On Sidewalk](#)
- [Shared-Use Path or Trail](#)
- [Non-Trafficway Area](#)
- [Other \(e.g., gore, separator\)](#)
- [Unknown](#)

Remarks:

Complete this element for all non-motorists. The element must be collected at the scene and cannot be collected through linkage to the State roadway system, because the MMUCC element identifies the location of the non-motorist with respect to the trafficway at the time of the crash. For example, the State roadway file may show that “Painted Cycle Lane (including sharrow markings and painted buffers)” are present, but the non-motorist may or may not have been in the “Painted Cycle Lane (including sharrow markings and painted buffers)” at the time of the crash.

- **On Roadway (travel lanes) - No Special Lane Use** – This non-motorist was located in the portion of the [trafficway](#) normally designed for vehicular traffic (i.e., travel lanes), including turn lanes, but excluding preferential lanes such as [In Bus Lanes](#), [In Parking Lane or Zone](#), or [In Painted Cycle Lane](#).
- **In Bus Lane** – This non-motorist was located in a preferential lane reserved for the exclusive use of buses.

- **In Parking Lane or Zone** – This non-motorist was located in an area on the roadway, or next to the roadway, on which parking is permitted in marked or unmarked spaces. This includes curbside and edge of-roadway parking (legal residential parking, city-street parking, etc.). Sometimes a strip of roadway can be designated for parking at certain hours of the day (parking lane) and for regular travel at other hours (travel lane). This attribute should NOT be used during hours when parking is NOT permitted (see [On Roadway \(travel lanes\) - No Special Lane Use](#)). See [Figure 4. Diagram of a trafficway with parking lanes](#).
- **In Painted Cycle Lane (including sharrow markings and painted buffers)** – This non-motorist was located in a lane for bicyclists that is located within or directly adjacent to the roadway and not physically separated from motor vehicle traffic (see [In Physically Separated Cycle Lane](#)).
- **In Physically Separated Cycle Lane (e.g., curb, pylons)** – This non-motorist was located in an exclusive lane for cyclists that is located within or directly adjacent to the [roadway](#) and that is physically separated from motor vehicle traffic with a vertical element (e.g., raised curbs or medians, bollards, landscaping, or planters). Separated bike lanes are differentiated from standard and buffered bike lanes (see [In Painted Cycle Lane](#)) by the vertical element. They are differentiated from [Shared-Use Path or Trail](#) by their more proximate relationship to the adjacent roadway and the fact that they are bike-only facilities. Physically separated bike lanes are also sometimes called “cycle tracks” or “protected bike lanes.”
- **On Shoulder** - (if present) This non-motorist was located in the part of a [trafficway](#) contiguous with the [roadway](#) for emergency use, for accommodation of stopped vehicles, and for lateral support of the roadway structure. A shoulder should be improved or maintained for these purposes (can be paved or unpaved). Not all roadways have shoulders.
- **On Median** – This non-motorist was located in the area of a divided trafficway between parallel roads separating travel in opposite directions. The principal functions of a median are to provide the desired freedom from interference of opposing traffic, to provide a recovery area for out-of-control vehicles, to provide a stopping area in case of emergencies, and to minimize headlight glare. Medians may be depressed, raised, or flush. Flush medians can be as little as four feet wide between roadway edge lines. Painted roadway edge lines four or more feet wide denote medians. Medians of lesser width must have a barrier to be considered a median. Continuous left-turn lanes are not considered medians (see [On Roadway \(travel lanes\) - No Special Lane Use](#)).
- **Pedestrian Refuge Island or Traffic Island** – This non-motorist was located in a defined area between traffic lanes for control of vehicular movements, for toll collection, or for pedestrian refuge. Examples include areas:
 - Between roadways of a trafficway meant to allow for a non-motorist to pause while traveling from one side of a trafficway to the other side;
 - For channelizing the flow of traffic at an intersection;
 - In the center island of a circular intersection;

- Dividing the entrance and exit in a driveway access.
- **Driveway Access** – This non-motorist was located in a portion of the [trafficway](#) at the end of a driveway providing access to property adjacent to a trafficway. This includes the driveway crossing that is the portion of the driveway access where a [Sidewalk](#) or [Shared-Use Path or Trail](#) crosses over the driveway access.
- **On Sidewalk** – This non-motorist was located in that portion of a street between the curb line, or the lateral line of a roadway, and the adjacent property line or on easements of private property that is paved or improved and intended for use by pedestrians. Do not select this attribute for sidewalks within a [Driveway Access](#), [Pedestrian Refuge Island or Traffic Island](#), or [Non-Trafficway Area](#).
- **Shared-Use Path or Trail** – This non-motorist was located in a bikeway physically separated from motor vehicle traffic by an open space or barrier. They may also be used by pedestrians, skaters, wheelchair users, joggers, and other users. Most have two-way travel.
- **Non-Trafficway Area** – This non-motorist was not physically located on any land way open to the public as a matter of right or custom for moving people or property from one place to another (i.e., outside the right-of-way). For example: a person in a parking lot (but not in a parking lot way, which is a [trafficway](#)), a yard, a person in a closed portion of a work zone, or in a house.
- **Other (e.g., gore, separator)** – This non-motorist was located in an area not identified by the other attributes for this data element. This includes other roadside locations, gore, separator, etc. If the non-motorist was in a location outside the right-of-way, see [Non-Trafficway Area](#). If it is unknown where the non-motorist was located at the time of the crash see [Unknown](#).
- **Unknown** – it cannot be determined where this non-motorist was located at the time of the crash.

Highway Safety Rationale:

This data element is important to evaluate crash outcomes, identify behavioral concerns, inform law enforcement and legislative activities, and to assess infrastructure design programs.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for NON-MOTORIST SPECIFIC LOCATION

None

NM8. Non-Motorist Safety Equipment

Element Definition:

The safety equipment used by this non-motorist.

Attribute Values:

Protective

Subfield 1: Non-Motorist Helmet Use (select one)

- [No](#)
- [Yes](#)
- [Unknown](#)

Subfield 2: Non-Motorist Use of Protective Pads (select one)

- [No](#)
- [Yes](#)
- [Unknown](#)

Subfield 3: Non-Motorist Use of Other Protective Safety Equipment (select one)

- [No](#)
- [Yes](#)
- [Unknown](#)

Preventive

Subfield 4: Non-Motorist Use of Reflective Clothing or Carried Item (select one)

- [No](#)
- [Yes](#)
- [Unknown](#)

Subfield 5: Non-Motorist Use of Lighting (select one)

- [No](#)
- [Yes](#)
- [Unknown](#)

Subfield 6: Non-Motorist Use of Other Preventive Safety Equipment (select one)

- [No](#)
- [Yes](#)
- [Unknown](#)

Remarks:

Complete this element for all non-motorists.

Subfield 1: Non-Motorist Helmet Use – used to identify if the non-motorist was wearing a safety helmet (e.g., cycling helmet, skateboard helmet, motorcycle helmet).

Subfield 2: Non-Motorist Use of Protective Pads – used to identify if the non-motorist used padded, shaped attachments to protect specific areas of the body (e.g., elbows, knees, shins).

Subfield 3: Non-Motorist Use of Other Protective Safety Equipment - used to identify if the non-motorist was using protective safety equipment other than a helmet or pads (e.g., eye wear, face shields, gloves, wrist guards).

Subfield 4: Non-Motorist Use of Reflective Clothing or Carried Item – used to identify if the non-motorist was using wearable or carried items (e.g., backpack, triangles, jacket, vest) that reflect light. The emphasis is on the reflective property of the clothing or carried item and does not include devices that give off light under their own power (e.g., flashlights). The reflective item can be reflective tape affixed to regular clothing, special reflective clothing, a reflective device that is worn or a reflective device that is carried. It can be made by the non-motorist and does not have to be specially designed as a safety device. Bicycle reflectors or clothing that is non-reflective but considered to be safety equipment (e.g., hi-glo orange clothing) should be captured in [Subfield 6—Non-Motorist Use of Other Preventive Safety Equipment](#). Subfield 4 is used only for clothing or equipment that is both reflective and worn or carried.

Subfield 5: Non-Motorist Use of Lighting – used to identify if the non-motorist was using light(s) on their person or on a cycle or personal conveyance for safety purposes, to include flashlights.

Subfield 6: Non-Motorist Use of Other Preventive Safety Equipment - used to identify if the non-motorist was using preventive safety equipment other than [Reflective Clothing or Carried Item](#) or [Lighting](#) (e.g., bicycle reflectors and flags, reflectors and triangles on a buggy, Hi-Glo orange clothing, rollerblade stoppers).

The following attributes apply to all six subfields:

- **No** - used when this non-motorist did not use this type of safety equipment.
- **Yes** - used when this non-motorist used this type of safety equipment.
- **Unknown** - used when it cannot be determined if this non-motorist used this type of safety equipment.

Highway Safety Rationale:

This element is important to evaluate crash outcomes, safety equipment design and effectiveness, and behavioral concerns. The element also informs law enforcement activities and legislative actions.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for NON-MOTORIST SAFETY EQUIPMENT

None

NM9. Non-Motorist Device Type

Element Definition:

The type of transport device and motorization of the device operated by the non-motorist.

Attribute Values:

Subfield 1: Device Type (select one)

- [None \(no device\)](#)
- [Unknown if Non-Motorist Was Operating a Device](#)
- **Group 1: Non-Motor Vehicle Transport Device**
 - [Ridden Animal or Animal-Drawn Conveyance](#)
 - [Railroad Vehicle or Road Vehicle on Rails](#)
- **Group 2: Cycles**
 - [Bicycle](#)
 - [Other Cycle](#)
- **Group 3: Personal Conveyances**
 - [Wheelchair or Other Mobility Aid Device](#)
 - [Skates](#)
 - [Skateboard](#)
 - [Self-Balancing Board](#)
 - [Scooter \(standing or seated\)](#)
 - [Personal Conveyance, Other](#)
 - [Personal Conveyance, Unknown Type](#)

Subfield 2: Device Motorization (select one)

- [Not Motorized](#)
- [Motorized](#)
- [Not Applicable](#)
- [Unknown if Motorized or Not Motorized](#)

Remarks:

Complete this element for all non-motorists.

This includes devices that rely on full motor engagement for propulsion or partial motor engagement in addition to human power and includes electrical, chemical, or combustion energy motors. This element identifies presence of a device and motor and not the motor's use for propulsion at the time of the crash. See [Figure 33. Non-motorist device type examples](#).

Subfield 1: Device Type

- **None (no device)** - used when it is known that this non-motorist was not using a transport device at the time of the crash. [PERSON TYPE](#) for this person must equal **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying** or **Pedestrian in or on a Building**.
- **Unknown if Non-Motorist Was Operating a Device** – used when it is not known if this non-motorist was using a transport device at the time of the crash. [PERSON TYPE](#) for this non-motorist must equal **Unknown Type of Non-Motorist**.

Group 1: Non-Motor Vehicle Transport Device

- **Ridden Animal or Animal-Drawn Conveyance** - used for any type of animal being ridden at the time of the crash or any device being drawn by an animal (e.g., wagon, carriage, sleigh).
- **Railroad Vehicle or Road Vehicle on Rails** - used for railroad trains (e.g., passenger or cargo train) and road vehicles operated on rails (e.g., trolley, streetcar).

Group 2: Cycles

- **Bicycle** - a device composed of two wheels held in a frame one behind the other, propelled by foot pedals, and steered with handlebars attached to the front wheel. This includes those solely propelled by human power and those that can be propelled by human power and/or a motor.
- **Other Cycle** - used for any device propelled by pedaling (by foot, hand, or other adaptive means) other than a [Bicycle](#). Examples include unicycle, tricycle, pedal car, handcycle, which can be solely propelled by human power and those that can be propelled by human power and/or a motor.

Group 3: [Personal Conveyances](#)

- **Wheelchair or Other Mobility Aid Device** - used for a device designed primarily for use by a person with a mobility disability for the main purpose of indoor or of both indoor and outdoor locomotion and includes both human and motor-powered devices. Some resemble 3-wheeled scooters; others small 4-wheel carts; still others look like typical human-powered wheelchairs.
- **Skates** - used for wheeled devices for each foot, rather than a connected board. These can be human powered or motorized. Examples include roller skates, inline skates, electric skates (e-skates).
- **Skateboard** - used for a wheeled device without handlebars or center column where the operator balances on a board. These devices have 2 trucks and at least 3 wheels and can be human powered or motorized.
- **Self-Balancing Board** - used for a wheeled device that may or may not have a center column with a handlebar where the operator can stand on a foot platform or foot pegs and manipulate the device with controls on the center column or by weight distribution. These devices enable the user to remain balanced when powered on, have 1 wheel or 2 wheels in parallel, and are motorized. Examples include hoverboards, Segway-style devices, One-Wheel devices. If selected, Subfield 2 must equal [Motorized](#).

- **Scooter (standing or seated)** - used for a wheeled device with a center column and handlebar where the operator can stand on a foot platform. These devices may or may not have a permanent or removable posted seat. These devices have at least two wheels and can be human powered or motorized. These devices are not designed specifically for assisted mobility (see [Wheelchair or Other Mobility Aid Device](#)). For motor scooters or mopeds, see [MOTOR VEHICLE BODY TYPE CATEGORY 2-Wheeled Motorcycle or Moped](#).
- **Personal Conveyance, Other** - used for a device that is not a cycle or a specific personal conveyance attribute listed in this element. The device could be intended for personal mobility (e.g., skis, a sled, toy car, toy wagon, other rideable toy or novelty item, baby carriage) or not intended for personal mobility (e.g., riding on a shopping cart).
- **Personal Conveyance, Unknown Type** - used when it is known the device was a [personal conveyance](#), but the specific type cannot be identified.

Subfield 2: Motorization

- **Not Motorized** - used when an applicable device had no motor.
- **Motorized** - used when an applicable device had a motor for propulsion or partial motor engagement in addition to human power and includes electrical, chemical, or combustion motors. The motor need not be in use at the time of the crash.
- **Not Applicable** – used for the [PERSON TYPE](#) attributes **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying; Pedestrian in or on a Building; Occupant of a Non-Motor Vehicle Transport Device; and Unknown Type of Non-Motorist**.
- **Unknown if Motorized or Not Motorized** - used when this non-motorist was using a transport device, but it cannot be determined if the device had a motor or not.

Highway Safety Rationale:

This element is important to identify non-motorist transport devices with and without motors and evaluate specific countermeasures designed for non-motorists on these devices. This is important to evaluate crash outcomes and vehicle design, assess non-motorist device design, identify behavioral concerns, inform law enforcement and legislative activities, and to measure infrastructure design programs.

Implementation Suggestions:

- If Subfield 1 is coded **None (no device), Ridden Animal or Animal-Drawn Conveyance, Railroad Vehicle or Road Vehicle on Rails, or Unknown if Non-Motorist Was Operating a Device**, then autofill Subfield 2 with **Not Applicable**.
- If Subfield 1 is coded **Self-Balancing Board**, then autofill Subfield 2 with **Motorized**.
- If [PERSON TYPE](#) is coded **Unknown Type of Non-Motorist**, then autofill NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type as **Unknown if Non-Motorist Was Operating a Device**, and autofill Subfield 2: Motorization as **Not Applicable**.
- If [PERSON TYPE](#) is coded **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying or Pedestrian in or on a Building**, then autofill NON-MOTORIST DEVICE

TYPE, Subfield 1: Device Type as **None (no device)**, and autofill Subfield 2: Motorization as **Not Applicable**.

- If [PERSON TYPE](#) is coded **Bicyclist**, then autofill NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type as **Bicycle**.
- If [PERSON TYPE](#) is coded **Other Cyclist**, then autofill NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type as **Other Cycle**.
- The attribute groupings are suggestions for nested drop-down lists. The State should organize the attributes in a way that is meaningful to the State’s users. See [Chapter 11: Designing User-Centered Crash Reporting Systems](#) for more information.

Validation Rules:

- If NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type equals **None (no device), Ridden Animal or Animal-Drawn Conveyance, Railroad Vehicle or Road Vehicle on Rails, or Unknown if Non-Motorist Was Operating a Device**, then Subfield 2: Motorization must equal **Not Applicable**.
- If NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type equals **Self-Balancing Board**, then Subfield 2: Motorization must equal **Motorized**.

Alignment Considerations for NON-MOTORIST DEVICE TYPE:

1. Many States use the term “scooter” to mean many different things. Be very careful to compare the State’s definition to the MMUCC definition before measuring alignment. Do not assume they are the same. For example, a State may be describing a [Wheelchair or Other Mobility Aid Device](#) as a “scooter.” Or a State may be describing a [moped](#) or a motor scooter (a type of [motorcycle](#)), which are motor vehicles and therefore the person riding it would be classified as a motor vehicle occupant rather than a non-motorist.

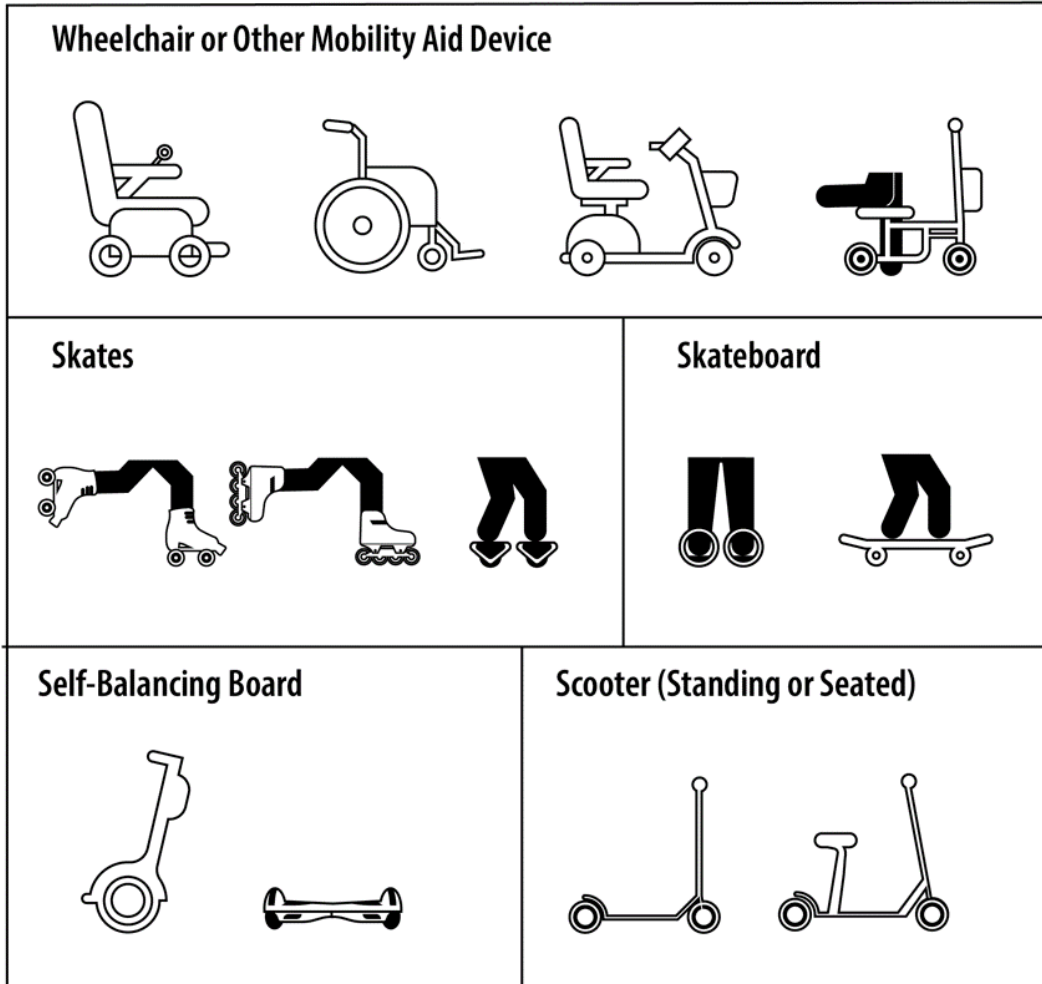


Figure 33. Non-motorist device type examples

NM10. Non-Motorist Traffic Control Device

Element Definition:

The traffic control device applicable to this non-motorist at the time of the crash.

Attribute Values:

Select one:

- [None](#)
- [Person \(e.g., flagger, crossing guard, law enforcement\)](#)
- [Non-Motorist Crossing Signal](#)
- [Non-Motorist Crossing Sign](#)
- [Non-Motorist Prohibited Sign](#)
- [Other Non-Motorist Sign or Signal](#)
- [Unknown](#)

Remarks:

Complete this element for all non-motorists. This data element is seeking the presence of a traffic control device applicable to this non-motorist, not the actuation of the device or if the device contributed to the crash. Sign and signal combination units should be coded as a [Non-Motorist Crossing Signal](#).

If more than one device is present, select the device most related to this crash, with one exception. The attribute [Person \(e.g., flagger, crossing guard, law enforcement\)](#) takes precedence over the entire list when a traffic control person and another traffic control device are present.

- **None** – used when no non-motorist traffic control sign, signal, or person (e.g., crossing guard, flagger) was applicable to this non-motorist at the time of the crash.
- **Person (e.g., flagger, crossing guard, law enforcement)** - used when the directions of a traffic control person applied to this non-motorist at the time of the crash. A traffic control person is an officially designated person (e.g., police officer, crossing guard, flagger), that is in the act of controlling both vehicular and non-motorist traffic. Person takes precedence over the entire list when a traffic control person and another traffic control device are present.
- **Non-Motorist Crossing Signal** – used when a non-motorist crossing signal applied to this non-motorist at the time of the crash. A non-motorist crossing signal is a signal, or sign and signal combination, used to direct non-motorist traffic. Examples:
 - Pedestrian signal head containing the symbols of a walking person (walk) and an upraised hand (don't walk). These may include a countdown display.
 - Pedestrian hybrid beacon used to warn and control vehicular traffic to assist non-motorists in crossing a street or highway at a marked crosswalk.

- Accessible pedestrian signals, which communicate information about pedestrian signal timing in non-visual format such as audible tones, speech messages, and/or vibrating surfaces.
- **Non-Motorist Crossing Sign** – used when a non-motorist crossing sign applied to this non-motorist at the time of the crash. A non-motorist crossing sign is used to limit pedestrian crossing to specific designated crossing locations (i.e., crosswalks). Sign and signal combination units should be coded as a [Non-Motorist Crossing Signal](#).
- **Non-Motorist Prohibited Sign** – used when a non-motorist prohibited sign applied to this non-motorist at the time of the crash. A non-motorist prohibited sign alerts non-motorists attempting to enter a limited access trafficway or other locations where non-motorist facilities (e.g., sidewalk, crosswalk) are not provided, to prohibit non-motorists from crossing a roadway at an undesirable location, or to direct non-motorists to an alternative route. See [Figure 34. Examples of non-motorist prohibited signs](#).



Figure 34. Examples of non-motorist prohibited signs. Source: Manual on Uniform Traffic Control Devices (MUTCD), FHWA

- **Other Non-Motorist Sign or Signal** – used when another type of non-motorist sign or signal was applicable to this non-motorist, other than a [Non-Motorist Crossing Sign](#), [Non-Motorist Crossing Signal](#), or a [Non-Motorist Prohibited Sign](#).
- **Unknown** – used when it is unknown whether any non-motorist traffic control signs, signals, or person (e.g., crossing guard, flagger) applied to this non-motorist at the time of the crash.

Highway Safety Rationale:

This element is used to identify behavioral concerns, inform law enforcement and legislative activities, and to measure infrastructure design programs.

Implementation Suggestions:

None

Validation Rules:

None

Alignment Considerations for NON-MOTORIST TRAFFIC CONTROL DEVICE

1. The MMUCC element identifies the presence of a traffic control device applicable to this non-motorist at the time of the crash regardless of whether the device contributed to the crash. If the State's element identifies only devices that contributed to the crash, the amount of data the State collects for that element differs from the MMUCC guidance, indicating that the State data element is incomplete. See [Chapter 12, Section 12.4.2 MMUCC Completeness](#).

Chapter 9: Narrative and Diagram

The narrative and diagram included in most PCRs contain important information needed to obtain a complete picture of a crash. They can provide clarity to ambiguous or seemingly conflicting data on the crash report and add context to information elsewhere on the crash report. Additionally, the narrative should be used to provide additional details and clarification to the standard data elements and attributes on the crash report and should not be a substitute for completing those standard data elements. The more information included in the narrative and diagram, the more complete the report will be. The narrative and diagram provide an easily digestible format for crash details to be understood quickly by data users, including law enforcement, researchers, highway safety offices, and traffic engineers. NHTSA uses the information included in the narrative and diagram to assist in coding varying State crash report formats into NHTSA's standardized data systems (e.g., FARS, CRSS, and CISS). Additionally, this is critical in determining scope during NHTSA's listing process for CISS and CRSS, and to determine if it is a traffic or a non-traffic crash.

The information in the narrative and diagram should correspond to the rest of the report. For example, [MOTOR VEHICLE NUMBER](#) and [PERSON NUMBER](#) coded on the crash report should be consistent in the narrative and diagram. NHTSA encourages States to train law enforcement officers on best practices in completing the narrative and diagram on a crash report and to include guidance in their PCR Instruction Manuals. Jurisdictions may also have specific requirements or recommendations that law enforcement officers must follow when completing PCR narratives and diagrams.

NHTSA reviewed all the State PCR instruction manuals and identified the following best practices for writing narratives and creating diagrams.

9.1 Narrative

The narrative is the law enforcement officer's written description of what occurred in the crash. The narrative provides the opportunity for an officer to include facts not fully captured in the data elements and attributes or to explain an attribute selection more fully when necessary. The narrative also offers a space to indicate factors that otherwise may not be included in the PCR. The narrative should be written in a chronological order and comprehensively describe the sequence of crash events. The narrative should be clear, concise, and written in plain language. For example, instead of using vague statements such as "Unit 1 and Unit 2 collided," include more specific details (see [section 9.3](#) for examples). The officer may note if the vehicles were moved prior to the officer's arrival, but a narrative should still be completed based upon the sequential crash events. Officers may note in the narrative if the crash report has been amended or contains supplemental documentation.

All crashes have precrash, crash, and post-crash events. The narrative should describe the precrash events prior to the [FIRST HARMFUL EVENT](#) of the crash for each motor vehicle and, if applicable, non-motorists and noncontact vehicles. The officer should label each vehicle or non-motorist to correspond with the numbering throughout the rest of the crash report and the diagram (e.g., Vehicle 1, Vehicle 2, Non-motorist 1, Non-motorist 2).

9.1.1 Precrash

The precrash events should begin by describing the vehicle positions, the directions of travel, the drivers' maneuvers prior to the crash, and all events leading up to the collision. If the crash is a [SECONDARY CRASH](#), the reporting officer should refer to the primary event in their narrative.

9.1.2 Crash

The narrative should follow sequentially from precrash events to the [FIRST HARMFUL EVENT](#). The [SEQUENCE OF EVENTS](#), harmful or otherwise, following the FIRST HARMFUL EVENT until the situation has stabilized should be documented in the narrative. The narrative should include all pertinent details to describe the crash completely. If a State's PCR limits the number of events that can be included in the SEQUENCE OF EVENTS to fewer than the number of events that occurred, the omitted events should be captured in the narrative.

9.1.3 Post-Crash

Post-crash information could include the extent of damage to vehicles, injury severity, EMS or medical facility transport information, vehicle towed information, or enforcement actions.

9.1.4 Other Information

Law enforcement officers can include in the narrative any circumstances they believe contributed to the crash or are relevant in some way. Examples may include witness statements, driver behaviors (e.g., speeding, impairment, use of electronic mobile devices), or vehicle factors (e.g., mechanical problems). In addition, pertinent environmental factors such as weather or lighting conditions should be documented. The officer may also list infrastructure or roadway features relevant to the crash (e.g., pavement markings, traffic control devices). If a traffic signal is relevant in the crash, the officer might include the status of the traffic signal at the time of the crash if known (e.g., red, yellow, green).

When describing the crash event, the reporting officer may comment on the injuries sustained by the crash victims, damage to property or vehicles (including trailers or towed vehicles), and evidence such as skid marks or tire tracks. Not everything needs to be mentioned if documented elsewhere on the PCR and there are no additional details. However, when an attribute **Other** or **Unknown** is selected elsewhere on the crash report, the narrative provides an opportunity for the officer to explain the unique circumstance, or why the element could not be determined from the crash scene.

9.2 Diagram

The diagram is a visualization of the [SEQUENCE OF EVENTS](#) in relation to the crash scene. The diagram shows the events of the crash as described in the narrative and other fields of the crash report and relates them spatially. The diagram portrays the officer's understanding of what took place, based on evidence gathered (e.g., statements from drivers, passengers, and/or non-motorists involved in the crash, witnesses, and physical evidence collected at the scene of the crash). If the vehicles involved in the crash have been moved prior to the officer's arrival, the officer should still create a diagram to reflect the events of the crash. Data analysts use the diagram to verify the crash location and understand the events and how they relate to the trafficway.

The diagram should display a north arrow. Diagrams do not need to be to scale, unless required by the reporting agency, but should be proportional and clearly convey what occurred before, during, and after the crash. If a diagram is drawn to scale, a linear scale should be included on the diagram.

The diagram should show all trafficways involved in the [unstabilized situation](#) and their relationship to the crash. Trafficways should be drawn to reflect curves in the roads, any intersections, interchanges, or driveways relevant to the crash. Label the street names and/or route numbers for each roadway involved. If a crash occurred on a segment of road away from intersecting trafficways, listing nearby mileposts on the diagram can help locate the crash. Business names and house numbers can be included if related to the unstabilized situation or to help locate the crash. Use of an incident location tool (ILT) can import an image where the crash occurred, easing the burden on the officer, and reducing the opportunity for errors.

When relevant, include trafficway features such as shoulders, curbs, or medians. Also, include traffic control devices or pavement markings related to the crash (e.g., lane markings for a crash with [RELATED FACTORS – DRIVER LEVEL](#) attribute **Failed to Keep in Proper Lane** or crosswalk markings if the crash involves a non-motorist crossing an intersection). Relevant fixed objects (e.g., fence, utility pole, trees, mailboxes, or guardrails) and non-fixed objects (e.g., a box that falls off the back of a truck) should be included with respect to the [SEQUENCE OF EVENTS](#). The diagram can include temporary or unusual conditions relevant to the crash, which can be physical (e.g., work zones), environmental (e.g., standing water or ice on the road), or evidence (e.g., skid marks, tire tracks, or vehicle debris).

Once the roadway and all relevant surroundings are included, the officer should add the units (vehicles and non-motorists) to the diagram. Label the units consistent with the narrative and the rest of the PCR. Draw the units at the approximate location of the [FIRST HARMFUL EVENT](#). Show each unit's path using a line with an arrow showing direction of travel and differentiate paths prior to the FIRST HARMFUL EVENT and after via solid and dashed lines (e.g., a dashed line prior to the FIRST HARMFUL EVENT and a solid line after the FIRST HARMFUL EVENT). If important, show each unit's position in subsequent harmful events or once the vehicle(s) is/are stabilized.

9.3 Example Narrative and Diagram

Unit 1 was traveling east on Tea Tree Road behind a school bus. Unit 2 was traveling west on Tea Tree Road. The school bus slowed to a stop to let children off and extended the stop sign arm and turned on the flashing lights. Unit 2 had begun passing the school bus prior to the school bus stopping. The driver of Unit 1 had been changing the radio station in the vehicle and did not notice the school bus slowing. The driver of Unit 1 looked up from the radio, saw the bus had stopped, quickly swerved into the oncoming lane to avoid the bus, and collided head-on with Unit 2.

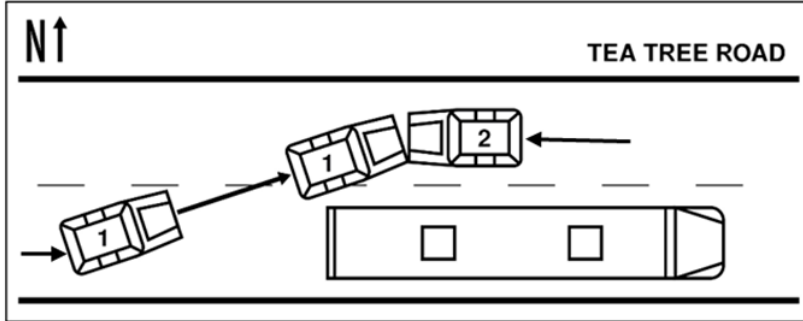


Figure 35. Example of a crash scene diagram

Chapter 10: Traffic Records Data Integration

A State traffic records system consists of data about the State's roadway transportation network and the people and vehicles that use it. It has six primary components: Crash, Driver, Vehicle, Roadway, Citation/Adjudication, and Injury Surveillance. NHTSA encourages States to integrate their traffic records data systems to reduce the burden and redundancy of several data collection efforts. This chapter contains best practice recommendations for data linkage.³ State traffic records assessments identify data integration as a challenge for many States. Ideally, all State crash data is consolidated into one database with a clearly defined organizational custodian and is generally accessible to key stakeholders. The crash system provides both an official record of the crash and the data that might help to identify traffic safety problems and to design and evaluate traffic safety countermeasures. Integrating crash data with other data systems enables users to conduct analyses and generate insights that might otherwise be impossible to achieve if based solely on crash data or the contents of any other single data system. Integrated data adds detail and provides a fuller picture to understand each crash event, the roadway environment, and the people and vehicles involved. Other data integration benefits include:

- Facilitating auto-population of information (as described in [Chapter 11: Designing User-Centered Crash Reporting Systems](#)) to reduce the burden for law enforcement officers in crash data collection;
- Increasing the information available to decision-makers while avoiding the expense, delay, and redundancy associated with collecting the same information separately; and
- Supporting the electronic reporting of traffic records data to improve timeliness, accuracy, and uniformity.

NHTSA defines key concepts of data linkage to establish common terminology. NHTSA's [Traffic Records Program Assessment Advisory](#) (Report No. DOT HS 812 601) describes the following terms.

- **Data linkages:** The connections established by matching at least one data element from a record in one file with the corresponding element or elements in one or more records in another file or files. Linkages may be further described as interface linkages or integration linkages depending on the nature and desired outcome of the connection.
- **Data interface:** A seamless, on-demand connectivity and a high degree of interoperability between systems that support critical business processes and enhance data quality. An interface refers to the 'real-time' transfer of data between data systems (e.g., auto-populating a crash report using a barcode reader for a driver's license).
- **Data integration:** The discrete linking of databases for analytic purposes.

NHTSA, the MMUCC Committee, and subject matter experts from each traffic records data system conducted a review of existing national data standards and guidelines. To assist States in identifying data elements and sources for integration with their crash system, MMUCC recommends the following data elements from nationally accepted standards. States are

³ The recommendations in this chapter are not part of MMUCC mapping or alignment calculations as described in [Chapter 12: Aligning to MMUCC](#), but are best practices and reflect authoritative source documents for States to improve the quality of their traffic records data systems.

encouraged to consider additional elements that may be beneficial for traffic safety analysis. For more information on specific data elements, attributes, and guidance, see each referenced document or system.

10.1 Vehicle Data System

Some benefits of data integration include the following.

- Law enforcement can verify the information entered into a citation or crash report for in-State registered vehicles and drivers in real time.
- Vehicle and driver records can be updated with crash and citation information close to real time.

American Association of Motor Vehicle Administrators (AAMVA) D20

Using the [VEHICLE IDENTIFICATION NUMBER](#), [MOTOR VEHICLE LICENSE PLATE NUMBER](#), and other data elements from the PCR as key linkage variables, below are AAMVA D20 vehicle data elements that can be integrated with the State crash system. For more information and the most current version, visit [AAMVA D20 Traffic Records Systems Data Dictionary](#).

- A.21.30 Safety Inspection Date
- A.21.32 School Bus Safety Equipment Condition
- A.22.4 Insurance Company Code
- A.32.22 Registration Plate Type
- A.32.25 Registration Status
- A.32.28 Registration Year
- A.38.16 Vehicle Brand Status
- A.38.18 Vehicle Commercial Class Code
- A.38.42 Vehicle Number of Axles
- A.38.49 Vehicle Recall Compliance

Implementation Suggestions:

- Consider interfacing citation and crash reports with the State's vehicle registration system to auto-populate the VIN, make, model, etc. based on a license plate lookup. Validate the imported vehicle information with the actual vehicle(s) in the crash.

10.2 Driver Data System

Some benefits of data integration include the following.

- Linkages of driver records with citation and crash records helps target educational campaigns against impaired driving and seat belt non-compliance to appropriate demographic groups.
- Linking driver data to injuries resulting from crashes lets DMVs determine effectiveness of their administrative authority and duty to grant, suspend, and revoke driving privileges.
- Integrating the driver and crash systems supports a deeper understanding of crash risk by providing driver history (e.g., crashes and traffic violations, key indicators for potential future incidents).

American Association of Motor Vehicle Administrators (AAMVA) D20

Using the [DRIVER LICENSE NUMBER](#), [NAME OF PERSON INVOLVED](#), [DATE OF BIRTH](#), and other data elements from the PCR as key linkage variables, below are AAMVA D20 driver data elements that can be integrated with the State crash system. For more information and the most current version, visit [AAMVA D20 Traffic Records Systems Data Dictionary](#).

- A.2.9 Driver License Statuses
- A.9.4 Driver Height
- A.9.6 Driver Medical History Indicator
- A.9.8 Driver Race and Ethnicity
- A.9.12 Driver Weight
- A.11.7 Driver License Commercial Class Code
- A.11.8 Driver License Endorsement Code
- A.11.18 Driver License Commercial Status
- A.11.19 Driver License Non-Commercial Status
- A.14.1 Driver License Restriction Code
- A.15.1 Driver License ACD Withdrawal Reason Code
- A.15.11 Driver License Withdrawal Type

Implementation Suggestions:

- Consider interfacing the citation and crash report with the State's driver data system to auto-populate appropriate driver information.
- Consider integrating the driver and adjudication systems to auto-populate driver histories with court adjudications.

Commercial Driver License Information System (CDLIS)

Using the [CRASH DATE](#), [DRIVER LICENSE NUMBER](#), [NAME OF PERSON INVOLVED](#), [DATE OF BIRTH](#), and other data elements from the PCR as key linkage variables, below are CDLIS elements that can be integrated with the State crash system. For more information, visit [AAMVA's CDLIS webpage](#).

- DCVCOM Conviction Commercial Vehicle Indicator
- DACJUR Crash Jurisdiction Code
- DCIDCI Citation Date
- DCVCCA Conviction Offense ACD Code
- DACSEV Crash Severity Code
- DCVJUR Jurisdiction Code – Convicting
- DCVDCV Conviction Date

10.3 Roadway Data System

Some benefits of data integration include:

- Traffic planners and roadway engineers have access to the trafficways with the most frequent and serious injury crashes and traffic citations, to use resources effectively.
- Law enforcement has access to roadway inventory, GIS data, and vehicle miles traveled per trafficway, to plan location-based enforcement strategies.

Model Inventory of Roadway Elements

Using [GLOBAL POSITION \(LATITUDE, LONGITUDE\)](#) and other data elements from the PCR as key linkage variables, below are FHWA's MIRE data elements to integrate with the State crash system. FHWA MIRE fundamental data elements (FDE) are noted, and data elements identified by the MMUCC Committee as most promising candidates for data integration or linkage are noted with an asterisk. For more information and the most current version, visit [FHWA's MIRE webpage](#).

- AADT (FDE)*
- AADT Year (FDE)
- Access Control (FDE)*
- Begin Point Segment Descriptor (FDE)
- Bicycle Count/Exposure*
- End Point Segment Descriptor (FDE)
- Direction of Inventory (FDE)
- Federal Aid (FDE)*
- Functional Class (FDE)*

- Interchange Type (FDE)*
- Intersection/Junction Geometry (FDE)*
- Intersection/Junction Traffic Control (FDE)
- Location Identifier for Road 1 Crossing Point (FDE)
- Location Identifier for Road 2 Crossing Point (FDE)
- Location Identifier for Roadway at Beginning Ramp Terminal (FDE)
- Location Identifier for Roadway at Ending Ramp Terminal (FDE)
- Median Type (FDE)
- Median Width*
- Motorcycle Count or Percentage*
- Number of Through Lanes (FDE)
- One/Two-Way Operations (FDE)
- Percentage Trucks or Truck AADT
- Presence/Type of Bicycle Facility*
- Ramp AADT (FDE)
- Ramp Length (FDE)
- Railroad Crossing Number*
- Roadway Lighting*
- Roadway Type at Beginning Ramp Terminal (FDE)
- Roadway Type at Ending Ramp Terminal (FDE)
- Route Number (FDE)*
- Route/Street Name (FDE)*
- Route Type (FDE)
- Rural/Urban Designation (FDE)*
- Segment Identifier (FDE)*
- Segment Length (FDE)
- Surface Type (FDE)*
- Total Daily Two-Way Pedestrian Count/Exposure*
- Type of Governmental Ownership (FDE)*
- Unique Approach Identifier (for each approach) (FDE)
- Unique Interchange Identifier (FDE)

- Unique Junction Identifier (FDE)
- Year of Ramp AADT (FDE)

Highway Performance Monitoring System (HPMS)

Using [GLOBAL POSITION \(LATITUDE, LONGITUDE\)](#) and other data elements from the PCR as key linkage variables, below are HPMS elements that can be integrated with the State crash system. For more information, visit [FHWA's HPMS website](#).

- Route_Number
- Functional_System
- Facility_Type
- Structure_Type
- Median_Type
- Shoulder_Type
- Signal_Type
- Surface_Type
- Ownership

10.4 Citation/Adjudication Data Systems

Some benefits of data integration include:

- Aids in planning high-visibility enforcement in areas with the most frequent and serious injury crashes and traffic citations, reducing costs and putting resources where they are most effective.
- Court records are updated with the latest crash and citation data uploaded from law enforcement in near real-time; in turn, law enforcement records are updated with the most current adjudications.
- DUI offenders can be tracked from arrest through adjudication.
 - The State can identify repeat offenders.
 - DMVs can ensure reinstatement follows compliance with court-ordered sanctions.
 - The State can evaluate education and therapy programs for success.
 - The State can conduct and evaluate prevention programs like ignition interlocks.

Example Citation Database (Typical State System, No Standard)

Using the [DRIVER LICENSE NUMBER](#), [NAME OF PERSON INVOLVED](#), [DATE OF BIRTH](#), and other data elements from the PCR as key linkage variables, below are typical citation data that can be integrated with the State crash system. No national standard currently exists.

- Jurisdiction Code
- Race and/or Ethnicity
- Citation Number
- Citation or Violation Date
- Docket Number
- Contributed to Crash

Example Adjudication Database (Typical State System, No Standard)

Using the [DRIVER LICENSE NUMBER](#), [NAME OF PERSON INVOLVED](#), [DATE OF BIRTH](#), and other data elements from the PCR as key linkage variables, below are typical adjudication data that can be integrated with the State crash system. No national standard currently exists.

- Court Code
- Race and/or Ethnicity
- Citation Number
- Citation or Violation Date
- Conviction Date
- Conviction Offense ACD Code
- Docket Number
- Final Disposition
- Contributed to Crash

Example Traffic Court Records System (Typical State System, No Standard)

Using the [DRIVER LICENSE NUMBER](#), [NAME OF PERSON INVOLVED](#), [DATE OF BIRTH](#), and other data elements from the PCR as key linkage variables, below are typical traffic court records data that can be integrated with the State crash system. No national standard currently exists.

- Court Code
- Citation Number
- Citation Date/Time
- Initial Charge
- Final Disposition

10.5 Injury Surveillance Data Systems

Some benefits of data integration include the following.

- Linked crash with EMS and injury surveillance records provide more accurate and complete injury data.
- EMS and injury surveillance agencies have access to traffic crash data that gives them better understanding of the contributing circumstances surrounding injuries.
- Linked crash with EMS and injury surveillance data give more accurate crash location and time data that can help EMS improve response times.

National Emergency Medical Services Information System (NEMSIS)

Using the [EMS UUID](#), [NAME OF PERSON INVOLVED](#), [DATE OF BIRTH](#), and other data elements from the PCR as key linkage variables, below are the NEMSIS v3.5.0 information and data elements that can be integrated with the State crash system. For more information and the most current version, visit the [NEMSIS webpage](#).

- Automated crash notification (ACN) data
- eTimes.01 PSAP Call Date/Time
- eScene.09 Incident Location Type
- eDispatch.01 Dispatch Reason
- eResponse.01 EMS Agency Number
- eRecord.01 Patient Care Report Number
- eRecord.03 Incident Number
- eDisposition.19 Final Patient Acuity
- eDisposition.21 Type of Destination
- eDisposition.28 Patient Evaluation/Care
- eDisposition.30 Transport Disposition
- eSituation.07 Chief Complaint Anatomic Location
- eSituation.13 Initial Patient Acuity
- eInjury.01 Cause of Injury
- eInjury.02 Mechanism of Injury
- eInjury.03 Trauma Triage Criteria (high risk for serious injury)
- eInjury.04 Trauma Triage Criteria (moderate risk for serious injury)
- eOutcome.10 Emergency Department Diagnosis
- eOutcome.13 Hospital Diagnosis
- eVitals.23 Total Glasgow Coma Score

- eVitals.26 Level of Responsiveness (AVPU)
- eVitals.33 Revised Trauma Score

Implementation Suggestions:

- Consider using the [EMS UUID](#) to link the crash report with the EMS patient care report(s) and other injury surveillance data systems (e.g., trauma registry, hospital records).
- Consider using **eOutcome.10 Emergency Department Diagnosis** and **eOutcome.13 Hospital Diagnosis** to compare to the [INJURY STATUS](#) on the crash report.

National Trauma Data Bank (NTDB)

Using the [EMS UUID](#), [NAME OF PERSON INVOLVED](#), [DATE OF BIRTH](#), and other data elements from the PCR as key linkage variables, below are the NTDB data elements that can be integrated with the State crash system. For more information, visit the American College of Surgeons [NTDB webpage](#) and the [National Trauma Data Standard webpage](#).

- Incident City
- ICD-10 Injury Diagnosis
- AIS Code
- Highest GCS-Total
- Initial ED Hospital GCS-Total
- ICD-10 Primary External Cause Code
- Race
- Ethnicity
- Date of Admission
- Time of Admission
- Location of Trauma Center

National Standard Certificate of Death

Using the [EMS UUID](#), [NAME OF PERSON INVOLVED](#), [DATE OF BIRTH](#), and other data elements from the PCR as key linkage variables, below are the Death Certificate data elements that can be integrated with the State crash system. For more information, visit the [U.S. Standard Certificate of Death](#) provided by the CDC.

- Death Certificate Number
- 17. County of Death
- 29. Actual or Presumed Date of Death
- 30. Actual or Presumed Time of Death
- 32. Cause of Death

- 38. Date of Injury
- 41. Injury at Work?
- 44. If Transportation Injury, Specify
- 52. Decedent of Hispanic Origin?
- 53. Decedent's Race

Alcohol and Drug Toxicology (Typical State System, No Standard)

Using the [EMS UUID](#), [NAME OF PERSON INVOLVED](#), [DATE OF BIRTH](#), and other data elements from the PCR as key linkage variables, below are example data elements that can be integrated with the State crash system. No national standard currently exists.

- Laboratory Number
- Specimen Type
- Alcohol (ethanol) Results (blood, urine, and vitreous test results should be represented as g/dL - North American standard)
- Drug Toxicology Results

Chapter 11: Designing User-Centered Crash Reporting Systems

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The information in this chapter supports State and local agencies in developing crash reporting systems and the developers of the systems to create a user-friendly product for law enforcement officers that supports high quality data collection. This chapter will:

1. Support understanding the importance of allocating time and funding for user-centered design processes early and throughout the development of crash reporting interfaces
2. Communicate the limitations and consequences of using fillable PDF data entry systems or paper reports for crash reporting
3. Provide guidance to deploying dynamic web-based or wizard-based systems to result in easy-to-use systems that yield high quality data
4. Provide design guidance for addressing individual MMUCC elements and attributes to reduce mental workload, errors, and frustrations among law enforcement officers
5. Provide guidance for the number and variety of end-users of crash reporting systems who should participate in system testing

History of Crash Reporting

Addressing commonalities in unsafe road conditions, vehicle designs, and driver behaviors observed in crashes is one of the greatest opportunities to prevent deaths and injuries from traffic crashes in the future. However, extracting meaningful and accurate data across all reportable crashes to identify these commonalities requires standardization in the documentation process. The first documented automobile fatal injury goes back to 1869, in which a young Irish woman named Mary Ward was crushed under the heavy wheels of a steam carriage after falling from it during a turn (Fallon & O'Neill, 2005). A current examination of this crash would result in obvious preventative solutions through safer designs of motor vehicles, such as mandated installation of seat belts. Safety innovation and adoption is exceedingly slow without a standardized reporting method and unified system to identify patterns of injuries and deaths from design failures such as this. Notably, the United States did not mandate seat belts to be installed in all seats until 100 years later (Kahane, 2015).

The history of the crash reporting standardization process, previously known as accident reporting, goes back decades and continues to evolve today. The first nationwide collection of fatal crash data began with the Fatal Accident Reporting System (FARS) in 1975, known today as the Fatality Analysis Reporting System (Dougan et al., 1980). This system required all 50 States, DC, and Puerto Rico to submit case files of coded data elements using a combination of police crash reports, vehicle and driver's registration files, highway department files, and coroner's reports. Early analyses of FARS data found substantial incomplete or missing data and a host of issues commonly stemming from transcription errors from transferring paper-based police crash report data into the new data file (Dougan et al., 1980).

The introduction of the first Model Minimum Uniform Crash Criteria Guideline in 1998 helped to create a national standard of data collection for all police crash reports and, in turn, aimed to improve the quality of crash data for each State's own use and analysis. The creation, and subsequent revisions, of MMUCC provided guidance for improved uniformity of crash data *reporting*; however, a major barrier in uniformity of crash data *recording* remained and persists today.

Transition from paper to electronic crash recording

Early crash reporting by law enforcement officers required extensive training to understand the terminology of crash reporting, ensure business rules were met, and record crash details with sufficient clarity to transfer the information for compilation into a larger data set. Early crash training courses for law enforcement officers on crash reporting stressed that a typed or printed standardized report would speed the flow of usable crash information to result in effective crash countermeasures (Daugherty, 1972). The paper format of crash reporting of that time, however, presented immense difficulty to support the completion of reports in a manner that fully lived up to this vision. States often struggled with a weeks-long backlog in their processing of paper reports (GAO, 2010) since paper reports typically required secondary editing to correct spelling errors or data cleaning to address data inconsistencies such as alternative road names (Austin, 1995; Ahmed et al., 2019).

The advent of computerized crash reports provided a solution to many of the crash data accuracy and timeliness barriers that were experienced with paper crash reports. Electronic crash reports could drastically reduce the State's backlog of processing data by speeding data recording and transmission from law enforcement agencies and reducing the time burdens of cleaning and editing data prior to combining into central data repositories (GAO, 2010). Many of the data improvement gains experienced by these early systems served the agencies receiving crash data as new technical systems are typically designed with a business-technical focus. However, the intention behind the design should instead have a socio-technical focus to consider how these systems would affect law enforcement officers (i.e., the system's users) to make their roles easier rather than simply supporting the bureaucratic process (Eason et al., 1996; Wastell & White, 2014).

User-Centered Design Eases Crash Reporting

The shift from predominantly paper-based crash reporting forms to electronic forms provided an opportunity to reduce missing data, delayed data transmission, and transcription errors (GAO, 2010). Without careful design considerations, however, these errors may simply be replaced with new types of errors through strained human computer interactions. Optimizing an electronic crash reporting system to support officers in data collection, and not create new types of errors, requires a user-centered design approach. The user-centered design approach cycles through three basic processes (Lee et al., 2017, [Figure 36](#)):

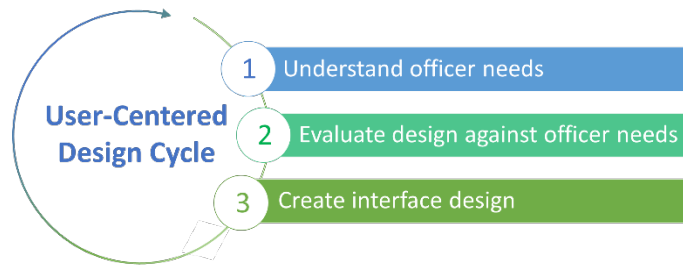


Figure 36. Visualized cycle of three main stages of user-centered design

The user-centered design approach should begin at design concept and be repeated until the final system is launched. Understanding officer needs can take many forms including interviews, surveys, and observing officers during crash recording (Lee et al., 2017). This process will help developers anticipate knowledge gaps, error propensities, and understand officers' mental models. Evaluating designs against officer needs should include usability testing to support design that is intuitive and will be used as intended. Conducting usability testing on early mock-ups and prototypes will help identify issues early so that improvements can be made before the final product is built or even in beta testing, when changes are often too expensive to consider (Dumas & Fox, 2012). Failing to apply principles of user-centered design in the creation of an electronic crash reporting system will result in poor compatibility with officer expectations and likely lead to (Sanders & McCormick, 1993):

- slower learning,
- increased error rates,
- increased mental workload, confusion, and frustration, and
- abandoned tools.

Most important, **poor design will lead to improper data capture**, which reduces the chances that effective countermeasures can be implemented to reduce serious injury and fatal crashes on our roadways. Additionally, **poor design is costly to government agencies** because it adds excess labor in training time, crash reporting, data processing, and technical support. Further, it may force an expensive redesign after the system is built or deployed and can result in missed opportunities to reduce or recoup financial losses from crashes (Nielsen, 1994). For example, poor design in properly capturing public property damages can cost taxpayers millions of dollars in failures to request and receive restitution from the insurers of drivers responsible for damaging public property (Pianalto, 2015).

Best Practices in Crash Reporting Interface Design

Creating new crash reporting systems, or even selecting an off-the-shelf system from available vendors, may be a daunting task for agencies to undertake. However, there are several best practices adapted from the field of interface design (Rubinstein & Hersh, 1984; Shneiderman & Leavitt, 2006; Shneiderman et al., 2016; Norman, 2013) that developers and government agencies could employ to create or select a crash reporting system that is built with the reporting officer in mind.

1. Use wizard-based or web-based intelligent interfaces
2. Minimize user entry

3. Intelligently structure lists and menus
4. Support decision-making
5. Prevent errors
6. Collect user feedback early and often in the design process

These best practices can be implemented in the design of new, custom-built crash reporting interfaces and many can be used to improve off-the-shelf or existing systems.

1. Use Wizard-Based or Web-Based Intelligent Interfaces

To best support officers during the crash reporting process, electronic crash reporting systems should be designed to be highly interactive, provide decision support, and capture crash details in a manner that best meets the needs, capabilities, and limitations of reporting officers. Two main interface types that afford the needed level of user support and interactive experience to achieve this are wizard-based interfaces and web-based, intelligent interfaces. Both interfaces typically limit visual clutter, use plain language, and support dynamic changes to downstream portions of the crash report to present as minimal number of queries to officers as possible to simplify and speed up the crash reporting process.

Use Wizard-Based Interfaces to Simplify Decision-Making. Wizard-based interfaces are often favored by law enforcement officers because they provide a series of step-by-step dialog boxes that clearly guide the officers through the reporting (Morris et al., 2016). The benefits of wizard-based interfaces are that they present the crash data queries within predefined paths that limits navigational errors to better support data completeness and compliance with logic-based rules. This type of interface reduces officer decision-making and mental workload by presenting information in digestible portions. Wizard-based interfaces often present as few as two to three data queries per screen or are segmented based on logic-based decision points within the crash report (see [Figure 37](#)). This format easily affords downstream data queries to dynamically change based on information provided by the officer. For example, units that are identified as pedestrians can then trigger downstream changes in the report to query only pedestrian-relevant elements or present only pedestrian-relevant attributes to reduce confusion or opportunities for error. This dynamic feature will also auto-complete any unnecessary elements for the unit (e.g., restraint type) with “Not applicable” without requiring any input from the officer.

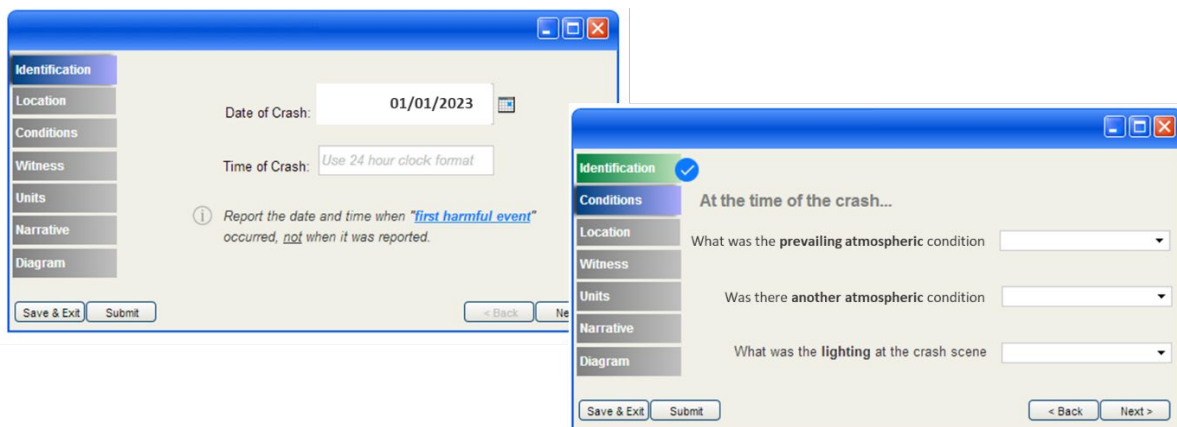


Figure 37. Example of wizard-based interface prototype screens prompting crash level information in limited portions (Morris et al., 2016)

There are limitations to wizard-based interfaces that may result in some user frustration at the rigid navigational paths and may narrow officers' situational awareness of the report as a whole or limit insight into upcoming queries (Wastell & White, 2014; Morris et al., 2016). Additionally, the segmented structure of wizard-based interfaces may require excess clicking or keystrokes to select "next" across the many screens it may present. However, these limitations are expected to be offset by the vast benefits of these guided interfaces.

Use Web-Based Intelligent Interfaces to Give Officers Support and Flexibility. The deployment of a web-based software system for crash reporting has been demonstrated to significantly reduce data entry time and reduce errors (Montella, 2019). Web-based, intelligent interfaces offer immense flexibility in presenting dynamically changing information and limiting the overall number of screens compared to a wizard-based system. While a greater number of data queries are available on each screen compared to wizard-based systems, they should not be overly crowded to use white space to visually group information and support the flow of data entry. The size and spacing of dropdown menus in these interfaces should be sufficient to allow the complete attribute name to be listed. The overall structure of the interface is typically made visible by a vertical menu of tabs across the tops of the screen (see [Figure 38](#)) and may also present tabs along the left side of the screen. These tabs offer some flexibility in navigating the report; however, this does have the limitation of increasing the opportunity for logic-based errors if necessary upstream fields are not selected to present correct downstream queries. These interfaces typically use short element labels but allow for embedded links to make additional reference information easily available. The same interface design used for web-based interfaces can also be used for standalone software when internet access is not available.

The screenshot shows a web-based form for submitting a crash report. At the top, there is a navigation bar with the TxDOT logo and the title 'Example Crash Report'. Below this is a secondary navigation bar with tabs for 'ID & Location', 'Units & Persons', 'Property Damage', 'Factors & Conditions', 'Narrative & Diagram', 'Investigator', and 'Custom Fields'. The main content area is divided into several sections:

- Crash Identification:** Includes fields for 'Crash Date' (with a date picker and instructions to use MM/DD/YYYY format), 'Crash Time' (with instructions to use HHMM format), 'Case ID', 'Local Use' (with a 'Clear' button), and 'Exceeds \$1000 Damage' (with radio buttons for 'Yes' and 'No').
- Crash Report Identifiers:** A section with instructions and checkboxes for 'CMV', 'School Bus', 'Railroad', 'Medical Advisory Board', and 'Active School Zone'.
- Crash Location Information:** Includes 'County' and 'City' dropdown menus, a 'City' checkbox for 'Outside City Limit', and 'Latitude' and 'Longitude' input fields with numerical ranges.
- Road on which Crash Occurred:** Includes a 'Highway Information' section with a 'Quick Fill' button and a 'Show Crash Report Tools' button.

At the bottom of the form, there are navigation buttons for 'Previous' and 'Next', and a row of action buttons: 'Submit', 'Save Progress', 'Validate', 'Delete', and 'Exit Editor'.

Figure 38. TxDOT C.R.I.S. electronic submission system

Paper-Based Electronic Interfaces Increase Reporting Time and Errors. Agencies selecting or custom-building crash reporting interfaces should avoid using simple paper-report conversions into fillable PDF reports. Many of the first electronic crash reporting systems, and unfortunately many that continue today, were a simple conversion of the previous paper form into a form-based fillable PDF (Cabelus et al., 2018). It may seem intuitive to directly convert a paper crash report form into a document-based fillable PDF as it caters to the officer's familiarity with the old report and does not add additional costs of an interface redesign; however, *using a paper-based electronic crash report increases cognitive demands, increases time burdens on officers, and increases opportunities for errors due to their poor designs.*

Paper-based PDF style interfaces fail officers because they rely on using coded data entry, an outdated data entry approach that only serves the bureaucracy of data storage but ignores the

the crash they are reporting. The result of deploying these types of interfaces will be added time for officers to complete reports that should be expected to be met with reduced care and attention during data entry, as officer frustrations mount in interacting with an interface that does not support their needs.

Number of Motor Vehicles:
Automobiles, Motorcycles, etc. 1

Number of Non-Motorists:
Pedestrians, Bicyclists, etc. 0

UNIFORM POLICE CRASH REPORT

Crash Summary

Case Number:

DOT Identifier:
For DOT use only

CRASH DATE, TIME, SEVERITY, AND LOCATION

Date of Crash (YYYYMMDD)	Time (0000-2359)	Town Name	Town #	Crash Severity
<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	<input type="radio"/> Fatal <input type="radio"/> Injury <input type="radio"/> PDO
Latitude	Crash occurred on (street name or route #) at its intersection with (street name or route #)			
<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>			
Longitude	If not an intersection:	distance	<input type="radio"/> Feet <input type="radio"/> Tenths of Mile	N, S, E, W
<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>	name of nearest intersecting road, town line, or mile marker
<input style="width: 100%;" type="text"/>				

CRASH FACTORS AND CONDITIONS

TRAFFICWAY OWNERSHIP 01 Public Road 02 Private Road 88 Not Applicable	LOCATION OF FIRST HARMFUL EVENT 01 On Roadway 02 Shoulder 03 Median 04 Roadside	FIRST HARMFUL EVENT NON-COLLISION 01 Overturn/Rollover 02 Fire/Explosion	TRAFFICWAY OWNERSHIP <i>(Applies to multi-vehicle crashes)</i> 01 Front to Rear 02 Front to Front
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Figure 40. Example of an interactive form-based interface

Summary. New crash reporting interfaces should be created using wizard-based or web-based interactive displays to support officers in the crash reporting process. These options are costlier to build or purchase, but the cost savings that agencies may receive by using paper-based electronic interfaces will be negated by increased costs in training time, technical support, poor data, and potentially costly redesigns. When supportive interfaces are created through a user-centered design process, they should be expected to require minimal training and lead to high officer satisfaction. Further, a well-designed user interface that speeds data entry and reduces officer frustration is the best approach to gaining statewide buy-in for its use as a single statewide data entry system. States that allow data to be collected across different methodologies and then merge these potentially disparate datasets into a single source risk reductions in data reliability and accuracy (Scopatz & DeLucia, 2000). Creating uniformity in not only crash reporting practices, but also *crash recording* practices with a single interface offers the best opportunity for high data validity and reliability for a State.

2. Minimize User Data Entry

Perhaps the most consequential design element of an intelligent crash reporting system to support officers is to minimize the demands on users to enter data (Smith & Mosier, 1986). A single unit crash requires approximately 100 data elements to be completed by officers and this number can quickly grow with multi-unit crashes; however, it is not necessary that officers complete all data entry themselves. Instead, the division of responsibility of crash reporting should be shifted to the system whenever possible. Implementing automated data entry uses what is known as *knowledge in the world* to complement the knowledge that is provided by officers

(Norman, 2013). Using knowledge in the world will often result in superior data reliability compared to *knowledge in the head* that is prone to forgetting and human error, due to several factors. There are several methods including autofilling data, conditional skip logic, and deriving data that designers can use to minimize user data entry. They are described below.

Autofill data. Interfacing with other database systems is one effective method to use knowledge in the world and reduce officer data entry burdens. This may include interfacing with driver and vehicle services systems that can populate vehicle elements such as make, model, year, and color, as well as person information such as full legal name, date of birth, sex/gender, and home address through minimal user data entry (i.e., license plate number and/or driver’s license number, see [Figure 41](#) and [Figure 42](#)). [Chapter 10: Traffic Records Data Integration](#) contains useful guidance for integration opportunities that can bolster data quality and reduce data entry burdens on officers.

Figure 41. Example of auto-population functions (MN Fill) for vehicle owner information (green) from license plate number (highlighted yellow) (Morris et al., 2016)

Figure 42. Example of auto-population functions (MN Fill) for passenger information (green) using Driver's License number (highlighted yellow) (Morris et al., 2016)

Connecting with detailed mapping databases can allow officers to auto-populate reliable data regarding roadway characteristics using GPS location, interactive mapping tools, or a combination of the two (Imprialou & Quddus 2019). This type of automation can also allow officers to autofill county, city, route or street name and system of single or intersecting roadways, along with many other data elements, such as latitude and longitude, through simple interactions with a smart mapping tool (see [Figure 43](#) and [Figure 44](#)).

Figure 43. Example of sequence using mapping feature (top image, orange “Map Location” button) for auto-populating roadway information (bottom image in green boxes, Morris et al., 2016)

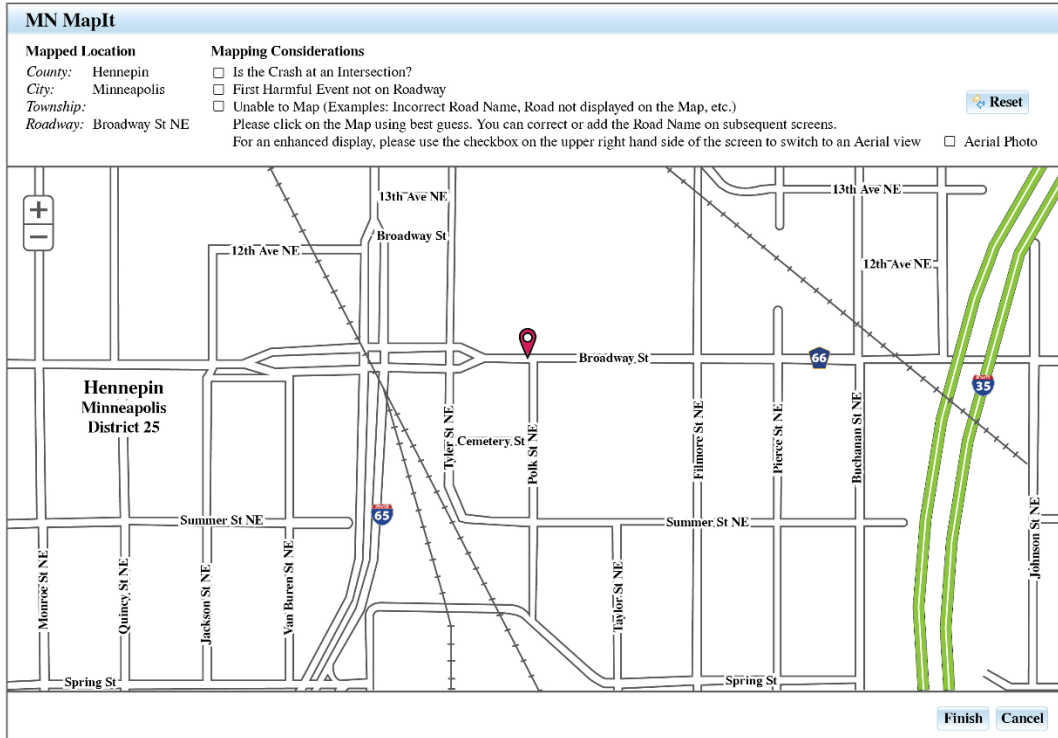


Figure 44. Example of MN MapIT mapping interface that allows enhanced functions when user is unable to map location (Morris, Schwieters et al., 2020)

Another autofill method is to use automated piping features to carry forward duplicate data to avoid requiring officers to repeat the same information more than once, an important usability consideration (Czaja & Sharit, 1997; Smith & Mosier, 1986). Optional autofill functions should be made available to officers for other instances in which the data elements requested may match information already provided, such as shared roadway information across units 1 and 2 (see Figure 45) and shared owner and driver information (see Figure 46).

Sequence of Events:	Roadway Characteristics For Unit:	COPY FROM UNIT 1
<p><i>First Event</i></p> <p>CROSS MEDIAN</p> <p><i>Second Event</i></p> <p>RAN OFF ROADWAY LEFT</p> <p><i>Third Event</i></p> <p>DITCH</p> <p><i>Fourth Event</i></p> <p></p> <p><i>Most Harmful Event</i></p> <p>DITCH</p>	<p><i>Direction of Travel before Crash</i> <i>Total # of Lanes</i></p> <p>Northbound 2</p> <p><i>Roadway Alignment</i> <i>Roadway Grade</i></p> <p>Straight Uphill</p> <p><i>Trafficway Design</i> <i>Speed Limit</i></p> <p>Two-Way, Not Divided 55</p> <p><i>Traffic Control Device Type</i> <i>Traffic Control Special Status</i></p> <p>No Controls</p>	

Figure 45. Example of design mockup of autofill feature (highlighted yellow) for roadway information shared across units 1 and 2 (green) (Morris et al., 2016)

Unit #3 B123456789

Type Events **Person Information** Person Actions Person Conditions Passengers ✓

Crash

Person Type: Driver

Units Identification: Drivers License B123456789 MN FILL COPY FROM OWNER 1

Narrative

Diagram

First Name JENNY Middle Name JANE Last Name DOE NAME SEARCH

DOB 12/16/1955 Sex Female

License Information:

Class	Status	DL State
D The Normal (Not Comn	Valid	Minnesota
Endorsement 1	Endorsement 2	Endorsement 3
None		
Restriction 1	Restriction 2	Restriction 3
None		
License Jurisdiction	Address Correct?	Recommendations?
State	Yes	None

Contact Information:

Address 789 SUNSHINE LANE

City MINNEAPOLIS State Minnesota Zip 55413

Phone Email

Figure 46. Example autofill feature (highlighted yellow) for person information shared across owner and driver (green) (Morris et al., 2016)

Conditional Skip Logic. The business rules of MMUCC dictate that a significant number of elements are conditional based on if/then logic rules. In many cases, attributes selected in a single element will render several preceding elements “Not applicable.” However, placing this rule-based data entry burden on officers is unnecessary and easily addressed through dynamic web-based reporting systems or wizard-based systems. Appendix B: Edit Rules contains clear guidance for elements that are dependent upon one another and can be used in creating dynamic interfaces. For example, only crashes first reported as “Near or in a work zone” should then report on the type of work zone, location of the crash within the work zone, and whether workers or law enforcement were present. Should officers indicate “No” to this initial question, the system should autofill “Not applicable” in the downstream affected fields in the backend system and disable or hide these four fields to reduce mental demands and visual clutter for officers reporting non-work zone crashes (see [Figure 47](#)). *Note: It is recommended that data auto-populated by conditional skip logic (e.g., “Not applicable”) contain a unique identifier so that system-generated data can be differentiated from user-generated data.*

Figure 47. Example conditional skip logic to reveal conditional work zone elements (i.e., progressive reveal) for crashes near or in work zones (Morris et al., 2016)

Derive Data. The remaining method to minimize user data entry is to derive data based on other reported or known data elements of the crash. For example, the number of motor vehicles or people can be calculated and derived in the backend data system. Similarly, States that wish to continue to collect “Crash Severity” can derive this by duplicating the highest injury of any person reported for the crash. The source of the data (e.g., reporting officers, station information) should be derived from the officer’s login credentials and should not be requested of the officer for each crash. Deriving this information can reduce required steps and mental accounting demands on officers.

Summary. Leveraging methods to reduce user data entry can dramatically shift the number of data entry elements that are fully user-reliant to creating opportunities in which can be system-provided. These features can expedite the time it takes to complete a crash report, improve officer satisfaction, and reduce opportunities for error. Morris, Achtemeier, and colleagues (2016) analyzed their prototype for a new dynamic web-based reporting system for the State of Minnesota and showed that the autofill, conditional skip logic, and derived data elements shifted the ratio of user-to-system responsibilities from 151:24 to 104:71. Developers should reference Appendix B: Edit Rules to identify if/then logic opportunities to reduce data entry burdens on officers and improve data accuracy.

3. Intelligently Structure Lists and Menus

Providing clear options and meaningful feedback to users so they clearly understand their options and what they have inputted into the system is an important factor in supporting officers during the data entry task. There are several important considerations for creating menus for data entry including implementing nested menus for very long lists, ordering menu lists intelligently, supporting user expectations, and using pre-selected defaults sparingly, which have been described below.

Consider Nested Menus to Support Decision-Making. In the case of long lists of attributes, officers may be tempted or even trained to satisfice by entering an easily memorable or default code rather than ensuring the appropriate selection has been made. In a 2016 study, officers in Minnesota were found to frequently enter “01” for the first and only event in Sequence of Events that they interpreted as “Motor Vehicle in Transport” rather than “Collision With Motor Vehicle in Transport” based on the abbreviated presentation in their look-up sheet and used this value

even in instances of single-unit crashes (Morris, et al., 2016). A modification of the user interface to use nested menus helped guide users to first reduce the 51 attributes into three main categories (i.e., lane departure or non-collision, collision with non-fixed object, and collision with fixed object) then select from a shorter, non-coded, attribute list, see [Figure 48](#). An audit of single-unit crashes found that this design change reduced the frequency of “01” entry errors from 25.6 percent in 2015 (i.e., pre-design change) to 4.8 percent in 2016 (Morris, Libby, et al., 2020).

The screenshot displays the MN Crash web-based design prototype. At the top, user information is shown: First Name (Katelyn), Last Name (Schwieters), Agency (MN Bureau of Criminal Apprehension), Rank, and Badge #. Below this, the Local Case Number is 123456789. The main form area is divided into sections: Date/Circumstances, Location, and Witnesses & Property Owners. The Date/Circumstances section includes a text input for the Local Case Number (123456789), a date picker for the Crash Occurrence (02/05/2023 at 00:00), and a clock format selector. The Environment section has dropdowns for Lighting (Daylight), Weather 1 (Clear), and Weather 2. The Road Details section has dropdowns for Surface (Wet), Contributing Road Circumstance 1 (Rut, Holes, Bumps), and Contributing Road Circumstance 2 (Road Surface Condition). The Crash Type section features a nested dropdown menu. The first level shows '1. Non-Collision', '2. Collision with Non-Fixed Object', and '3. Collision with Fixed Object'. The second level, under 'Collision with Non-Fixed Object', lists various categories: Animal Alive Before Crash, Animal Dead Before Crash, Deer, Motor Vehicle in Transport, Other - Non Fixed Object, Other - Non-Motorist, Parked Motor Vehicle, Pedalcycle (Bike), Pedestrian, Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle, Train - Cargo, Train - LRT, and Train - Passenger. The form also includes a 'Close' button, a 'Next' button, and a 'Finish' button.

Figure 48. Example of web-based design prototype of nested menu structure for Crash Type (Morris, Achtemeier. et al., 2016)

Order Menu Lists Intelligently. Ordering drop-down menus should take special consideration to support users and enhance data quality. Long or illogically ordered lists can slow officer search time and risk resulting in satisficing by simply selecting the first option or a familiar option that may not be the best option. Morris, Achtemeier, and colleagues (2016) indicated four methods for ordering drop-down menus: alphabetical, logically driven, statistically driven, and standard ordering. [Figure 49. Considerations for drop-down menu ordering](#) describes appropriate uses for each ordering method. These considerations may guide local agencies’ list ordering decisions to support local decision-making.

Ordering Type	Key Considerations for Use	Examples
Alphabetical	Long lists (e.g., exceeding ~20 attributes) with officer familiarity of its contents OR shorter lists with no logical or statistical ordering	U.S. States, Counties
Logically driven	Shorter lists (e.g., <~20) that detail physical spaces OR order of operations	Air bag deployment, Alcohol test type
Statistically driven	Long lists where reporting officer may be unfamiliar with list's contents AND statistical information is available for attribute's true frequency	Motor vehicle body type category
Standard ordering	Lists that <u>are drawn</u> from other agencies (e.g., FMCSA) and existent materials consistently present a set order of attributes	Cargo Body Type

Figure 49. Considerations for drop-down menu ordering

The visible length of drop-down menus (i.e., how many attributes are presented at once) is also important to support officer decision-making and reduce workload. Shneiderman (1980) recommends that all options be presented simultaneously and that lists longer than seven are subject to forgetting early attributes once the user has reached the last attributes. Scrolling drop-down lists should be avoided as much as possible and very long lists where scrolling is necessary should consider nested menus (see [Figure 48](#) above) when appropriate.

Support User Expectations. Some list alterations should be considered to accommodate officer needs and expectations. For example, alphabetically ordered lists of U.S. States should place the law enforcement agency's home State, e.g., Wisconsin, at the top of the list to reduce unnecessary scrolling for the vast majority of crashes that officers in that agency would be selecting. Standard, recurring attributes such as "Unknown," "Other," and "Not applicable" should be placed in the same sequence at the end of drop-down lists where they are included, regardless of the lists ordering convention. Finally, lists containing three or fewer options should not be presented as drop-down menus and should instead be presented as radio buttons or check box options.

Use Defaults Sparingly. Common requests from officers in usability testing can often include default selections that preselect items from drop-down lists to reduce the need for frequent attribute selections that are common among most crashes. While pre-selected defaults can be altered when they are not suitable for the crash scenario, it should be expected that users are less likely to make necessary changes due to the phenomenon known as the *default bias* (Kahneman et al., 1991; Jachimowicz et al., 2019). Further, analysis of data entry systems errors in healthcare settings have found the greatest errors among the fields containing defaults (Shelby-James, et al., 2007). However, in select cases pre-selecting defaults may be appropriate and places little risk of inaccurate data selection due to biases. These cases may include instances where elements are highly likely based on if/then logic of upstream elements, but there may be edge cases in which the pre-selected default will not apply. For example, Morris and colleagues (2020) recommended that in instances when an officer indicates "No" for "Suspects alcohol?" then "Test not given" should be default pre-selected for "Alcohol test" and similarly for drug testing. This pre-selected default was estimated to reduce task duration by 7.6 seconds and still allows for the default to be changed to test given in cases where officers will still test for alcohol even when they do not suspect it (e.g., public bus drivers).

Summary. Leveraging drop-down menus are an important design feature of dynamic web-based reporting systems or wizard-based systems. Ensuring that each drop-down menu is created with the officer and the contents of the menu in mind will help to speed data entry while improving data quality. Limiting the number of elements is also an important consideration in helping to support users' decision-making. There is a tradeoff between offering ample attribute options to account for all crash circumstances and offering too many attributes of which officers lose motivation to search through them all. However, implementing the design considerations outlined above are expected to ease user burden without a pressing need to reduce attribute lists.

4. Support Decision-Making

Crash reporting requires law enforcement officers to rely on both working memory and long-term memory to accurately recall the situational details of the crash they observed and correctly apply business rules of the standardized data format they are expected to follow. Both tasks are at risk of forgetting and performing unintentional knowledge-based and rule-based errors (Rasmussen, 1983; Sanders & McCormick, 1993). Introducing a poorly designed crash reporting system introduces additional cognitive demands on users and, thus, risks further errors in accurate and complete data capture. Conversely, introducing thoughtful user-centered design to crash reporting systems may help to reduce mental workload burdens on officers and support accurate recall and rule compliance. Reducing mental workload can be achieved through design by mapping officers' mental models, supporting situational awareness, embedding aids, and making information visible.

Present Appropriate Flow of Information. The order and flow of the crash report should match the officers' mental model of how they think through the crash information and should be designed to support the dynamic state of the crash reporting system (i.e., allowing for logic to dictate downstream queries). Importantly, the order of the crash report should not be influenced by how analysts or other backend stakeholders process the data, given that the backend data can be easily manipulated. Morris, Achtemeier, and colleagues (2016) conducted a series of card sort activities and interviews with officers to map their preferred order and flow of a crash report. They found that officers preferred a one-to-many structure where all crash level information was completed first, then individual unit information with vehicle, driver, then passenger information completed, before switching to the next unit, see [Figure 50](#). Within each section, an inside-out and/or general-to-specific flow was preferred. For example, officers preferred environmental information (e.g., weather) before location information (e.g., intersection). Within "unit," vehicle details (e.g., make and model) before vehicle events (e.g., sequence of events). Within "driver," vehicle-related elements (e.g., seat belt use) before more strictly person-related elements (e.g., alcohol use).

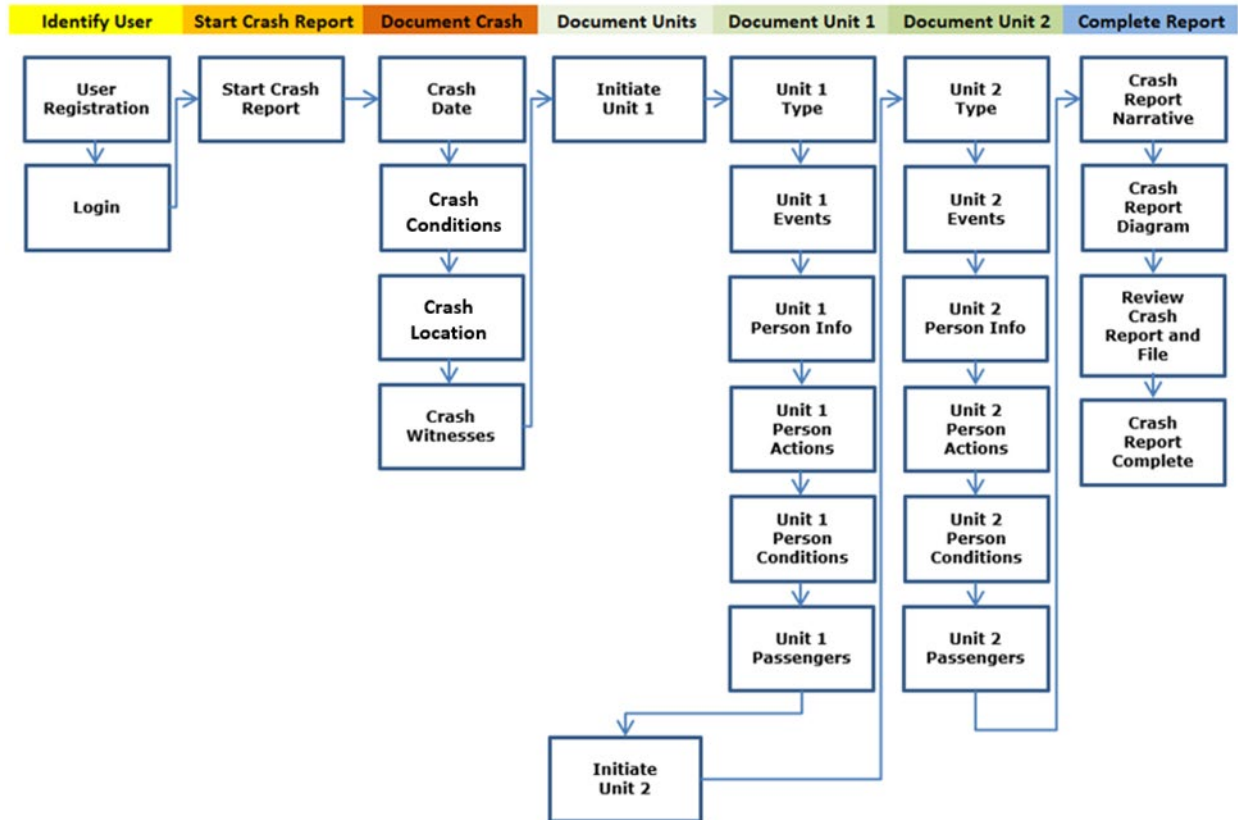


Figure 50. Adapted figure of one-to-many structure within flow chart proposed by Morris, Achtemeier, et al. (2016)

Using best practices in the design and organization of information on each screen of the dynamic crash reporting system or wizard-based system will also help to reduce workload and reduce errors. Placing queries together in logical groupings (e.g., safety equipment grouped separately from injury information) will help officers recall and easily interact with each section. While data entry systems often work to condense as much content into one screen as possible, this approach is not advised for creating usable systems. Designers should use white space to help separate logical groupings from one another (Lee et al., 2017). Using white space helps to reduce the presence of clutter on the page that can also be achieved through dropdown boxes and dividing content across two or more screens.

Support Situational Awareness. Supporting users' situational awareness of where they are in the process of crash reporting will reduce mental workload, support intentional data entry, and reduce erroneous user inputs. Presenting the crash report flow in a manner that matches officer expectations is one way to help to support situational awareness. Another method is to provide a status bar to help officers understand which information they have completed, what is coming next, and how far along they are in the process of completing a report (see Figure 51). This design feature should help reduce the feelings of "lostness," particularly in wizard-based systems where they may only see two to three questions on any one screen, which may limit situational awareness.

Figure 51. Example of progress bar for unit information (across top) and overall crash report progress (along left side) from Morris, Achtemeier, et al. (2016)

Use Plain Language. Natural language interfaces that allow users to select fully listed attributes directly from menus have been well established to reduce errors compared to coded value data entry (Gade et al., 1981; Sanders & McCormick, 1993). The terminology used in MMUCC elements and attributes may not match the knowledge or regional terminology used by local law enforcement officers. HOV may have a local (or commercial) name that is more commonly used and may be a suitable substitute or a useful addition to the attribute name. Additionally, some crash elements or attributes contain engineering language that may not be known or familiar to all officers. Providing alternative names within dropdown lists (e.g., “Sunrise/Sunset” to support “Dawn/Dusk”), in addition to embedded help links, should help increase officer confidence in making selections and improve data quality.

In some cases, it may be appropriate to present different data query labels from those listed in MMUCC to help better describe what information is being asked without relying on training or manual referencing. For example, Sequence of Events is an important section of the crash report that often results in limited data entry (i.e., only one event described) and frequent erroneous data entries by law enforcement officers (Morris et al., 2020). The Massachusetts’ RAMS Crash Report presents this data query by asking officers “What happened first?,” “What happened second?,” etc., rather than simply listing “First event,” “Second event,” etc., see Figure 52. This query also demonstrates a method to support more accurate decision-making by presenting a “Collision with:” and “Non-Collision:” drop-down list to correspond with the plain language query.

Figure 52. Image of Massachusetts’ RAMS Crash Report

Embed Aids, Diagrams, and Definitions. One of the greatest advantages of an electronic crash reporting system is the capability to embed aids throughout the report to ease officer mental workload and bridge the gap between officer existing knowledge and required knowledge (Shneiderman, 2000, Ahmed et al., 2019). There are many definitions that officers may fail to accurately recall and referring to MMUCC or their agency’s manual adds additional time burdens to an already lengthy process. Creating hyperlinks over element label text (i.e., with blue and underlined text appearance) or information bubbles can prime officers to click and be presented with additional information to aid decision-making. Some complex definitions that officers may struggle to retain are “First Harmful Event,” “Trafficway,” “Parked Status,” and “Injury Severity”. Helpful images or diagrams (e.g., diagram of trafficway, diagram of work zone area) should also be included in embedded aids to reduce mental workload, see [Figure 53](#).

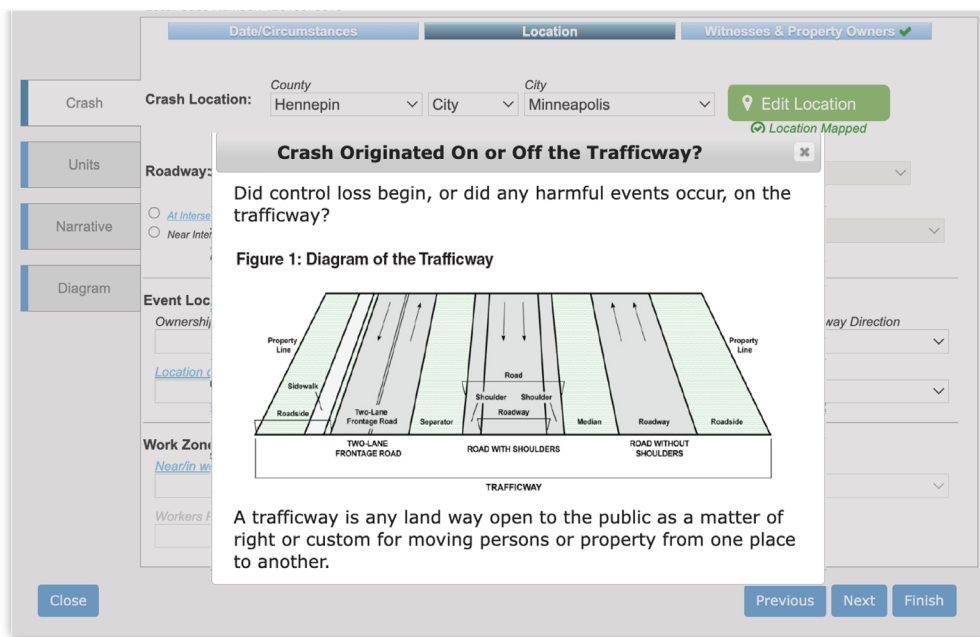


Figure 53. Example of embedded pop-up definition and diagram of trafficway from Morris et al., (2020)

While nearly all elements could feature a hyperlink with definitions and/or business rules, this approach is not recommended. Namely, officers may be unaware of their own lack of knowledge on elements of the report that are prone to errors. Highlighting only the fields that are known to be confusing or error prone will help draw officers’ attention to these aids, whereas providing aids on every field may present excess noise so that the aids that are most in need are lost among the rest. Additionally, some MMUCC diagrams or definitions may provide too much visual information (e.g., manner of collision) or dense text (e.g., injury severity) that is not suitable for inclusion in an embedded aid and should be reduced or reorganized to better fit the space constraints of an aid, see [Figure 54](#).

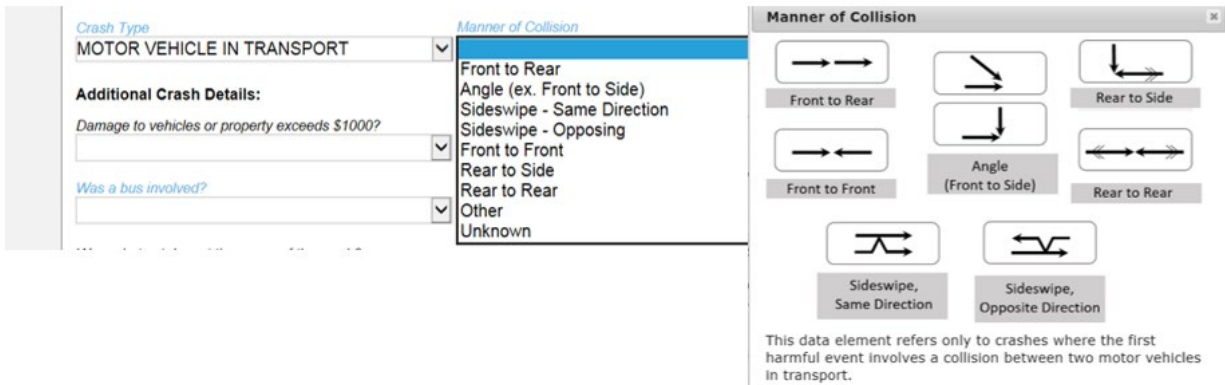


Figure 54. Screenshot of example of embedded aid for manner of collision with reduced images from the MMUCC manual from Morris, Schwieters et al., (2020)

An advanced method of leveraging visual diagrams is to allow users to interact with them for data entry rather than simple referencing. Morris and colleagues (2016) integrated the MMUCC 12-point diagram for “Initial Contact” and “All Damaged Areas” as an interactive tool to allow users to select the areas of damage straight from the diagram rather than reference the diagram and convert that information into the appropriate selection from a drop-down menu, see [Figure 55](#). Notably, the central image of this diagram is pre-populated with one of five vehicle images (e.g., passenger car, motorcycle, bus) based on upstream information entered about the unit type. Tools like these leverage a usability principle known as congruence that match the format of the data element with the format of the data request (Fum et al., 2001).

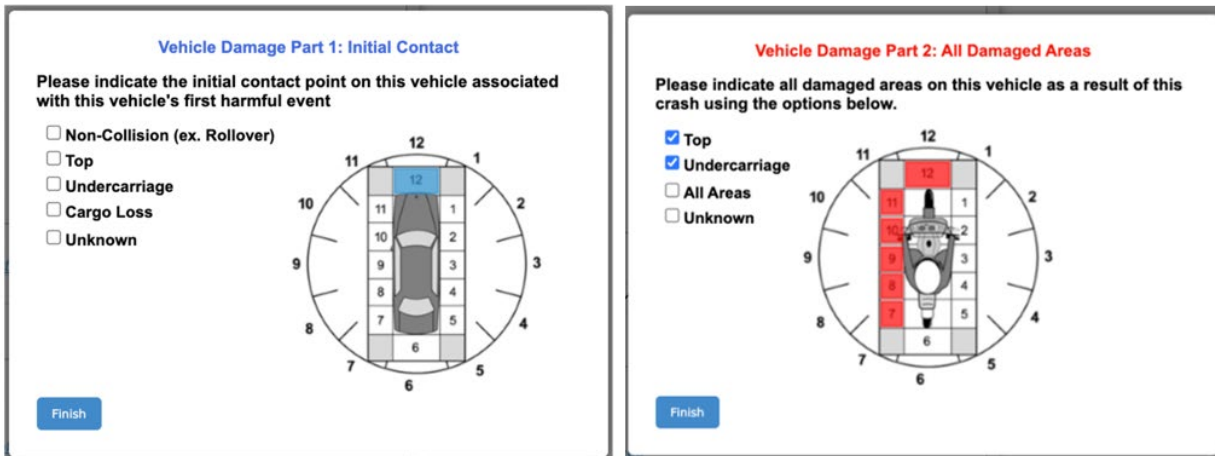


Figure 55. Screenshot of interactive tools to select first point of contact for passenger vehicle (left) and all damaged areas for motorcycle (right), from Morris, Schwieters et al., (2020)

Make Inputted Information Visible. Ensuring that the information that officers input into a reporting system is easily viewable is another important component of reducing mental workload (Johnson, 2010). Designers should select text entry field lengths so that they are long enough to allow users to see 95 percent of the attributes (Shneiderman & Leavitt, 2006). For open entry text fields, visible field lengths should attempt to meet any character limits that the system may have to help guide officer expectations of such limits and avoid surprises or error messages that their entry exceeds the limit. Further, using plain language drop-down lists, rather than coded

data entry, may result in the selection of attributes with many characters that exceed the length of the drop-down list entry field. It is recommended that the length of the entry field be determined to accommodate the characters of most of the attributes in the list, with few exceptions.

Summary. Documenting a crash is a complex task that requires a high level of processing potentially conflicting and possibly emotionally charged information. A poorly designed electronic crash reporting system will drive up officer mental workload and stress on top of what is already a difficult task and will hinder accurate, timely, and complete data collection. While human cognition and capabilities under stress is limited, the possibilities of how electronic crash reporting systems can be designed to help facilitate the crash reporting task is limitless. Creating dynamic electronic reports that map officers' mental models, provide context of their processes, anticipate their knowledge needs, and provide clear feedback will support officers and, in turn, support traffic safety through superior data collection (Nielsen, 1994).

5. Prevent Errors

Supportive, user-centered design works to anticipate errors and reduce the chance they will occur in the first place. Receiving an error while completing a crash report is a rather unpleasant experience and may be a symptom of bad design more than it is a symptom of poor training or poor attention from the reporting officer (Norman, 2013). The good intention of providing restrictions to limit erroneous data entry could result in an overly rigid system that leaves officers frustrated and in need of extensive training to not only understand the processes of crash reporting but now the processes of the report itself. Shneiderman and colleagues (2016) suggest that interfaces should be designed such that users simply cannot make critical errors; moreover, **when officers do make errors in crash reporting, the crash reporting system should offer simple error handling so that the officer can easily recover.** To achieve this, dynamic crash reporting systems should restrict the number of possible actions, reduce error attempts, and offer error recovery options.

Restrict the Number of Possible Actions. One of the benefits of wizard-based reporting systems is that they guide the officer through the reporting workflow and allow little deviation in the order of operations. Systems that guide users to complete logical task sequences through intelligent design can reduce errors and confusion (Barber & Stanton, 2007). Providing a narrow path for completing a crash report will reduce the likelihood that an officer may choose a suboptimal path, which may fail to correctly trigger conditional skip logic or may result in missed fields. Dynamic reporting systems can also reduce the number of fields on each screen and help direct officers to the correct sequence of actions that is not prone to errors.

Reduce Erroneous Attempts. Several common violations in business rules of crash reporting can be sidestepped through intelligent design that limits officers' ability to make an error. Morris and colleagues (2016) recognized that "Ejection" is not a permissible element for drivers or passengers of motorcycles; however, it was found to be frequently selected by officers. In response, the team designed a feature of the Minnesota crash report that did not present this element to officers who had previously indicated that the unit was a motorcycle. A follow up audit found that this design feature reduced the frequency of this error from 72 percent of motorcycle crashes sampled from 2015 to only 1.31 percent of sample crashes from 2016 (Morris et al., 2020). Similarly, officers were observed to frequently document "Manner of Collision/Crash Impact" for crashes with only one involved motor vehicle in transport (i.e., the element requires two). Moving this element to a later phase in the report, that is after the officer

has indicated how many motor vehicles were involved in the crash, the system could simply withhold this element from officers reporting crashes with only one motor vehicle. Like the motorcycle ejection errors, the audit of the data found that 99.1 percent of crashes with one motor vehicle were erroneously coded “Manner of collision” in 2015, but only 2 percent of crashes involving one motor vehicle had this error in 2016. Both design features demonstrate the vast opportunities to reduce errors by removing the opportunities for their occurrence.

Offer Error Recovery Options. After all attempts to prevent errors before they occur have failed, it is important to design systems that provide explicit messages to help officers easily recognize and correct their errors (Shneiderman et al., 2016). Frustration is an expected outcome from officers if they experience errors that are unclear regarding their origin, the correct action, or both. Officers should be notified of their error immediately, rather than giving all error feedback once the officer tries to submit the report, see [Figure 56](#). Reducing the number of fields on any single page can help increase error reporting frequency (i.e., notify officers of errors before they can move on to the next page) and can reduce confusion regarding errors because fewer errors should be presented to officers at once. If some fields on the form are required, while others are not, then providing clear indication of which fields are required or optional is useful to reduce errors. Finally, the criticality of the error should be made clear to the officer with clear capability to reverse the error. For example, if the policy is to accept the report with a missing field, it may still be useful to notify the officer that they failed to complete the field before they submit the report.

The screenshot shows a web form for reporting a crash. At the top, it displays the 'Local Case Number: 1234569810'. The form is divided into three main sections: 'Date/Circumstances', 'Location', and 'Witnesses & Property Owners' (which has a green checkmark). On the left side, there is a vertical navigation menu with buttons for 'Crash', 'Units', 'Narrative', and 'Diagram'. The 'Crash' section is currently active. A red error message is displayed: 'Near/in work zone is required. The Crash has not been mapped.' Below this, the 'Crash Location' section includes dropdown menus for 'County' (Hennepin), 'City' (Minneapolis), and a 'Map Location' button. A red warning icon and text 'Location Not Mapped' are shown next to the map button. The 'Roadway' section has a dropdown menu for 'Route # or Street Name' and 'System'. The 'Event Location Details' section contains several dropdown menus: 'Ownership of Land' (Public Property), 'Crash Originated On or Off the Trafficway?' (Trafficway, On Road), 'Divided Highways Only: Roadway Direction' (North), 'Location of First Harmful Event' (On Roadside), 'Location Relative to Intersection' (Four-Way Intersection), and 'On Bridge?' (No). The 'Work Zone Details' section includes dropdown menus for 'Near/in work zone?', 'Type of work zone', and 'Location of crash related to work zone', along with checkboxes for 'Workers Present?' and 'Law Enforcement Present?'. At the bottom of the form, there are buttons for 'Close', 'Previous', 'Next', and 'Finish'.

Figure 56. Screenshot of Minnesota MNCrash providing clear error feedback and cueing officer of locations containing errors

Summary. Errors in crash reporting are often perceived as an indication that officers lack training, care, or resources to properly complete a crash report correctly. However, even expert officers in crash reporting cannot be expected to submit errorless reports within a poorly designed system. Good crash reporting systems should help officers document all the detail, context, and circumstance of a crash while avoiding errors or making it easy to correct them. When systems are not designed with officers in mind, the fluid dynamic between officer and form breaks down and errors will arise.

6. Collect User Feedback Early and Often in the Design Process

Usability testing is perhaps the most critical practice for good design of a crash reporting system. The mantra of human computer interaction (HCI) design is “know thy user, for he is not thyself” (Rubinstein & Hersh, 1984, p. 8). Conducting usability testing early and often through the design process with *current law enforcement officers who respond to crashes and complete crash reports regularly* is critical to ensuring that the system is designed with the officer in mind and that design issues can be resolved before they become too costly or difficult to address after the system is deployed (Dumas & Fox, 2012).

Conduct Multiple Rounds of Testing With Officers. Usability testing using think aloud, heuristic evaluation, and cognitive walkthrough methods, typically requires 10 ± 2 users to discover most issues with a system design (Hwang & Salvendy, 2010). However, given the complexity of crash reporting with not all aspects of the report applying to all crashes, it is recommended that multiple rounds of usability testing be conducted to allow all key aspects (e.g., non-motorists, multi-unit) of the report to be tested across the various rounds of testing. The early usability testing of the Minnesota MNCrash interface prototype included 41 law enforcement officers across four rounds of usability testing (Morris et al., 2016). These tests began by examining single-unit crashes with different vehicle types (e.g., passenger car or motorcycle) and then expanded to include multi-unit crashes and non-motorist involved crashes to capture the variety of dynamic changes the intelligent report could produce based on unique crash circumstances. The final version of MNCrash was then tested with 18 law enforcement officers over two rounds of usability testing prior to its final launch (Morris et al., 2016).

Test Design on a Variety of Users. Usability testing should include a variety of experience levels (i.e., novice, intermediate, and expert) and a variety of geographical regions (e.g., rural, suburban, urban) to capture the unique perspectives, knowledge, and needs those officers may have. Sampling officers across State patrol/police, county sheriff’s departments, Tribal police departments, and local police departments from different geographical regions will help to capture the variety of scenarios and use cases needed to inform the design of the report. Ensuring that a wide spectrum of users is included in usability testing will help achieve what Shneiderman (2002) calls “universal usability” so that all officers can be supported by the crash report design. Another benefit of sampling from many diverse agencies is that the participation in the testing process helps to instill ownership and buy-in for the crash reporting system and the crash reporting process overall.

Conduct Subject Matter Expert Testing. Once law enforcement officers have helped to guide the design of a crash reporting system, it is useful to test the system using subject matter experts (SME). These SMEs may include law enforcement trainers, analysts, or crash data researchers. This testing provides another layer of protection to stress test the system for edge cases of crash reporting and business rules. Providing a structure for testing scenario types and outcomes is

useful to support systematic testing during this stage of development. Morris and colleagues (2016) created a structure for user acceptance testing (UAT) for SMEs (see [Figure 57](#) and [Figure 58](#)). Providing overly detailed test cases can slow down SMEs during this testing; however, providing broad categories to cover distinct aspects of the crash report and allowing testers to explore based on their expertise allows expedited testing of numerous use cases. Notably, this step should not be used as a substitute for usability testing with current law enforcement officers, nor is a former law enforcement officer among the designers sufficient to represent user needs in design.

Use Case Testing	Description
Scenario	Brief statement of what happens during the incident (does not need extensive details))
Triggering Event	The first point of contact within the crash scenario. Example: Bus impacts pedestrian in crosswalk.
Crash Type	The type of collision involved with the incident.
Location Factor	The type of roadway or roadway feature by which the incident occurred.
Units	The involved parties to the incident.
Conditions	Circumstances adding to or contributing toto the incident.
Additional Persons	Parties involved in the incident (not including the driver).).

Figure 57. Basic UAT Scenario testing structure proposed by Morris, Achtemeier, et al. (2016)

Use Case Testing	Description	Description2	Description3
Scenario 3.1	Incident in a crosswalk in inclement weather involving a fleeing hit/run driver, a pedestrian, and bicyclist.		
Triggering Event	Hit and run vehicle striking a pedestrian and bicyclist in crosswalk.		
Crash Type	Collision with Non-Fixed Object		
Location Factor	Crosswalk		
Units	Hit and Run Vehicle (not present)	Pedestrian	Bicycle
Conditions	Snow/sleet		
Additional Persons	Witness		

Figure 58. Example UAT Scenario Proposed by Morris, Achtemeier, et al. (2016)

Summary. Designing crash reporting systems *with* the officer rather than simply *for* the officer will result in a superior system that will, in turn, result in superior data that is capable of saving lives. This practice prioritizes allowing current officers across diverse agencies with varying experience levels to guide the design of the interface and only using subject matter experts to validate the report after the user-friendly design is created. These activities should be planned for, both in terms of time and budget, so that each iteration of the design and its many components receives testing and feedback from a sufficient number of officers. Agencies can require these. Agencies can require these usability testing activities to be included within vendor proposals for custom-built or off-the-shelf systems with modifications; however, it is preferable to employ an external user experience firm or research group to provide adequate oversight that design choices are guided by best practices and less influenced by cost-cutting, business

motivations of a vendor. Finally, usability testing should be used to explore modifications of existing systems, e.g., when new MMUCC elements and attributes are added, to optimize and improve officer experiences and improve data quality.

Chapter Summary

The quality and utility of crash data is dependent upon the responding officer who communicates their observations and investigations of a crash scene by recoding the information into a standardized format. This process can powerfully illustrate the circumstances that led up to and followed a crash, or obscure and muddle these details. Responding to traffic crashes can be monotonous and tedious under the best of conditions and dangerous and emotionally draining under the worst. As our vehicles, roadways, and standards for crash data continue to evolve and become more complex, the complexity of the crash reporting task will also continue to grow and further strain officers. It is impractical and far too costly to create crash reporting systems that are not created considering human factors and conducting usability testing with officers early and often throughout the design process (Sanders & McCormick, 1993).

The best practices and design guidance principles outlined in this chapter are presented to support agencies in creating custom-built crash reporting interfaces, selecting optimal off-the-shelf reporting systems, or modifying existing systems that put officers at the center of design. Following these best practices will support officers who carry the greatest responsibility in the crash reporting process. A wizard-based or web-based intelligent interface should be a partner with officers to make the crash recording process as quick, intuitive, and effortless as possible and allow officers to provide the most accurate account of the crash as they can. Using the provided principles of user-centered design in creating dynamic electronic crash reporting systems will result in greater compatibility with officer expectations and likely lead to faster learning, reduce mental workload, confusion, and frustration, and reduced error rates (Sanders & McCormick, 1993). The key takeaways of this chapter are:

1. Wizard-based and web-based intelligent interface designs create the greatest opportunities to reduce the time burdens of crash reporting on officers, reduce mental workload, and reduce opportunities for errors
2. Paper-based electronic interfaces are not suited to support officers during the crash reporting process and increase opportunities for errors in data entry, hindering data-driven initiatives to reduce crashes on our roads
3. Data entry can be improved and sped up by reducing unnecessary data entry, intelligently structuring drop-down menus, providing visual aids, and matching the order and flow of the report to officer's mental models of crashes
4. User-centered design can help create crash reporting interfaces that reduce the need for lengthy training and present designs that anticipate errors and prevent them before they occur
5. Conducting usability testing with current officers early and throughout the design process provides the best opportunities to deploy a system that is accepted by officers and reduces the risks that costly changes must be made after the system is deployed
6. User-centered design of crash reporting systems increases data quality that gives agencies the best chance at reducing serious injury and fatal crashes on our roadways

Chapter 11 References

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Chapter 12: Aligning to MMUCC

12.1 Introduction

12.1.1 Purpose

Whenever a State TRCC considers updating their PCR, they should plan to increase their alignment to MMUCC to help improve national crash data uniformity and completeness. Upon request, NHTSA will provide a State TRCC with a MMUCC mapping; an analysis of how well their crash data align to MMUCC, in terms of uniformity and completeness, to identify opportunities for the State to increase their alignment to MMUCC. The methodology below explains how NHTSA measures alignment, specifically the uniformity and completeness of all State crash data elements and attributes compared to the MMUCC data elements and attributes. State TRCCs should contact their NHTSA Regional Program Manager to request a MMUCC mapping at no cost to the State. Likewise, NHTSA's *Guide to Updating State Crash Data Systems* (Brown et al., 2021) provides further explanation of how States can use and interpret a MMUCC mapping report and a process for prioritizing changes that could yield improvements to data collection and data quality in Chapter 3: Increasing Alignment to the Model Minimum Uniform Crash Criteria.

Attribute Uniformity

The State's measure of MMUCC uniformity examines how well the State's attribute definitions and application match the MMUCC attribute definitions and application. For example, when measuring the MMUCC data element [ATMOSPHERIC CONDITIONS](#), a State collects the attribute "Rain" that has the same definition and application as the MMUCC attribute **Rain**. This is a 100 percent uniform match. Whereas another State may have an attribute "Rain" that does not match the MMUCC attribute **Rain**, because the State combines rain and freezing rain. This is a 0 percent uniform match.

Element Completeness

The State's measure of MMUCC completeness examines whether the amount of data the State collects meets or exceeds the amount of data that MMUCC recommends collecting. For example, the MMUCC data element ATMOSPHERIC CONDITIONS recommends a minimum system capability of collecting two selections. A State allows the collection of two attributes. This is a complete MMUCC match. Whereas another State allows the collection of one attribute. This is an incomplete MMUCC match. If a State has an incomplete MMUCC match to a data element, then it will be identified as an area for improvement.

12.1.2 Benefits

The primary benefit of aligning to the MMUCC guideline is increasing the national uniformity and completeness of crash data, which is necessary to identify traffic safety problems and design countermeasures to improve traffic safety within each State and nationally. A MMUCC mapping report provides each State with an objective measurement of how the State's crash data aligns to MMUCC. The MMUCC mapping report can serve as a tool to help a State complete a detailed analysis and evaluation of the gaps in their data. States can use a mapping report to identify and prioritize changes to their State crash system, crash reports, and documentation. In addition, if

States wish to participate in NHTSA's EDT, increasing alignment to MMUCC will create a smoother process for data transfer.

The MMUCC 6th edition and NHTSA's records-based crash data systems (FARS and CRSS) have made significant efforts to reduce inconsistencies. Data elements, attributes, definitions, and guidance have been harmonized when appropriate across the platforms. States that increase their alignment to the MMUCC 6th edition will greatly assist State FARS reporting in the traffic records performance measures timeliness, completeness, and uniformity.

12.2 MMUCC Mapping Preparation

To facilitate a MMUCC mapping, the State provides NHTSA with the most current documentation of all the data elements, attributes, definitions, and guidance used in the State crash data collection process. Items necessary to complete a mapping are:

- Crash data dictionary
- Crash report instruction manuals
- Police crash report, as well as other primary data collection forms (e.g., large vehicle, fatal, or non-motorist supplemental forms)
- Associated crash report coding overlays
- Derived variables not manually entered on the crash report (e.g., calculated fields)
- Any other variables that the State adds to its database that are not on the crash report (e.g., a computer-generated State case number).
- Other documents relevant to the understanding of how the State collects, manages, and links crash data (e.g., software instruction manual, FARS/CRSS State Specific Coding Instructions).

Together, these documents should include detailed information on the data elements and attributes used in the State's data collection. The information may include a database name, the data source, the data type, definitions and guidance for the elements and attributes, a list of attributes for each element, and the number of allowable selections for each element. The crash report and the crash report instruction manual are necessary to understand how the officers are instructed to interpret, select, and apply the data elements and attributes.

12.3 Uniformity Alignment Rules

The following general alignment rules are necessary for data uniformity. NHTSA changed the MMUCC 6th Edition mapping rules to be more flexible and enable more State data elements to align with MMUCC and facilitate electronic data sharing. Additional considerations for specific data elements are explained in the entry for that element (Chapters 3 to 8). Alignment determinations are binary (i.e., aligns or does not align).

12.3.1 General Alignment Rules

1. The State element or attribute name does not need to exactly match the MMUCC element or attribute name. When the concept and application of the State's data element or attribute are the same as MMUCC, then they will align with MMUCC. This is contingent

upon definitions, guidance, and other State documents. A State definition that is partially aligned is not considered aligned to MMUCC, because it lacks a component of the MMUCC definition.

2. If a State’s element or attribute has the same name as MMUCC’s element or attribute, the definitions and application must be the same to align. A State definition that is partially aligned is not considered aligned to MMUCC.

Example: A State attribute “Railway Grade Crossing” in the State element “Relation to Junction” has the same name as the MMUCC attribute **Railway Grade Crossing** in the MMUCC element RELATION TO JUNCTION. To use the MMUCC attribute, the FIRST HARMFUL EVENT must occur within the at-grade crossing of the trafficway and railroad. The State’s definition includes the at-grade crossing of the trafficway and railroad, but also crashes related to the crossing. Because of the differences in definitions, the State attribute does not align with the MMUCC attribute.

3. One-to-Many Rule. If a State’s attribute combines several terms that are distinct in MMUCC, it will not align with separate MMUCC attributes that are included in that combination within the same element.

Example: In [Figure 59](#), A State attribute “Mud, Dirt, Gravel, Sand” does not align to the separate MMUCC attributes for **Mud, Dirt, or Gravel** and **Sand**. The reason is that if the State attribute “Mud, Dirt, Gravel, Sand” is selected, it cannot be determined which MMUCC attribute the State’s attribute is referring to, the MMUCC attribute **Mud, Dirt, or Gravel** or the MMUCC attribute **Sand**.

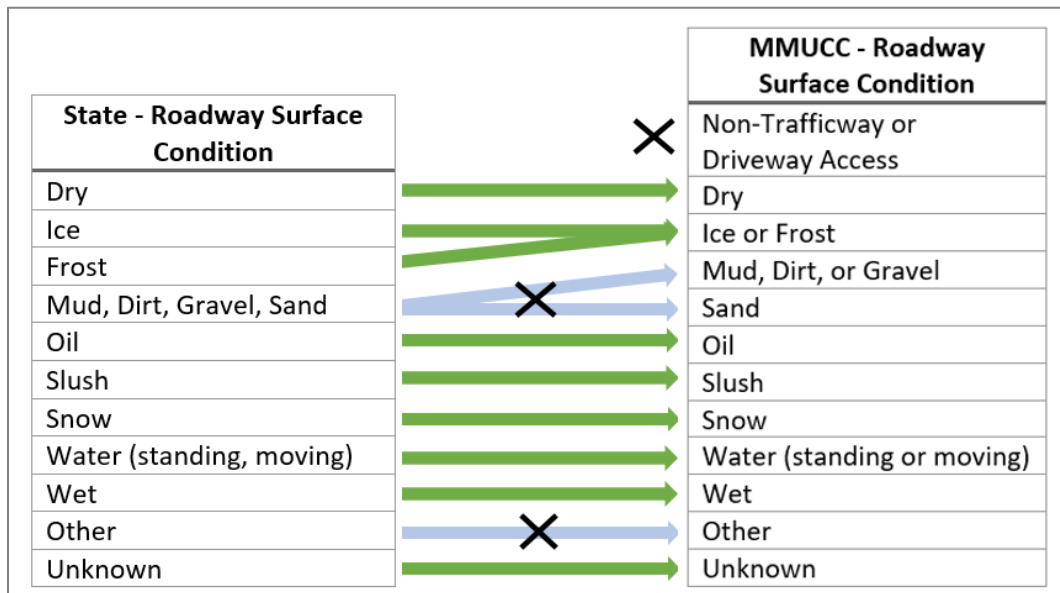


Figure 59. Example of a State to MMUCC mapping

However, if one State attribute can align with attributes from more than one MMUCC data element, it can align when the definitions are the same. For example, in [Figure 60](#), if a State data element “Non-Motorist Location” includes an attribute such as “Intersection - Marked Crosswalk,” this aligns (when the definitions are the same) with the MMUCC

data elements NON-MOTORIST AT INTERSECTION attribute **Yes** and NON-MOTORIST IN CROSSWALK attribute **Yes, Marked Crosswalk**.

State – Non-Motorist Location	MMUCC – Non-Motorist at Intersection	MMUCC – Non-Motorist in Crosswalk
Intersection – Marked Crosswalk	Yes	Yes, Marked
Intersection – Unmarked Crosswalk	Yes	Yes, Unmarked
Intersection - Other	Yes	No
Midblock – Marked Crosswalk	No	Yes, Marked

Figure 60. Example of a State data element mapping to more than one MMUCC data element.

4. Many-to-One Rule. Multiple State attributes can align to a single MMUCC attribute with the combined terms, when the definitions are the same.

Example: In [Figure 59](#), a State data element has separate attributes “Ice” and “Frost.” Both attributes together can align to the MMUCC attribute **Ice or Frost**. This is because no matter if the State attribute “Ice” or the State attribute “Frost” is selected, it is captured within the MMUCC attribute **Ice or Frost**.

5. Without appropriate edit rules, checkboxes can be misleading and are generally discouraged. If a State has a checkbox to indicate “Yes” if checked and “No” if not checked, it can only align to “Yes” if checked. If the checkbox is left unchecked, it cannot be determined if it was left unchecked on purpose or if the officer forgot or missed the data field. In which case, the unchecked checkbox could mean “No,” or it could mean “Unknown,” or no information reported. A single checkbox in place of a MMUCC data element can never completely align to the MMUCC data element.
6. Open text fields can be misleading and problematic for alignment mapping. If the officer needs to write something in the field to indicate “Yes,” but the officer leaves it blank, it could mean (1) “No,” (2) “Unknown,” or (3) “no information reported.” Furthermore, the officer could write something that does not conform to a standardized format or something irrelevant to the data element. Consequently, some open text fields *may* not align with MMUCC. States can mitigate these issues by including instructions with a list of acceptable entries for the open text field.
7. When a State does not define an attribute, then the definition of the State element needs to match the definition of the MMUCC element to consider alignment for that attribute.
8. When there are conflicting instructions, rules, or definitions in a State’s documentation about a specific element or attribute, the element or attribute will not align to MMUCC, because it is unknown which document takes precedence.
9. When a State’s element captures contributory factors, but the MMUCC element captures presence, then attributes within the State element will align with MMUCC, if the definitions are the same. While contributory factors require presence, presence does not denote contribution. A factor needs to be present to be contributing. For example, the MMUCC data element RELATED FACTORS – DRIVER LEVEL recommends the

collection of any factors present that are related to the driver. If a State only collects the factors for this driver that contributed to the crash, they are not collecting all that were present. However, by selecting a contributing attribute, it means that the attribute was present.

12.3.2 Attribute-Dependent Alignment Rules

MMUCC data elements frequently include the non-specific attributes **Other**, **Unknown**, and **No** or **None**, that are dependent upon the other attributes in the same list. For the State to map to the MMUCC attributes **Other**, **Unknown**, and **No** or **None**, the State must include the dependent MMUCC attributes for that data element. Rules 10 through 14 apply to these situations.

10. For a State attribute “Other” to align to a MMUCC attribute **Other**, the State element must align to all the attributes of the MMUCC data element.

Example: In [Figure 59. Example of a State to MMUCC mapping](#), the State data element does not capture the MMUCC attribute **Non-Trafficway or Driveway Access**. If the vehicle is in a non-trafficway area or a driveway access, the Officer may select the State attribute “Other.” Because of this, the State’s “Other” does not mean the same thing as MMUCC’s **Other** and therefore, the two attributes do not align.

11. A State attribute “Unknown” will align to a MMUCC attribute **Unknown** if both the State’s element and MMUCC’s element contain the attributes “Other” and “Unknown,” regardless of whether the attribute “Other” aligns to MMUCC.

Example: In [Figure 59](#), both the State data element and the MMUCC data element contain the attributes “Other” and “Unknown.” Even though the State’s “Other” attribute does not align with MMUCC, the State’s “Unknown” attribute does align.

If the State doesn’t have the attribute “Other,” then the State’s attribute “Unknown” will not align to MMUCC’s **Unknown**. The reason for this is if the data collector has information that isn’t included in the list of possible State attributes, and the list of State attributes doesn’t have an “Other” attribute, the data collector may select “Unknown.” By doing this, the State’s “Unknown” now combines the concepts of “Other” and “Unknown,” which is not the same as MMUCC’s attribute **Unknown**. See [Figure 61. Example: State doesn't align with MMUCC Unknown](#).

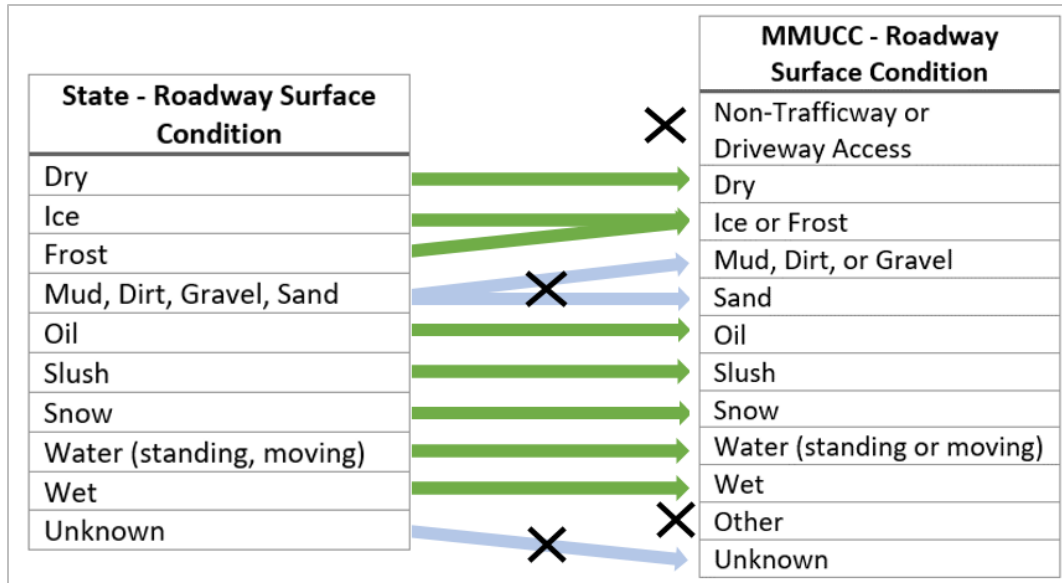


Figure 61. Example: State doesn't align with MMUCC Unknown.

12. If a MMUCC element contains the attribute **Unknown** but not the attribute **Other**, then the State element must align to all the attributes of the MMUCC element for the State attribute “Unknown” to align to the MMUCC attribute **Unknown**.

Example: The MMUCC data element SPEEDING-RELATED does not include an **Other** attribute. In [Figure 62](#), the State does not have the MMUCC attribute **Yes, Too Fast for Conditions**. Therefore, the State’s “Unknown” does not mean the same as MMUCC’s **Unknown**.

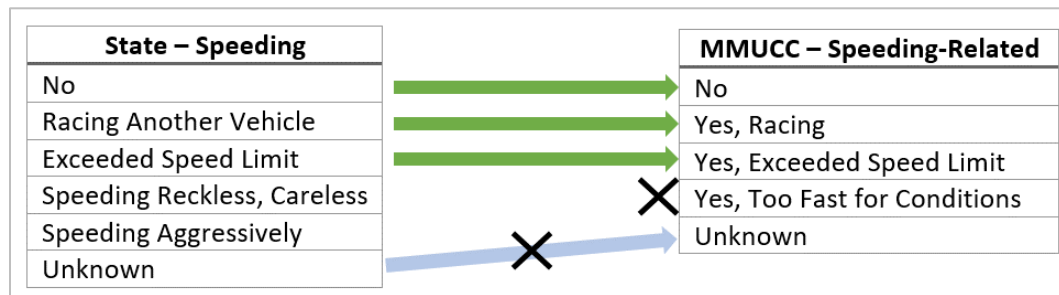


Figure 62. Example: State "Unknown" does not align with MMUCC Unknown.

13. For a State attribute “No...,” or “None...” to align to a MMUCC attribute **No...**, or **None...**, one of the following conditions must apply.
- The State’s attributes must align to all the MMUCC attributes, or
 - The State includes an “Other” attribute, even if it doesn’t align with the MMUCC attribute **Other** or the MMUCC element does not include the attribute **Other**.

Example 1: In [Figure 63](#), Figure 63. Example where "No" or "None" does not align. State A’s data element Special Use only collects if the vehicle was a “Fire Truck,” an “Ambulance,” or “Law Enforcement.” The MMUCC element SPECIAL USE includes the attribute **Taxi**. If the vehicle is a taxi, the Officer will select “No Special Use,”

because taxi is not a special use on the State’s crash report. Because of this, the State’s “None” does not mean the same thing as MMUCC’s **No Special Use** and therefore, the two attributes do not align. In [Figure 64](#), State B’s data element includes the attribute “Other.” Even though the MMUCC element does not have an attribute **Other**, State B’s “None” aligns with the MMUCC attribute **No Special Use**, because if the vehicle is a taxi, the Officer can select “Other.”

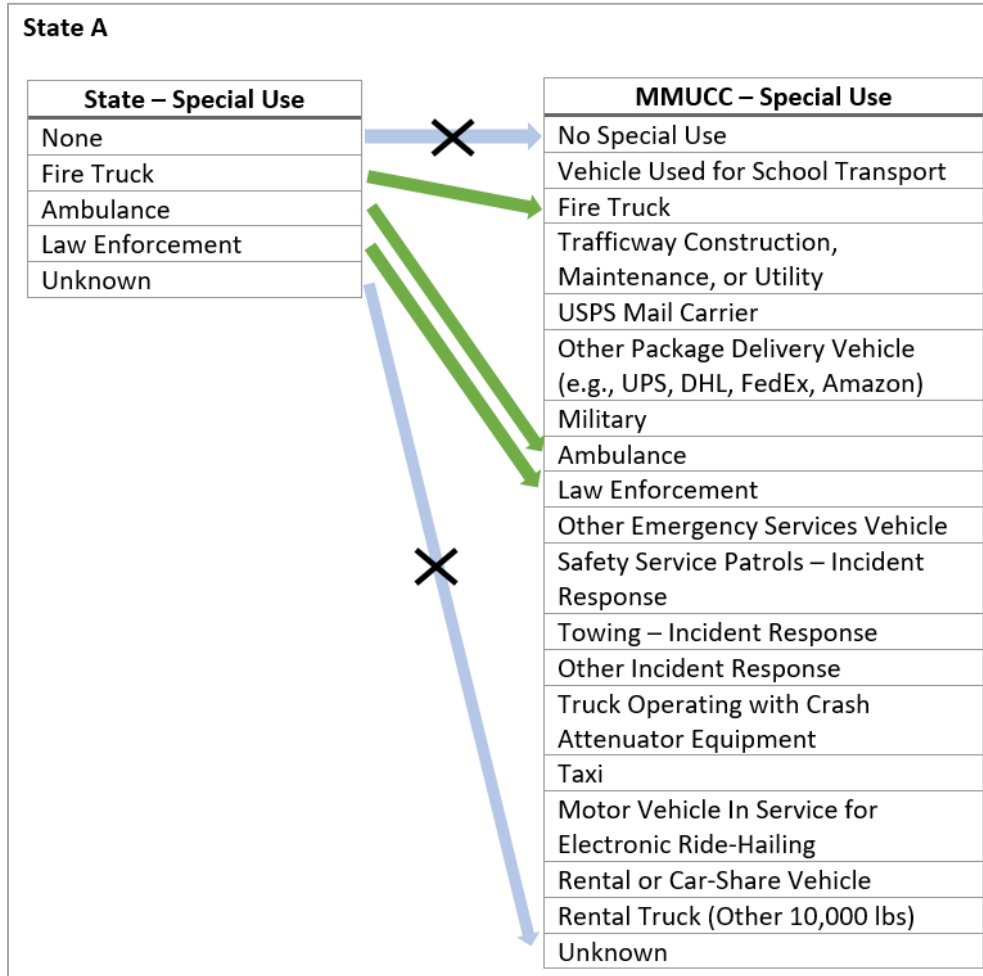


Figure 63. Example where “No” or “None” does not align.

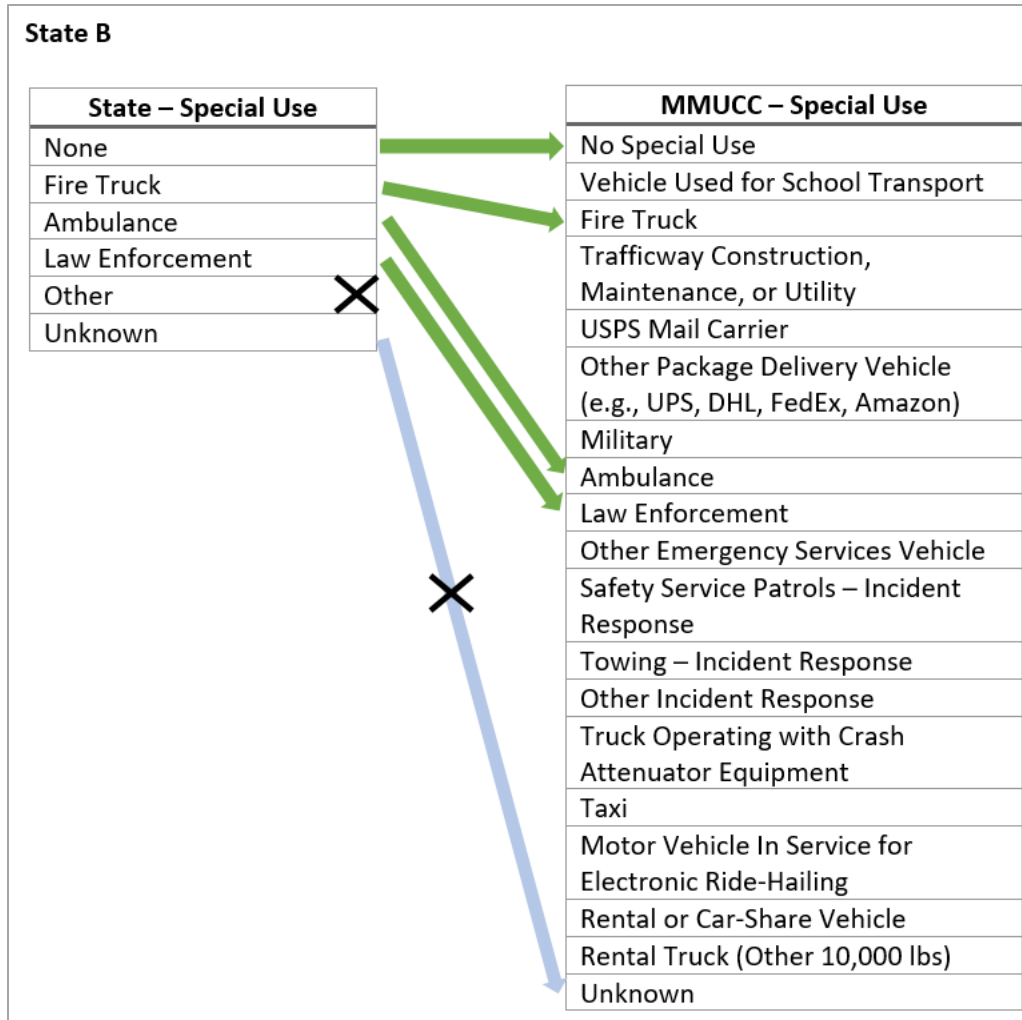


Figure 64. Example where "No" or "None" does align.

Example 2: In [Figure 65](#), the State data element Motor Vehicle Contributing Circumstances includes the attributes “Other” and “None.” Although the State’s attribute “Other” does not align with the MMUCC attribute **Other** (see rule 10), the State’s attribute “None” aligns with the MMUCC attribute **None**. An officer can use the attribute “Other” to indicate the missing MMUCC attributes; therefore, the State’s attribute “None” means the same as the MMUCC attribute **None**.

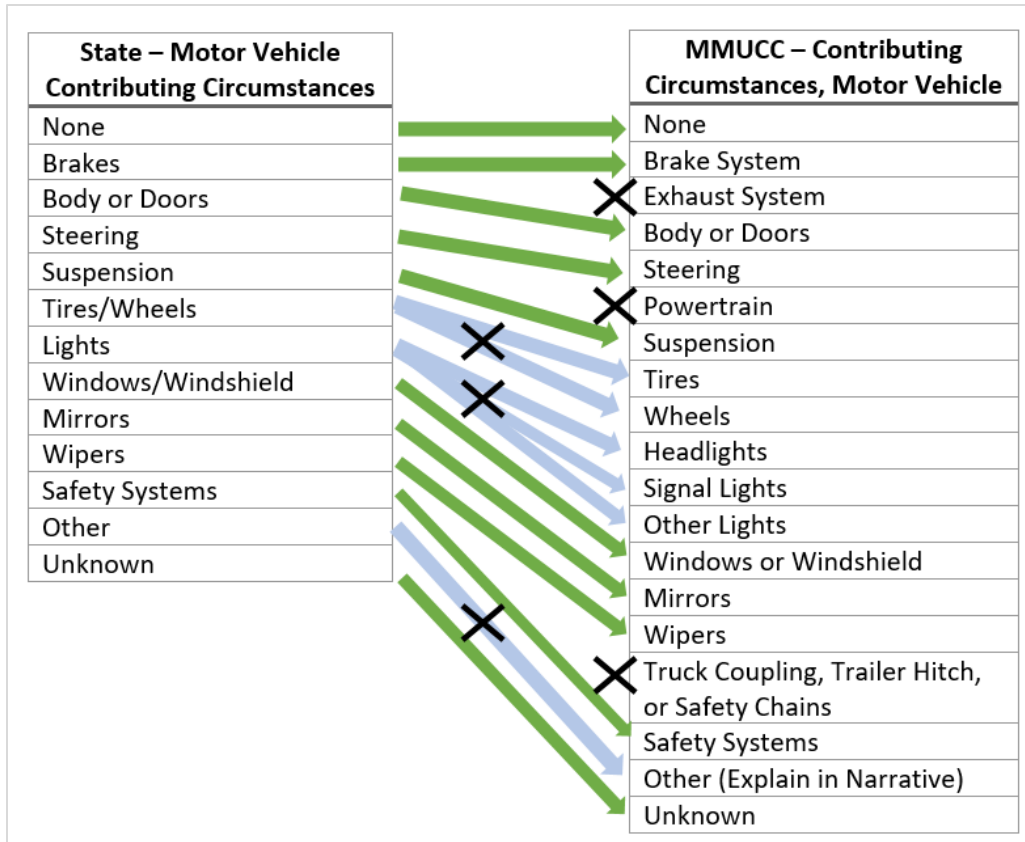


Figure 65. Example: State "None" Aligns with MMUCC **None**, even though the State's "Other" does not align with MMUCC's **Other**.

- When a State element does not display the MMUCC attributes **None**, **Other**, **Not Applicable**, or **Unknown**, but the police crash report instruction manual or crash data dictionary directs the Officer to enter a general code (e.g., "00," "N/A," "UNK," "98," "99") for "None," "Other," "Not Applicable," or "Unknown," then these general codes *may* align to the appropriate MMUCC attribute (i.e., **None**, **Other**, **Not Applicable**, or **Unknown**).

12.4 MMUCC Mapping Process

The MMUCC 6th edition changes the formula for calculating MMUCC alignment to account for each attribute in an element. The formula published in Mapping to MMUCC (Governors Highway Safety Association & National Highway Traffic Safety Administration, 2015) and the MMUCC 5th edition (National Highway Traffic Safety Administration, 2017) calculated the percentage alignment to MMUCC by weighting each element equally, regardless of the number of attributes contained in an element. The MMUCC 6th edition calculates alignment by weighting the attributes equally. This change, along with measuring completeness, will more accurately reflect a State's alignment to MMUCC.

Step 1: NHTSA will build a complete model of the State's data structure in NHTSA's mapping tool using the State's documentation.

Step 2: NHTSA conducts a thorough evaluation using the uniformity alignment rules and considerations described in [12.3 Uniformity Alignment Rules](#) and element-specific alignment considerations throughout Chapters 3 to 8, to measure State attribute to MMUCC attribute uniformity. Uniformity alignment determinations are binary (i.e., aligns or does not align). NHTSA’s mapping tool calculates the uniformity alignment percentages for each MMUCC data element, each MMUCC data level, and to MMUCC overall.

Step 3: NHTSA will examine the State to MMUCC completeness at the element level. NHTSA’s mapping tool will identify the number of complete versus incomplete data elements.

12.4.1 MMUCC Uniformity Calculations

Data Element Uniformity

To measure the uniformity of each State data element to MMUCC, add the number of positive attribute alignments for that element, and divide by the total number of attributes for that element (i.e., calculate the average).

$$\text{State to MMUCC Element Uniformity} = \frac{\text{Number of Positive MMUCC Alignments in the Element}}{\text{Total Number of MMUCC Attributes in the Element}}$$

Equation 1: State to MMUCC Data Element Uniformity

Example: In mapping the MMUCC data element ATMOSPHERIC CONDITIONS, a State has 8 positive attribute alignments. The MMUCC element has 13 total attributes. To calculate the State to MMUCC element uniformity for ATMOSPHERIC CONDITIONS, divide 8 by 13 to get 0.6154, or 61.54 percent.

$$\text{State to MMUCC Element Uniformity} = \frac{8}{13} = 62\%$$

Equation 2: Example State to MMUCC Data Element Uniformity

Data Level Uniformity

To measure the uniformity of each State data level (e.g., Crash, Vehicle) to MMUCC, add the number of positive attribute alignments in that data level, and divide by the total number of MMUCC attributes in that data level (i.e., calculate the average).

$$\text{State to MMUCC Data Level Uniformity} = \frac{\text{Number of Positive MMUCC Alignments in the Data Level}}{\text{Number of MMUCC Attributes for Data Level}}$$

Equation 3: State to MMUCC Data Level Uniformity

Example: The MMUCC Crash Level has 181 attributes. The sum of a State’s Crash Level positive attribute alignments is 95. Divide by the number of MMUCC Crash Level attributes (i.e., 181) to reach the State’s Crash Level alignment to MMUCC (52%).

$$\text{State to MMUCC Crash Level Uniformity} = \frac{95}{181} = 52\%$$

Equation 4: Example State to MMUCC Data Level Uniformity

Overall Uniformity

To measure the overall uniformity of the State's crash data to MMUCC, add the State's positive attribute alignments, and divide by the total number of MMUCC attributes (i.e., calculate the average).

$$\text{Overall State to MMUCC Uniformity} = \frac{\text{Number of Positive MMUCC Alignments}}{\text{Number of MMUCC Attributes}}$$

Equation 5: Overall State to MMUCC Uniformity

Example: MMUCC has 1,066 attributes. The sum of a State's positive attribute alignments is 496. Divide this by the number of MMUCC attributes (i.e., 1,066) to reach the State's overall uniformity to MMUCC (47%).

$$\text{Overall State to MMUCC Uniformity} = \frac{496}{1066} = 47\%$$

Equation 6: Example Overall State to MMUCC Uniformity

12.4.2 MMUCC Completeness

Unlike measuring uniformity, completeness measures have many dimensions and are State specific. It can include some of the following examples:

- Number of selections the State collects for a data element versus the number of selections MMUCC recommends collecting for the data element
- A State's data element collects contributing factors versus the MMUCC element recommends collecting the presence of any factors
- A State collects data for only injured people versus MMUCC recommends collecting data for all people involved in the crash
- A State collects data for only large vehicles and buses versus MMUCC recommends collecting data for all vehicles
- A State combines two or more data elements versus MMUCC recommends collecting the data elements individually
- Other State specific data collection considerations

While a State may uniformly align to a MMUCC element (see [12.4.1 MMUCC Uniformity Calculation](#)), the amount of data the State collects for that element may differ from the MMUCC guidance, indicating that the State data element is incomplete. NHTSA will identify incomplete State data elements and provide recommendations to improve the State's crash data in the final MMUCC mapping report. For example, a State may receive a total of 10 incomplete ratings, along with recommendations to improve their data.

12.5 Using the MMUCC Mapping Results

The MMUCC 6th edition mapping process provides States with a measure of their crash data uniformity and completeness alignment to MMUCC. States can use their mapping report to conduct a gap analysis and identify areas to prioritize for improvement.

The final MMUCC mapping report contains three related uniformity measures:

- Percent uniformity to each MMUCC data element (e.g., LIGHT CONDITION)
- Percent uniformity to each MMUCC data level (e.g., Crash, Vehicle, Person)
- Percent uniformity to MMUCC overall

The MMUCC mapping report will also identify the incomplete State data elements, along with recommendations that could be helpful for States choosing to improve their crash data collection. NHTSA's Guide to Updating State Crash Data Systems (Brown et al., 2021) provides further explanation of how States can use and interpret a MMUCC mapping report and a process for prioritizing changes that could yield improvements to data collection and data quality in Chapter 3: Increasing Alignment to the Model Minimum Uniform Crash Criteria.

12.5.1 Improving Alignment to MMUCC and NHTSA's Data Systems

When updating a crash system, NHTSA encourages States to consider the relationships between the State's crash system and NHTSA's crash data programs, FARS and CRSS. NHTSA uses FARS and CRSS to identify highway safety priorities, measure trends, and assess the effectiveness of motor vehicle safety standards and highway safety programs.

EDT protocol is NHTSA's automated transfer of State motor vehicle crash data from State data repositories. NHTSA uses EDT to advance real-time data collection and transfer, enable more timely decision-making, reduce the burden of data collection, improve data quality, and make data available sooner. Ultimately this supports the FARS and CRSS programs, which align to many MMUCC data elements. The closer a State aligns to MMUCC, the easier it is to share data and there is less work to do in translating between the State data elements and NHTSA's data elements. States can request additional information about EDT by contacting their NHTSA regional program managers.

12.5.2 Improvement Prioritization

A State may need to prioritize the intended improvements to close the crash data gaps in a logical sequence that takes available resources into account. [Figure 66](#) displays five steps to conduct a complete gap analysis process using the MMUCC mapping results. NHTSA's Guide to Updating State Crash Data Systems (Brown et al., 2017) provides more details and templates for conducting a crash data gap analysis and prioritizing improvements in Chapter 3: Increasing Alignment to the Model Minimum Uniform Crash Criteria.



Figure 66. Using MMUCC mapping to conduct a gap analysis

MMUCC is typically updated every 5 years. State TRCCs can request a MMUCC mapping report by contacting their NHTSA regional program managers. Over time, improvements in alignment can be used to show measurable progress. States can benefit from the knowledge gained through the MMUCC mapping exercise by (1) knowing how their data elements and attributes compare to the national crash data reporting standard, and (2) identifying the elements and attributes that could be shared and compared in national crash databases.

Glossary of Terms

Numbers

2-Wheeled Motorcycle ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – an open (no enclosed body) motor vehicle propelled by a motor, having a seat or a saddle for the use of its operator, and designed to travel on not more than 2 wheels in contact with the ground (excluding an attached trailer or sidecar).

3-Wheeled Motorcycle (trike) ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – an open (no enclosed body) motor vehicle propelled by a motor, having a seat or a saddle for the use of its operator, and designed to travel on not more than 3 wheels in contact with the ground (excluding an attached trailer or sidecar).

4-Digit Hazardous Materials Identification Number ([HAZARDOUS MATERIALS](#)) - this number may be on a placard, in an orange panel, or on a white square-on-point configuration. Proper shipping name (or names), if displayed, are marked on the transport vehicle or shipping package. See [Figure 19. Nine classes of hazardous materials, FMCSA visor card \(front\)](#) and [Figure 20. Reporting hazardous materials information, FMCSA visor card \(back\)](#) for more information on locating and reporting this number.

A

Accelerating ([ATTEMPTED AVOIDANCE MANEUVER](#)) – used when the driver sped up the vehicle in an attempt to avoid an impending danger. If the driver also steered the vehicle to the left while accelerating, use [Accelerating and Steering Left](#). If the driver also steered the vehicle to the right while accelerating, use [Accelerating and Steering Right](#).

Accelerating ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) – used when this vehicle was traveling straight ahead within the road portion of the trafficway and was accelerating.

Accelerating and Steering Left ([ATTEMPTED AVOIDANCE MANEUVER](#)) - used when the driver sped up the vehicle and steered the vehicle to the left in an attempt to avoid an impending danger.

Accelerating and Steering Right ([ATTEMPTED AVOIDANCE MANEUVER](#)) - used when the driver sped up the vehicle and steered the vehicle to the right in an attempt to avoid an impending danger.

Acceleration or Deceleration Lane ([RELATION TO JUNCTION](#)) – used when the [FIRST HARMFUL EVENT](#) occurs in a travel lane in the [roadway](#) that is designated for vehicles to either increase vehicle speed to reach traffic speed, or to reduce speed.

Activity Area ([WORK ZONE](#)) – the [FIRST HARMFUL EVENT](#) was located adjacent to actual work area, whether workers and equipment were present or not.

Adaptive Equipment ([RELATED FACTORS – VEHICLE LEVEL](#)) - used when this vehicle is equipped with adaptive equipment for an operator with a disability or for other reasons such as mail carriers, driving instructors, etc. Examples:

- Extended brake and/or gas pedals,
- Special steering apparatus,
- Hand brakes or accelerator, etc., or
- Steering wheel and operator pedals on the right side.

Advance Warning Area ([WORK ZONE](#)) – the [FIRST HARMFUL EVENT](#) was located after the first warning sign but before the transition area.

[AGENCY \(POLICE JURISDICTION\)](#) - Law enforcement agency reporting the crash.

Aggressive Driving ([RELATED FACTORS – DRIVER LEVEL](#)) – used when the driver operated the vehicle with a disregard for safety and endangered themselves, other people, or property. Common violations include speeding, tailgating, suddenly changing lanes without warning, cutting off other drivers, and failing to yield the right of way. If this driver also exhibited road rage behavior, see [Road Rage](#).

Aggressive Driving by Noncontact Vehicle Driver ([RELATED FACTORS – CRASH LEVEL](#)) - used when a noncontact vehicle, which is somehow related to this crash, was operated with disregard for safety and endangers themselves, other drivers, or property. Moving violation offenses associated with this behavior can include speeding, tailgating, suddenly changing lanes without warning, cutting off other drivers, and failing to yield the right of way. If the driver of the noncontact vehicle was also exhibiting road rage behavior, see attribute [Road Rage by Noncontact Vehicle Driver](#). For contact vehicles, see [RELATED FACTORS—DRIVER LEVEL](#) attributes [Aggressive Driving](#) and [Road Rage](#).

[AIR BAG DEPLOYED](#) – Deployment status of an air bag relative to position in the vehicle for this occupant.

Alcohol and/or Drug Test Refused ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver refused to take an alcohol and/or a drug test. Refusing a test does not necessarily mean that a test was not given. It is possible that after a refusal, the officer may have obtained a warrant or some other authorization to administer a test post-refusal. This includes when the person initially refuses and later consents. Because of this, it is possible to select **Alcohol and/or Drug Test Refused** and also record an actual test with results for the same person.

[ALCOHOL TEST](#) – Identifies (1) if a chemical test for the presence of alcohol (ethanol) was given to this person, (2) the bodily tissue or fluid used to perform a chemical test for the presence of alcohol (ethanol) in this person, and (3) the result of a chemical test for the presence of alcohol (ethanol) in this person.

Alcohol Test Performed, Results Unknown ([ALCOHOL TEST](#)) –an alcohol content test was performed but the results were reported as unknown or pending and are unobtainable (includes a “Contaminated Sample” or “Insufficient Sample”). **Alcohol Test Performed, Results Unknown** can be used for any specimen type.

All-Terrain Vehicle or All-Terrain Cycle (ATV or ATC) ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – used for off-road recreational vehicles. ATVs and ATCs have 3 or 4 wheels, a saddle-type seat, and handlebars for steering (no steering wheel).

Ambulance ([SPECIAL USE](#)) – used for any readily identifiable (lights or markings) vehicles with separated driver's and patient compartments and designed to transport sick or injured people. The ambulance is presumed to be in special use at all times, although not necessarily in “emergency use.”

Angle ([MANNER OF COLLISION OF THE FIRST HARMFUL EVENT](#)) – A crash where two motor vehicles impact at an angle. For example, the front of one motor vehicle impacts the side of another motor vehicle.

Appended to a Motor Vehicle for Motion ([SEATING POSITION](#)) - used when this person was appended to the motor vehicle at the time of the crash with the intention of using the motor vehicle’s motion to initiate movement or to gain propulsion, momentum, speed, etc. (e.g., “skitching”). The person may be appended by any means (e.g., hand grasp, tow rope) and could be using a non-motorist device (e.g., bicycle, skateboard, hoverboard, sled) at and during the time they appended to the motor vehicle for the purpose of motion. It must be clear that they were appended at the start of the crash. This attribute excludes people riding on the hood, roof, fender, running board, trunk, etc., which should be coded as SEATING POSITION [Riding on Exterior of Vehicle \(non-trailing unit\)](#). NOTE: If this person was attempting to append or had already let go of the motor vehicle, and it was clear that they were NOT appended at the start of the crash, then this person is a Non-Motorist and should be categorized as such.

(A) Suspected Serious Injury ([INJURY STATUS](#)) – any injury other than fatal that results in one or more of the following.

- Severe laceration resulting in exposure of underlying tissues, muscle, or organs or resulting in significant loss of blood
- Broken or distorted extremity (arm or leg)
- Crush injuries
- Suspected skull, chest, or abdominal injury other than bruises or minor lacerations
- Significant burns (second and third degree burns over 10 percent or more of the body)
- Unconsciousness when taken from the crash scene
- Paralysis

[ATMOSPHERIC CONDITIONS](#) – The prevailing atmospheric conditions that existed at the time of the crash.

[ATTEMPTED AVOIDANCE MANEUVER](#) – identifies movements or actions taken by the driver after the driver realizes there is an impending danger. This element assesses what the driver’s action was in response to this realization.

Attempted to Move Over or Slow Down as Required by Move Over Law ([RELATED FACTORS - DRIVER LEVEL](#)) – This driver tried to move over or slow down when passing a stopped emergency or maintenance vehicle or personnel and this may have contributed to the

crash. Whether the driver's actions were successful is not relevant. The stopped emergency or maintenance vehicle may or may not have been displaying flashing warning lights.

Autocycle ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – a large motorcycle with 1 rear wheel and 2 front wheels, with either a saddle and handlebars or a seat (or seats) and a steering wheel, which can be fully enclosed, partially enclosed, or unenclosed.

Autonomous or Semi-Autonomous Driving Engaged ([RELATED FACTORS – VEHICLE LEVEL](#)) – this vehicle's Automated Driving System (ADS) or Advanced Driver Assistance System (ADAS) technology was engaged at the time of the crash or leading up to the crash. If this attribute is selected, then [Autonomous or Semi-Autonomous Vehicle](#) must also be selected.

Autonomous or Semi-Autonomous Vehicle ([RELATED FACTORS – VEHICLE LEVEL](#)) – This vehicle was equipped with Automated Driving System (ADS) or Advanced Driver Assistance System (ADAS) technology. The system need not be engaged at the time of the crash. If the system was engaged at the time of the crash also select [Autonomous or Semi-Autonomous Driving Engaged](#).

Auto Transporter ([CARGO BODY TYPE \(POWER UNIT ONLY\)](#), [TRAILER BODY TYPE](#)) – specifically designed to transport two or more fully assembled automobiles. Single-unit flatbed tow-trucks hauling cars DO NOT qualify (see [flatbed](#)).

B

Backing Up (other than for parking position) ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) – used when this vehicle was intentionally traveling backwards within the trafficway. Vehicles backing into or from a driveway are included in this attribute. If the backward movement is unintentional (e.g., the vehicle rolls or drifts backward) do not use this attribute (use **Other (explain in narrative)**). Also, do not use this attribute if the vehicle was backing into or out of a parking space (see [Entering a Parking Position](#) or [Leaving a Parking Position](#), respectively).

Before the First Work Zone Warning Sign ([WORK ZONE](#)) – the [FIRST HARMFUL EVENT](#) was located before the first work zone warning sign.

Bicycle ([NON-MOTORIST DEVICE TYPE](#)) - is a device composed of 2 wheels held in a frame one behind the other, propelled by foot pedals, and steered with handlebars attached to the front wheel. This includes those solely propelled by human power and those that can be propelled by human power and/or a motor.

Bicyclist ([PERSON TYPE](#)) - any person on a device composed of 2 wheels held in a frame one behind the other, propelled by foot pedals, and steered with handlebars attached to the front wheel. This includes those solely propelled by human power and those that can be propelled by human power and/or a motor. This includes all people (operator and passengers) on a bicycle and a person being pulled by a bicycle (e.g., in a wagon or bike trailer).

Blood ([ALCOHOL TEST](#)) - a blood sample may be identified as whole blood, blood plasma/serum, or blood clot. A blood sample that is taken as evidence and tested to determine whether a suspected impaired driver has used alcohol and/or another drug. If a lab report identifies a "blood test" it most likely refers to a test of whole blood, not tests of plasma/serum or of a blood clot.

Blowing Sand, Soil, Dirt, or Dust ([ATMOSPHERIC CONDITIONS](#)) – used for earthen particles being blown about by the wind, reducing visibility.

Blowing Snow ([ATMOSPHERIC CONDITIONS](#)) – used for wind-driven snow that reduces visibility. Blowing snow can be falling snow or snow that has already accumulated but is picked up and blown by strong winds.

Boat Trailer ([TRAILER BODY TYPE](#)) - A trailer designed with cradle-type mountings to transport a boat and configured to permit launching of the boat from the rear of the trailer.

Body or Doors ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of the vehicle’s body or doors may have contributed to the occurrence or severity of the crash, including the panels mounted to the frame of the vehicle, trunk, hood, tailgate, rear doors of cargo vans, etc.

Booster Seat ([RESTRAINT SYSTEM USE](#)) – used when a child passenger is seated in one of the following “belt-positioning” seats that positions a child on a vehicle seat to improve the fit of the child in a lap and shoulder seat belt system. This does not imply correct use or placement of the seat (see Subfield 2).

- **Booster Seat With High Back:** provides neck and head support and is ideal for vehicles that don’t have head rests or high seat backs.
- **Backless Booster Seat:** does not provide head and neck support. It is ideal for vehicles that have head rests.
- **Combination Seat:** transitions from a forward-facing seat with a harness into a booster seat.
- **All-in-One Seat:** can change from a rear-facing seat to a forward-facing seat (with a harness and tether) and to a booster seat as a child grows.

Boulder ([FIRST HARMFUL EVENT, SEQUENCE OF EVENTS, MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) - a rock of sufficient mass that when struck by a motor vehicle moves very little and remains basically intact. It may be considered as a fixed object.

Box or Van Enclosed Trailer ([TRAILER BODY TYPE](#)) – a trailer with an enclosed body integral to the frame of the trailer.

Brake System ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of any part of the vehicle’s brake system may have contributed to the occurrence or severity of the crash. The brake system slows or stops the rotation of the wheels. This includes the parking brake.

Braking ([ATTEMPTED AVOIDANCE MANEUVER](#)) – used when the driver applied the brakes in an attempt to avoid an impending danger. If the driver also steered the vehicle to the left while braking, use [Braking and Steering Left](#). If the driver also steered the vehicle to the right while braking, use [Braking and Steering Right](#). If the driver also steered the vehicle while braking, but the direction of the steer (left or right) cannot be determined, use [Braking and Unknown Steering Direction](#).

Braking and Steering Left ([ATTEMPTED AVOIDANCE MANEUVER](#)) - used when the driver applied the brakes and steered the vehicle to the left in an attempt to avoid an impending danger.

Braking and Steering Right ([ATTEMPTED AVOIDANCE MANEUVER](#)) - used when the driver applied the brakes and steered the vehicle to the right in an attempt to avoid an impending danger.

Braking and Unknown Steering Direction ([ATTEMPTED AVOIDANCE MANEUVER](#)) - used when the driver applied the brakes and steered the vehicle in an attempt to avoid an impending danger, but the direction of the steer (left or right) cannot be determined.

Bridge Overhead Structure ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – any part of a bridge that is over the reference or subject [roadway](#). In crash reporting, this typically refers to the beams or other structural elements supporting a bridge deck.

Bridge Pier or Support ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – support for a bridge structure including the ends (abutments).

Bridge Rail (includes parapet) ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – barrier attached to a bridge deck or a bridge parapet to restrain motor vehicles, pedestrians, or other users.

Broken or Improperly Cleaned Windshield ([DRIVER'S VISION OBSCURED BY](#)) – used when this condition obscured this driver's vision. For a “fogged” or “frosted” windshield, see [Frost or Fog on Windshield](#).

(B) Suspected Minor Injury ([INJURY STATUS](#)) – any injury that is evident at the scene of the crash, other than fatal or serious injuries. Examples include lump on the head, abrasions, bruises, minor lacerations (cuts on the skin surface with minimal bleeding and no exposure of deeper tissue or muscle).

Building ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – roofed and walled structure built for permanent use. The type of construction material used is not of interest, nor is the use of the building.

Building, Billboard, or Other Structure ([DRIVER'S VISION OBSCURED BY](#)) - used when any of these manmade structures obstructed the view of the driver (e.g., including traffic signs, poles, signals).

Bus ([CARGO BODY TYPE \(POWER UNIT ONLY\)](#)) – A motor vehicle with seating for transporting nine or more people including the driver, not including vans owned and operated for personal use.

BUS USE – the common type of bus service this vehicle was being used for at the time of the crash or the primary use for the bus if not in service at the time of the crash.

C

Cable Barrier ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – flexible barrier system that uses several cables typically supported by steel posts. These can be used on the [roadside](#) or as a median barrier. These barriers are designed to help lessen impact or keep vehicles within the confines of the [road](#).

Camping or Travel Trailer ([TRAILER BODY TYPE](#)) - a trailer designed as temporary living quarters for recreational, camping, or travel use.

Careless Driving, Inattentive Operation, Improper Driving, or Driving Without Due Care ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver was exhibiting any of these behaviors. If this driver was also distracted, include the applicable distraction in [DRIVER DISTRACTION](#). If this driver also drove the vehicle aggressively, see [Aggressive Driving](#).

[CARGO BODY TYPE \(POWER UNIT ONLY\)](#) – the primary cargo-carrying capability of this vehicle.

Cargo or Equipment Loss or Shift (non-harmful) ([SEQUENCE OF EVENTS](#)) - refers specifically to the loss or shift of items carried on or in a motor vehicle or its trailing unit, which does not cause damage and/or injury to the vehicle, its occupants, its parts, trailing unit, or the cargo itself. For example, a cargo tank driver swerves or over-corrects causing liquid in the tank to slosh and overtake vehicle control causing the vehicle to rollover. In this case, the cargo shift was not harmful on its own, but led to the harmful event [Rollover or Overturn](#).

Cargo or Equipment Loss, Shift, or Damage (harmful) ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – refers specifically to the loss or shift of items carried on or in a motor vehicle or its trailing unit, causing damage and/or injury to the vehicle, its occupants, its parts, trailing unit, or the cargo itself. Harm can be measured in loss of monetary value from unrecoverable cargo loss as well as physical damage. For example: (1) A pickup truck brakes rapidly to avoid a collision. This causes a piece of lumber in the pickup bed to smash through the rear window. (2) Unsecured cargo shifts inside a box truck and bursts through the wall of the trailer. (3) Pallets of beehives on a [flatbed](#) truck fall off the truck on a sharp curve causing the hives to open and the bees to fly away.

Do not use this attribute if the cargo or equipment loss or shift on its own does not cause damage or injury (i.e., not a harmful event). Instead, see the [SEQUENCE OF EVENTS](#) non-harmful event [Cargo or Equipment Loss or Shift \(non-harmful\)](#). For example, a cargo tank driver swerves or over-corrects causing liquid in the tank to slosh and overtake vehicle control causing the vehicle to rollover. In this case, the cargo shift was not harmful on its own, but led to the harmful event [Rollover or Overturn](#).

Cargo Loss or Object or Person Set-in-Motion ([INITIAL CONTACT POINT](#)) – used for a vehicle when its first [harmful event](#) in its [SEQUENCE OF EVENTS](#) involves striking another vehicle, person, or property (a collision event) by the vehicle's cargo, an object, or a person that falls from or is propelled by the vehicle. For example, select **Cargo Loss or Object or Person Set-in-Motion** for a log truck if logs fall from the truck onto the top of a vehicle in an adjacent lane, while the vehicle struck by the logs should be coded for the area where the logs struck (i.e., **Top**).

Cargo Tank ([CARGO BODY TYPE \(POWER UNIT ONLY\)](#)) – a single-unit truck with a cargo body designed to transport dry bulk (fly, ash, etc.), liquid bulk (gasoline, milk, etc.) or gas bulk (propane, etc.).

Cargo Van ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – any van where the area behind the driver or cab is designed for transporting cargo or operated for general commercial use.

Changing Lanes ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) – shift from one traffic lane to another traffic lane while moving in the same direction.

Charter or Tour ([BUS USE](#)) – used when a company provides transportation on a for-hire basis and demand-response basis, usually round-trip service for a tour group or outing, regardless of if the function is consistent with the [MOTOR VEHICLE BODY TYPE CATEGORY](#). Buses are any motor vehicle with seats to transport nine or more people including the driver but not including vans owned and operated for personal use.

Childcare or Daycare ([BUS USE](#)) – used when the bus was used to transport passengers to or from a childcare or daycare facility.

Child Restraint System – Forward-Facing ([RESTRAINT SYSTEM USE](#)) - used when a child passenger is seated in one of the following forward-facing child safety seats. This does not imply correct use or placement of the seat (see Subfield 2).

- Convertible Seat: can change from a rear-facing seat to a forward-facing seat with a harness and tether.
- Combination Seat: transitions from a forward-facing seat with a harness and tether into a booster seat.
- All-in-One Seat: can change from a rear-facing seat to a forward-facing seat (with a harness and tether) and to a booster seat as a child grows.

Child Restraint System – Rear-Facing ([RESTRAINT SYSTEM USE](#)) - used when a child passenger is seated in one of the following rear-facing child safety seats. This does not imply correct use or placement of the seat (see Subfield 2).

- Infant car seat: designed for newborns and small babies, the infant-only car seat is a small, portable seat that can only be used rear-facing.
- Convertible car seat: can change from a rear-facing seat to a forward-facing seat with a harness and tether. Because it can be used with children of various sizes, it allows for children to stay in the rear-facing position longer.
- All-in-One Seat: can change from a rear-facing seat to a forward-facing seat (with a harness and tether) and to a booster seat as a child grows. Because it can be used with children of various sizes, it allows for children to stay in the rear-facing position longer.

Child Restraint – Type Unknown ([RESTRAINT SYSTEM USE](#)) - used when a child passenger is seated in a child safety seat; however, the type used (e.g., forward, rear, booster) cannot be determined. This does not imply correct use or placement of the seat (see Subfield 2).

Circular Intersection (e.g., Roundabout, Traffic Circle) ([TYPE OF INTERSECTION](#)) - used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the intersection of roads is where motor vehicles must travel around a circle to continue on the same road or leave on any intersecting road.

[CITATIONS ISSUED](#) – the violations, citations, or infractions of the State’s vehicle code issued to this driver in this crash, regardless of whether the driver survived the crash.

Clear ([ATMOSPHERIC CONDITIONS](#)) – used when the sky is free of clouds or partially cloudy if sunlight is not diminished.

Clock Points 01-12 ([INITIAL CONTACT POINT](#), [DAMAGED AREAS](#)) - refer to the points on a clock (see [Figure 30. Clock point diagrams for different types of motor vehicles](#)). The clock points extend to the entire length of the power unit and any attached trailer (or trailers). If the load of a vehicle extends outside of the vehicle's profile, select the clock point that best describes the impact point (for INITIAL CONTACT POINT) or damage (for DAMAGED AREAS). For example, lumber extending out of the back of a pickup truck bed would be clock point **06** for the pickup truck.

Cloudy ([ATMOSPHERIC CONDITIONS](#)) - used when the sky is overcast or partially cloudy when sunlight is diminished.

Collision Event ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – a [harmful event](#) that involves the collision of a [motor vehicle in-transport](#) with another motor vehicle, a non-fixed object, or a fixed object.

Collision With Fixed Object ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – a collision crash in which the [harmful event](#) is the striking of a fixed object by a road vehicle [in-transport](#). Fixed objects include guardrails, bridge railings or abutments, construction barricades, impact attenuators, trees, embedded rocks, utility poles, ditches, steep earth or rock slopes, culverts, fences, and buildings.

Combination ([AIR BAG DEPLOYED](#)) – used if two or more air bags of different types deployed for this person in this seat position.

Concrete Mixer ([CARGO BODY TYPE \(POWER UNIT ONLY\)](#)) - a single-unit truck with a cargo body designed with a rotating drum for mixing cement, sand, gravel, or other substances to make concrete.

Concrete Traffic Barrier ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – longitudinal traffic barrier constructed of concrete and located on the outside of the [road](#) surface, in a median, or in [gore](#) areas. This includes all temporary concrete barriers regardless of location (e.g., temporary barrier on a bridge being used to control traffic during bridge repair or construction).

Cones, Barrels, or Other Channelizing Devices ([TRAFFIC CONTROL DEVICE](#)) – devices to warn road users of conditions created by activities in or near the roadway and to guide road users. Includes cones, tubular markers, vertical panels, drums (barrels), barricades, and longitudinal channelizing devices. Channelizing devices provide for smooth and gradual vehicular traffic flow from one lane to another, onto a bypass or detour, or into a narrower traveled way.

Construction ([WORK ZONE](#)) - used when there is long-term stationary construction such as building a new bridge, adding travel lanes to the roadway, extending an existing trafficway, etc. Highway construction includes construction of appurtenances, such as guardrails or ditches, surveying activity, installation of utilities within the right-of-way, etc.

Construction Equipment (e.g., backhoe, bulldozer, forklift) ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) - construction equipment other than trucks propelled by a motor, such as bulldozer, road grader, etc.

Continuous Left-Turn Lane ([LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY](#)) - a two-way left turn lane positioned between opposing straight-through travel lanes. When the [FIRST HARMFUL EVENT](#) occurs in a continuous left-turn lane, this attribute takes precedence over [On Roadway](#).

[CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#) – pre-existing motor vehicle defects or maintenance conditions that may have contributed to the occurrence or severity of the crash.

[COUNTY OR EQUIVALENT](#) – the county or equivalent entity in which the crash physically occurred.

County or Equivalent Name ([COUNTY OR EQUIVALENT](#)) - the name of the county (or equivalent) in which a crash physically occurred.

[CRASH DATE](#) – the date when the crash occurred or if unknown, the date the crash was reported.

[CRASH TIME](#) - the time at which the crash occurred.

Cross Centerline ([SEQUENCE OF EVENTS](#)) - used when a vehicle crosses over the centerline of a two-way, undivided trafficway. The centerline must be delineated with paint or raised markers. This is also used for unstabilized situations involving vehicles that depart from their initial travel lane and enter the continuous left-turn lane, having a harmful event that is located within the marked boundaries of the continuous left-turn lane. This attribute also applies to vehicles that traverse the continuous left-turn lane area, having a harmful event that is located in the opposing travel lane(s).

Crossing ([NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#)) - Immediately prior to the crash, the non-motorist was moving across the [roadway](#). The person can be in any location (e.g., in the roadway, on a center crossing island, stepping off a sidewalk). This includes if the person began to cross the roadway, stopped, and then was struck.

Cross Median ([SEQUENCE OF EVENTS](#)) - used when a vehicle departs its roadway, traverses the median, and enters the shoulder or travel lanes on the opposite side of a divided highway.

(C) Possible Injury ([INJURY STATUS](#)) – any injury reported or claimed that is not a fatal, suspected serious, or suspected minor injury. Examples include momentary loss of consciousness, claim of injury, limping, or complaint of pain or nausea. Possible injuries are those that are reported by the person or are indicated by their behavior, but no wounds or injuries are readily evident.

Crossover ([WORK ZONE](#)) – one or more traffic lanes temporarily transferred across a median away from an adjacent work zone.

Crossover-Related ([RELATION TO JUNCTION](#)) – used when the [FIRST HARMFUL EVENT](#) occurs in a crossover or on approach to or exit from a crossover, and related to the movement of traffic units through the crossover. Note a crossover is the area of the median of a divided trafficway where motor vehicles are permitted to cross the opposing lane of traffic or execute a U-turn. Breaks in the median designated for “authorized vehicles only” are not considered crossovers.

Culvert ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used when the vehicle strikes a manmade drain or channel crossing under a road, sidewalk, etc., resulting in injury or damage.

Curb ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used when the vehicle strikes a raised edge or border to a [roadway](#), resulting in injury or damage. Curbs may be constructed of concrete, asphalt, or wood and typically have a face height of less than 9 inches.

Curtain ([AIR BAG DEPLOYED](#)) – used when the curtain air bag is out of its cover and protruding into driver or passenger compartment. The bag is fully or partially deflated or inflated. This attribute refers to a head only, side impact, or rollover air bag for outboard occupants. These are usually mounted in the roof rail above the side windows, deploying between the glazing and the occupant. These look like a curtain when deployed and are designed to help protect an adult’s head in a side-impact or rollover crash. This includes a head impact curtain in a convertible car body type, which deploys upward from the door panel near the lower edge of the side glazing. A single curtain may cover one or all rows, or a vehicle may have one for the first row with another covering two or more rearward rows. Curtain airbags are sometimes called a rollover curtain, roof bag, roof-rail bag, roof curtain, anti-ejection curtain, or a safety canopy. These rollover curtains are a special type of side curtain air bag with sensors that measure vehicle tilting and protect occupants from injury and ejection during a rollover crash. Refer to [Figure 32. Air bag diagram](#).

Curve, Hill, or Other Roadway Design Feature ([DRIVER’S VISION OBSCURED BY](#)) - used when any of these roadway features or design elements obstructed the view of the driver (e.g., including embankment, sag).

Curve Left ([ROADWAY ALIGNMENT](#)) – used when the roadway on which this vehicle was traveling curved to the left just prior to the vehicle’s involvement in this crash.

Curve Right ([ROADWAY ALIGNMENT](#)) - used when the roadway on which this vehicle was traveling curved to the right just prior to the vehicle’s involvement in this crash.

D

[DAMAGED AREAS](#) - Identifies all areas damaged on the vehicle as a result of this crash.

[DATE OF BIRTH](#) – the year, month, and day of birth of the person involved in this crash.

[DATE OF ROADWAY CLEARANCE](#) – the date of first recordable awareness to when all traffic lanes became available for normal traffic flow.

Dark – Lighted ([LIGHT CONDITION](#)) – the scene of the crash is illuminated at night, or another period of darkness, by streetlamps or other man-made light sources.

Dark – Not Lighted ([LIGHT CONDITION](#)) – the scene of the crash is not illuminated at night, or another period of darkness, by streetlamps or other man-made light sources.

Dark – Unknown Lighting ([LIGHT CONDITION](#)) – used when it is known that the crash occurred at night or during another period of darkness, but not known if the crash scene was illuminated by a man-made light source.

Dart or Dash ([NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#)) – Non-motorist suddenly entering from off the [roadway](#), including running, jogging, or stumbling, etc.

Dawn ([LIGHT CONDITION](#)) – the transition period going from “dark of night” to daylight. This is typically the 30-minute period before the sun rises.

Daylight ([LIGHT CONDITION](#)) – used whenever the sun is above the horizon at a given location.

Decelerating ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) – used when this vehicle was traveling straight ahead within the road portion of the trafficway and was decelerating.

Deployed - Unknown Location ([AIR BAG DEPLOYED](#)) - used if an air bag did deploy for this person in this seat position, but the origin of the air bag cannot be determined.

Deployment Unknown ([AIR BAG DEPLOYED](#)) – used when it cannot be determined if any air bag for this person in this seat position is out of its cover and protruding into occupant compartment.

[DEVICE FUNCTIONING](#) - identifies whether the traffic control device recorded for this vehicle in the data element [TRAFFIC CONTROL DEVICE](#) was functioning properly just prior to this vehicle’s involvement in the crash.

Device Functioning Properly ([DEVICE FUNCTIONING](#)) - used when the device selected in [TRAFFIC CONTROL DEVICE](#) was functioning as designed at the time of the crash.

Device Not Functioning, Functioning Improperly, or Missing ([DEVICE FUNCTIONING](#)) - used when the device selected in [TRAFFIC CONTROL DEVICE](#) was not functioning as designed or was missing at the time of the crash. Examples include signal burned out, sign knocked down, sign twisted, sign or signal obscured by vegetation, sign or signal missing, traffic control person not paying attention.

Disabled Vehicle Related (working on, pushing, leaving, or approaching) ([NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#)) - immediately prior to the crash, the non-motorist was performing activities related to a disabled or inoperative vehicle including working on it, pushing it, leaving it, or approaching it. For vehicles in a previous crash, it is not necessary to know the damage severity.

Disabling Damage ([EXTENT OF DAMAGE](#)) – damage that precludes departure of the motor vehicle from the scene of the crash in its usual daylight-operating manner after simple repairs. As a result, the motor vehicle had to be towed, carried from crash scene, or assisted by an emergency motor vehicle.

Distracted ([NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#)) - This person was inattentive, lost in thought, or distracted. Examples include using any electronic devices (e.g., mobile phone, video game, e-reader), using earbuds on a music player while jogging, chatting with a neighbor, caring for a baby in a stroller, admiring a garden, etc. If this attribute is selected,

then [NON-MOTORIST DISTRACTION](#) must equal **Mobile-Electronic-Device-Related or Other Distractions**.

Distracted, Details Unknown ([DRIVER DISTRACTION](#)) – It is known that this driver was distracted from the driving task, but specific distractions cannot be identified.

Distracted Driver of a Noncontact Vehicle ([RELATED FACTORS – CRASH LEVEL](#)) - used when the driver of a noncontact vehicle (“phantom vehicle”) was distracted and that distraction was related to this crash.

Ditch ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used when the vehicle strikes a trench used for drainage purposes, resulting in injury or damage. A ditch ends where a [culvert](#) begins and resumes on the opposite side of the culvert.

Dolly Attached ([RELATED FACTORS – VEHICLE LEVEL](#)) - used when this vehicle has one or more dollies (converter or tow) attached to the power unit and/or a trailing unit. The dolly or dollies may be with or without a trailing unit.

DOT-Compliant Motorcycle Helmet ([HELMET USE](#)) – used when the occupant was wearing a DOT-compliant motorcycle helmet. Motorcycle helmets that are compliant with Federal Motor Vehicle Safety Standards typically weigh approximately 3 lb, have an inner liner at least one-inch thick of firm polystyrene foam, have an inside label that states the manufacturer, model, and date of manufacture, and have a DOT sticker on the back of the helmet. A DOT sticker alone is not sufficient evidence to indicate that the helmet is DOT-compliant, as counterfeit stickers have been found affixed to non-compliant helmets.

Downhill ([ROADWAY GRADE](#)) – used when the roadway on which this vehicle was traveling was descending just prior to this vehicle’s involvement in this crash.

Downhill Runaway ([SEQUENCE OF EVENTS](#)) - used when a vehicle cannot decelerate on a downhill grade due to vehicle malfunction. This does not apply to a vehicle that cannot slow down due to lack of surface friction (e.g., due to ice or snow).

[DRIVER ADDRESS](#) – the address of the driver of this vehicle.

[DRIVER DISTRACTION](#) - Identifies this driver’s attention to driving prior to the driver’s realization of an impending critical event or just prior to impact if realization of an impending critical event does not occur. This element reports on the presence of any distractions that may or may not have contributed to the crash. Distraction from the primary task of driving occurs when drivers divert their attention from the driving task to some other activity.

[DRIVER LICENSE JURISDICTION](#) – The geographic or political entity issuing a driver license to this person.

[DRIVER LICENSE NUMBER](#) – a unique set of alphanumeric characters assigned by the authorizing agent issuing a driver license to this person.

Driver of a Motor Vehicle In-Transport ([PERSON TYPE](#)) – occupant who is in actual physical control of a motor vehicle or, for an out-of-control motor vehicle, an occupant who was in control until control was lost.

[DRIVER PRESENCE](#) - identifies whether a driver was present in this vehicle at the time of the crash.

Driver Required to Use Interlock Device ([RELATED FACTORS – DRIVER LEVEL](#)) - used for drivers whose licenses have been suspended or revoked for certain alcohol- or drug-related offenses who possess ignition interlock restricted licenses. These licenses permit them to drive if they use an ignition interlock device installed in their car that tests breath for alcohol consumption.

[DRIVER’S VISION OBSCURED BY](#) - This data element records impediments to a driver’s visual field.

Driveway Access ([NON-MOTORIST SPECIFIC LOCATION](#)) This non-motorist was located in a portion of the [trafficway](#) at the end of a driveway providing access to property adjacent to a trafficway. This includes the driveway crossing that is the portion of the driveway access where a **Sidewalk** or **Shared-Use Path or Trail** crosses over the driveway access.

Driveway Access or Related ([RELATION TO JUNCTION](#)) – used when the [FIRST HARMFUL EVENT](#) occurs:

- On a driveway access or involves a road vehicle entering or leaving by way of a driveway access where at least one traffic unit (vehicle, cyclist, or pedestrian) is physically on the driveway access within the [trafficway](#), OR
- adjacent to a driveway, does not occur on a driveway access, but results from an activity, behavior, or control related to the movement of traffic units onto or out of a driveway.

Driving on Wrong Side of Two-Way Trafficway ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver was established in and driving on the wrong side of the trafficway, whether intentional or unintentional. “Unintentional” means they may not be aware they are on the wrong side. For situations where a driver unintentionally crosses the centerline, see [Failed to Keep in Proper Lane](#). For situations where the vehicle is on the wrong side because of an improper passing maneuver, see [Improper Passing](#). Examples:

- Driving the wrong way or on the wrong side of a divided trafficway.
- Driving on the wrong side of an undivided trafficway.
- Driving the wrong way in a circular intersection.
- Driving on the left half of an approaching bridge or tunnel.

Driving Wrong Way on One-Way Trafficway ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver was driving in the wrong direction on a one-way trafficway, whether intentional or unintentional. If this is a divided trafficway, although each side is “one-way,” driving against traffic should be captured in the attribute [Driving on Wrong Side of Two-Way Trafficway](#).

Drowsy, Asleep, or Fatigued ([RELATED FACTORS-DRIVER LEVEL](#)) – used when the driver was drowsy or asleep or was operating in a reduced physical or mental capacity due to weariness, medication, or other drugs.

Dry ([ROADWAY SURFACE CONDITION](#)) - used when the roadway surface on which this vehicle was traveling just prior to this vehicle’s involvement in this crash was free from moisture or liquid. A road made of sand or dirt would be coded as **Dry** under normal conditions, not **Sand** or **Mud, Dirt, or Gravel**.

Dump ([CARGO BODY TYPE \(POWER UNIT ONLY\)](#)) – a cargo body type that can be tilted or otherwise manipulated to discharge its load by gravity.

Dump Trailer ([TRAILER BODY TYPE](#)) - a trailer type that can be tilted or otherwise manipulated to discharge its load by gravity.

Dusk ([LIGHT CONDITION](#)) - the transition period going from daylight to “dark of night.” This is typically the 30-minute period after the sun sets.

E

[EJECTION](#) – identifies if the occupant was completely or partially thrown from the interior of the motor vehicle as a result of this crash.

Embankment ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used when the vehicle strikes a raised structure to hold back water, to carry a roadway, or the result of excavation or washout (including erosion) that may be faced with earth (or rock, stone, or concrete), resulting in injury or damage. An **Embankment** can usually be differentiated from a [Wall](#) by its incline, whereas a wall is usually vertical. However, there are exceptions to this, such as a retaining wall that may be inclined or a vertical embankment that is caused by a natural event such as a washout.

In crashes involving a field approach or driveway crossing, use attribute **Embankment** when no specific components (e.g., culverts or ditches) are identified.

Emergency Medical Services (EMS) ([SPECIAL FUNCTION](#)) - at the time of the crash this person was performing EMS duties. This includes emergency medical responder (EMR), emergency medical technician (EMT), or paramedic who provides the triage, treatment, and/or transport of crash victims.

[EMERGENCY RESPONSE](#) – Subfield 1 indicates operation of any motor vehicle that is legally authorized by a government authority to respond to emergencies with or without the use of emergency warning equipment, such as a police vehicle, fire truck, or ambulance while engaged in such response. Subfield 2 indicates the use of emergency warning equipment in this vehicle, such as lights or sirens. Subfield 3 indicates if the vehicle was transporting non-emergency people, such as patients or arrestees.

Emergency-Vehicle-Related ([RELATED FACTORS – CRASH LEVEL](#)) - used when a crash was related to the presence of an emergency vehicle (or vehicles) or incident response vehicle (or vehicles) engaged in an emergency operation or incident response at the time of the crash. Emergency vehicles include police cars, ambulances, fire trucks, etc. Incident response vehicles include safety service patrol vehicles, tow trucks, highway help vehicles, etc. These vehicles may be contact or noncontact vehicles in the crash engaged in a response either with or without lights and/or sirens.

Services such as escorting a funeral procession, providing traffic control assistance at a work zone, or for a motorcade or parade would NOT qualify as emergency or incident responses.

Noncontact Example:

- A vehicle moves over to allow an ambulance on an emergency response to pass and strikes a pedestrian.

Contact Example:

- An ambulance on an emergency response travels through an intersection and is struck by another motor vehicle.

EMS Air ([TRANSPORTED TO FIRST MEDICAL FACILITY BY](#)) - includes any air transport device. This attribute would be used any time air transport was used for this person. For example, if there is an indication that both air and ground transportation were used, use **EMS Air**.

EMS Ground ([TRANSPORTED TO FIRST MEDICAL FACILITY BY](#)) - used when this person was transported by ambulance or other medical ground service. This includes transport by local, State, Tribal, Territorial, Federally run, or for-profit ambulance or rescue squad vehicles.

[EMS RESPONSE AGENCY](#) - the agency identifier and run number of the EMS agency that responded to this crash and attended to this person.

EMS Response Agency Identifier ([EMS RESPONSE AGENCY](#)) – identifier for EMS agency that responded to the crash and attended to this person.

EMS Response Run Number ([EMS RESPONSE AGENCY](#)) – the EMS run number for the EMS agency that responded to this crash and attended to this person. Usually documented on an EMS Run Report.

EMS, Unknown if Air or Ground ([TRANSPORTED TO FIRST MEDICAL FACILITY BY](#)) - used when a person is transported to a treatment facility by EMS, but it is unknown if it was [EMS Air](#) or [EMS Ground](#).

[EMS UUID](#) – The Universally Unique Identifier of the EMS patient care report for this person.

Enclosed Passenger or Cargo Area ([SEATING POSITION](#)) – used when an occupant is in the fifth or higher numbered seat row in an enclosed area where no defined seating exists or using a fold-down type seat in its folded-down position. This attribute is also used for bus passengers in undetermined seating (not driver) and for bus occupants who fall from an open door. This attribute is also used for people in the treatment compartment of an ambulance.

End Departure (T-intersection, dead-end, etc.) ([SEQUENCE OF EVENTS](#)) - used when the vehicle leaves the roadway by traveling straight through the top of a T-intersection of a two-way trafficway or top of an intersecting one-way roadway. This code should also apply to vehicles traveling off the end of dead-end roadways or into the barrier of a closed trafficway.

Entering a Parking Position ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) - used when this vehicle was leaving the travel lane to a parking area adjacent to the traffic lanes (i.e., in the process of parking). This attribute includes vehicles that are stopping or parking on the shoulder, roadside, median, etc. For a vehicle backing into a driveway use [Backing Up \(other than for parking position\)](#).

Entering or Exiting Parked or Stopped Vehicle ([NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#)) - immediately prior to the crash the non-motorist was adjacent to a stopped or parked vehicle and in the process of getting into or had just exited that stopped or parked vehicle. Excludes non-motorists performing other actions such as crossing the roadway to or from a parked vehicle (see [Crossing](#) and [Waiting to Cross](#)) or other movements that occurred after the non-motorist exited the vehicle.

Entrance or Exit Ramp or Related ([RELATION TO JUNCTION](#)) – used when the [FIRST HARMFUL EVENT](#) occurs on an approach to or exit from a [roadway](#) or results from an activity, behavior, or control related to the movement of traffic units entering or exiting a ramp.

Equipment Failure (blown tire, brake failure, etc.) ([SEQUENCE OF EVENTS](#)) - describes when a component of a vehicle fails (e.g., blown tires, brake failures). This is not used to describe damage from a collision event.

Evidential Breath ([ALCOHOL TEST](#)) - used if the result is from an evidential breath test performed by a device on NHTSA's Conforming Products List. Preliminary breath test devices (PBTs), also known as alcohol screening devices (ASDs), that are not considered evidential should be coded under [Preliminary Breath Test \(PBT\)](#).

Exhaust System ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of any part of the vehicle's exhaust system may have contributed to the occurrence or severity of the crash. The exhaust system describes a system of pipes that guide the vehicle's exhaust gases away from the engine. This includes the exhaust manifold, headers, muffler, catalytic converter, tailpipe, etc.

[EXTENT OF DAMAGE](#) – identifies the extent to which the damage identified in [DAMAGED AREAS](#) affects the vehicle's operability rather than the cost to repair.

External Mirrors ([DRIVER'S VISION OBSCURED BY](#)) - used when an exterior mirror on this driver's vehicle created a visual obstruction.

F

Failed to Keep in Proper Lane ([RELATED FACTORS – DRIVER LEVEL](#)) – this driver did not maintain position in appropriate travel lane.

Failed to Move Over or Slow Down as Required by Move Over Law ([RELATED FACTORS – DRIVER LEVEL](#)) - This driver did not try to move over or slow down when passing a stopped emergency or maintenance vehicle or personnel and this may have contributed to the crash. The stopped emergency or maintenance vehicle may or may not have been displaying flashing warning lights.

Failed to Yield Right-of-Way ([RELATED FACTORS – DRIVER LEVEL](#)) – driver failed to yield right-of-way to another motor vehicle or non-occupant as required.

Failure to Obey Traffic Control Devices ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver failed to obey an applicable traffic control device (sign or signal), traffic officer, or traffic safety zone laws (e.g., school zone, work zone). This attribute does NOT apply if this driver is in a police car, ambulance, or fire apparatus with active lights and/or sirens (also see [SPECIAL FUNCTION](#) for this person). If a driver stops as required but then fails to yield, use the attribute [Failed to Yield Right-of-Way](#) and not **Failure to Obey Traffic Control Devices**. For examples of traffic control devices, see [TRAFFIC CONTROL DEVICE](#).

Failure to Obey Traffic Sign, Signal, or Officer ([NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#)) - used when the non-motorist failed to obey a traffic control device. Examples include a traffic sign, a traffic control device (including a pedestrian signal), a traffic officer, or a safety zone; or passing around railroad gates.

Failure to Use Vehicle Lights Properly ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver failed to use the vehicle's external lights properly. Examples:

- The driver failed to turn on the vehicle's headlights at night or in a tunnel.
- The driver failed to turn on the motorcycle's headlights as required.
- The driver failed to dim the vehicle's high beams.
- The driver used fog lights when prohibited.
- The driver was using aftermarket mounted floodlights.

Failure to Yield Right-Of-Way ([NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#)) - used when the non-motorist failed to yield the right-of-way to other road users. Examples:

- failure to yield when exiting a driveway;
- failure to yield at an intersection not controlled by a stop sign or flashing red lights
- a bicyclist that stopped at the stop sign but did not realize it was a two-way stop rather than a four-way stop control and proceeded into the intersection without yielding to traffic on the through trafficway.

Farm Equipment (e.g., tractor, combine harvester) ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) - farming implements other than trucks propelled by a motor (e.g., farm tractors, combines). This attribute is not under 49 CFR Part 565 regulation. Farm equipment are off-road vehicles and do not require VINs.

Fatal Injury (K) – See [\(K\) Fatal Injury](#)

Fell or Jumped From Motor Vehicle ([FIRST HARMFUL EVENT, SEQUENCE OF EVENTS, MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used when an occupant of this vehicle falls or jumps (not suicide) from the vehicle causing injury. For example, an occupant of a motor vehicle in-transport leans against the car door, it opens, and the occupant falls out; or a person riding on a vehicle's exterior (hood, roof, running board, etc.) falls or jumps, and is injured by the fall. If an occupant falls or jumps from a vehicle and is struck by that vehicle, use this attribute.

Fence ([FIRST HARMFUL EVENT, SEQUENCE OF EVENTS, MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) - a barrier constructed to prevent escape or intrusion or to mark a boundary. A fence can be made of wood, metal, stone, etc., and includes the fence posts and gates.

Fire and Rescue ([SPECIAL FUNCTION](#)) - at the time of the crash this person was performing fire and/or rescue duties. This includes providing aid by fighting fires, rescuing those involved in crashes from vehicles, and managing hazardous materials incidents.

Fire Hydrant ([FIRST HARMFUL EVENT, SEQUENCE OF EVENTS, MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) - the roadside device used by fire departments to provide water for fighting fires. Usually made of steel, these devices are also referred to as fire plugs or fire standpipes in some areas.

Fire or Explosion ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – a fire or explosion that was the cause or result of the crash. A fire or explosion is a non-collision harmful event.

[FIRE OCCURRENCE](#) - identifies whether a fire in any way related to the crash occurred in this vehicle.

Fire Truck ([SPECIAL USE](#)) – a readily identifiable vehicle specially designed and equipped for the purposes of providing fire, hazmat, medical, and extrication services. This attribute includes medium and heavy vehicles such as engines, pumpers, ladder, platform aerial apparatus, heavy rescue vehicles, water tenders or tankers, brush or wilderness firefighting vehicles, etc. The fire truck is presumed to be in special use at all times, although not necessarily in “emergency use.”

[FIRST HARMFUL EVENT](#) – The first injury- or damage-producing event of the crash.

Five or More Legs and Not Circular ([TYPE OF INTERSECTION](#)) - used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the intersection is where more than two roadways cross or connect.

Flashing Traffic Control Signal ([TRAFFIC CONTROL DEVICE](#)) – a traffic control signal that is flashing or a single-light flashing red or yellow.

Flatbed ([CARGO BODY TYPE \(POWER UNIT ONLY\)](#)) – a single-unit truck whose cargo body is without sides or roof, with or without readily removable stakes that may be tied together with chains, slats, or panels. This includes trucks transporting containerized loads.

Flatbed or Platform Trailer ([TRAILER BODY TYPE](#)) – a trailer type without sides or roof, with or without readily removable stakes that may be tied together with chains, slats, or panels. This includes trailers transporting containerized loads.

Fleeing or Evading Law Enforcement ([RELATED FACTORS – DRIVER LEVEL](#), [NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#)) - used to identify this person was trying to escape and/or avoid the police.

Fog or Mist ([ATMOSPHERIC CONDITIONS](#)) - used for a visible accumulation of fine water droplets in the atmosphere that reduce visibility.

Followed Too Closely ([RELATED FACTORS – DRIVER LEVEL](#)) – this driver was positioned at a distance behind another motor vehicle or non-occupant that was too close to permit safe response to any change in movement or behavior by the other motor vehicle or non-occupant.

Four-Leg Intersection ([TYPE OF INTERSECTION](#)) – used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the two roadways cross or connect.

Freezing Rain ([ATMOSPHERIC CONDITIONS](#)) – used for precipitation falling as liquid (rain) and then freezing on the roadway, not including sleet or hail (see [Sleet or Hail](#)).

Front ([AIR BAG DEPLOYED](#)) – used when the driver or front seat passenger air bag is out of its cover and protruding into driver compartment. The bag is fully or partially deflated or inflated. The driver frontal air bag is located in the hub of the steering wheel. The right front passenger frontal air bag is located in the dashboard (instrument panel). Refer to [Figure 32. Air bag diagram](#).

Front to Front ([MANNER OF COLLISION OF THE FIRST HARMFUL EVENT](#)) – the front end of one vehicle collides with the front end of another vehicle, while the two vehicles are traveling in opposite directions.

Front-to-Rear or Rear-to-Front ([MANNER OF COLLISION OF THE FIRST HARMFUL EVENT](#)) – used when a collision occurs between the rear of one vehicle and the front of another vehicle. If this attribute is selected, the [INITIAL CONTACT POINT](#) for the vehicles involved in the [FIRST HARMFUL EVENT](#) must be the rear of one vehicle and the front of the other vehicle.

Frost or Fog on Windshield ([DRIVER’S VISION OBSCURED BY](#)) - the presence of frost or fog on the windshield obscured this driver’s vision. This includes the defrost system being turned off or not operating properly.

Functional Damage ([EXTENT OF DAMAGE](#)) – damage that is not disabling but affects operation of the motor vehicle or its parts.

G

Garbage or Refuse ([CARGO BODY TYPE \(POWER UNIT ONLY\)](#)) – a single-unit truck with a cargo body specifically designed to collect and transport garbage and refuse. This includes both conventional rear-loading and over-the-top bucket-loading garbage trucks. Also included are recycle trucks and roll-off style garbage trucks.

[GLOBAL POSITION \(LATITUDE, LONGITUDE\)](#) – the latitude and longitude where the [FIRST HARMFUL EVENT](#) of the crash occurred.

Global Positioning System (GPS) ([GLOBAL POSITION \(LATITUDE, LONGITUDE\)](#)) – a system of satellites that transmit geographic locations in terms of latitude and longitude.

Going Straight ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) - used when this vehicle’s path of travel was straight ahead without any attempted or intended changes. The coding of this attribute is not always dependent on the roadway alignment (e.g., a vehicle that travels straight in a curved roadway without any attempt by the driver to negotiate the curve).

Going to or From School (Pre-K-12) ([NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#)) – immediately prior to the crash, the non-motorist was going to or from school for any reason. Examples include normal school attendance, school dance, sports practice, or extracurricular activities. This attribute includes students (pre-kindergarten through 12th-grade) or an adult supervising students.

Golf Cart ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – a self-propelled vehicle not designed primarily for operation on roadways. A golf cart has a design speed of less than 20 miles per hour, at least 3 wheels in contact with the ground, and an empty weight of under 1,300 lb.

Gore ([LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY](#)) – area of land where two [roadways](#) diverge or converge. The area is bounded on two sides by the edges of the roadways, which join at the point of divergence or convergence. The direction of traffic must be the same on both sides of these roadways. The area includes shoulders or marked pavement, if any, between the roadways.

Government ([TYPE OF MOTOR CARRIER OR RESPONSIBLE ENTITY](#)) – used for a government vehicle whether it is operated by the local, State, or Federal government (e.g., county-owned school buses, city-owned transit buses, fire trucks, military vehicles, State-owned highway maintenance truck). In most circumstances, the government-owned vehicle will not have a U.S. DOT Number.

Grain, Chip, or Gravel ([CARGO BODY TYPE \(POWER UNIT ONLY\)](#)) – a single-unit truck with a bed designed to carry these or other similar bulk commodities with a rear discharge and not designed to tilt and dump (see [Dump](#)).

Grain, Chip, or Gravel Trailer ([TRAILER BODY TYPE](#)) – a trailer body type used for hauling these or other similar bulk commodities. They may be referred to as “open hoppers” or “belly dumps.”

Ground ([FIRST HARMFUL EVENT, SEQUENCE OF EVENTS, MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) - used when the impact is with an earthen or paved surface off this vehicle’s roadway. For example, free falls or vaults from the road surface to the ground. If the impact is with a surface irregularity (e.g., ruts, potholes) not on a paved surface, use **Ground**. If the impact is with a pavement surface irregularity, use [Pavement Surface Irregularity \(ruts, potholes, grates, etc.\)](#). **Ground** should not be used when the harmful event is [Rollover or Overturn](#).

Guardrail End ([FIRST HARMFUL EVENT, SEQUENCE OF EVENTS, MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – the end of the guardrail, with or without treatment. See [Figure 1. Guardrail face and guardrail end](#). **Guardrail Face** ([FIRST HARMFUL EVENT, SEQUENCE OF EVENTS, MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – surface area of the guardrail other than the end. Its function is to redirect the vehicle back onto the roadway. See [Figure 1. Guardrail face and guardrail end](#).

H

Harmful Event – Occurrence of injury or damage.

Harmful Event, Details Unknown ([FIRST HARMFUL EVENT, SEQUENCE OF EVENTS, MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) - a harmful event occurred, but the classification (non-collision, collision with a motor vehicle, fixed object, or non-fixed object) was unknown.

Hazardous Materials ([HAZARDOUS MATERIALS](#)) – any substance or material that has been determined by the U.S. Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and that has been so designated under regulations of the U.S. DOT.

[HAZARDOUS MATERIALS](#) – indication of the hazardous materials identification and class being transported by the motor vehicle, and whether [hazardous materials](#) were released.

Hazardous Materials Class ([HAZARDOUS MATERIALS](#)) - the hazardous materials class number, indicated on the placard or from the shipping papers. See [Figure 19. Nine classes of hazardous materials, FMCSA visor card \(front\)](#) and [Figure 20. Reporting hazardous materials information, FMCSA visor card \(back\)](#) for more information on locating and reporting this number. There may be more than one hazardous materials class on the transport vehicle, and in these cases the DANGEROUS placard may be displayed. This is NOT a representation of a

hazardous materials class, but an indication that two or more [Figure 22. § 172.504 \(e\) Placarding Tables. Table 2 to Paragraph \(e\)](#) materials are present. There may be two or more placards displayed in cases where the hazardous materials regulations require either the display of specific placards for primary hazards ([Figure 21. § 172.504 \(e\) Placarding Tables. Table 1 to Paragraph \(e\)](#)), or subsidiary hazards per 172.505.

Hazardous Materials Placard ([HAZARDOUS MATERIALS](#)) – a hazardous materials placard is a sign required to be affixed to any motor vehicle transporting quantities of [hazardous materials](#) in quantities above the thresholds established by the U.S. Department of Transportation, or other authorized entity. This placard identifies the hazard class division number, 4-digit hazardous material identification number, or name of the hazardous material being transported.

Hazardous Materials Present ([HAZARDOUS MATERIALS](#)) – indicates whether the vehicle was carrying hazardous materials at the time of the crash. Do not include fuel or oil carried by the vehicle for its own use.

Headlights ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of the vehicle’s headlights may have contributed to the occurrence or severity of the crash.

Heavy (greater than 26,000 lb GVWR) ([POWER UNIT GROSS VEHICLE WEIGHT RATING](#)) – used for vehicles with a GVWR greater than 26,000 lb.

Helmet, Other Than DOT-Compliant Motorcycle Helmet ([HELMET USE](#)) - used when the occupant was wearing a helmet that is not a DOT-compliant motorcycle helmet. Examples include bicycle helmets, skateboard helmets, and novelty helmets.

Helmet, Unknown if DOT-Compliant ([HELMET USE](#)) – used when the occupant was wearing a helmet, but the investigating officer cannot determine if it was a DOT-compliant motorcycle helmet.

[HELMET USE](#) - records the type of helmet in use, and any indications of misuse of the helmet, by motor vehicle occupants of [MOTOR VEHICLE BODY TYPE CATEGORY All-Terrain Vehicle or All-Terrain Cycle \(ATV or ATC\)](#) , [Snowmobile, Moped, Multipurpose Off-Highway Utility Vehicle \(MOHUV\) or Recreational Off-Highway Vehicle \(ROV\)](#), [2-Wheeled Motorcycle](#), [3-Wheeled Motorcycle \(trike\)](#), and [Autocycle](#) at the time of the crash.

Hillcrest ([ROADWAY GRADE](#)) – used when the roadway on which this vehicle was traveling was the top of a hill just prior to this vehicle’s involvement in this crash.

[HIT-AND-RUN](#) – refers to cases where the [motor vehicle in-transport](#) is a contact vehicle in the crash and either the vehicle or the driver departs the scene without the driver stopping to render aid or report the crash.

House Trailer ([TRAILER BODY TYPE](#)) – a trailer type specifically designed for carrying a house or a mobile or modular home.

I

Ice or Frost ([ROADWAY SURFACE CONDITION](#)) - used when the roadway surface on which this vehicle was traveling just prior to this vehicle’s involvement in this crash had frozen water on it.

Ill (sick) or Fainted ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver was ill (e.g., seizures, heart attack, vomiting) or lost consciousness. This attribute applies even if the source of the illness or loss of consciousness is alcohol or drug related.

Illegal Driving on Shoulder, Median, Roadside, etc. ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver was intentionally driving illegally in a location off the roadway (e.g., shoulder, median, roadside). This attribute should not be used when the vehicle enters one of these locations as part of an avoidance maneuver or as a result of a critical or harmful event. Also do not use this value for a vehicle that leaves its lane at the direction of a flagman or police officer.

Immersion, Full or Partial ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – occurs when a motor vehicle enters a body of water and results in injury or damage. This attribute would also be used if the vehicle came to rest in water and the depth cannot be ascertained.

Impact Attenuator or Crash Cushion ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – a device for controlling the absorption of energy released during vehicle collision (crash cushion). Its most common application involves the protection of fixed roadside objects such as bridge piers, elevated gores at exit ramps, etc. Examples include barrels filled with water or sand, and plastic collapsible structures. See [Figure 2. Impact attenuator or crash cushion](#). Source: FHWA

Improper Crossing of Roadway or Intersection (“jaywalking”) ([NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#)) - used when a pedestrian or a person on a personal conveyance, either motorized or non-motorized, is engaged in crossing a road but is not doing so properly (i.e., not in a crosswalk). The person may be engaged in other activities such as the continuation of jogging, running, etc. This attribute should not be used in conjunction with [In Roadway Improperly \(standing, lying, working, playing, etc.\)](#).

Improper Passing ([RELATED FACTORS - DRIVER LEVEL](#), [NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#)) - driver (or non-motorist) had completed or was passing in a way that was unsafe, poorly executed, or prohibited. A non-motorist may be passing a motor vehicle or another non-motorist. Examples include unsafely passing on the right (when not in a bike lane), passing a stopped school bus, or passing where prohibited by signs or pavement markings (i.e., mainly violations as designated by traffic controls).

Improper Turn ([RELATED FACTORS - DRIVER LEVEL](#)) - the driver completed or was making a turn that was unsafe, poorly executed, or prohibited.

Improper Turn or Merge ([NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#)) - occurs when the non-motorist completed or was making a turn that was unsafe, poorly executed, or prohibited. This attribute is only applicable to [PERSON TYPE](#) **Bicyclist, Other Cyclist, Pedestrian on Personal Conveyance, Occupant of a Non-Motor Vehicle Transport Device, and Unknown Type of Non-Motorist**. Examples of an improper turn include too wide right or left turns, making a right turn from the left lane, a left turn from the right lane, or unsafe U-turns. An example of an improper merge is when the bicycle lane ends and the bicyclist merges into the path of a vehicle without leaving sufficient space.

In Bus Lane ([NON-MOTORIST SPECIFIC LOCATION](#)) – This non-motorist was located in a preferential lane reserved for the exclusive use of buses.

Incident Responder Working ([NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#)) - immediately prior to the crash, the non-motorist was part of an official response to an incident, such as a firefighter moving between an emergency vehicle and a crash involved vehicle. [SPECIAL FUNCTION](#) must be **Emergency Medical Service (EMS), Fire and Rescue, Law Enforcement, Towing and Recovery, or Safety Service Patrol** for this person.

Indian Nation ([DRIVER LICENSE JURISDICTION](#)) – the driver’s license was issued by a Federally recognized Indian tribe with sovereign authority to interact on a government-to-government basis directly with Federal agencies.

[INITIAL CONTACT POINT](#) – the approximate contact point on this vehicle associated with this vehicle’s first [harmful event](#).

[INJURY STATUS](#) – injury severity level for a person involved in a crash, using the KABCO scale.

In Painted Cycle Lane (including sharrow markings and painted buffers) ([NON-MOTORIST SPECIFIC LOCATION](#)) – This non-motorist was located in a lane for bicyclists that is located within or directly adjacent to the roadway and not physically separated from motor vehicle traffic (see [In Physically Separated Cycle Lane](#)).

In Parking Lane or Zone ([LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY, NON-MOTORIST SPECIFIC LOCATION](#)) – area on the roadway, or next to the roadway, on which parking is permitted in marked or unmarked spaces. This includes curbside and edge of-roadway parking (legal residential parking, city-street parking, etc.). Sometimes a strip of roadway can be designated for parking at certain hours of the day (parking lane) and for regular travel at other hours (travel lane). This attribute should NOT be used during hours when parking is NOT permitted (see [On Roadway \(travel lanes\) - No Special Lane Use](#)). See [Figure 4. Diagram of a trafficway with parking lanes](#).

In Physically Separated Cycle Lane (e.g., curb, pylons) ([NON-MOTORIST SPECIFIC LOCATION](#)) – This non-motorist was located in an exclusive lane for cyclists that is located within or directly adjacent to the [roadway](#) and that is physically separated from motor vehicle traffic with a vertical element (e.g., raised curbs or medians, bollards, landscaping, or planters). Separated bike lanes are differentiated from standard and buffered bike lanes (see [In Painted Cycle Lane](#)) by the vertical element. They are differentiated from [Shared-Use Path or Trail](#) by their more proximate relationship to the adjacent roadway and the fact that they are bike-only facilities. Physically separated bike lanes are also sometimes called “cycle tracks” or “protected bike lanes.”

In Roadway Improperly (standing, lying, working, playing, etc.) ([NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#)) - occurs when a person was in the [roadway](#) in violation of applicable laws. Examples:

- Playing in the road before the vehicle arrived (the person must not have just run into the roadway, which would be coded [Dart or Dash](#))
- In the street voluntarily, such as a civilian directing traffic at the scene of a crash
- Attempting to hail a cab, flag down assistance, or flag down a transit bus between designated stops

- Sitting, getting up, asleep or unconscious, kneeling, etc.

Interchange ([RELATION TO JUNCTION](#)) – a system of interconnecting roadways in conjunction with one or more grade separations, providing for the movement of traffic between two or more roadways on different levels.

Intercity ([BUS USE](#)) – used when a company provides long-distance passenger transportation between cities over fixed routes with regular schedules (e.g., Greyhound bus service between major cities) for compensation. Buses are any motor vehicle with seats to transport nine or more people, including the driver seat, but not including vans owned and operated for personal use.

Intermittent or Moving Work ([WORK ZONE](#)) – temporary work activity that may move or shift frequently.

Intermodal Container Chassis or Trailer ([TRAILER BODY TYPE](#)) - a trailer specifically designed to have a rail or ship container mounted directly on the chassis or trailer. These should not be confused with [Box or Van Enclosed Trailer](#). Intermodal containers may also be mounted on a flatbed trailer, in which case use the attribute [Flatbed or Platform Trailer](#).

International License (other than Mexico or Canada) ([DRIVER LICENSE JURISDICTION](#)) – driver’s license issued by a country other than Canada or Mexico.

Intersection or Related ([RELATION TO JUNCTION](#)) – used when the [FIRST HARMFUL EVENT](#) (1) occurs within an intersection or on an approach to or exit from an intersection and (2) results from an activity, behavior, or control related to the movement of traffic units through the intersection.

Interstate Motor Carrier ([TYPE OF MOTOR CARRIER OR RESPONSIBLE ENTITY](#)) – used if this is a motor carrier that is registered with FMCSA to operate across State lines and issued a U.S. DOT number.

In-Transport – ANSI D.16-2017 defines “in-transport” as the state or condition of a transport vehicle which is in motion or within the portion of a transport way ordinarily used by similar transport vehicles. When applied to motor vehicles, “in-transport” means on a [roadway](#) or in motion within or outside the [trafficway](#). A transport vehicle which is also a [working motor vehicle](#) at the time of the [unstabilized situation](#) is not “in-transport.” In roadway lanes used for travel during some periods and for parking during other periods, a [parked motor vehicle](#) should be considered “in-transport” during periods when parking is forbidden.

In-Transport Motor Vehicle (including load) ([DRIVER’S VISION OBSCURED BY](#)) - used when a vehicle that is in motion or stopped on the roadway obstructed the view of the driver. The vehicle may be but does not have to be a contact vehicle in the case.

Intrastate Motor Carrier ([TYPE OF MOTOR CARRIER OR RESPONSIBLE ENTITY](#)) – used if this is a motor carrier that is not registered with FMCSA to operate across State lines. They may or may not have a U.S. DOT number.

J, K, L

Jackknife (harmful to this vehicle) ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – a condition that occurs to a combination vehicle while in motion. The condition reflects a loss of control of the vehicle by the driver in which the trailer (or trailers) yaws from its normal straight-line path behind the

power unit, striking the power unit, or other trailers, causing damage to the power unit or trailer. **Jackknife (harmful to this vehicle)** should only be coded as a harmful event if there is clear indication of damage to the jackknifed vehicle or injury to its occupants caused by the jackknife. If the jackknife was not harmful to this vehicle, see SEQUENCE OF EVENTS attribute [Non-Harmful Swaying Trailer or Jackknife](#).

Junction (RELATION TO JUNCTION) - either an intersection or the connection between a driveway access and a roadway other than a driveway access.

KABCO (INJURY STATUS) – a functional measure of the injury severity for any person involved in the crash. **(K) Fatal Injury, (A) Suspected Serious Injury, (B) Suspected Minor Injury, (C) Possible Injury, and (O) No Apparent Injury.**

(K) Fatal Injury (INJURY STATUS) – any injury that results in death within 30 days after the motor vehicle crash in which the injury occurred. If the person did not die at the scene but died within 30 days of the motor vehicle crash in which the injury occurred, the injury classification should be changed from the attribute previously assigned to the attribute **(K) Fatal Injury**.

L-Intersection (TYPE OF INTERSECTION) – used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the intersection is a two-armed intersection in which one road intersects with another road but neither road extends beyond the other road. The roadways form an “L.”

Lane Closure (WORK ZONE) – one or more lanes of traffic are temporarily closed to accommodate this work zone.

Lane Shift (WORK ZONE) – one or more lanes of traffic are temporarily shifted to accommodate this work zone.

Lane Splitting or Filtering (VEHICLE STATUS PRIOR TO CRITICAL EVENT) - Lane splitting is when a motorcycle travels between clearly marked lanes for traffic traveling in the same direction. Lane filtering is when a motorcycle travels between or next to stopped motor vehicles to get to the front of the queue (typically at a signalized intersection). This attribute takes precedence over all others for this element and is limited to [MOTOR VEHICLE BODY TYPE CATEGORY](#) attributes [2-Wheeled Motorcycle](#) and [Moped](#). For example, if a motorcycle was passing or overtaking another vehicle and lane splitting or filtering, select **Lane Splitting or Filtering**.

Lane Use Control Signal (TRAFFIC CONTROL DEVICE) - used for lane control electronic devices (i.e., overhead lights or “X” indicating lane open or closed for rush hour lanes, bridges, or at tollbooths).

Lap Belt Only Used (RESTRAINT SYSTEM USE) – use of only a lap seat belt either because the motor vehicle is equipped only with a lap belt or because the shoulder belt is not in use.

Law Enforcement (SPECIAL FUNCTION) – at the time of the crash this person was performing law enforcement duties. This includes directing traffic, conducting a traffic stop, traffic crash scene duties, assisting a disabled or abandoned vehicle, incident response duties, sitting in vehicle and writing a traffic ticket, etc.

Law Enforcement (SPECIAL USE) – a vehicle equipped with police emergency devices (lights and siren) owned or subsidized by any local, county, State, or Federal government entity. A law enforcement vehicle is presumed to be in special use at all times, although not necessarily in

“emergency use.” Vehicles not owned by a government entity that are used by law enforcement officers (e.g., undercover) are excluded.

Law Enforcement ([TRANSPORTED TO FIRST MEDICAL FACILITY BY](#)) – used when a person is transported to a treatment facility by a State, County, Local, or Tribal law enforcement agency vehicle.

[LAW ENFORCEMENT SUSPECTS ALCOHOL INVOLVEMENT](#) – This data element reflects the judgment of law enforcement as to whether alcohol was suspected or not for this person.

[LAW ENFORCEMENT SUSPECTS DRUG INVOLVEMENT](#) – This data element reflects the judgment of law enforcement as to whether drugs were suspected or not for this person.

Lay Down Motorcycle ([ATTEMPTED AVOIDANCE MANEUVER](#)) – used when the driver of this vehicle intentionally laid the motorcycle down in an attempt to avoid an impending danger. This attribute may only be used for a driver of a [MOTOR VEHICLE BODY TYPE CATEGORY](#) attribute [2-Wheeled Motorcycle](#).

Leaving a Parking Position ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) - used when this vehicle was entering the travel lane from a parking area adjacent to the traffic lanes (i.e., in the process of leaving the parking position). This attribute includes vehicles that were previously stopped or parked on the shoulder, roadside, median, etc. For vehicles backing from a driveway, use attribute [Backing Up \(other than for parking position\)](#).

Level ([ROADWAY GRADE](#)) - used when the roadway on which this vehicle was traveling was neither uphill nor downhill just prior to this vehicle’s involvement in this crash.

License Plate Number ([MOTOR VEHICLE LICENSE PLATE NUMBER](#)) - record the permanent or temporary license plate number for this vehicle. For combination vehicles, the MOTOR VEHICLE LICENSE PLATE NUMBER is obtained from the power unit.

Light (10,000 lb or less GVWR) ([POWER UNIT GROSS VEHICLE WEIGHT RATING](#)) – used for vehicles with a GVWR of 10,000 lb or less.

[LIGHT CONDITION](#) – the type or level of light that existed at the time of the motor vehicle traffic crash.

Limousine ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – a vehicle typically driven by a chauffeur with a partition between the driver’s compartment and the passenger’s compartment. Stretch limos, limo buses (also known as party buses), sedan limos, SUV limos, convertible limos, and all other types of limos would also be coded as **Limousine**. If this attribute is selected, Subfield 2 must be completed to capture the number of seats.

Live Animal ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used for collisions with domesticated or wild live animals that are not themselves being used as transportation or to draw a wagon, cart, or other transport device. Use **Live Animal** if it cannot be determined if the struck animal is alive, dead, or if it was being ridden or drawing a transport device. If the animal was deceased prior to the crash, then use [Other Object \(not fixed\)](#).

Live Animal Trailer ([TRAILER BODY TYPE](#)) – a trailer designed specifically for transporting live animals (e.g., livestock, zoo animals, insects, horses, aquatic animals).

LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY – the location of the **FIRST HARMFUL EVENT** as it relates to its position within or outside the **trafficway**.

Log (**CARGO BODY TYPE (POWER UNIT ONLY)**) – a single-unit truck with a cargo body type with a fixed middle beam and side support posts specifically designed for carrying logs.

Logging Trailer (**TRAILER BODY TYPE**) – a trailer type with a fixed middle beam and side support posts specifically designed for carrying logs.

Looked But Did Not See (**RELATED FACTORS – DRIVER LEVEL**) - used when the driver is paying attention to driving (not distracted), but does not see the relevant vehicle, object, etc. This attribute should be used when a driver has an opportunity to take some action prior to impact, but the driver takes no action, and no distractions apply under **DRIVER DISTRACTION**. Examples:

- A driver looks before changing lanes but does not see another vehicle in the driver’s “blind spot.”
- A driver looks before passing through an intersection but does not see a motorcycle crossing the intersection.
- A driver looks before turning but does not see a pedestrian in the crosswalk.

Low-Speed Vehicle (**MOTOR VEHICLE BODY TYPE CATEGORY**) – a motor vehicle with 4 or more wheels whose top speed is greater than 20 miles per hour, but not greater than 25 miles per hour. LSVs are required to have basic items of safety equipment: headlamps, stop lamps, turn signal lamps, tail lamps, reflex reflectors, parking brake, windshields of either type AS-1 or type AS-5 glazing, rearview mirrors, seat belts, and VINs.

M

Maintenance (**WORK ZONE**) - used when there are work activities, including moving work activities, such as striping the roadway, median and roadside grass mowing or landscaping, pothole repair, snowplowing, etc., where there are warning signs or signals marking the beginning of the moving work area.

Make (**MOTOR VEHICLE MAKE**) - name assigned by motor vehicle manufacturer (e.g., Ford, Chevrolet, Toyota).

Making U-Turn (**VEHICLE STATUS PRIOR TO CRITICAL EVENT**) – used when this vehicle was moving forward making a U-turn on the trafficway. Excludes situations where the vehicle was leaving a parking position (see **Leaving a Parking Position**).

Mailbox (**FIRST HARMFUL EVENT**, **SEQUENCE OF EVENTS**, **MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE**) - a residence or business mail or newspaper box including the post. A cluster of mailboxes is included in this attribute. This attribute does not include USPS mailboxes, which are typically blue and are for general public use. For a USPS mailbox, use the attribute **Other Fixed Object**.

MANNER OF COLLISION OF THE FIRST HARMFUL EVENT – identifies the orientation of two **motor vehicles in-transport** when they are involved in the **FIRST HARMFUL EVENT** of a collision crash. If the **FIRST HARMFUL EVENT** is not a collision between two motor vehicles in-transport, it is classified as such.

Median ([MEDIAN BARRIER PRESENCE](#)) - the area of a divided trafficway between parallel roads separating travel in opposite directions. The principal functions of a median are to provide the desired freedom from interference of opposing traffic, to provide a recovery area for out-of-control vehicles, to provide a stopping area in case of emergencies, and to minimize headlight glare. Medians may be depressed, raised, or flush. Flush medians can be as little as four feet wide between roadway edge lines. Painted roadway edge lines four or more feet wide denote medians. Medians of lesser width must have a barrier to be considered a median. Continuous left-turn lanes are not considered medians.

[MEDIAN BARRIER PRESENCE](#) - identifies whether the trafficway associated with this vehicle included a median barrier, just prior to this vehicle's involvement in the crash.

Median With Traffic Barrier (e.g., guardrail, cable barrier, concrete barrier) ([MEDIAN BARRIER PRESENCE](#)) - the trafficway associated with this vehicle is physically divided with a median and the division is protected by any concrete, metal, or other type of longitudinal barrier (i.e., all manufactured barriers). For underpass support structures and bridge rails acting as a barrier, use this attribute. Traffic barrier refers to a physical structure such as a guardrail, a concrete safety barrier, or a rock wall that has the primary function of preventing cross-median travel by deflecting and redirecting vehicles along the roadway on which they were traveling. Therefore, trees, curbing, rumble strips, and drain depressions are not barriers (see [Median Without a Traffic Barrier](#)).

Median Without a Traffic Barrier (e.g., grass, vegetation, flush or painted > 4', curb) ([MEDIAN BARRIER PRESENCE](#)) - the trafficway associated with this vehicle is physically divided with a median; however, the median is unprotected by a traffic barrier (e.g., vegetation, gravel, paved medians, trees, water, embankments, painted medians greater than 4 feet, and ravines that separate a trafficway [i.e., all non-manufactured barriers]). Note: Curbs alone are not traffic barriers; therefore, raised curbed medians DO NOT constitute a positive barrier in and by themselves. Without a positive barrier, curbed medians are examples of **Median Without a Traffic Barrier**. The unprotected medians can be of any width; however, painted, paved, flush areas must be at least four feet in width to constitute a median strip. Continuous left-turn lanes are not considered medians (see [Not Applicable](#)).

Medical Facility ([TRANSPORTED TO FIRST MEDICAL FACILITY BY, MEDICAL FACILITY RECEIVING PATIENT](#)) - an injury treatment facility (hospital, clinic, trauma center, etc.). A morgue is not an injury treatment facility.

[MEDICAL FACILITY RECEIVING PATIENT](#) - Name of the first hospital, clinic, or trauma center that received the patient for treatment.

Medium (10,001 – 26,000 lb GVWR) ([POWER UNIT GROSS VEHICLE WEIGHT RATING](#)) - used for vehicles with a GVWR from 10,001 to 26,000 lb.

Merging (other than from a parking position) ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) - used when this vehicle was moving forward and merging from the left or right into a traffic lane (e.g., roadway narrows, exit or entrance ramps).

Military ([SPECIAL USE](#)) - used for any vehicle that is operated for any of the Armed Forces purposes regardless of body type. This attribute includes military police vehicles, military ambulances, military hearses, and military fire vehicles.

Minivan or Van (up to 8 seats) ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) - down-sized cargo or passenger unibody vans. If this vehicle has more than 8 seats, see [Passenger Van](#).

Minor Damage ([EXTENT OF DAMAGE](#)) – damage that does not affect the operation of or disable the motor vehicle .

Mirrors ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of the vehicle’s mirrors may have contributed to the occurrence or severity of the crash, including switches, wires, glass, sockets, heating elements, actuator, circuits, motors, etc.

Mixer Trailer ([TRAILER BODY TYPE](#)) – a trailer type designed with a rotating drum for mixing cement, sand, gravel, or other substances.

Mobile-Electronic-Device-Related ([NON-MOTORIST DISTRACTION](#)) - used when this non-motorist was distracted by using a handheld or hands-free mobile electronic device (e.g., mobile phone, tablet, gaming device, GPS). Examples include talking or listening on a mobile device; texting, dialing, or other manipulation of a device; using navigation apps; playing a game; listening to music; etc.

Moped ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) - used when the motor vehicle is a speed-limited motor-driven cycle capable of moving either by pedaling or by a motor. NOTE: This does not include motorized bicycles, ridden by non-motorists (see [NON-MOTORIST DEVICE TYPE](#)).

[MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#) – the event that resulted in the most severe injury or, if no injury, the greatest property damage involving this motor vehicle.

Motor Carrier – The legal business entity, individual, partnership, corporation, or organization that directs, controls, and is responsible for the transportation of goods, property, or people.

[MOTOR CARRIER OR RESPONSIBLE ENTITY IDENTIFICATION](#) – The identification number (or numbers) of the business entity, individual, partnership, corporation, or organization responsible for the transportation of people or property.

[MOTOR CARRIER OR RESPONSIBLE ENTITY NAME AND ADDRESS](#) - The name and address of the business entity, individual, partnership, corporation, or organization responsible for the transportation of people or property.

Motorcoach ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – a bus with a GVWR of 11,793 kg (26,000 lb) or greater, 16 or more designated seating positions including the driver, and at least two rows of passenger seats, rearward of the driver’s seating position, that are forward-facing or can convert to forward-facing without the use of tools. **Motorcoach** includes buses sold for intercity, tour, and commuter bus service, but does not include a school bus, or an urban transit bus sold for operation as a common carrier in urban transportation along a fixed route with frequent stops. If this attribute is selected, Subfield 2 must be completed to capture the number of seats.

Motor Home or Recreational Vehicle ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – A van where a frame-mounted recreational unit is added behind the driver or cab area or mounted on a bus or truck chassis suitable to live in and drive across the country.

Motorist ([PERSON TYPE](#)) – any occupant of a motor vehicle, whether in-transport, parked, or working (see [MOTOR VEHICLE UNIT TYPE](#)). This includes drivers and passengers of motor vehicles in-transport, occupants of motor vehicles not in-transport (i.e., parked or working), and unknown occupants of motor vehicles in-transport.

Motorized ([NON-MOTORIST DEVICE TYPE](#)) - used when an applicable device had a motor for propulsion or partial motor engagement in addition to human power and includes electrical, chemical, or combustion motors. The motor need not be in use at the time of the crash.

[MOTOR VEHICLE BODY TYPE CATEGORY](#) – the category indicating the general configuration or shape of a motor vehicle distinguished by characteristics such as number of doors, rows of seats, windows, or roof line.

Motor Vehicle in Service for Electronic Ride-hailing ([SPECIAL USE](#)) – a transportation network company (TNC) (sometimes known as mobility service providers or MSPs) connects, via websites and mobile apps, paying passengers with drivers who provide such passengers with transportation on the driver’s non-commercial vehicle. If this motor vehicle was rented and/or part of a shared mobility service (TNC) to provide customers with the vehicle only (no driver included), then see [Rental or Car-Share Vehicle](#).

Motor Vehicle In-Transport ([FIRST HARMFUL EVENT](#), [MOTOR VEHICLE UNIT TYPE](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – A motor vehicle is any motorized (mechanically or electrically powered) road vehicle not operated on rails. When applied to motor vehicles, “[in-transport](#)” refers to being in motion or on a [roadway](#) (travel lanes). Includes motor vehicle in traffic on a highway, driverless motor vehicle in motion, motionless motor vehicle abandoned on a roadway, disabled motor vehicle on a roadway, etc.

[MOTOR VEHICLE LICENSE PLATE NUMBER](#) – the alphanumeric identifier or other characters, exactly as displayed, on the license plate or tag affixed to the motor vehicle.

[MOTOR VEHICLE MAKE](#) – the manufacturer-assigned name applied to a group of motor vehicles.

[MOTOR VEHICLE MODEL](#) – the manufacturer-assigned name denoting a family of motor vehicles within a make that have a degree of similarity in construction, such as body, chassis, etc.

[MOTOR VEHICLE MODEL YEAR](#) – the year assigned to a motor vehicle by the manufacturer.

[MOTOR VEHICLE NUMBER](#) - motor vehicle number assigned to uniquely identify each motor vehicle involved in the crash.

[MOTOR VEHICLE POSTED OR STATUTORY SPEED LIMIT](#) – the posted or statutory speed limit for this motor vehicle, just prior to this vehicle’s involvement in the crash.

[MOTOR VEHICLE REGISTRATION STATE OR COUNTRY](#) – the State, commonwealth, territory, Indian Nation, U.S. Government, foreign country, etc., issuing the license plate displayed on the motor vehicle.

[MOTOR VEHICLE UNIT TYPE](#) – the type of unit that applies to this motor vehicle at the time it became an involved vehicle in the crash.

Movement Against Traffic ([NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#)) – immediately prior to the crash the non-motorist was moving in the opposite direction of the flow

of traffic (facing oncoming vehicles). This includes if the person stopped momentarily (e.g., to tie shoes, talk on mobile phone).

Movement With Traffic ([NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#)) – immediately prior to the crash the non-motorist was moving in the same direction as the flow of traffic. This includes if the person stopped momentarily (e.g., to tie shoes, talk on mobile phone).

Mud, Dirt, or Gravel ([ROADWAY SURFACE CONDITION](#)) - used when the roadway surface on which this vehicle was traveling just prior to this vehicle’s involvement in this crash had mud, dirt, or gravel on it. Do not use this attribute to describe the surface type of the roadway by design (see [Dry](#)).

Multiple State Registration ([MOTOR VEHICLE REGISTRATION STATE OR COUNTRY](#)) - used for vehicles registered in more than one State under a valid reciprocal agreement (such as the International Registration Plan [IRP]).

Multipurpose Off-Highway Utility Vehicle (MOHUV) or Recreational Off-Highway Vehicle (ROV) ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – vehicles intended to be used on terrain similar to that on which all-terrain vehicles (ATVs) are used. MOHUVs or ROVs are designed to travel on 4 or more wheels. They are distinguished from ATVs by the presence of a steering wheel instead of a handlebar for steering, bench or bucket seats for the driver and passenger(s) instead of straddle seating, and foot controls for throttle and braking instead of levers located on the handlebar. In addition, ROVs have a rollover protective system (ROPS) and restraint systems. MOHUVs can have maximum speeds from 25 mph to 50 mph and ROVs have a maximum speed greater than 30 mph. MOHUVs with maximum speeds above 30 mph meet the definition of an ROV.

N

[NAME OF PERSON INVOLVED](#) – The full name of the person involved in the crash.

Native American Indian Nation ([MOTOR VEHICLE REGISTRATION STATE OR COUNTRY](#)) – used for vehicles registered in a Native American Indian Nation.

Negative Reading With No Actual Value ([ALCOHOL TEST](#)) – can be used for any specimen type where the result is indicated to be negative without a numeric value to record and for any negative results reported from a liver test. This should only be used when a final test result is returned as “negative” with no actual result to record. This can occur when a screening test is used, and it is the only test result available.

Some portable (handheld) breath-test devices are only preliminary breath tests (PBTs) and indicate whether alcohol is present in the breath by positive (green) or negative (red) lights. Other portable breath test devices indicate the approximate blood alcohol concentration in numbers. When a PBT result only indicates “negative” for alcohol, with no actual blood alcohol concentration value, **Negative Reading With No Actual Value** should be used.

Negotiating a Curve ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) - used when this vehicle was continuing along a road that curved to the right or left. If the vehicle traveled straight in a curved roadway without any attempt by the driver to negotiate the curve, then use the attribute [Going Straight](#).

No, Alcohol Not Suspected ([LAW ENFORCEMENT SUSPECTS ALCOHOL INVOLVEMENT](#)) – used when alcohol is not suspected to be present in this person at the time of the crash.

No Apparent Injury (O) – See [\(O\) No Apparent Injury](#).

No Avoidance Maneuver ([ATTEMPTED AVOIDANCE MANEUVER](#)) – used when the driver did not attempt any evasive (pre-impact) maneuvers. Examples of when a driver may not attempt an avoidance maneuver:

- The vehicle is stopped in traffic.
- The driver did not have time to react.
- The driver was asleep or unconscious.
- The driver did not see or recognize there was anything to avoid.

No Cargo Body (bobtail, fire truck, tow truck, light motor vehicle with hazardous materials placard, etc.) ([CARGO BODY TYPE \(POWER UNIT ONLY\)](#)) - used for any medium or heavy vehicle that fits into the qualifying criteria for this data element and does not have cargo carrying capability on its own (i.e., it would need a trailer or other attachment to carry cargo). This attribute also includes light trucks and passenger vehicles displaying a hazardous materials placard (i.e., without a placard, light trucks and passenger vehicles should be coded **Not Applicable**). Examples include truck tractors (with or without trailers), sign trucks, fire trucks, tow trucks, construction equipment, farm equipment, a minivan or van with a hazardous materials placard, etc.

No Controls ([DEVICE FUNCTIONING](#)) – used when **No Traffic Controls** is selected for the data element [TRAFFIC CONTROL DEVICE](#).

No Damage ([DAMAGED AREAS](#), [EXTENT OF DAMAGE](#)) – the vehicle did not sustain any damage as a result of this crash. Pre-existing defects or maintenance conditions that may have contributed to the crash should be captured under [CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#).

No Driver Present or Unknown if Driver Present ([DRIVER ADDRESS](#), [DRIVER LICENSE NUMBER](#), [DRIVER DISTRACTION](#), [ATTEMPTED AVOIDANCE MANEUVER](#), [DRIVER'S VISION OBSCURED BY](#)) - used when there was no driver in this vehicle or when it is unknown if there was a driver present in this vehicle at the time of the crash. [DRIVER PRESENCE](#) must equal **No Driver Present or Not Applicable**.

No, Drugs Not Suspected ([LAW ENFORCEMENT SUSPECTS DRUG INVOLVEMENT](#)) – used when drugs are not suspected to be present in this person at the time of the crash.

No Helmet ([HELMET USE](#)) - used when the occupant was not wearing a helmet of any kind.

No Indication of Misuse ([HELMET USE](#)) - used when the occupant was properly using the helmet selected in Subfield 1, or when the occupant was using the helmet, but it is unknown if the helmet was misused. Using an inappropriate type of helmet (e.g., wearing a bicycle helmet while riding a motorcycle) is not by itself an indication of misuse. Do not use this attribute when a helmet was not used (see [None Used or Not Applicable](#)).

No Indication of Misuse ([RESTRAINT SYSTEM USE](#)) - used when the occupant was properly using the restraints selected in Subfield 1, or when the occupant was using the restraints, but it is unknown if the restraints were misused. Do not use this attribute when restraints were not used (see [None Used or Not Applicable](#)).

No License Plate ([MOTOR VEHICLE LICENSE PLATE NUMBER](#)) - this vehicle did not have a license plate when required or plates are not required for this type of vehicle.

Non-Collision ([INITIAL CONTACT POINT](#)) – used when this vehicle’s first harmful event in its [SEQUENCE OF EVENTS](#) is a non-collision harmful event, i.e., **Rollover or Overturn; Cargo or Equipment Loss, Shift, or Damage (harmful); Fell or Jumped From Motor Vehicle; Fire or Explosion; Immersion, Full or Partial; Jackknife (harmful to this vehicle); Thrown or Falling Object; Pavement Surface Irregularity (ruts, potholes, grates, etc.); or Other Non-Collision**. Hitting the ground during a non-collision crash is not considered an “impact” for this data element. If the only event for a vehicle is a non-collision harmful event, the INITIAL CONTACT POINT is **Non-Collision**. If following a non-collision harmful event, a vehicle has a collision event, the INITIAL CONTACT POINT is still **Non-Collision**.

Non-Collision Harmful Event ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – a [harmful event](#) that does not involve a collision.

None (no device) ([NON-MOTORIST DEVICE TYPE](#)) - used when it is known that this non-motorist was not using a transport device at the time of the crash. [PERSON TYPE](#) for this person must equal **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying or Pedestrian in or on a Building**.

Non-Harmful Event ([SEQUENCE OF EVENTS](#)) – an event that does not produce injury or damage (e.g., **Cross Centerline, Ran Off Roadway Right**).

Non-Harmful Swaying Trailer or Jackknife ([SEQUENCE OF EVENTS](#)) – a condition that occurs to a combination vehicle while in motion. The condition reflects a loss of control of the vehicle by the driver in which the trailer (or trailers) yaws from its normal straight-line path behind the power unit. The event by itself does not cause damage to the vehicle or injury to its occupants. If the event caused damage or injury, see [Jackknife \(harmful to this vehicle\)](#).

Non-Junction ([RELATION TO JUNCTION](#)) – used when the [FIRST HARMFUL EVENT](#) occurs in the roadway that is not an intersection or a connection between a driveway access and a roadway other than a driveway access. Use **Non-Junction** for crashes where the FIRST HARMFUL EVENT occurs outside an interchange area and does not occur in or related to a junction, ramp, rail grade crossing, crossover, or shared-use path or trail. This attribute includes crashes that occur on a parking lot way (access road) at the connection of a parking aisle.

Non-Motorist ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#), [PERSON TYPE](#)) – any person who is not an occupant of a motor vehicle. This includes pedestrians, bicyclists, other cyclists, and occupants of non-motor vehicle transport devices.

[NON-MOTORIST AT INTERSECTION](#) - the location of the non-motorist with respect to an intersection at the time of the crash.

[NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#) – the actions or circumstances of the non-motorist at the time of the crash that may have contributed to the crash.

Non-Motorist Crossing Sign ([NON-MOTORIST TRAFFIC CONTROL DEVICE](#)) – used when a non-motorist crossing sign applied to this non-motorist at the time of the crash. A non-motorist crossing sign is used to limit pedestrian crossing to specific designated crossing locations (i.e., crosswalks). Sign and signal combination units should be coded as a [Non-Motorist Crossing Signal](#).

Non-Motorist Crossing Signal ([NON-MOTORIST TRAFFIC CONTROL DEVICE](#)) – used when a non-motorist crossing signal applied to this non-motorist at the time of the crash. A non-motorist crossing signal is a signal, or sign and signal combination, used to direct non-motorist traffic. Examples:

- Pedestrian signal head containing the symbols of a walking person (walk) and an upraised hand (don't walk). These may include a countdown display.
- Pedestrian hybrid beacon used to warn and control vehicular traffic to assist non-motorists in crossing a street or highway at a marked crosswalk.
- Accessible pedestrian signals, which communicate information about pedestrian signal timing in non-visual format such as audible tones, speech messages, and/or vibrating surfaces.

[NON-MOTORIST DEVICE TYPE](#) - the type of transport device and motorization of the device operated by the non-motorist.

[NON-MOTORIST DISTRACTION](#) - Identifies this non-motorist's attention prior to the non-motorist's involvement in this crash. This element reports on the presence of any distractions that may or may not have contributed to the crash. Distraction, for a non-motorist, occurs when a non-motorist's attention is diverted from the task of navigating in public to some other activity.

Non-Motorist Helmet Use ([NON-MOTORIST SAFETY EQUIPMENT](#)) – used to identify if the non-motorist was wearing a safety helmet (e.g., cycling helmet, skateboard helmet, motorcycle helmet).

[NON-MOTORIST IN CROSSWALK](#) - The location of the non-motorist with respect to a crosswalk at the time of the crash.

Non-Motorist Prohibited Sign ([NON-MOTORIST TRAFFIC CONTROL DEVICE](#)) – used when a non-motorist prohibited sign applied to this non-motorist at the time of the crash. A non-motorist prohibited sign alerts non-motorists attempting to enter a limited access trafficway or other locations where non-motorist facilities (e.g., sidewalk, crosswalk) are not provided, to prohibit non-motorists from crossing a roadway at an undesirable location, or to direct non-motorists to an alternative route. See [Figure 34. Examples of non-motorist prohibited signs](#).

[NON-MOTORIST SAFETY EQUIPMENT](#) – the safety equipment used by this non-motorist.

[NON-MOTORIST SPECIFIC LOCATION](#) - the location of the non-motorist with respect to the trafficway at the time of the crash.

[NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#) – the status of the non-motorist immediately prior to the crash.

[NON-MOTORIST TRAFFIC CONTROL DEVICE](#) - the traffic control device applicable to this non-motorist at the time of the crash.

Non-Motorist Use of Lighting ([NON-MOTORIST SAFETY EQUIPMENT](#)) – used to identify if the non-motorist was using light(s) on their person or on a cycle or personal conveyance for safety purposes, to include flashlights.

Non-Motorist Use of Other Preventive Safety Equipment ([NON-MOTORIST SAFETY EQUIPMENT](#)) - used to identify if the non-motorist was using preventive safety equipment other than [Reflective Clothing or Carried Item](#) or [Lighting](#) (e.g., bicycle reflectors and flags, reflectors and triangles on a buggy, Hi-Glo orange clothing, rollerblade stoppers).

Non-Motorist Use of Other Protective Safety Equipment ([NON-MOTORIST SAFETY EQUIPMENT](#)) - used to identify if the non-motorist was using protective safety equipment other than a helmet or pads (e.g., eye wear, face shields, gloves, wrist guards).

Non-Motorist Use of Protective Pads ([NON-MOTORIST SAFETY EQUIPMENT](#)) – used to identify if the non-motorist used padded, shaped attachments to protect specific areas of the body (e.g., elbows, knees, shins).

Non-Motorist Use of Reflective Clothing or Carried Item ([NON-MOTORIST SAFETY EQUIPMENT](#)) – used to identify if the non-motorist was using wearable or carried items (e.g., backpack, triangles, jacket, vest) that reflect light. The emphasis is on the reflective property of the clothing or carried item and does not include devices that give off light under their own power (e.g., flashlights). The reflective item can be reflective tape affixed to regular clothing, special reflective clothing, a reflective device that is worn or a reflective device that is carried. It can be made by the non-motorist and does not have to be specially designed as a safety device. Bicycle reflectors or clothing that is non-reflective but considered to be safety equipment (e.g., hi-glo orange clothing) should be captured in [Subfield 6—Non-Motorist Use of Other Preventive Safety Equipment](#). Subfield 4 is used only for clothing or equipment that is both reflective and worn or carried.

Non-Occupant Struck Vehicle ([RELATED FACTORS – CRASH LEVEL](#)) - used when a non-occupant (e.g., pedestrian, bicyclist, person on personal conveyance) “struck” or “ran into” a motor vehicle (usually the side or back of the vehicle). This does not include non-occupants who are struck in the vehicle’s path of travel. Examples:

- A bicyclist runs into the mirror of a parked car and falls into the path of a motor vehicle in-transport.
- A runner collides with the side of a vehicle that comes to a sudden stop and the runner is subsequently struck by another vehicle.

Non-Trafficway (e.g., parking lot, private driveway) ([NUMBER OF OPEN LANES IN VEHICLE’S ENVIRONMENT](#)) – used when this vehicle was not on a trafficway just prior to this vehicle’s involvement in this crash.

Non-Trafficway Area ([LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY, NON-MOTORIST SPECIFIC LOCATION](#)) – not physically located on any land way open to the public as a matter of right or custom for moving people or property from one place to another (i.e., outside the right-of-way).

Non-Trafficway or Driveway Access ([TRAFFICWAY FLOW](#), [ROADWAY ALIGNMENT](#), [ROADWAY GRADE](#), [ROADWAY SURFACE CONDITION](#)) – used when this vehicle was not on a trafficway or was in a driveway access prior to this vehicle’s involvement in this crash.

No Obstruction ([DRIVER’S VISION OBSCURED BY](#)) - used when there is no indication of a visual obstruction for this driver.

No Registration ([MOTOR VEHICLE REGISTRATION STATE OR COUNTRY](#)) – used for vehicles required by State law to be registered and are NOT registered.

No Special Use ([SPECIAL USE](#)) - this vehicle was not being used for any of the identified special use attributes at the time of the crash.

Not a Bus ([BUS USE](#)) – a vehicle that does not have a bus body type and is not being used as a bus in the crash. This should be used for vehicles with less than nine seats including the driver and personal-use vans with nine or more seats including the driver.

Not an Intersection ([TYPE OF INTERSECTION](#)) - used when [RELATION TO JUNCTION](#) Subfield 2 equals **Non-Junction, Acceleration or Deceleration Lane, Crossover-Related, Driveway Access or Related, Entrance or Exit Ramp or Related, Railway Grade Crossing, Shared-Use Path or Trail, Through Roadway, Other Location Within an Interchange Area (median, shoulder, and roadside), or Unknown.**

Not Deployed or No Air Bag Available ([AIR BAG DEPLOYED](#)) – used when no air bags deployed for this person in this seat position or there was no air bag available for this seat position (e.g., not equipped, not installed, prior deployment-not replaced).

Not Distracted ([DRIVER DISTRACTION](#)) - the driver was completely attentive to driving.

Not Distracted ([NON-MOTORIST DISTRACTION](#)) – used when this non-motorist was completely attentive to the task of navigating in public.

Not Ejected ([EJECTION](#)) – used when this occupant was not ejected, either partially or totally, from the vehicle as a result of this crash.

Not In-Transport Motor Vehicle (parked or working) ([DRIVER’S VISION OBSCURED BY](#)) - used when a vehicle [parked](#) in a designated parking area or space, stopped in an area off the roadway, or is a [working motor vehicle](#) obstructed the view of the driver. The vehicle may be but does not have to be a contact vehicle in the case.

Not Licensed ([DRIVER LICENSE JURISDICTION](#), [DRIVER LICENSE NUMBER](#)) – this driver did not have a valid driver’s license at the time of the crash.

Not Motorized ([NON-MOTORIST DEVICE TYPE](#)) - used when an applicable device had no motor.

Not Towed ([VEHICLE TOWED](#)) - used when this vehicle was not removed from the scene of this crash by tow truck or other vehicle.

No Traffic Controls ([TRAFFIC CONTROL DEVICE](#)) – used if, at the time of the crash there was no intent to control (regulate or warn) vehicle traffic. Use the attribute **No Traffic Controls** when a traffic control is deactivated (e.g., traffic signal that emits no signals) during certain times of the day and was deactivated at the time of the crash. Also use the attribute **No Traffic Controls** for a traffic control that has just been installed and not yet activated.

No Trailer ([TRAILER BODY TYPE](#)) – this motor vehicle did not have any trailing units or did not have additional trailing units.

No Trailers ([VEHICLE TRAILING](#)) – this vehicle was not pulling or towing a wheeled unit.

No Trailing Units ([TRAILER VIN](#)) – this motor vehicle did not have any trailing units or did not have additional trailing units.

Not Transported for Treatment ([TRANSPORTED TO FIRST MEDICAL FACILITY BY](#)) - used for:

- People not taken (or who do not go) to a medical treatment facility or hospital for treatment.
- People who are declared dead on the scene
- Uninjured person who rides along with an injured person to a treatment facility.
- A person who did not go to a treatment facility directly from the scene but was later transported for injuries sustained in the crash.

Not Visible (dark clothing, no lighting, etc.) ([NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#)) - used when the non-motorist was not visible to the motorist because of blocked views, insufficient lighting, or other reasons such as clothing that blends in with the surroundings at any time of the day (camouflage) or dark clothing in the rain at night.

No VIN Required, Not a Vehicle for Road Use ([TRAILER VIN](#)) - used when the trailer is not required to have a VIN as per 49 CFR Part 565 Requirements for Trailer Manufacturers. This attribute should only be used for homemade or custom trailers not manufactured for sale to the public.

No VIN Required, Not a Vehicle for Road Use ([VEHICLE IDENTIFICATION NUMBER](#)) - used when the vehicle is not required to have a VIN as per 49 CFR Part 565 AND there is no VIN data available (e.g., ATVs, off-road motorcycles, farm tractors, go-carts). If VIN data is available enter the VIN as provided. You should not expect a VIN if the vehicle is not one of the following: passenger cars, multipurpose passenger vehicles, trucks, buses, trailers (including trailer kits), incomplete vehicles, low-speed vehicles, and motorcycles (see 49 CFR Part 565).

[NUMBER OF OPEN LANES IN VEHICLE'S ENVIRONMENT](#) – Total number of open lanes in this motor vehicle's environment, just prior to this vehicle's involvement in the crash, including through lanes, turn lanes, acceleration or deceleration lanes, HOT or HOV lanes, or any other lanes.

O

Obstructed Crosswalks ([RELATED FACTORS – CRASH LEVEL](#)) - used when crosswalks were in the vicinity of the crash but were not available because they were somehow obstructed. For example, due to construction, people, stopped motor vehicles, or other objects preventing their use.

Obstructing Angles on This Vehicle ([DRIVER'S VISION OBSCURED BY](#)) - used when the size or shape of a driver's own vehicle created a visual obstruction (including trailer, vehicle height, blind spot). Not to be confused with visual obstructions from other vehicles (see [In-Transport Motor Vehicle \(including load\)](#) or [Not In-Transport Motor Vehicle \(parked or](#)

[working](#)) or a vehicle's interior components such as head restraints, sunshades, etc. (see [Obstruction Interior to the Vehicle](#)).

Obstruction in Roadway ([RELATED FACTORS - CRASH LEVEL](#)) – a blockage in the [roadway](#), such as that caused by a fallen tree or a large boulder.

Obstruction Interior to the Vehicle ([DRIVER'S VISION OBSCURED BY](#)) - used when this driver's vision was impaired because of a feature in the interior of their vehicle (including head restraint, rearview mirror, window stickers, sunshades, ornaments, windshield tinting).

Occupant of a Motor Vehicle Not In-Transport ([PERSON TYPE](#)) – used for any occupant of a motor vehicle not in-transport (i.e., [MOTOR VEHICLE UNIT TYPE](#) attributes [Parked Motor Vehicle](#) or [Working Motor Vehicle](#)) including someone sitting in the driver's seat position.

Occupant of a Non-Motor Vehicle Transport Device ([PERSON TYPE](#)) – person riding in an animal-drawn conveyance, on an animal, or an injured occupant of a railway train, etc.

[OCCUPANT'S MOTOR VEHICLE UNIT NUMBER](#) – the unique number assigned for this crash to the motor vehicle in which this person was an occupant.

Off-Roadway, Location Unknown ([LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY](#)) – the [FIRST HARMFUL EVENT](#) is off the [roadway](#), but the location of the property line is unknown.

Oil ([ROADWAY SURFACE CONDITION](#)) - used when the roadway surface on which this vehicle was traveling just prior to this vehicle's involvement in this crash had oil on it (including fuel spilled on the roadway).

One Trailer ([VEHICLE TRAILING](#)) – this vehicle was pulling one trailer.

One-Way ([TRAFFICWAY FLOW](#)) - used whenever the trafficway is undivided and traffic flows in one direction (e.g., one-way streets). Do NOT use this attribute for one side of a divided trafficway (see [Two-Way](#)).

On Median ([LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY, NON-MOTORIST SPECIFIC LOCATION](#)) – the area of a divided trafficway between parallel roads separating travel in opposite directions. The principal functions of a median are to provide the desired freedom from interference of opposing traffic, to provide a recovery area for out-of-control vehicles, to provide a stopping area in case of emergencies, and to minimize headlight glare. Medians may be depressed, raised, or flush. Flush medians can be as little as four feet wide between roadway edge lines. Painted roadway edge lines four or more feet wide denote medians. Medians of lesser width must have a barrier to be considered a median. Continuous left-turn lanes are not considered medians.

(O) No Apparent Injury ([INJURY STATUS](#)) – a situation where there is no reason to believe that the person received any bodily harm from the motor vehicle crash. There is no physical evidence of injury, and the person does not report any change in normal function.

On Roadside ([LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY](#)) – The outermost part of the [trafficway](#) from the property line or other boundary to the edge of the first [road](#). Includes: area between edge of trafficway and edge of [roadway](#) with no shoulder, and area between edge of trafficway and edge of shoulder. Excludes: roadways, shoulders, separators, and medians.

On Roadway ([LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY](#)) – the portion of the [trafficway](#) normally designed for vehicular traffic (i.e., travel lanes). If the [FIRST HARMFUL EVENT](#) occurs in a continuous left-turn lane, use [Continuous Left-Turn Lane](#).

On Roadway (travel lanes) - No Special Lane Use ([NON-MOTORIST SPECIFIC LOCATION](#)) – This non-motorist was located in the portion of the [trafficway](#) normally designed for vehicular traffic (i.e., travel lanes), including turn lanes, but excluding preferential lanes such as [In Bus Lanes](#), [In Parking Lane or Zone](#), or [In Painted Cycle Lane](#).

On Shoulder ([LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY](#), [NON-MOTORIST SPECIFIC LOCATION](#)) - (if present) the part of a trafficway contiguous with the roadway for emergency use, for accommodation of stopped vehicles, and for lateral support of the roadway structure. A shoulder should be improved or maintained for these purposes (can be paved or unpaved). Not all roadways have shoulders.

On Sidewalk ([NON-MOTORIST SPECIFIC LOCATION](#)) – this non-motorist was located in that portion of a street between the curb line, or the lateral line of a roadway, and the adjacent property line or on easements of private property that is paved or improved and intended for use by pedestrians. Do not select this attribute for sidewalks within a [Driveway Access](#), [Pedestrian Refuge Island or Traffic Island](#), or [Non-Trafficway Area](#).

Opening Door, Trunk, or Hatch into Traffic ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver improperly opened a door, the trunk, or a hatch into traffic.

Operating the Vehicle in an Erratic, Reckless, or Negligent Manner ([RELATED FACTORS – DRIVER LEVEL](#)) - used when the driver is engaged in a driving behavior with willful or wanton disregard for safety. If this driver also operated their vehicle aggressively, see [Aggressive Driving](#). Examples:

- Driving erratically.
- Erratic lane changing.
- Suddenly changing speed.
- Motorcyclist doing wheelies (aka "popping" wheelies)

Operating Without Required Equipment ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver was operating the vehicle without a required piece of equipment or with required equipment being inoperable. This does NOT include when an available restraint (e.g., seat belts, child restraints) or motorcycle helmet was not used (see [RESTRAINT SYSTEM USE](#) and [HELMET USE](#)). Examples:

- The driver was operating the vehicle with defective or no lamps, brakes, mirrors, muffler, flares, wipers, horn, snow tires, chains, etc.
- A driver failed to have extended side mirrors on the vehicle when required (e.g., when pulling a trailer).
- A driver driving in snow without snow tires on the vehicle when required.
- The driver was operating a vehicle where the seat belts have been removed.

- The driver failed to have a child safety seat (or seats) in the vehicle when required for the occupant (or occupants).
- A motorcycle rider did not have a helmet with them when required by law.
- The driver was operating a vehicle where an air bag (or air bags) was (or were) not reinstalled after a prior crash.

Other Cycle ([NON-MOTORIST DEVICE TYPE](#)) - used for any device propelled by pedaling (by foot, hand, or other adaptive means) other than a [Bicycle](#). Examples include unicycle, tricycle, pedal car, handcycle, which can be solely propelled by human power and those that can be propelled by human power and/or a motor.

Other Cyclist ([PERSON TYPE](#)) – a non-motorist using a device propelled by pedaling (by foot, hand, or other adaptive means) other than a bicycle. Examples include unicycle, tricycle, pedal car, handcycle, which can be solely propelled by human power and those that can be propelled by human power and/or a motor.

Other Emergency Services Vehicle ([SPECIAL USE](#)) – used for any readily identified (lights and markings) vehicles that do not meet the criteria for [Ambulance](#), [Fire Truck](#), [Safety Service Patrols-Incident Response](#), [Towing-Incident Response](#), or [Other Incident Response](#) and are specifically designed and equipped to respond to fire, hazmat, medical, and extrication incidents. This attribute includes light vehicles such as sedans, vans, SUVs, pickups, trucks, motorcycles, etc. This attribute includes vehicles that have been dispatched to an incident or have initiated operation in a non-emergency mode and are not transporting passengers, such as patients or suspects. An example of an **Other Emergency Services Vehicle** is a fire chief’s unit, commonly an SUV.

Other Fixed Object ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used when the object is fixed (considered a permanent structure) and is not described by any of the other fixed object attributes. This attribute excludes collisions with curbing that forms raised islands, medians, or separators (see [Curb](#)). Examples:

- Bus shelters
- Pedestrian walkways
- Toll booths
- Guy wires supporting utility poles
- USPS Mailbox for public use

Other examples include property damage to standing crops, yards, and other vegetation (excluding [Shrubbery](#), [Tree \(standing only\)](#), and [Ground](#)).

Other Foreign Country ([MOTOR VEHICLE REGISTRATION STATE OR COUNTRY](#)) – used for vehicles registered in a foreign country other than Canada or Mexico.

Other Incident Response ([SPECIAL USE](#)) - used for incident response vehicles excluding [Safety Service Patrols - Incident Response](#) and [Towing - Incident Response](#). Vehicles responding to clean up spills are examples of this. To use this attribute, this vehicle must have

been responding to a traffic incident at the time of its involvement in the crash. See [NOTE on Incident Response Vehicles](#).

Other Inside Vehicle (e.g., eating, smoking) ([DRIVER DISTRACTION](#)) - used when the driver was distracted by something inside this vehicle other than a mobile electronic device, a passenger, or a vehicle-integrated device or control. For example, eating, drinking, smoking, shaving, a flying insect, a moving pet, etc. or involved in a related activity (e.g., lighting a cigarette, throwing out a used food wrapper, calming a restless dog).

Other Intersection Type ([TYPE OF INTERSECTION](#)) – used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the intersection design is not captured under one of the other attributes. For example, a restricted crossing U-turn (RCUT), see [Figure 10. Example of an unsignalized RCUT intersection](#).

Other (knee, airbelt, etc.) ([AIR BAG DEPLOYED](#)) – used when a knee air bag, airbelt, or other air bag technology is deployed. If two or more air bags deploy for this seating position, use the attribute [Combination](#). Refer to [Figure 32. Air bag diagram](#). Examples include:

- Inflatable Seat belt/Airbelts – currently available for outboard passengers beyond the first row. Some airbelts will deploy in either front or side collisions.
- Rear Impact Curtain – helps protect the last row occupants during a rearward impact.
- Knee Air Bags/Knee Bolsters – deploys from the lower instrument panel/dashboard.
- Anti-slide/Anti-submarine/Seat Cushion Air Bag – inflates in the seat cushion to help maintain the occupant’s seating position.

Other Large Passenger or Bus ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) - a vehicle designed or converted to carry nine or more people, including the driver, not described by the attributes **Limousine**, **Passenger Van**, **School Bus**, **Transit Bus**, or **Motorcoach**. Examples include a specialized tour bus, a mini-bus, or bus-based motor home. If this attribute is selected, Subfield 2 must be completed to capture the number of seats.

Other Lights ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of any other light (i.e., not the [Headlights](#) or [Signal Lights](#)) may have contributed to the occurrence or severity of the crash. This includes missing or inoperative taillights on the vehicle or trailer.

Other Location Within an Interchange Area (median, shoulder, and roadside) ([RELATION TO JUNCTION](#)) - used when the [FIRST HARMFUL EVENT](#) occurs within an interchange area, off the roadway (e.g., median, shoulder, roadside) and is not related to the use of or the entry onto a ramp. Examples:

- A vehicle on the **Through Roadway** portion of the interchange area departs the roadway and overturns in the median.
- A vehicle leaves the **Through Roadway** portion of the interchange area and strikes a vehicle parked on the shoulder.

Other Maintenance or Construction-Created Condition ([RELATED FACTORS – CRASH LEVEL](#)) - used for inadequate maintenance of the roadway (e.g., potholes, ruts in roadway) or

conditions related to construction activity (e.g., addition of barricades, change in traffic patterns, merging lanes).

Other Non-Collision ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – a non-collision event not captured by other non-collision event attributes. For example, driving off a cliff where damage is not the result of an overturn or a collision with a fixed object, an unbelted passenger hits their head on the roof of a vehicle and is injured when the vehicle travels over a sharp dip in the road, situations where a passenger is sickened or dies due to carbon monoxide fumes leaking from a motor vehicle in-transport.

Other Non-Motorist Sign or Signal ([NON-MOTORIST TRAFFIC CONTROL DEVICE](#)) – used when another type of non-motorist sign or signal was applicable to this non-motorist, other than a [Non-Motorist Crossing Sign](#), [Non-Motorist Crossing Signal](#), or a [Non-Motorist Prohibited Sign](#).

Other Object (not fixed) ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used when a [motor vehicle in-transport](#) strikes a non-fixed object that is known NOT to have been the cargo or part of another motor vehicle in-transport, or when it is UNKNOWN whether the object was the cargo or part of another motor vehicle in-transport (i.e., objects such as a dead body, animal carcass, construction cones or barrels, an unattached trailer, a bicycle without a rider, downed tree limbs or power lines, or debris from a prior crash). For objects that have become separated from a motor vehicle in-transport not as a result of a prior crash, use attribute [Strikes Object at Rest That Had Fallen From Motor Vehicle In-Transport](#).

Other Outside Vehicle (e.g., outside person, object, or event) ([DRIVER DISTRACTION](#)) - used when the driver was distracted by an outside person, object, or event prior to realization of impending danger. Examples include animals on the roadside, a previous crash, or non-traffic related signs (e.g., advertisements, electronic billboards). Do not use this attribute for a person, object, or event that the driver has recognized and for which the driver has taken some action (e.g., avoiding a pedestrian on the roadway).

Other Package Delivery Vehicle (e.g., UPS, DHL, FedEx, Amazon) ([SPECIAL USE](#)) - this vehicle was a parcel delivery vehicle at the time of the crash. This attribute excludes [USPS Mail Carrier](#) vehicles.

Other Post, Pole, or Other Supports ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used for posts other than traffic signs, traffic signals, utility poles, or light supports (e.g., reflectors on poles alongside of roadway, parking meters, flag poles). For mailbox posts, use [Mailbox](#). For fence posts, use [Fence](#).

Other Regulatory Sign ([TRAFFIC CONTROL DEVICE](#)) - used when the traffic control sign that best describes the traffic controls in this vehicle's environment just prior to this vehicle's involvement in this crash was a regulatory sign other than the listed regulatory sign attributes for this data element. An example is a No Passing sign.

Other Specimen ([ALCOHOL TEST](#)) - used when a type of test used to obtain a blood alcohol concentration for this person was a type other than the available attributes (e.g., liver, vitreous). This attribute would not apply to behavioral tests (field sobriety) or observations.

Other Traffic Barrier ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – longitudinal barriers other than guardrails, concrete traffic barriers, or cable barriers. They may be composed of material such as wood or rock.

Other Traffic Signal ([TRAFFIC CONTROL DEVICE](#)) - used when the traffic control signal that best describes the traffic controls in this vehicle's environment just prior to this vehicle's involvement in this crash was something other than the listed traffic control signal attributes for this data element.

Other Truck or Bus (e.g., rental truck for personal use) ([TYPE OF MOTOR CARRIER OR RESPONSIBLE ENTITY](#)) – used for personal use of a rental vehicle (e.g., U-Haul, Ryder, Penske) that is over 10,000 lb GVWR/GCWR and operated by a private individual for non-commercial purposes. In these situations, the rental company is not the carrier and should not be recorded.

Other Type of Work Zone ([WORK ZONE](#)) – the work zone involves something other than a **Crossover, Lane Shift, Lane Closure, Intermittent or Moving Work, or Work on Shoulder or Median.**

Other Visual Obstruction ([DRIVER'S VISION OBSCURED BY](#)) - used when the driver's vision was obscured by something other than the listed attributes for this data element. For example, an unattached trailer left on the road shoulder.

Other Working Vehicle (not construction, maintenance, utility, police, fire, or EMS vehicle) ([RELATED FACTORS – VEHICLE LEVEL](#)) - used when this vehicle is performing some other work activity at the time it was involved in the crash. The vehicle does not need to be occupied at the time of the crash. Examples include:

- Garbage truck picking up trash,
- Personal pickup truck with a snow blade plowing snow,
- UPS or postal vehicle stopped in the roadway while making a delivery,
- Food delivery vehicle making a delivery, or
- Personal vehicle making a delivery.

Overcorrecting ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver steered the wheel more than what was necessary to correct the vehicle's travel path, typically resulting in a loss of control.

Overloading or Improper Loading of Vehicle with Passengers or Cargo ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver improperly loaded the vehicle occupants or cargo into or on the vehicle. Examples:

- The vehicle had more than three passengers in the front seat,
- There were people riding on the exterior of the vehicle,
- The vehicle was carrying occupants that were sitting or standing on the rails, tailgate of a pickup, or improperly sitting in the bed of a pickup,
- More than one person secured in a belt restraint,

- An unsecured or uncovered load violation,
- The vehicle's trunk was open with extra-large cargo protruding,
- The vehicle was overweight, over length, or illegally or improperly oversize.

Override ([VEHICLE UNDERRIDE OR OVERRIDE](#)) - used when this motor vehicle traveled or rode up over another motor vehicle (including a parked or working motor vehicle) during the crash. This attribute is also used for this motor vehicle when another motor vehicle passes under it.

An example of an override is a truck-tractor with a semi-trailer attached striking the front end or rear end of a passenger vehicle and coming to a stop on top of it. In this example, the truck-tractor with a semi-trailer attached is the overriding vehicle, and the passenger vehicle is the underriding vehicle.

Override events can occur at any plane of contact and at any angle. It is possible in an override for a motor vehicle to completely pass over another motor vehicle.

P

Parked ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) – ANSI D.16-2017 defines a parked motor vehicle as a motor vehicle not in-transport, other than a [working motor vehicle](#), that is not in motion and not located on the [roadway](#) (travel lanes). In roadway lanes used for travel during some periods and for parking during other periods, a parked motor vehicle is considered [in-transport](#) during periods when parking is forbidden. This attribute includes any stopped motor vehicle where the entirety of the vehicle's primary outline as defined by the four sides of the vehicle (e.g., tires, bumpers, fenders) and load, if any, is not within the roadway. To use this attribute, the [MOTOR VEHICLE UNIT TYPE](#) for this motor vehicle must be **Parked Motor Vehicle**.

Parked Motor Vehicle ([FIRST HARMFUL EVENT](#), [MOTOR VEHICLE UNIT TYPE](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – ANSI D.16-2017 defines a parked motor vehicle as a motor vehicle not in-transport, other than a [working motor vehicle](#), that is not in motion and not located on the [roadway](#) (travel lanes). In roadway lanes used for travel during some periods and for parking during other periods, a parked motor vehicle is considered [in-transport](#) during periods when parking is forbidden. This attribute includes any stopped motor vehicle where the entirety of the vehicle's primary outline as defined by the four sides of the vehicle (e.g., tires, bumpers, fenders) and load, if any, is not within the roadway.

Partially Ejected ([EJECTION](#)) – used when some part but not all of this occupant's body is at some time during the crash sequence thrown outside the occupant compartment as a result of this crash.

Passenger of a Motor Vehicle In-Transport ([PERSON TYPE](#)) – occupant of a motor vehicle in-transport other than the driver.

Passenger Car ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – motor vehicles used primarily for carrying passengers.

Passenger(s) ([DRIVER DISTRACTION](#)) - used when the driver was distracted by a passenger in this driver's vehicle prior to realization of impending danger. Examples of passenger

distraction include conversing with or looking at a passenger (e.g., baby or child in back seat). Excludes pets, see [Other Inside Vehicle \(e.g., eating, smoking\)](#).

Passenger Van ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – a box-shaped vehicle designed to move nine or more passengers including the driver. These vehicles are identifiable by their enclosed cargo or passenger area and relatively short (or non-existent) hood. If this attribute is selected, Subfield 2 must be completed to capture the number of seats.

Passing or Overtaking Another Vehicle ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) – used when this vehicle was traveling straight ahead and was in the process of passing or overtaking another vehicle on the left or right.

Pavement Surface Irregularity (ruts, potholes, grates, etc.) ([FIRST HARMFUL EVENT, SEQUENCE OF EVENTS, MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) - used when the surface irregularity is on a paved surface. Other examples include indication of contact with a dip, depression, low spot, trough, etc. If the impact is with a surface irregularity not on a paved surface, use [Ground](#). For a vehicle that “bottoms out” on the paved surface (causing damage) due to speed, but not because of a pavement surface irregularity, use the attribute [Other Non-Collision](#).

Pedestrian in or on a Building ([PERSON TYPE](#)) - used for a person inside of or on a building who is struck by a motor vehicle directly or by way of an object set-in-motion (e.g., crash debris as a vehicle penetrates a wall).

Pedestrian on Personal Conveyance ([PERSON TYPE](#)) - used for pedestrians using personal conveyances. A personal conveyance is a device used by a pedestrian for personal mobility assistance or recreation. These devices can be motorized or human powered, but not propelled by pedaling. Examples include rideable toys, skates, skateboards, baby carriage, Segway-style devices, wheelchair, mobility scooter. Also see element [NON-MOTORIST DEVICE TYPE](#).

Pedestrian Refuge Island or Traffic Island ([LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY, NON-MOTORIST SPECIFIC LOCATION](#)) – a defined area between traffic lanes for control of vehicular movements, for toll collection, or for pedestrian refuge. Examples include areas:

- Between roadways of a trafficway meant to allow for a non-motorist to pause while traveling from one side of a trafficway to the other side;
- For channelizing the flow of traffic at an intersection;
- In the center island of a circular intersection;
- Dividing the entrance and exit in a driveway access.

Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying ([PERSON TYPE](#)) - used for all pedestrians except for those in or on [personal conveyances](#) and [in or on buildings](#). This attribute includes a person pushing a vehicle or being carried by another pedestrian.

Person (e.g., flagger, crossing guard, law enforcement) ([TRAFFIC CONTROL DEVICE, NON-MOTORIST TRAFFIC CONTROL DEVICE](#)) – used when the directions of a traffic control person applied to this vehicle (or non-motorist) at the time of the crash. A traffic control person is an officially designated person (e.g., police officer, crossing guard, flagger), that is in

the act of controlling both vehicular and non-motorist traffic. **Person** takes precedence over the entire list when a traffic control person and another traffic control device are present.

Personal Conveyance – a device used by a pedestrian for personal mobility assistance or recreation. These devices can be motorized or human powered, but not propelled by pedaling. Examples include rideable toys, skates, skateboards, baby carriages, Segway-style devices, wheelchairs, mobility scooters. Also see element [NON-MOTORIST DEVICE TYPE](#).

Personal Conveyance, Other ([NON-MOTORIST DEVICE TYPE](#)) - used for a device that is not a cycle or a specific personal conveyance attribute listed in this element. The device could be intended for personal mobility (e.g., skis, a sled, toy car, toy wagon, other rideable toy or novelty item, baby carriage) or not intended for personal mobility (e.g., riding on a shopping cart).

Personal Conveyance, Unknown Type ([NON-MOTORIST DEVICE TYPE](#)) - used when it is known the device was a [personal conveyance](#), but the specific type cannot be identified.

Personal Use ([BUS USE](#)) – used when the bus was for personal or private use. For example, a bus with seats removed to allow for personal or private hauling of cargo (instead of passengers), or a musical group in a bus with the interior remodeled with home-like conveniences.

[PERSON NUMBER](#) - identifies a number for the motor vehicle occupant in the motor vehicle they occupied, or for each non-motorist, in consecutive order.

[PERSON TYPE](#) – the role of this person involved in the crash.

Physical Impairment ([RELATED FACTORS – DRIVER LEVEL](#)) – this driver had a physical impairment that isn't a listed attribute in this data element (e.g., this driver was impaired due to a previous injury).

Pickup Truck ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) - a single-unit straight truck with a pickup body style. May have a removable or retractable roof. Includes light, medium, and heavy pickup body styles.

Playing ([NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#)) - immediately prior to the crash, the non-motorist was playing. Examples include playing with toys, basketball, street hockey, hopscotch, etc.

Pole-Trailer ([TRAILER BODY TYPE](#)) – a trailer designed to be attached to the towing vehicle by means of a reach or pole, or by being boomed or otherwise secured to the towing motor vehicle, and ordinarily used for carrying property of a long or irregular shape.

Police, Fire, or EMS Vehicle Working at the Scene of an Emergency or Performing Other Traffic Control Activities ([RELATED FACTORS – VEHICLE LEVEL](#)) - used when this vehicle is an official law enforcement, fire, or EMS vehicle performing some work function related to working at the scene of an emergency or acting as traffic control. The vehicle does not need to be occupied at the time of the crash. Examples:

- Police car, fire truck, or ambulance at the scene of a crash,
- Fire truck at the scene of a fire,
- Police car leading or trailing a convoy for a funeral,
- Police car blocking the entrance to a parade route, or

- Police car at a check point or work zone.

Police Officer in Pursuit ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver is a police officer engaged in a “pursuit” that is active at the time of crash. [SPECIAL FUNCTION](#) must be coded as [Law Enforcement](#) for this person. Also see [RELATED FACTORS—CRASH LEVEL](#) attribute [Police Pursuit Involved](#).

Definition of Police Pursuit: A pursuit is an event that is initiated when a law enforcement officer operating an authorized emergency vehicle gives notice to stop (either through the use of visual or audible emergency signals or a combination of emergency devices) to a motorist whom the officer is attempting to apprehend, and that motorist fails to comply with the signal by either maintaining speed, increasing speed, or taking other evasive action to elude the officer’s continued attempts to stop the motorist. A pursuit is terminated when the motorist stops, or when the attempt to apprehend is discontinued by the officer, or at the direction of a competent authority.

Police Pursuit Involved ([RELATED FACTORS—CRASH LEVEL](#)) - used when a police pursuit had been initiated by the police and was active at the time of the crash. This attribute is also used when a pursuit had been initiated and terminated, but the pursuit action is still related to the crash. This applies for both air and ground pursuing vehicles. To identify the driver or drivers involved in the pursuit, please see [RELATED FACTORS—DRIVER LEVEL](#) for [Fleeing or Evading Law Enforcement](#) and [Police Officer in Pursuit](#).

Definition of Police Pursuit: A pursuit is an event that is initiated when a law enforcement officer, operating an authorized emergency vehicle, gives notice to stop (either through the use of visual or audible emergency signals or a combination of emergency devices) to a motorist who the officer is attempting to apprehend, and that motorist fails to comply with the signal by either maintaining speed, increasing speed, or taking other evasive action to elude the officer’s continued attempts to stop the motorist. A pursuit is terminated when the motorist stops, or when the attempt to apprehend is discontinued by the officer or at the direction of a competent authority.

[POLICE-REPORTED](#) - indicates whether this is a crash report completed and signed by a law enforcement officer or representative appointed by the law enforcement agency (e.g., a non-sworn officer).

Positive Reading With No Actual Value ([ALCOHOL TEST](#)) – used for any specimen type where the result is indicated to be positive without a numeric value to record and for any positive results reported from a liver test. This should only be used when a final test result is returned as “positive” with no actual result to record. This can occur when a screening test is used, and it is the only test result available. This attribute is also used for a positive blood alcohol concentration expressed as a range or as less than some specific value (e.g., less than .020g/dL).

Some portable (handheld) breath-test devices are only preliminary breath tests (PBTs) and indicate whether alcohol is present in the breath by positive (green) or negative (red) lights. Other portable breath test devices indicate the approximate blood alcohol concentration in numbers. When a PBT result only indicates “positive” for alcohol, with no actual blood alcohol concentration value, **Positive Reading With No Actual Value** should be used.

Possible Injury (C) – See [\(C\) Possible Injury](#).

Powertrain ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of any part of the vehicle's powertrain components may have contributed to the occurrence or severity of the crash. Examples are universal joints, drive shaft, and transmission. This also includes engine, differential, and stuck throttles.

POWER UNIT GROSS VEHICLE WEIGHT RATING – the value specified by the manufacturer as the recommended maximum loaded weight of a single motor vehicle.

Preliminary Breath Test (PBT) ([ALCOHOL TEST](#)) - testing device not considered evidential, but merely as a tool to help determine whether alcohol is present. Some PBTs only indicate whether alcohol is present in the breath by “pass” (green) or “fail” (red) lights. Other PBTs indicate the approximate blood alcohol concentration in numbers. If the device is of evidential quality, see [Evidential Breath](#).

Q, R

Racing-Style Harness Used ([RESTRAINT SYSTEM USE](#)) – used when the occupant restraint system in use consists of a five-point seat belt, four-point latch harness, three- to five-point race harness, off-road race harness, three-point non-retractable seat belt, or other similar device rather than a three-point shoulder and lap belt system.

Railroad Crossing Sign ([TRAFFIC CONTROL DEVICE](#)) – includes the sign commonly identified as a crossbuck sign (see [Figure 29. Railroad crossbuck sign](#)) that requires road users to yield the right-of-way to rail traffic at a highway-rail grade crossing. Also use **Railroad Crossing Sign** for a crossbuck assembly with a YIELD or STOP sign on the crossbuck sign support. If the sign has flashing lights and/or other signals, use [Railroad Flashing-Light Signal With Gates](#) or [Railroad Flashing-Light Signal Without Gates](#) as appropriate. This attribute also includes railroad warning signs.

Railroad Flashing-Light Signal With Gates ([TRAFFIC CONTROL DEVICE](#)) - a powered traffic control system that alerts road users of the approach or presence of rail traffic on at-grade crossings. These systems may include two- or four-quadrant gate systems, automatic gates, flashing-light signals, traffic control signals, actuated blank-out and variable message signs, or other traffic control devices. The signal need not be activated at the time of the crash.

Railroad Flashing-Light Signal Without Gates ([TRAFFIC CONTROL DEVICE](#)) - a powered traffic control system that alerts road users of the approach or presence of rail traffic on at-grade crossings. These systems may include flashing-light signals, traffic control signals, actuated blank-out and variable message signs, or other traffic control devices. The signal need not be activated at the time of the crash.

Railroad-Related ([RELATED FACTORS – CRASH LEVEL](#)) – the crash occurred at or in the vicinity of railroad tracks, station, or depot and were somehow relevant in this crash. Examples: a vehicle stopped at a rail crossing is rear-ended by another vehicle, a vehicle travels under a railroad bridge and something falls from a train above onto the vehicle below, a vehicle crossing tracks is struck by a train. If the [FIRST HARMFUL EVENT](#) occurs in the at-grade crossing of the trafficway and railroad, also see [RELATION TO JUNCTION Railway Grade Crossing](#).

Railroad Vehicle or Road Vehicle on Rails ([NON-MOTORIST DEVICE TYPE](#)) - used for railroad trains (e.g., passenger or cargo train) and road vehicles operated on rails (e.g., trolley, streetcar).

Railroad Vehicle ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – Any land vehicle (train, engine) that is (1) designed primarily for, or in use for, moving people or property from one place to another on rails and (2) not in use on a land way other than a railroad.

- Includes: Railroad trains, streetcar, trolley, or light rail on private way, railroad maintenance vehicles operating on rails.
- Excludes: Streetcar or trolley operating on trafficway (see [Road Vehicle on Rails](#)).

Railway Grade Crossing ([RELATION TO JUNCTION](#)) – used when the [FIRST HARMFUL EVENT](#) occurs in the at-grade crossing of the trafficway and railroad.

Rain ([ATMOSPHERIC CONDITIONS](#)) – used for precipitation other than [Snow](#) or [Sleet or Hail](#). If the rain is freezing, select [Freezing Rain](#).

Rain, Snow, Fog, Smoke, Sand, or Dust ([DRIVER'S VISION OBSCURED BY](#)) - used when one or more of these conditions exist AND obstructed the view of the driver. Do not use this attribute when only the vehicle windshield was “fogged” or not properly cleaned (see [Frost or Fog on Windshield](#) or [Broken or Improperly Cleaned Windshield](#)).

Ran Off Roadway - Direction Unknown ([SEQUENCE OF EVENTS](#)) – used if any part of the vehicle runs off the [roadway](#) (travel lanes), but the direction (left or right) cannot be determined.

Ran Off Roadway Left ([SEQUENCE OF EVENTS](#)) – used if any part of the vehicle runs off the left side of the [roadway](#) (travel lanes).

Ran Off Roadway Right ([SEQUENCE OF EVENTS](#)) – used if any part of the vehicle runs off the right side of the [roadway](#) (travel lanes).

Rear to Rear ([MANNER OF COLLISION OF THE FIRST HARMFUL EVENT](#)) – used when the rear of a vehicle makes contact with the rear of another. This can happen when two vehicles are backing up.

Rear-to-Side or Side-to-Rear ([MANNER OF COLLISION OF THE FIRST HARMFUL EVENT](#)) – used when the rear of a vehicle makes contact with the side of another. This can happen when a vehicle backs up into the side of another vehicle or a vehicle hydroplanes and the side of the vehicle contacts the rear of another vehicle.

Reconstructed or Altered Vehicle ([RELATED FACTORS – VEHICLE LEVEL](#)) - used when this vehicle was either (1) not constructed by an original vehicle manufacturer or (2) is constructed by an original vehicle manufacturer but is significantly altered in some way with aftermarket modifications. These vehicles may or may not have a standard VIN, or the State may issue a number in place of the VIN for their registration. For a vehicle that has been modified with adaptive equipment for an operator with a disability or for other reasons such as mail carriers, driving instructors, etc., use [Adaptive Equipment](#). Examples:

- The addition of enhanced performance engine chips or accessories,
- Two vehicles are combined into one,

- Significant altering of suspension system (e.g., “monster trucks” or “low riders”),
- Hydraulic systems or tilted/canted wheels, or
- Glider kit.

Re-Entering Roadway ([SEQUENCE OF EVENTS](#)) - used when a vehicle that departed the roadway portion of the trafficway returns to the same roadway (e.g., a motor vehicle in-transport runs off the roadway right, strikes the guardrail face, then re-enters the roadway and collides with another motor vehicle in-transport). This attribute should not be used if a vehicle departs the roadway and enters a different roadway. For example, do NOT use the attribute **Re-Entering Roadway** when a motor vehicle in-transport runs off the roadway left, crosses the median, and enters the roadway on the other side of the median.

Reflected Glare, Bright Sunlight, or Headlights ([DRIVER’S VISION OBSCURED BY](#)) - used when one or more of these conditions obstructed the view of the driver.

Registration Not Required ([MOTOR VEHICLE REGISTRATION STATE OR COUNTRY](#)) - used for vehicles that are not required to be registered. This is State-specific based on State vehicle registration requirements.

[RELATED FACTORS – CRASH LEVEL](#) - Identifies factors related to this crash.

[RELATED FACTORS - DRIVER LEVEL](#) – Identifies factors related to this driver.

[RELATED FACTORS – VEHICLE LEVEL](#) - Records factors related to this vehicle to identify and track ongoing or emerging issues associated with these vehicle characteristics.

Related to a Bus Stop ([RELATED FACTORS - CRASH LEVEL](#)) - used when the crash was related to the use of a location set aside for, or customarily used for, boarding and disembarking passengers onto or from a bus of any kind (e.g., pedestrian collisions involving vehicles maneuvering around a bus stopped for boarding or disembarking passengers, pedestrians walking to a bus stop, or pedestrians running across traffic lanes to a bus stop).

[RELATION TO JUNCTION](#) – the location of the [FIRST HARMFUL EVENT](#) with respect to presence in a junction or proximity to components typically in junction or [interchange](#) areas.

Releasing Brakes ([ATTEMPTED AVOIDANCE MANEUVER](#)) – used when the driver released the brakes in an attempt to avoid an impending danger.

Rental or Car-Share Vehicle ([SPECIAL USE](#)) - used when this motor vehicle was rented and/or part of a shared mobility service (transportation network company) to provide customers with the vehicle only (no driver included) at the time of the crash. Examples may include rental vehicles, car-sharing, or other on-demand motor vehicle transportation services on an as-needed basis. If this vehicle included a driver to provide passengers with transportation in the driver’s non-commercial vehicle, see [Motor Vehicle in-Service for Electronic Ride-hailing](#). If the vehicle is a rental truck over 10,000 lb, see [Rental Truck \(Over 10,000 lb\)](#).

Rental Truck (Over 10,000 lb) ([SPECIAL USE](#)) - the vehicle was being used as a rental vehicle at the time of the crash. This attribute is intended for rental trucks in use by private citizens, not for uses by commercial concerns as part of regular business. For example, a homeowner rents a truck to move their belongings. The [MOTOR VEHICLE BODY TYPE CATEGORY](#) for this vehicle must be **Cargo Van, Pickup Truck, Single-Unit Truck (2 axles and GVWR > 10,000 lb), Single-Unit Truck (3 or more axles), Truck-Tractor, With or**

Without Trailers (bobtail, semi, doubles, or triples), or Truck, Unknown Type. The [POWER UNIT GROSS VEHICLE WEIGHT RATING](#) for this vehicle must be **Medium (10,001 – 26,000 lb GVWR), Heavy (Greater than 26,000 lb GVWR), or Unknown.**

[RESTRAINT SYSTEM USE](#) - the restraint equipment in use by the occupant and any indication of improper use of the available restraint system at the time of the crash.

Ridden Animal or Animal-Drawn Conveyance ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#), [NON-MOTORIST DEVICE TYPE](#)) - used for any type of animal being ridden at the time of the crash or any device being drawn by an animal (e.g., wagon, carriage, sleigh).

Riding on Exterior of Vehicle (non-trailing unit) ([SEATING POSITION](#)) – person riding on the exterior of a motor vehicle (on hood, roof, fender, running board, trunk, non-trailing unit, etc.). If this person was holding onto or attached to this motor vehicle for motion, see [Appended to a Motor Vehicle for Motion](#).

Road – the part of a [traffway](#) that includes both the [roadway](#) and any shoulder alongside the roadway. Includes designated parking areas on a roadway or between the roadway and curb.

Road Rage ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver exhibited road rage behavior. Road rage is when a driver experiences extreme aggression or anger intending to cause harm to others. Note that a deliberate act that results in a harmful event (or events) is not considered an [unstabilized situation](#) and thus is not a crash. A crash must have both an unstabilized situation (unintended event) and at least one harmful event that is separate from or beyond what was intended by the deliberate act. If this driver also operated their vehicle aggressively, see [Aggressive Driving](#).

Examples of road rage driving behavior by a contact vehicle driver resulting in a motor vehicle traffic crash:

- One driver tries to force another driver off the roadway (deliberate act), and subsequently results in the two vehicles colliding. Another vehicle not associated with the deliberate act comes upon and strikes both vehicles (unintended event).
- A driver tailgating dangerously close intentionally nudges the bumper of the vehicle in front (deliberate act), resulting in the driver losing control, and striking a third vehicle in the opposing travel lanes (unintended event).

Road Rage by Noncontact Vehicle Driver ([RELATED FACTORS – CRASH LEVEL](#)) - used when the driver of a noncontact vehicle related to this crash, exhibited “road rage” driving behavior (extreme aggression or anger intending to cause harm to others). Note that a deliberate act that results in a harmful event (or events) is not an [unstabilized situation](#) and thus is excluded from being considered a crash. To qualify as a crash there must be an unstabilized situation (unintended event) and at least one harmful event that is separate from or beyond what was intended by the deliberate act. If the driver of the noncontact vehicle was also driving aggressively, see attribute [Aggressive Driving by Noncontact Vehicle Driver](#). For contact vehicles, see [RELATED FACTORS—DRIVER LEVEL](#) attributes [Road Rage](#) and [Aggressive Driving](#). Examples:

- One driver forces another driver off the roadway, and that deliberate act subsequently results in the involvement of another vehicle not associated with the deliberate act.

- One driver gets out of their vehicle at a traffic light with intent to injure another driver. The driver being attacked flees and strikes another vehicle.

Roadside – the outermost part of the [trafficway](#) from the property line to other boundary in to the edge of the first [road](#). Includes: area between edge of trafficway and edge of [roadway](#) with no shoulder, and area between edge of trafficway and edge of shoulder. Excludes: roadways, shoulders, separators, and medians.

Road Vehicle on Rails ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) - any land vehicle on rails designed to operate primarily within a trafficway.

- Includes: Streetcar, trolley, or light rail operating on trafficway.
- Excludes: Railroad trains, railroad maintenance vehicles operating on rails, or streetcar, trolley, or light rail operating on a private way (see [Railroad Vehicle](#)); streetcar, trolley, or electric bus operating on tires.

Roadway – the part of a [trafficway](#) designed, improved, and ordinarily used for motor vehicle travel (i.e., travel lanes) or, where various classes of motor vehicles are segregated, the part of a trafficway used by a particular class. Separate roadways may be provided for opposing directions of traffic or for trucks and automobiles. Bridle paths and bicycle paths are not included in this definition.

[ROADWAY ALIGNMENT](#) – the geometric or layout characteristics of the [roadway](#) in the direction of travel for this vehicle, just prior to this vehicle’s involvement in the crash.

Roadway Construction ([SPECIAL FUNCTION](#)) – at the time of the crash this person was performing roadway construction duties related to the [trafficway](#). This includes long-term stationary construction such as building a new bridge, adding travel lanes to the roadway, extending an existing trafficway, construction of appurtenances, such as guardrails or ditches, surveying activity, installation of utilities within the right-of-way, etc.

[ROADWAY GRADE](#) - the inclination characteristics of the [roadway](#) in the direction of travel for this vehicle, just prior to this vehicle’s involvement in the crash.

Roadway Maintenance ([SPECIAL FUNCTION](#)) – at the time of the crash this person was performing roadway maintenance duties related to the [trafficway](#). This includes work activities such as striping the roadway, median and roadside grass mowing or landscaping, pothole repair, snowplowing, etc.

[ROADWAY SURFACE CONDITION](#) – the [roadway](#) surface condition for this vehicle, just prior to this vehicle’s involvement in the crash.

Rollover or Overturn ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) used when a motor vehicle rotates (rolls over) at least one quarter turn onto its side or end. For motorcycles, laying the motorcycle down on its side is sufficient to use this attribute as a harmful event if damage or injury is produced.

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Safety Service Patrol ([SPECIAL FUNCTION](#)) - at the time of the crash this person was performing short-term emergency response management to traffic incidents, commonly resulting from crashes, debris, or disabled vehicles.

Safety Service Patrols – Incident Response ([SPECIAL USE](#)) – vehicles that provide short-term emergency response management to traffic incidents, commonly resulting from crashes, debris, or disabled vehicles, intended to promote safe movement of people and commerce, and reduce traffic delays and congestion. To use this attribute, this vehicle must have been responding to a traffic incident at the time of its involvement in the crash. See [NOTE on Incident Response Vehicles](#).

Safety Systems ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of any part of the vehicle's safety systems may have contributed to the occurrence or severity of the crash. This includes if the air bags failed to deploy or deployed inappropriately. Also, use this attribute for a seat belt failure, such as webbing that was excessively worn or came unlatched. Do NOT use this attribute for improper restraint use (see [RESTRAINT SYSTEM USE](#) Subfield 2: Indication of Restraint System Misuse).

Sag (bottom) ([ROADWAY GRADE](#)) – used when the roadway on which this vehicle was traveling was the bottom of a hill just prior to this vehicle's involvement in this crash.

Sand ([ROADWAY SURFACE CONDITION](#)) - used when the roadway surface on which this vehicle was traveling just prior to this vehicle's involvement in this crash had sand on the roadway as a result of sand blown by wind or sand discharged on the roadway by highway trucks. Do not use this attribute to describe the surface type of the roadway by design (see [Dry](#)).

School Bus ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) - a bus designed to carry passengers to and from educational facilities and/or related functions. The vehicles are characteristically painted yellow and clearly identified as school buses. Use this attribute regardless of whether the vehicle is owned by a school system or a private company. Also use this attribute for school buses converted for other uses (e.g., church bus). If this attribute is selected, Subfield 2 must be completed to capture the number of seats.

[SCHOOL-BUS-RELATED](#) – indicates whether a school bus or motor vehicle functioning as a school bus for a school-related purpose is directly or indirectly involved in the crash.

School ([BUS USE](#)) – any public or private school or district, or contracted carrier operation on behalf of the entity, providing transportation for K-12 pupils. See additional remarks under [SCHOOL-BUS-RELATED](#).

School Zone Sign or Device ([TRAFFIC CONTROL DEVICE](#)) – signs or devices that change the speed limit on roads adjacent to schools on school days, give advance warning of a school, and/or warn of children crossing the road.

Scooter (standing or seated) ([NON-MOTORIST DEVICE TYPE](#)) - used for a wheeled device with a center column and handlebar where the operator can stand on a foot platform. These devices may or may not have a permanent or removable posted seat. These devices have at least two wheels and can be human powered or motorized. These devices are not designed specifically for assisted mobility (see [Wheelchair or Other Mobility Aid Device](#)). For motor scooters or

mopeds, see [MOTOR VEHICLE BODY TYPE CATEGORY 2-Wheeled Motorcycle](#) or **Moped**.

[SEATING POSITION](#) – the location for this occupant in, on, or outside of the motor vehicle prior to the first event in the [SEQUENCE OF EVENTS](#).

[SECONDARY CRASH](#) - Identifies if this crash was related to a prior (primary) crash.

Self-Balancing Board ([NON-MOTORIST DEVICE TYPE](#)) - used for a wheeled device that may or may not have a center column with a handlebar where the operator can stand on a foot platform or foot pegs and manipulate the device with controls on the center column or by weight distribution. These devices enable the user to remain balanced when powered on, have 1 wheel or 2 wheels in parallel, and are motorized. Examples include hoverboards, Segway-style devices, One-Wheel devices.

Separation of Units ([SEQUENCE OF EVENTS](#)) – used when a trailing unit separates from its power unit or another trailing unit. This applies to truck tractors with at least one trailer, single-unit trucks with at least one trailer, and other vehicles pulling at least one trailer (e.g., car pulling a boat or motor home).

Separator ([LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY](#)) – the area of a [trafficway](#) between parallel [roads](#) separating travel in the same direction or separating a frontage road from other roads.

[SEQUENCE OF EVENTS](#) – events in sequence related to this motor vehicle, including non-harmful events, non-collision harmful events, and collision events.

Severe Crosswinds ([ATMOSPHERIC CONDITIONS](#)) – used for strong air flow perpendicular to the intended path of travel.

[SEX OR GENDER](#) – The sex or gender of the person involved in the crash.

Shared-Use Path or Trail ([RELATION TO JUNCTION, NON-MOTORIST SPECIFIC LOCATION](#)) – a bikeway physically separated from motor vehicle traffic by an open space or barrier. They may also be used by pedestrians, skaters, wheelchair users, joggers, and other users. Most have two-way travel.

Shoulder and Lap Belt Used ([RESTRAINT SYSTEM USE](#)) – used when the occupant is restrained by a standard three-point shoulder belt and lap belt connected to a buckle. Also use this attribute when the occupant is using a belt-positioning device that works with a three-point harness.

Shoulder Belt Only Used ([RESTRAINT SYSTEM USE](#)) – use of only a shoulder belt either because the motor vehicle is equipped only with a shoulder belt or because the lap belt is not in use.

Shrubbery ([FIRST HARMFUL EVENT, SEQUENCE OF EVENTS, MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) - vegetation usually of a woody multi-stemmed variety and in most instances is low growing rather than tall. May also be called bushes. Some common examples are boxwood, hawthorn, and mountain laurel.

Shuttle ([BUS USE](#)) – used when the bus transports people from airports, hotels, rental car companies, and business facility to facility. Examples also include private companies providing transportation services for their own employees, non-governmental organizations (such as

churches and non-profit groups), and non-educational units of government (such as departments of corrections). Buses are any motor vehicle with seats to transport nine or more people including the driver but not including vans owned and operated for personal use.

Side (door or seatback) ([AIR BAG DEPLOYED](#)) – used when an air bag on a side of the motor vehicle is out of its cover and protruding into occupant compartment. The bag is fully or partially deflated or inflated. This air bag is mounted in the outboard side of the seat or in the door. Side impact air bags located between [SEATING POSITION Front Row, Left Side](#) and [Front Row, Right Side](#) within the inboard seatbacks or center console designed to mitigate occupant versus occupant injury are also collected in this attribute. Refer to [Figure 32. Air bag diagram](#).

Sideswipe, Opposite Direction ([MANNER OF COLLISION OF THE FIRST HARMFUL EVENT](#)) – two vehicles traveling in the opposite direction impact one another where the initial engagement does not overlap the corner of either vehicle so that there is no significant involvement of the front or rear surface areas. The impact then swipes along the surface of the vehicle parallel to the direction of travel.

Sideswipe, Same Direction ([MANNER OF COLLISION OF THE FIRST HARMFUL EVENT](#)) – two vehicles traveling in the same direction impact one another where the initial engagement does not overlap the corner of either vehicle so that there is no significant involvement of the front or rear surface areas. The impact then swipes along the surface of the vehicle parallel to the direction of travel.

Signal Lights ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of the vehicle's signal lights may have contributed to the occurrence or severity of the crash.

Single-Unit Truck (2 axles and GVWR > 10,000 lb) ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – a power unit that includes a permanently mounted cargo body (also called a straight truck) that has only two axles and a GVWR of over 10,000 lb. When counting axles on a single-unit truck, include raised axles.

Single-Unit Truck (3 or more axles) ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – a power unit that includes a permanently mounted cargo body (also called a straight truck) that has three or more axles. When counting axles on a single-unit truck, include raised axles.

Skateboard ([NON-MOTORIST DEVICE TYPE](#)) - used for a wheeled device without handlebars or center column where the operator balances on a board. These devices have 2 trucks and at least 3 wheels and can be human powered or motorized.

Skates ([NON-MOTORIST DEVICE TYPE](#)) - used for wheeled devices for each foot, rather than a connected board. These can be human powered or motorized. Examples include roller skates, inline skates, electric skates (e-skates).

Sleeper Section of Cab (truck) ([SEATING POSITION](#)) – used if the occupant's vehicle is a medium or heavy truck and has a cab sleeper, and this occupant is in the sleeper section at the time of the crash.

Sleet or Hail ([ATMOSPHERIC CONDITIONS](#)) – used for conditions where the precipitation is falling as ice (sleet or hail), not including freezing rain (see [Freezing Rain](#)).

Slide-in Camper ([RELATED FACTORS – VEHICLE LEVEL](#)) – this vehicle had a slide-in camper, which is a unit that mounts within a pickup truck bed. Pickup truck bed caps, tonneau covers, or frame mounted campers are not applicable for this attribute.

Slush ([ROADWAY SURFACE CONDITION](#)) – used when the roadway surface on which this vehicle was traveling just prior to this vehicle’s involvement in this crash had accumulated snow or ice that had partially melted.

Smog or Smoke ([ATMOSPHERIC CONDITIONS](#)) - used for a natural and/or man-made condition of suspended particles resulting from combustion or other atmospheric pollutants that causes reduced visibility.

Snow ([ATMOSPHERIC CONDITIONS](#)) - used when precipitation is falling as frozen flakes at the time of the crash not including blowing snow (see [Blowing Snow](#)).

Snow ([ROADWAY SURFACE CONDITION](#)) - used when the roadway surface on which this vehicle was traveling just prior to this vehicle’s involvement in this crash was covered with snow.

Snowbank ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) - used when snowfall and/or road plowing creates essentially fixed barriers of snow and/or ice that are not snow-covered earth or rock embankments.

Snowmobile ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) - a vehicle designed to operate over snow, propelled by a motor.

[SPECIAL FUNCTION](#) - identifies if this person involved in the crash was performing a unique function at the time of the crash.

[SPECIAL USE](#) – the type of authorized special use being served by this motor vehicle regardless of whether the use is marked on the vehicle or aligns to the body type, at the time of the crash. For example, a 15-Passenger van being used as a school bus.

[SPEEDING-RELATED](#) – the investigating officer indicates that the driver involved in the crash was speeding.

Splash or Spray of Passing Vehicle ([DRIVER’S VISION OBSCURED BY](#)) - used when this condition obstructed the view of the driver. The splash or spray can come from water or mud; however, the use of this attribute does not require it to be raining at the time of the crash.

Sport Utility Vehicle ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) – A motor vehicle other than a motorcycle or bus consisting primarily of a transport device designed for carrying 10 or fewer people, and generally considered a multi-purpose vehicle that is designed to have off-road capabilities. These vehicles are generally 4-wheel-drive (4x4) and have increased ground clearance. A utility vehicle has a gross vehicle weight rating (GVWR) of 10,000 lb or less. Utility vehicles with wheelbases greater than 88 inches are classified by overall width. The wheelbase and overall width should be rounded to the nearest inch. Sizes range from mini, small, midsize, full-size, and large. Four-wheel automobiles are not considered utility vehicles.

Stalled or Disabled Vehicle ([RELATED FACTORS – CRASH LEVEL](#)) - used when a stalled or mechanically disabled vehicle was related to the crash. It includes both contact and noncontact

vehicles that are stalled or disabled for mechanical reasons not due to crash-related damage. Examples:

- A pedestrian is struck when walking from their stalled vehicle.
- A vehicle is stalled in the travel lanes causing another vehicle to lose control and crash.
- A vehicle runs out of fuel or loses its charge and stops, unable to exit the travel lanes, and is hit by another vehicle.

Starting ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) – used when this vehicle was in the process of starting forward from a stopped position and intending to proceed straight ahead within the road portion of the trafficway (e.g., start up from traffic signal).

[STATE REPORTABLE CRASH](#) - indicates whether a crash meets the State’s threshold for a reportable crash and is required to be reported by State law.

[STATE UNIQUE CRASH ID](#) - the unique crash report identifier (also referred to as the State Case Number) maintained in the statewide crash data repository.

Stationary (not moving) ([NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#)) – immediately prior to the crash the non-motorist was not moving. This includes standing, sitting, or lying still.

Steering ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of any part of the vehicle’s steering mechanism may have contributed to the occurrence or severity of the crash, including the tie rod ends, kingpins, power steering components, and ball joints.

Steering Left ([ATTEMPTED AVOIDANCE MANEUVER](#)) – used when the driver steered the vehicle to the left in an attempt to avoid an impending danger. If the driver also applied the vehicle’s brakes while steering left, use [Braking and Steering Left](#). If the driver also sped up the vehicle while steering left, use [Accelerating and Steering Left](#).

Steering Right ([ATTEMPTED AVOIDANCE MANEUVER](#)) - used when the driver steered the vehicle to the right in an attempt to avoid an impending danger. If the driver also applied the vehicle’s brakes while steering right, use [Braking and Steering Right](#). If the driver also sped up the vehicle while steering right, use [Accelerating and Steering Right](#).

Stopped ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) – used when this vehicle was stopped (not moving) within the roadway portion of the trafficway (i.e., travel lanes). Examples include motor vehicles legally stopped for a stop sign or signal, motor vehicles stopped prior to initiating a turn, motor vehicles stopped in traffic due to a slowdown in traffic ahead, motor vehicles illegally stopped in a traffic lane (e.g., “double parked”), and disabled motor vehicles in the travel lane. A vehicle stopped in traffic may or may not have a driver and the vehicle’s engine may or may not be running.

Stopped in Roadway (vehicle not abandoned) ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver stopped their vehicle in the roadway (travel lanes). It is intended to capture an unusual condition where a vehicle is stopped in the roadway with the driver present in the vehicle. If the driver has gotten out of the vehicle (i.e., not in the vehicle at the time of this crash), use the attribute [Not Applicable \(no driver\)](#). It includes both a driver in the process of stopping the vehicle and when a driver has completely stopped the vehicle. It excludes typical

stopping situations such as stopping in or for traffic, waiting to turn, or stopping for a traffic control. Examples:

- A vehicle disabled in a prior crash.
- A vehicle with a flat tire.
- A vehicle that stops for debris in the roadway

Stop Sign ([TRAFFIC CONTROL DEVICE](#)) – an eight-sided red sign with “STOP” on it, requiring motor vehicles to come to a full stop and look for on-coming traffic before proceeding with caution.

Straight ([ROADWAY ALIGNMENT](#)) – used when the roadway on which this vehicle was traveling did not curve to the left or right just prior to the vehicle’s involvement in this crash.

Strikes Object at Rest That Had Fallen From Motor Vehicle In-Transport ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used when a [motor vehicle in-transport](#) impacts a non-fixed object at rest that is known to have been the cargo or part of another motor vehicle in-transport. For example, a motor vehicle in-transport strikes a mattress that fell from another motor vehicle in-transport and was at-rest in the roadway. Do not use this attribute:

- If the cargo or debris was at rest as a result of a prior crash, use attribute [Other Object \(not fixed\)](#).
- For vehicle occupants who are ejected or fall from a motor vehicle in-transport (e.g., a motorcycle operator falling from a motorcycle). For people falling from a motor vehicle, see non-collision event [Fell or Jumped From Motor Vehicle](#).
- For impacts involving two motor vehicles in-transport resulting from cargo, people, or objects set-in-motion. (See [Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport](#).)
- For at-rest detached trailers (e.g., a detached semi-trailer). See attribute [Other Object \(not fixed\)](#).

Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used when the injury- or damage-producing event is two motor vehicles in-transport making contact by something set-in-motion by one or both of the vehicles. Examples:

- Logs fall off or come loose from an in-transport truck (see [SEQUENCE OF EVENTS non-harmful event Cargo or Equipment Loss or Shift \(non-harmful\)](#)) and the logs strike another motor vehicle in-transport traveling behind the truck causing injury or damage.
- A tire blows out on a motor vehicle in-transport (see [SEQUENCE OF EVENTS non-harmful event Equipment Failure \(blown tire, brake failure, etc.\)](#)) and pieces of the tire fly up and strike another motor vehicle in-transport causing injury or damage.

- A motor vehicle in-transport strikes a rock in the roadway producing injury or damage (see [Other Object \(not fixed\)](#)) and propels the rock into another motor vehicle in-transport causing injury or damage.
- A motorcycle rider loses control of the motorcycle that overturns (see [Rollover or Overturn](#)) and the rider is propelled into another motor vehicle in-transport causing injury or damage.

This attribute does not apply when the cargo, people, or objects set-in-motion by an in-transport motor vehicle strikes something other than another in-transport motor vehicle. In this case, use the applicable harmful event attribute for the thing struck by the cargo, person, or object set-in-motion. Examples:

- If cargo falls from an in-transport truck (see SEQUENCE OF EVENTS non-harmful event [Cargo or Equipment Loss or Shift \(non-harmful\)](#)) and the cargo strikes a parked motor vehicle, use the attribute [Parked Motor Vehicle](#).
- If a motor vehicle in-transport strikes a rock in the roadway producing injury or damage (see [Other Object \(not fixed\)](#)) and propels the rock into a pedestrian, use the attribute [Non-Motorist](#).
- If a motorcycle rider loses control of the motorcycle that overturns (see [Rollover or Overturn](#)) and the rider is propelled into a standing tree, use the attribute [Tree \(standing only\)](#).

Surface Collapsed (e.g., washed out, caved-in, sink hole, road slippage) ([RELATED FACTORS – CRASH LEVEL](#)) - used when the roadway had previously collapsed due to prior events associated with the environment (flooding, earthquakes, etc.).

Surface Under Water ([RELATED FACTORS – CRASH LEVEL](#)) - used when the roadway surface is under water beyond normal accumulation (i.e., depth of water). Also use this attribute when the roadway is permanently under water (i.e., fords).

Suspected Minor Injury (B) – See [\(B\) Suspected Minor Injury](#).

Suspected Serious Injury (A) – See [\(A\) Suspected Serious Injury](#).

Suspension ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) – used when any pre-existing defects or maintenance conditions of any part of the vehicle’s suspension components may have contributed to the occurrence or severity of the crash. These include springs, shock absorbers, struts, and control arms.

Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist, or Animal in Roadway, etc. ([RELATED FACTORS – DRIVER LEVEL](#)) – defensive driver action to defend against an apparent danger in, on, or due to the condition of the [roadway](#) or the presence of a motor vehicle, object, non-motorist, or animal in the roadway to avoid a crash.

T

T-Intersection ([TYPE OF INTERSECTION](#)) – used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the intersection is where two roadways connect in a perpendicular manner and one roadway does not continue across the other roadway. The roadways form a “T.”

Talking or Listening on Hands-Free Mobile Electronic Device ([DRIVER DISTRACTION](#)) - used when the driver was talking or listening on a “hands-free” or Bluetooth-enabled mobile phone or other electronic device.

Talking or Listening on Handheld Mobile Electronic Device ([DRIVER DISTRACTION](#)) - used when the driver was talking or listening on a handheld mobile phone or other electronic device.

Tank Trailer ([TRAILER BODY TYPE](#)) – a trailer type designed to transport dry bulk (fly, ash, etc.), liquid bulk (gasoline, milk, etc.) or gas bulk (propane, etc.).

Taxi ([SPECIAL USE](#)) - used when this vehicle was operated during this trip (at the time of the crash) on a “fee-for-hire” basis to transport people. Most of these vehicles will be marked and formally registered as taxis; however, vehicles that are used as taxis, even though they are not registered, are included here. For vehicles affiliated with a transportation network company, see [Motor Vehicle in Service for Electronic Ride-Hailing](#). Passengers do not have to be present at the time of the crash. Taxis and drivers that are off duty at the time of the crash are coded as [No Special Use](#). If it is unknown whether the taxi is on-duty or not, code as **Taxi**. This attribute also applies for limousines on a “fee-for-hire” basis.

Termination Area ([WORK ZONE](#)) – the [FIRST HARMFUL EVENT](#) was located after the activity area but before traffic resumes normal conditions.

Test Given ([ALCOHOL TEST](#)) – used when an alcohol test was performed on this person.

Test Not Given ([ALCOHOL TEST](#)) – used when an alcohol test was not performed on this person.

Texting or Manually Operating a Mobile Electronic Device ([DRIVER DISTRACTION](#)) - used when the driver was dialing or text messaging (texting) on a mobile phone or mobile electronic device. Any manual button or control actuation on the device qualifies. This includes dialing or text messaging on any wireless e-mail device.

The First Harmful Event Was Not a Collision With a Motor Vehicle In-Transport ([MANNER OF COLLISION OF THE FIRST HARMFUL EVENT](#)) - used when the [FIRST HARMFUL EVENT](#) is not an impact between two in-transport motor vehicles.

Three or More Trailers ([VEHICLE TRAILING](#)) - this vehicle was pulling three or more [trailing units](#).

Through Roadway ([RELATION TO JUNCTION](#)) – used when the [FIRST HARMFUL EVENT](#) occurs in an interchange area and it does NOT occur: (1) on an **Entrance or Exit Ramp**, (2) in an **Intersection or Related** to an intersection or other junction, or (3) in an **Acceleration or Deceleration Lane**.

Thrown or Falling Object ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – a non-collision harmful event where any object is thrown (intentionally or unintentionally) and impacts an [in-transport](#) motor vehicle, or falls onto, into, or in the path of an in-transport motor vehicle. This excludes contacts made by loads or objects set in-motion by a motor vehicle (see [Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport](#)).

TIME OF ROADWAY CLEARANCE - the time of first recordable awareness to when all traffic lanes became available for normal traffic flow.

Tires (**CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE**) – used when any pre-existing defects (e.g., lost or losing re-tread) or maintenance conditions (e.g., one or more bald tires) of the vehicle’s tires may have contributed to the occurrence or severity of the crash. If the contributing factor is of the wheel (e.g., a lug nut comes off), then use **Wheels**.

Toll Booth or Plaza-Related (**RELATED FACTORS – CRASH LEVEL**) - the crash occurred at or in the vicinity of a toll booth (manned or unmanned) or a toll plaza. These are crashes that occur in the upstream approach to the toll booth or plaza area and continues as the approach area (where the toll road begins to widen) leading up to the toll booths and in the departure area where the road begins to narrow leading back to the normal number of lanes comprising the toll road downstream departure area.

Top (**INITIAL CONTACT POINT, DAMAGED AREAS**) – non-horizontal impacts (for INITIAL CONTACT POINT) or damage (for DAMAGED AREAS) to the hood, windshield, roof, rear window, trunk deck, and to the top of trailing units. For horizontal impacts, select the most appropriate **Clock Point 01-12**.

Totally Ejected (**EJECTION**) – used when this occupant’s body was thrown entirely outside the vehicle as a result of this crash. This includes occupants who are not initially in the seating compartment of the vehicle (e.g., in a pickup bed, on an open tailgate, on a convertible top boot). The occupant’s body may still be in contact with the vehicle.

TOTAL OCCUPANTS IN MOTOR VEHICLE – the total number of injured and uninjured occupants in this motor vehicle involved in the crash, including people in or on the motor vehicle at the time of the crash.

Towed (**VEHICLE TOWED**) - used when this vehicle has been removed from the scene of this crash by tow truck or other vehicle. Pulling a vehicle out of a ditch by itself does not justify the use of this attribute. For example, if a vehicle was removed from a ditch and was then driven away, use **Not Towed**.

Towed Vehicle (**TRAILER BODY TYPE**) – used when the trailing unit was a motor vehicle connected by a fixed or non-fixed linkage.

Towing and Recovery (**SPECIAL FUNCTION**) – at the time of the crash this person was performing towing and recovery duties, including tow service at a traffic incident scene, removing disabled vehicles or parts of vehicles, or parking enforcement.

Towing – Incident Response (**SPECIAL USE**) – used for any type of tow truck involved in the crash while providing tow service at a traffic incident scene. The tow truck does not need to have a vehicle in tow at the time of the crash to use this attribute. To use this attribute, this vehicle must have been responding to a traffic incident at the time of its involvement in the crash. Tow trucks involved in crashes under any other circumstances are not included in this attribute. See **NOTE on Incident Response Vehicles**.

Towing or Pushing Improperly (**RELATED FACTORS – DRIVER LEVEL**) - used when this driver was operating the vehicle that was towing another vehicle with an improper connection (e.g., by rope or cable) or was pushing another vehicle in a dangerous manner (e.g., bumper to bumper).

TRAFFIC CONTROL DEVICE – the traffic control device (TCD) applicable to this motor vehicle, just prior to this vehicle’s involvement in the crash.

Traffic Control Signal (TRAFFIC CONTROL DEVICE) – controls traffic movements by illuminating systematically, a green, yellow, or red light or by flashing a single-color light.

Traffic Incident (Other Than a Crash) (RELATED FACTORS - CRASH LEVEL) – an unplanned randomly occurring traffic event that adversely effects normal traffic operations (e.g., spilled cargo).

Traffic Sign or Support (FIRST HARMFUL EVENT, SEQUENCE OF EVENTS, MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE) – used when the post supporting a traffic sign, or the sign itself, is hit by a motor vehicle in-transport. This includes mile marker posts and elevated signs.

Traffic Signal or Support (FIRST HARMFUL EVENT, SEQUENCE OF EVENTS, MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE) – used when the post supporting a traffic signal, or the signal itself, is hit by a motor vehicle in-transport. Use **Traffic Signal or Support** for a railroad crossing arm or gate.

Trafficway – any land way open to the public as a matter of right or custom for moving people or property from one place to another.

Trafficway Construction, Maintenance, or Utility (SPECIAL USE) – used for any vehicle whose function is designed to conduct improvements to a roadway, perform authorized maintenance, or provide utility services.

TRAFFICWAY FLOW - identifies whether the trafficway associated with this vehicle serves one-way or two-way traffic, just prior to this vehicle’s involvement in the crash.

TRAILER BODY TYPE - the primary cargo carrying capability of this trailer.

TRAILER VIN – a unique combination of alphanumeric characters assigned to each trailer designated by the manufacturer.

Trailing Unit (SEATING POSITION) – used when an occupant is in or on a trailing unit (i.e., VEHICLE TRAILING, for this occupant’s vehicle must have one or more trailing units).

Trailing Unit Other Than a Trailer or Another Motor Vehicle (VEHICLE TRAILING) - used when this vehicle was pulling or towing a wheeled unit that is something other than a trailer or another motor vehicle (e.g., generator, woodchipper, log splitter).

Transit Bus (MOTOR VEHICLE BODY TYPE CATEGORY) – A bus sold for public transportation provided by, or on behalf of a State or local government, equipped with a stop-request system, and is not an over-the-road bus. An “over-the-road bus” means a bus is characterized by an elevated passenger deck located over a baggage compartment. If this attribute is selected, Subfield 2 must be completed to capture the number of seats.

Transit or Commuter (BUS USE) – a government entity or private company providing passenger transportation over fixed, scheduled routes, within primarily urban geographical areas. (e.g., inner-city mass transit bus service.) Buses are any motor vehicle with seats to transport nine or more people including the driver but not including vans owned and operated for personal use.

Transition Area ([WORK ZONE](#)) – the [FIRST HARMFUL EVENT](#) was located before the activity area, where lanes are shifted or tapered for lane closure, moving traffic out of its normal path.

[TRANSPORTED TO FIRST MEDICAL FACILITY BY](#) – type of unit providing transport to the first medical facility receiving the patient.

Transported, Unknown Type ([TRANSPORTED TO FIRST MEDICAL FACILITY BY](#)) - used when the person was transported to a medical treatment facility, but the type of transport (i.e., EMS, law enforcement, or other) is not known.

Traveling on Prohibited Trafficways ([RELATED FACTORS – DRIVER LEVEL](#)) - used when this driver was driving on an open trafficway that prohibited travel for the kind of vehicle they were operating. For example, driving a moped on an interstate, driving a truck where prohibited, or operating a vehicle with hazardous materials cargo where prohibited. For trucks or slower vehicles using the left lane when prohibited, use [Failed to Keep in Proper Lane](#).

Traveling Wrong-Way ([NON-MOTORIST CONTRIBUTING CIRCUMSTANCES](#)) – the non-motorist was traveling in a direction other than required by statute.

Tree (standing only) ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – tree is upright and in the ground. A standing tree is a fixed object as opposed to a fallen tree that is a moveable object.

Trees, Crops, or Vegetation ([DRIVER’S VISION OBSCURED BY](#)) - used when any of these natural features obstructed the view of the driver.

Truck Coupling, Trailer Hitch, or Safety Chains ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of the vehicle’s truck coupling, trailer hitch, or safety chains may have contributed to the occurrence or severity of the crash. This includes a defective or improper trailer hitch.

Truck Operating With Crash Attenuator Equipment ([SPECIAL USE](#)) - this vehicle was specially equipped with devices to absorb impacts from collisions and was in use as a crash attenuator at the time of the crash ([MOTOR VEHICLE UNIT TYPE](#) must equal [Working Motor Vehicle](#)).

Truck-Tractor, With or Without Trailers (bobtail, semi, doubles, or triples) ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) - a fifth-wheel-equipped tractor-trailer power unit. The number of trailing units is not a consideration. Without a trailer, it is sometimes called a bobtail.

Truck, Unknown Type ([MOTOR VEHICLE BODY TYPE CATEGORY](#)) - used when it is known that this vehicle is a truck, but there is insufficient data to classify the vehicle further.

Turning Left ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) - used when this vehicle was moving forward and turned left, changing lanes from one roadway to a different roadway (e.g., from or to a driveway, parking lot, or intersection). Excludes situations where the vehicle was leaving a parking position (see [Leaving a Parking Position](#)).

Turning Right ([VEHICLE STATUS PRIOR TO CRITICAL EVENT](#)) - used when this vehicle was moving forward and turned right, changing lanes from one roadway to a different roadway (e.g., from or to a driveway, parking lot, or intersection). Excludes situations where the vehicle was leaving a parking position (see [Leaving a Parking Position](#)).

Two Trailers ([VEHICLE TRAILING](#)) - this vehicle was pulling two [trailing units](#).

Two-Way ([TRAFFICWAY FLOW](#)) – used whenever the trafficway flows in both directions. This includes undivided (e.g., a centerline) and divided trafficways (i.e., there is a median). If the trafficway is two-way, but includes a continuous left turn lane, see [Two-Way With a Continuous Left Turn Lane](#).

Two-Way With a Continuous Left Turn Lane ([TRAFFICWAY FLOW](#)) – used whenever the trafficway flows in both directions and includes an undivided center lane that facilitates left turns by traffic from both directions. Continuous left-turn lanes are not considered painted medians.

[TYPE OF INTERSECTION](#) – Allows separation of various intersection types when the location of the [FIRST HARMFUL EVENT](#) is in an intersection or related to the use of an intersection.

[TYPE OF MOTOR CARRIER OR RESPONSIBLE ENTITY](#) - The type of business entity, individual, partnership, corporation, or organization responsible for the transportation of people or property.

U, V

Undercarriage ([DAMAGED AREAS](#)) – includes damage to the underside of the vehicle, including tires, wheels, axles, exhaust system, etc.

Undercarriage ([INITIAL CONTACT POINT](#)) - non-horizontal impacts to the underside of the vehicle or swiping or snagging of undercarriage components (e.g., axles, exhaust system). For horizontal tire or wheel impacts, select the most appropriate [Clock Point 01-12](#).

Underride ([VEHICLE UNDERRIDE OR OVERRIDE](#)) - used when this motor vehicle traveled or was pushed under another motor vehicle (including a parked or working motor vehicle) during the crash. This attribute is also used for this motor vehicle when another motor vehicle passes over it.

An example of an underride is a passenger vehicle striking the rear end or the side of a truck-tractor with a semi-trailer attached and coming to a stop under the trailer. In this example, the passenger vehicle is the underriding vehicle and the truck-tractor with a semi-trailer attached is overriding.

Underride events can occur at any plane of contact and at any angle. It is possible in an underride for a motor vehicle to pass under the other motor vehicle and emerge from the other side.

Under the Influence of Medication, Drugs, and/or Alcohol ([RELATED FACTORS – DRIVER LEVEL](#)) – This driver was under the influence of medication, drugs, and/or alcohol.

Unenclosed Passenger or Cargo Area ([SEATING POSITION](#)) – used when an occupant is in the fifth or higher numbered seat row in an unenclosed area where no defined seating exists or is using a fold-down type seat in its folded-down position. Examples include passengers riding in an open pickup bed, on top of an open double-decker bus, etc.

Unknown Fixed Object ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used when the event involves an object that is known to be fixed but the specific object cannot be determined.

Unknown if Distracted ([DRIVER DISTRACTION](#), [NON-MOTORIST DISTRACTION](#)) – used when it cannot be determined if this driver or non-motorist was distracted at the time of the crash.

Unknown if Motorized or Not Motorized ([NON-MOTORIST DEVICE TYPE](#)) - used when this non-motorist was using a transport device, but it cannot be determined if the device had a motor or not.

Unknown if Non-Motorist Was Operating a Device ([NON-MOTORIST DEVICE TYPE](#)) – used when it is not known if this non-motorist was using a transport device at the time of the crash. [PERSON TYPE](#) for this non-motorist must equal **Unknown Type of Non-Motorist**.

Unknown Object Not Fixed ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – used when the event involves an object that is known to be not fixed but the specific object cannot be determined.

Unknown Occupant Type in a Motor Vehicle In-Transport ([PERSON TYPE](#)) – used when it cannot be determined if the person was the driver or passenger, but it is known that the person was an occupant of a motor vehicle in-transport.

Unknown Type of Non-Motorist ([PERSON TYPE](#)) - used when it cannot be determined which attribute describes the non-motorist at the time they became involved in the crash. An example would be if it is unknown if the person was on foot or on a skateboard at the time they were struck.

Unknown Use of a Mobile Electronic Device ([DRIVER DISTRACTION](#)) - used when the driver was distracted from the driving task due to reaching for or using a mobile phone or other mobile electronic device, but it is unknown what they were doing with the device just prior to the crash.

Unstabilized Situation Began and All Harmful Events Occurred Off the Roadway ([RELATED FACTORS – CRASH LEVEL](#)) - used when the [unstabilized situation](#) began within the trafficway but off the roadway (travel lanes), and all harmful events occurred off the roadway. Examples:

- A vehicle stopped on the roadside begins to accelerate to enter the roadway (travel lanes) and runs into a ditch and overturns.
- A vehicle is driving along the roadside and strikes a tree stump.
- A vehicle strikes a pedestrian while driving down the road shoulder.
- A vehicle strikes a traffic sign while driving in a grassy median.

Uphill ([ROADWAY GRADE](#)) – used when the roadway on which this vehicle was traveling was ascending just prior to this vehicle’s involvement in this crash.

Urine ([ALCOHOL TEST](#)) – used when urine was the specimen type used to obtain a blood alcohol concentration for this person.

U.S. Government ([DRIVER LICENSE JURISDICTION](#)) – the driver’s license was issued by the U.S. Government, such as military or State Department Foreign Service.

U.S. Government Tags (includes military) ([MOTOR VEHICLE REGISTRATION STATE OR COUNTRY](#)) - used to indicate the license was issued by the U.S. Government, such as military or State Department Foreign Service.

USPS Mail Carrier ([SPECIAL FUNCTION](#)) – at the time of the crash this person was performing U.S. Postal Service (USPS) authorized mail carrier duties. This attribute excludes other delivery services (e.g., FedEx, UPS, Amazon).

USPS Mail Carrier ([SPECIAL USE](#)) - this vehicle was a U.S. Postal Service authorized mail carrier at the time of the crash. This includes personal vehicles being used as rural USPS-authorized mail carriers. This attribute excludes [Other Package Delivery Vehicles \(e.g., UPS, DHL, FedEx, Amazon\)](#).

U.S. State or Territory ([DRIVER LICENSE JURISDICTION](#)) – the driver’s license was issued by a U.S. State, U.S. Territory, or U.S.-owned outlying area.

Utility ([SPECIAL FUNCTION](#)) - at the time of the crash this person was performing stationary work such as repairing or maintaining electric, gas, telephone, cable, water lines, or traffic signals.

Utility ([WORK ZONE](#)) - used when there is short-term stationary work such as repairing or maintaining electric, gas, water lines, or traffic signals. The utility company must perform the work.

Utility Pole or Light Support ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – constructed for the primary function of supporting an electric line, telephone line, or other electrical or electronic transmission line or cable. This includes the support poles for roadway lighting.

Utility Trailer ([TRAILER BODY TYPE](#)) – a small trailer designed primarily to be drawn behind a passenger car or pickup truck for domestic and utility purposes, has an open-top, and is used for hauling light loads.

Van or Enclosed Box ([CARGO BODY TYPE \(POWER UNIT ONLY\)](#)) – a single-unit truck with an enclosed body integral to the frame of the motor vehicle.

Vehicle Being Pushed by Non-Motorist ([RELATED FACTORS – VEHICLE LEVEL](#)) - used when this vehicle was being pushed by a non-motorist with or without a driver at the controls.

[VEHICLE IDENTIFICATION NUMBER](#) – a unique combination of 17 alphanumeric characters assigned to a specific motor vehicle designated by the manufacturer.

Vehicle-Integrated Device or Controls ([DRIVER DISTRACTION](#)) - used when the driver is distracted from the driving task while adjusting the climate controls, audio, headlights, interior lights, windows, door locks, mirrors, seat, seat belt, steering wheel, on-board navigational and/or infotainment system, etc.

[VEHICLE NUMBER OF MOTOR VEHICLE STRIKING NON-MOTORIST](#) – number assigned to identify the first motor vehicle that struck the non-motorist in the crash.

[VEHICLE OWNER AND ADDRESS](#) - the name and address of the owner of this vehicle.

Vehicle’s Exterior Lighting System ([DRIVER’S VISION OBSCURED BY](#)) - used when this driver’s vision was obscured because the exterior lighting system (including headlights, fog

lights, etc.) of the driver's vehicle was deficient in some way. This includes being turned off or not operating properly. This response should not be used to describe inadequate lighting systems of other vehicles (e.g., oncoming motor vehicles) or for inadequate highway lighting.

[VEHICLE STATUS PRIOR TO CRITICAL EVENT](#) – the controlled maneuver for this motor vehicle, just prior to this vehicle's involvement in the crash.

[VEHICLE TOWED](#) - identifies whether the vehicle was towed or carried from the scene of the crash.

Vehicle Towing Another Motor Vehicle – Fixed Linkage ([VEHICLE TRAILING](#)) – used to identify that a vehicle was towing another motor vehicle connected by a fixed linkage. The towed vehicle will have two or more wheels on the ground. This will most commonly apply to drive-away or tow-away tow trucks. These are vehicles equipped with a mechanism designed to be attached to a towed vehicle (e.g., hoist). This attribute would also be used for saddle-mounted towed vehicles. An example of a saddle-mount unit would be a bobtail towing one or more other bobtails. This attribute does not apply to vehicles towed by being loaded on a flatbed or auto transporter.

Vehicle Towing Another Motor Vehicle – Non-Fixed Linkage ([VEHICLE TRAILING](#)) - used to identify that a vehicle was towing another motor vehicle connected by a non-fixed linkage. A non-fixed linkage includes ropes, chains, or cables.

[VEHICLE TRAILING](#) - identifies whether this vehicle had any attached trailing units or was towing another motor vehicle.

[VEHICLE UNDERRIDE OR OVERRIDE](#) - indicates whether this vehicle experienced an underride or override with another vehicle during the crash. An underride refers to this motor vehicle sliding under another motor vehicle during a crash. An override refers to this motor vehicle riding up over another motor vehicle during a crash. Either can occur with a parked or working motor vehicle.

Vehicle Used for School-Related Activity ([SPECIAL USE](#)) - a motor vehicle authorized by a school or school district for the transportation to or from a school-related activity, sponsored by a school, whether on or off school grounds. These may include sports events, band concerts, field trips, and competitions such as debate or chess tournaments. If this vehicle was used to transport passengers to or from school, see **Vehicle Used for School Transport**. See additional remarks about school buses under [SCHOOL-BUS-RELATED](#).

Vehicle Used for School Transport ([SPECIAL USE](#)) – a motor vehicle authorized by a school or school district for the transportation of any school pupil at or below the 12th-grade level to or from a public or private school. If this vehicle was used to transport passengers to or from a school-related activity, see **Vehicle Used for School-Related Activity**. See additional remarks about school buses under [SCHOOL-BUS-RELATED](#).

Vehicle Went Airborne ([SEQUENCE OF EVENTS](#)) – used when the vehicle left the ground (excludes vehicles leaving the ground during a rollover event). Examples: the vehicle drove off a cliff, the vehicle was launched into the air after striking another vehicle or after traversing a berm.

W

Waiting to Cross ([NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#)) - immediately prior to the crash, the non-motorist was waiting to cross the [roadway](#). If the person was not moving while waiting to cross, also use the attribute [Stationary \(not moving\)](#).

Wall ([FIRST HARMFUL EVENT](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) - primarily vertical structure composed of concrete, metal, timber, or stone that is not part of a [Building](#) or a [Fence](#) but typically is used for retaining earth, abating noise, and separating areas. Also included as **Wall** are headwalls (or endwalls) that are sometimes provided on culvert ends principally to protect the sides of the embankment around the culvert opening against erosion. This does not include wingwalls, which are attached to ends of bridge abutments and extend back at an angle from the roadway. Wingwalls should be coded as [Bridge Pier or Support](#).

Warning Sign (not railroad crossing) ([TRAFFIC CONTROL DEVICE](#)) – a sign intended to warn traffic of existing or potentially hazardous conditions on or adjacent to a road. For railroad crossing warning signs, see the attribute [Railroad Crossing Sign](#).

Water (standing or moving) ([ROADWAY SURFACE CONDITION](#)) - used when the roadway surface on which this vehicle was traveling just prior to this vehicle’s involvement in this crash was covered with standing or moving water. This includes flooding. If the surface was wet, without standing or moving water, see [Wet](#).

Wet ([ROADWAY SURFACE CONDITION](#)) - used when the roadway surface on which this vehicle was traveling just prior to this vehicle’s involvement in this crash was wet from rain or melted snow. If the water was standing or moving, see [Water \(standing or moving\)](#).

Wheelchair or Other Mobility Aid Device ([NON-MOTORIST DEVICE TYPE](#)) - used for a device designed primarily for use by a person with a mobility disability for the main purpose of indoor or of both indoor and outdoor locomotion and includes both human and motor-powered devices. Some resemble 3-wheeled scooters; others small 4-wheel carts; still others look like typical human-powered wheelchairs.

Wheels ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) – used when any pre-existing defects or maintenance conditions of the vehicle’s wheels may have contributed to the occurrence or severity of the crash, including the loss of lug nuts.

Windows or Windshield ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of the windows or windshield may have contributed to the occurrence or severity of the crash, such as improper tinting or cracks.

Wipers ([CONTRIBUTING CIRCUMSTANCES, MOTOR VEHICLE](#)) - used when any pre-existing defects or maintenance conditions of the vehicle’s wipers may have contributed to the occurrence or severity of the crash, including the wiper blades, motor, switches, washer fluid, washer fluid hose, reservoir, pump, nozzle, connectors, etc.

Within Designated School Zone ([RELATED FACTORS – CRASH LEVEL](#)) - used when the crash occurred in an area signed or marked as a “School Zone.” This may or may not be [SCHOOL-BUS-RELATED](#). “School Zones” are zones near or at a school that exist during months and hours when zone signing is in effect.

Working Motor Vehicle ([FIRST HARMFUL EVENT](#), [MOTOR VEHICLE UNIT TYPE](#), [SEQUENCE OF EVENTS](#), [MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE](#)) – ANSI D.16-2017 defines a working motor vehicle as a motor vehicle in the act of performing construction, maintenance, or utility work related to the [trafficway](#). The “work” may be located within open or closed portions of the trafficway, and the vehicle performing these activities can be within or outside the trafficway boundaries. A working motor vehicle at the time of the [unstabilized situation](#) is not considered “in-transport.”

Working (not incident response) ([NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT](#)) - immediately prior to the crash, the non-motorist was performing work, unrelated to incident response. Examples include construction, maintenance, or utility work, working as a crossing guard, delivering mail or packages, delivering food or groceries, operating a snow blower or lawn care equipment, etc.

Work on Shoulder or Median ([WORK ZONE](#)) – the work activity is on or involves the shoulder or median.

[WORK ZONE](#) – a crash that occurs in or related to a construction, maintenance, or utility work zone, whether workers were present at the time of the crash or not.

Work Zone Reduced Speed Limit ([TRAFFIC CONTROL DEVICE](#)) -a “Work Zone” plaque may be mounted above a speed limit sign to emphasize that a reduced speed limit is in effect within a temporary traffic control zone. An “End Work Zone Speed Limit” sign may be installed at the end of the reduced speed limit zone. A “Fines Higher,” “Fines Double,” or “\$XX Fine” plaque may be mounted below the Speed Limit sign if increased fines are imposed for traffic violations within the temporary traffic control zone. Individual signs and plaques for work zone speed limits and higher fines may be combined into a single sign or may be displayed as an assembly of signs and plaques.

Work Zone, Type Unknown ([WORK ZONE](#)) - used when there is insufficient information to distinguish between [Construction](#), [Maintenance](#), or [Utility](#).

X, Y

Yes, Alcohol Suspected ([LAW ENFORCEMENT SUSPECTS ALCOHOL INVOLVEMENT](#)) – used when alcohol is suspected to be present in this person at the time of the crash.

Yes, Drugs Suspected ([LAW ENFORCEMENT SUSPECTS DRUG INVOLVEMENT](#)) – used when drugs are suspected to be present in this person at the time of the crash.

Yes, Exceeded Speed Limit ([SPEEDING-RELATED](#)) – when a motor vehicle is traveling above the posted or statutory speed limit on certain designated roadways and/or by certain types of vehicles (e.g., for trucks, buses, motorcycles, on bridge, at night, in school zone). This attribute takes precedence over [Yes, Too Fast for Conditions](#). If the driver was racing in addition to exceeding the speed limit, then select [Yes, Racing](#).

Yes, Indication of Misuse ([HELMET USE](#)) - used when the occupant was misusing the helmet selected in [Subfield 1](#) at the time of the crash. Using an inappropriate type of helmet (e.g., wearing a bicycle helmet while riding a motorcycle) is not by itself an indication of misuse. Do not use this attribute when a helmet not used (see [None Used or Not Applicable](#)). An example of misuse is wearing the helmet backwards.

Yes, Indication of Misuse ([RESTRAINT SYSTEM USE](#)) - used when the occupant was misusing the restraints selected in [Subfield 1](#) at the time of the crash. Do not use this attribute when restraints were not used (see [None Used or Not Applicable](#)).

Yes, Marked ([NON-MOTORIST IN CROSSWALK](#)) – used when the non-motorist is in that portion of a roadway that is distinctly indicated for pedestrian crossing by lines or other markings on the surface of the roadway. It includes shared-use path crossings and crosswalks located in mid-blocks.

Yes, Number of Trailers Unknown ([VEHICLE TRAILING](#)) - used when it is known that there was at least one trailer, but the number of trailers cannot be determined.

Yes, Racing ([SPEEDING-RELATED](#)) – when two or more motor vehicles are engaged in a speed-related competition on the [trafficway](#). This attribute takes precedence over [Yes, Exceeded Speed Limit](#) and [Yes, Too Fast for Conditions](#).

Yes, Too Fast for Conditions ([SPEEDING-RELATED](#)) – traveling at a speed that was unsafe for the [road](#), weather, traffic, or other environmental conditions at the time. If the driver was also exceeding the speed limit, then select [Yes, Exceeded Speed Limit](#). If the driver was also racing, then select [Yes, Racing](#).

Yes, Unmarked ([NON-MOTORIST IN CROSSWALK](#)) – used when the non-motorist is in that portion of a roadway within the prolongations of the sidewalk edges but there are no lines or other markings on the surface of the roadway (unmarked crosswalk). There must be a sidewalk or improved path present on at least one side of the leg of the trafficway that this person is crossing for there to be an unmarked crosswalk. If there are no sidewalks or improved paths, there are no unmarked crosswalks.

Y-Intersection ([TYPE OF INTERSECTION](#)) – used when [RELATION TO JUNCTION](#) Subfield 2 equals **Intersection or Related** and the intersection is where three roadways connect and none of the roadways continue across the other roadways. The roadways form a “Y.”

Yield Sign ([TRAFFIC CONTROL DEVICE](#)) – three-sided signs that require motor vehicles to give way to other vehicles.

References

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**Appendix A: Summary of Changes to the MMUCC Guideline, 5th
Edition (2017)**

System-Populated Data Elements

Element #	Element Name	Comments
New S1	State Unique Crash ID	New data element (previously C1 Crash Identifier)
New S2	Agency (Police Jurisdiction)	New data element (previously C10 Source of Information, Subfield 2)
New S3	Police-Reported	New data element (previously C10 Source of Information, Subfield 1)
New S4	State Reportable Crash	New data element

Crash Data Elements

Element #	Element Name	Comments
Old C1	Crash Identifier	Data element moved to the new System-Populated Level (see new S1. State Unique Crash ID)
Old C2	Crash Classification	Data element removed Subfield 3 moved (see new C16. Secondary Crash)
New C1 Old C3	Crash Date	Revised element name: Crash Date <i>and Time</i> Element moved from C3 to C1 Revised element definition Revised attributes and remarks Revised subfield format New implementation suggestions Revised validation rules New alignment considerations
New C2	Crash Time	New data element (previously C3 Crash Date and Time, Subfield 1) New attributes and remarks New highway safety rationale New validation rules New alignment considerations
New C3	Date of Roadway Clearance	New data element New attributes and remarks New highway safety rationale New implementation suggestions New validation rules New alignment considerations
New C4	Time of Roadway Clearance	New data element (previously C3 Crash Date and Time, Subfield 2) New attributes and remarks New highway safety rationale New validation rules

New C5 Old C4	County or Equivalent	Revised element name: Crash County or Equivalent Element moved from C4 to C5 Revised attributes Revised remarks Format changed from GSA Geographic Locator Codes to FIPS codes Revised highway safety rationale New implementation suggestions New alignment considerations
Old C5	Crash City/Place (Political Jurisdiction)	Data element removed
C6	Global Position (Latitude, Longitude)	Revised element name: Crash Location Global Position (Latitude, Longitude) Revised element definition Revised remarks Revised highway safety rationale New alignment considerations
C7	First Harmful Event	Revised element definition New and revised attributes and remarks Revised highway safety rationale New alignment considerations
C8	Location of First Harmful Event Relative to the Trafficway	New and revised attributes and remarks Revised highway safety rationale
C9	Manner of Collision of the First Harmful Event	Revised element name: Manner of Crash Collision Impact of the First Harmful Event Revised element definition Revised attributes and remarks Revised highway safety rationale New alignment considerations
Old C10	Source of Information	Data element moved to the new System-Populated Level (see new S2. Agency (Police Jurisdiction) and S3. Police-Reported)
New C10 Old C11	Atmospheric Conditions	Revised element name: Weather Atmospheric Conditions Element moved from C11 to C10 Revised attributes and remarks Revised highway safety rationale Revised validation rules
New C11 Old C12	Light Conditions	Element moved from C12 to C11 Revised element definition Revised attributes and remarks

		Revised highway safety rationale
Old C13	<i>Roadway Surface Condition</i>	Data element moved to the Vehicle Level (see V30. Roadway Surface Condition)
New C12 Old C15	Relation to Junction	Element moved from C15 to C12 Revised element definition Revised attributes and remarks Revised highway safety rationale Revised validation rules New alignment considerations
New C13 Old C16	Type of Intersection	Element moved from C16 to C13 Revised element definition New Format Subfields removed New attributes and remarks Revised highway safety rationale New implementation suggestions New alignment considerations New figure
New C14 Old C17	School-Bus-Related	Element moved from C17 to C14 New attributes and remarks Revised highway safety rationale New alignment considerations
New C15 Old C18	Work Zone	Revised element name: <i>Work Zone-Related (Construction/Maintenance/Utility)</i> Element moved from C18 to C15 Revised element definition New attributes and remarks Revised subfields Revised highway safety rationale New implementation suggestions Revised validation rules New alignment considerations New figure
New C16	Secondary Crash	New data element (previously C2. Crash Classification, Subfield 3) New attributes and remarks New highway safety rationale New validation rules

New C17 Old C14	Related Factors – Crash Level	Revised element name: <i>Contributing Circumstances – Roadway Environment Related Factors– Crash Level</i> Element moved from C14 to C17 Revised element definition Revised attributes and remarks Revised highway safety rationale Revised validation rules New figure
New C18	Route Number or Road Name	New data element New attributes and remarks New highway safety rationale New implementation suggestions
Old C19	Crash Severity	Data element removed
Old C10	Number of Motor Vehicles Involved	Data element removed
Old C21	Number of Motorists	Data element removed
Old C22	Number of Non-Motorists	Data element removed
Old C23	Number of Non-Fatally Injured Persons	Data element removed
Old C24	Number of Fatalities	Data element removed
Old C25	Alcohol Involvement	Data element removed
Old C26	Drug Involvement	Data element removed
Old C27	Day of Week	Data element removed

Vehicle Data Elements

Element #	Element Name	Comments
New V1	Motor Vehicle Number	New data element (previously within V2 Motor Vehicle Unit Type and Number) New attributes and remarks New highway safety rationale
New V2 Old V1	Vehicle Identification Number	Element moved from V1 to V2 Revised attributes and remarks Revised highway safety rationale New implementation suggestions
New V3 Old V2	Motor Vehicle Unit Type	Revised element name: Motor Vehicle Unit Type and Number Element moved from V2 to V3 Revised element definition Revised attributes and remarks

		Subfields removed Revised highway safety rationale Revised validation rules New alignment considerations
New V4	Vehicle Owner and Address	New data element New attributes and remarks New highway safety rationale New implementation suggestions New alignment considerations
New V5 Old LV7	Motor Carrier or Responsible Entity Identification	Revised element name: Motor Carrier <i>or Responsible Entity</i> Identification Element moved from LV7 to V5 Revised element definition Revised subfields and format Revised attributes and remarks Revised highway safety rationale New implementation suggestions New validation rules
New V6	Type of Motor Carrier or Responsible Entity	New data element (previously LV7 Motor Carrier Identification, Subfield 6) New attributes and remarks New highway safety rationale
New V7	Motor Carrier or Responsible Entity Name and Address	New data element (previously LV7 Motor Carrier Identification, Subfields 4 and 5) New attributes and remarks New highway safety rationale New implementation suggestions New validation rules New alignment considerations
New V8 Old V3	Motor Vehicle Registration State or Country	Revised element name: Motor Vehicle Registration State <i>and Year or Country</i> Element moved from V3 to V8 Subfields removed New attributes and remarks New highway safety rationale New implementation suggestions
New V9 Old V4	Motor Vehicle License Plate Number	Element moved from V4 to V9 New attributes and remarks Revised highway safety rationale
New V10 Old V5	Motor Vehicle Make	Element moved from V5 to V10 New attributes and remarks Revised highway safety rationale
New V11	Motor Vehicle Model Year	Element moved from V6 to V11

Old V6		New attributes and remarks Revised highway safety rationale
New V12 Old V7	Motor Vehicle Model	Element moved from V7 to V12 New attributes and remarks Revised highway safety rationale
New V13 Old V8	Motor Vehicle Body Type Category	Element moved from V8 to V13 New and revised attributes and remarks Subfields removed New subfield added Revised highway safety rationale New alignment considerations
New V14	Power Unit Gross Vehicle Weight Rating	New data element (previously V8 Motor Vehicle Body Type Category, Subfield 3) New attributes and remarks New highway safety rationale New implementation suggestions New alignment considerations
New V15 Old LV9	Cargo Body Type (Power Unit Only)	Revised element name: Cargo Body Type (<i>Power Unit Only</i>) Element moved from LV9 to V15 New element definition Revised attributes and remarks New highway safety rationale New implementation suggestions New alignment considerations New figure
New V16 Old LV10	Hazardous Materials	Revised element name: Hazardous Materials (<i>Cargo Only</i>) Element moved from LV10 to V16 New subfields New and revised attributes and remarks Revised highway safety rationale New implementation suggestions New validation rules
New V17	Vehicle Trailing	New data element (previously V8 Motor Vehicle Body Type Category, Subfield 2) New attributes and remarks New highway safety rationale New implementation suggestions
New V18 Old LV3	Trailer VIN	Element moved from LV3 to V18 New and revised attributes and remarks Revised highway safety rationale New implementation suggestions

New V19	Trailer Body Type	New data element New attributes and remarks New highway safety rationale New implementation suggestions New alignment considerations
New V20 Old V9	Total Occupants in Motor Vehicle	Element moved from V9 to V20 Revised element definition New attributes and remarks Revised highway safety rationale Revised validation rules New alignment considerations
New V21 Old V10	Special Use	Revised element name: Special <i>Use Function of Motor Vehicle In-Transport</i> Element moved from V10 to V21 Revised element definition New and revised attributes and remarks Revised highway safety rationale
New V22	Bus Use	New data element (previously within V10 Special Function of Motor Vehicle In-Transport) New attributes and remarks New highway safety rationale
New V23 Old V11	Emergency Response	Revised element name: Emergency <i>Response Motor Vehicle Use</i> Element moved from V11 to V23 Revised element definition New format with subfields added Revised highway safety rationale New implementation suggestions
New V24 Old V12	Motor Vehicle Posted or Statutory Speed Limit	Revised element name: Motor Vehicle Posted <i>or</i> Statutory Speed Limit Element moved from V12 to V24 Revised attributes and remarks Revised highway safety rationale Revised validation rules New alignment considerations
Old V13	<i>Direction of Travel Before Crash</i>	Data element removed
Old V14	<i>Trafficway Description</i>	Data element removed. Data element split between New data elements V25. Trafficway Flow and V26. Median Barrier Presence
New V25	Trafficway Flow	New data element (previously part of V14 Trafficway Description) New attributes and remarks

		New highway safety rationale New alignment considerations
New V26	Median Barrier Presence	New data element (previously part of V14 Trafficway Description) New attributes and remarks New highway safety rationale New alignment considerations
New V27 Old V15	Number of Open Lanes in Vehicle's Environment	Revised element name: Total Lanes in Roadway Number of Open Lanes in Vehicle's Environment Element moved from V15 to V27 Revised element definition Revised format New attributes and remarks Revised highway safety rationale New alignment considerations
New V28 Old V16	Roadway Alignment	Revised element name: Roadway Alignment and Grade Element moved from V16 to V28 Revised element definition Subfields removed New attributes and remarks Revised highway safety rationale New alignment considerations
New V29	Roadway Grade	New data element (previously V16 Roadway Alignment and Grade, Subfield 2) New attributes and remarks New figure New highway safety rationale New alignment considerations
New V30	Roadway Surface Condition	Element moved from the Crash Level to Vehicle Level Revised element definition New attributes and remarks Revised highway safety rationale New alignment considerations
New V31 Old V17	Traffic Control Device	Revised element name: Traffic Control Device Type Element moved from V17 to V31 Revised element definition New and revised attributes and remarks Subfields removed Revised highway safety rationale New implementation suggestions New alignment considerations

New V32	Device Functioning	New data element (previously V17 Traffic Control Device Type, Subfield 2) New attributes and remarks New highway safety rationale New alignment considerations
New V33 Old V18	Vehicle Status Prior to Critical Event	Revised element name: Motor Vehicle Maneuver/Action Vehicle Status Prior to Critical Event Element moved from V18 to V33 New and revised attributes and remarks Revised highway safety rationale New implementation suggestions New alignment considerations
New V34 Old V19	Initial Contact Point	Revised element name: Vehicle Damage Initial Contact Point Element moved from V19 to V34 Revised element definition Subfields removed Revised attributes and remarks Revised highway safety rationale New figure New alignment considerations
New V35	Damaged Areas	New data element (previously V19 Vehicle Damage, Subfield 2) New attributes and remarks New highway safety rationale New alignment considerations
New V36	Extent of Damage	New data element (previously V19 Vehicle Damage, Subfield 3) New attributes and remarks New highway safety rationale New alignment considerations
New V37 Old V20	Sequence of Events	Element moved from V20 to V37 New and revised attributes and remarks Revised highway safety rationale New alignment considerations
New V38 Old V21	Most Harmful Event for This Motor Vehicle	Element moved from V21 to V38 New and revised attributes and remarks Revised highway safety rationale New alignment considerations
New V39 Old V22	Hit-and-Run	Element moved from V22 to V39 Revised attributes and remarks Revised highway safety rationale

		Revised validation rules New alignment considerations
New V40 Old V23	Vehicle Towed	Revised element name: <i>Vehicle</i> Towed <i>Due to Disabling Damage</i> Element moved from V23 to V40 Revised element definition New and revised attributes and remarks Revised highway safety rationale New implementation suggestions New alignment considerations
New V41 Old V24	Contributing Circumstances, Motor Vehicle	Element moved from V24 to V41 Revised element definition New and revised attributes and remarks Revised highway safety rationale
New V42	Vehicle Underride or Override	New data element New attributes and remarks New highway safety rationale
New V43	Fire Occurrence	New data element New attributes and remarks New highway safety rationale
New V44	Related Factors – Vehicle Level	New data element New attributes and remarks New highway safety rationale

Driver Data Elements

Element #	Element Name	Comments
New D1	Driver Presence	New data element New attributes and remarks New highway safety rationale New implementation suggestions New alignment considerations
New D2	Driver Address	New data element New attributes and remarks New highway safety rationale New implementation suggestions New alignment considerations
New D3 Old P11	Driver License Jurisdiction	Element moved from P11 to D3 Revised element definition New and revised attributes and remarks Revised highway safety rationale New implementation suggestions New validation rules

New D4 Old P12	Driver License Number	Revised element name: Driver License Number; <i>Class, CDL, and Endorsements</i> Element moved from P12 to D4 Subfields removed New and revised attributes and remarks Revised highway safety rationale
New D5 Old P13	Speeding-Related	Element moved from P13 to D5 New and revised attributes and remarks New alignment considerations
New D6	Driver Distraction	New data element (previously part of P18. Distracted by) New attributes and remarks New highway safety rationale New alignment considerations
New D7 Old F1	Attempted Avoidance Maneuver	Element moved from F1 to D7 New and revised attributes and remarks New highway safety rationale New alignment considerations
New D8	Driver's Vision Obscured by	New data element New attributes and remarks New highway safety rationale
New D9 Old P15	Citations Issued	Revised element name: Violations Codes <i>Citations Issued</i> Element moved from P15 to D9 Revised attributes and remarks New implementation suggestions Revised validation rules
New D10 Old P14	Related Factors – Driver Level	Revised element name: Driver Actions at Time of Crash <i>Related Factors – Driver Level</i> Element moved from P14 to D10 Revised element definition New and revised attributes and remarks New highway safety rationale New validation rules

Person Data Elements

Element #	Element Name	Comments
New P1	Person Number	New data element New attributes and remarks New highway safety rationale New implementation suggestions
New P2	Name of Person Involved	Element moved from P1 to P2

Old P1		New attributes and remarks Revised highway safety rationale New implementation suggestions
New P3 Old P2	Date of Birth	Element moved from P2 to P3 Revised element definition Subfields removed New subfields added New attributes and remarks Revised highway safety rationale New implementation suggestions New alignment considerations
New P4 Old P3	Sex or Gender	Revised element name: <i>Sex or Gender</i> Element moved from P3 to P4 Revised element definition New attributes and remarks New highway safety rationale New alignment considerations
New P5 Old P4	Person Type	Element moved from P4 to P5 New and revised attributes and remarks Subfields removed New highway safety rationale New alignment considerations
New P6	Special Function	New data element (previously P4 Person Type, Subfield 2) New attributes and remarks New highway safety rationale
New P7 Old P5	Injury Status	Element moved from P5 to P7 Revised remarks New highway safety rationale New alignment considerations
New P8 Old P24	Transported to First Medical Facility by	Element moved from P24 to P8 Revised element definition Subfields removed New and revised attributes and remarks Revised highway safety rationale
New P9	EMS Response Agency	New data element (previously P24 Transported to First Medical Facility by, Subfields 2 and 3) New attributes and remarks New highway safety rationale
New P10	Medical Facility Receiving Patient	New data element (previously P24 Transported to First Medical Facility by, Subfield 4) New attributes and remarks New highway safety rationale

New P11	EMS UUID	New data element New attributes and remarks New highway safety rationale
New P12 Old P6	Occupant's Motor Vehicle Unit Number	Element moved from P6 to P12 New remarks Revised highway safety rationale
New P13 Old P7	Seating Position	Element moved from P7 to P13 New format New and revised attributes and remarks New highway safety rationale New figure New alignment considerations
New P14 Old P8	Restraint System Use	Revised element name: Restraint Systems <i>Use</i> / Motorcycle Helmet Use Element moved from P8 to P14 Revised element definition New and revised attributes and remarks New highway safety rationale New implementation suggestions New validation rules
New P15	Helmet Use	New data element (previously part of P8 Restraint Systems/Motorcycle Helmet Use) New attributes and remarks New highway safety rationale New implementation suggestions New validation rules New alignment considerations
New P16 Old P9	Air Bag Deployed	Element moved from P9 to P16 New and revised attributes and remarks Revised highway safety rationale New alignment considerations
New P17 Old P10	Ejection	Element moved from P10 to P17 Revised attributes and remarks New highway safety rationale New implementation suggestions New alignment considerations
Old P16	Driver License Restrictions	Data element removed Refer to 10.2 Driver Data System
Old P17	Driver License Status	Data element removed Refer to 10.2 Driver Data System

Old P18	<i>Distracted by</i>	Data element removed. See new data element on the Driver Level: D6. Driver Distraction and new data element on the Non-Motorist Level: NM3. Non-Motorist Distraction
Old P19	<i>Condition at Time of the Crash</i>	Data element removed
New P18 Old P20	Law Enforcement Suspects Alcohol Involvement	Revised element name: Law Enforcement Suspects Alcohol <i>Use Involvement</i> Element moved from P20 to P18 Revised attributes and remarks New highway safety rationale New alignment considerations
New P19 Old P21	Alcohol Test	Element moved from P21 to P19 New and revised attributes and remarks New highway safety rationale New implementation suggestions New validation rules New alignment considerations
New P20 Old P22	Law Enforcement Suspects Drug Involvement	Revised element name: Law Enforcement Suspects Drug <i>Use Involvement</i> Element moved from P22 to P20 Revised attributes and remarks New highway safety rationale New alignment considerations
Old P23	<i>Drug Test</i>	Data element removed
Old P25	<i>Injury Area</i>	Data element removed
Old P26	<i>Injury Diagnosis</i>	Data element removed
Old P27	<i>Injury Severity</i>	Data element removed

Roadway Data Elements

Element #	Element Name	Comments
Old R1	<i>Bridge/Structure Identification Number</i>	Data element removed Refer to 10.3 Roadway Data System
Old R2	<i>Roadway Curvature</i>	Data element removed Refer to 10.3 Roadway Data System
Old R3	<i>Grade</i>	Data element removed Refer to 10.3 Roadway Data System
Old R4	<i>Part of National Highway System</i>	Data element removed Refer to 10.3 Roadway Data System

Old R5	<i>Roadway Functional Class</i>	Data element removed Refer to 10.3 Roadway Data System
Old R6	<i>Annual Average Daily Traffic</i>	Data element removed Refer to 10.3 Roadway Data System
Old R7	<i>Widths of Lane(s) and Shoulder(s)</i>	Data element removed Refer to 10.3 Roadway Data System
Old R8	<i>Width of Median</i>	Data element removed Refer to 10.3 Roadway Data System
Old R9	<i>Access Control</i>	Data element removed Refer to 10.3 Roadway Data System
Old R10	<i>Railway Crossing ID</i>	Data element removed Refer to 10.3 Roadway Data System
Old R11	<i>Roadway Lighting</i>	Data element removed Refer to 10.3 Roadway Data System
Old R12	<i>Pavement Markings, Longitudinal</i>	Data element removed Refer to 10.3 Roadway Data System
Old R13	<i>Presence/Type of Bicycle Facility</i>	Data element removed Refer to 10.3 Roadway Data System
Old R14	<i>Mainline Number of Lanes At Intersection</i>	Data element removed Refer to 10.3 Roadway Data System
Old R15	<i>Cross Street Number of Lanes at Intersection</i>	Data element removed Refer to 10.3 Roadway Data System
Old R16	<i>Total Volume of Entering Vehicles</i>	Data element removed Refer to 10.3 Roadway Data System

Fatal Data Elements

Element #	Element Name	Comments
Old F1	<i>Attempted Avoidance Maneuver</i>	Element moved to the Driver Level (see D7. Attempted Avoidance Maneuver)
Old F2	<i>Alcohol Test Type and Results</i>	Data element removed
Old F3	<i>Drug Test Type and Results</i>	Data element removed

Large Vehicle and Hazardous Materials Data Elements

Element #	Element Name	Comments
Old LV1	CMV License Status and Compliance with CDL Endorsements	Data element removed Refer to 10.2 Driver Data System
Old LV2	Trailer License Plate Number	Data element removed
Old LV3	Trailer VIN(s)	Data element moved to Vehicle Level (see V18. Trailer VIN)
Old LV4	Trailer Make(s)	Data element removed
Old LV5	Trailer Model(s)	Data element removed
Old LV6	Trailer Model Year(s)	Data element removed
Old LV7	Motor Carrier Identification	Data element moved to Vehicle Level (see V5. Motor Carrier or Responsible Entity Identification)
Old LV8	Vehicle Configuration	Data element removed Attributes incorporated into the Vehicle Level (see V13. Motor Vehicle Body Type Category)
Old LV9	Cargo Body Type	Data element moved to Vehicle Level Data element split between Power Unit and Trailing Units (see V15. Cargo Body Type (Power Unit Only) and V19. Trailer Body Type)
Old LV10	Hazardous Materials (Cargo-Only)	Data element moved to the Vehicle Level (see V16. Hazardous Materials)
Old LV11	Total Number of Axles	Data element removed

Non-Motorist Data Elements

Element #	Element Name	Comments
NM1	Vehicle Number of Motor Vehicle Striking Non-Motorist	Revised element name: <i>Unit Vehicle</i> Number of Motor Vehicle Striking Non-Motorist Revised element definition Revised attributes New highway safety rationale
NM2	Non-Motorist Status Prior to Critical Event-	Revised element name: Non-Motorist Action/Circumstance - <i>Status</i> Prior to Crash <i>Critical Event</i> Revised element definition Subfields removed New and revised attributes and remarks New highway safety rationale New alignment considerations

New NM3	Non-Motorist Distraction	New data element (previously part of P18. Distracted by) New attributes and remarks New highway safety rationale New alignment considerations
New NM4 Old NM3	Non-Motorist Contributing Circumstance(s)	Revised element name: Non-Motorist Contributing Action(s) /Circumstances(s) Element moved from NM3 to NM4 Revised element definition New and revised attributes and remarks New highway safety rationale New alignment considerations
Old NM4	Non-Motorist Location at Time of Crash	Data element removed and split into new data elements: NM5. Non-Motorist at Intersection , NM6. Non-Motorist in Crosswalk , and NM7. Non-Motorist Specific Location
New NM5	Non-Motorist at Intersection	New data element (previously part of NM4 Non-Motorist Location at Time of Crash) New attributes and remarks New highway safety rationale
New NM6	Non-Motorist in Crosswalk	New data element (previously part of NM4 Non-Motorist Location at Time of Crash) New attributes and remarks New highway safety rationale
New NM7	Non-Motorist Specific Location	New data element (previously part of NM4 Non-Motorist Location at Time of Crash) New attributes and remarks New highway safety rationale
New NM8 Old NM5	Non-Motorist Safety Equipment	Element moved from NM5 to NM8 New format with subfields New attributes and remarks New highway safety rationale
Old NM6	Initial Contact Point on Non-Motorist	Data element removed
New NM9	Non-Motorist Device Type	New data element New subfields, attributes, and remarks New highway safety rationale New implementation suggestions New validation rules New alignment considerations

New NM10	Non-Motorist Traffic Control Device	New data element New attributes and remarks New highway safety rationale New alignment considerations
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Dynamic Data Elements

Element #	Element Name	Comments
Old DV1	<i>Motor Vehicle Automated Driving System(s)</i>	Data element removed Attributes incorporated at the Vehicle Level (see V44. Related Factors – Vehicle Level)

Appendix B: Edit Rules

While validation rules help to maintain consistency within a data element (chapters 3 to 8), edit rules help to maintain consistency between data elements. The following edit rules can greatly enhance quality control when implemented in an electronic crash data entry system. Edit rules are intended to help avoid coding errors and inaccuracy.

Edit Rule Identification

MMUCC edit rules have a unique identifier composed of a prefix and a 3-digit sequential number. The two prefixes used in the MMUCC edit rule identifiers are “ER” for an error rule or “WR” for a warning rule.

- Violation of an error rule or “ER” indicates that the PCR contains one or more data elements with invalid values that must be corrected. An error rule or “ER” cannot be overridden in the system. ERs use the term “must.” For example:

ER.014 If FIRST HARMFUL EVENT = **Motor Vehicle In-Transport**, then MOTOR VEHICLE UNIT TYPE must = **Motor Vehicle In-Transport** for at least two vehicles.

- Warning rules or “WR” are intended to inform the user that one or more data elements may contain invalid values, and those elements should be double-checked to confirm the information is correct. A warning rule or “WR” can be overridden in the system if necessary. WRs use the term “should.” For example:

WR.005 If BUS USE = **School** for at least 1 vehicle, then SCHOOL-BUS-RELATED should = **Yes**.

MMUCC Warning Rules

WR.001 If FIRST HARMFUL EVENT = **Cable Barrier, Concrete Traffic Barrier, Guardrail Face, Guardrail End, Traffic Sign or Support, Traffic Signal or Support, Utility Pole or Light Support, Curb, Ditch, or Embankment**, then LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY should = **On Roadside, On Median, Pedestrian Refuge Island or Traffic Island, Separator, or Gore**.

WR.002 If ATMOSPHERIC CONDITIONS = **Freezing Rain, Rain, Sleet or Hail, or Snow**, then ROADWAY SURFACE CONDITION should not = **Dry** for any vehicle record.

WR.003 If CRASH TIME = between 1800 and 0700 and months *x* to *y*, LIGHT CONDITION should = **Dawn, Dusk, Dark – Lighted, Dark – Not Lighted, or Dark – Unknown Lighting**.

Note: States should adjust the time period to fit their situation.

WR.004 If CRASH TIME = between 0700 and 1500, and months *x* to *y*, LIGHT CONDITION should = **Daylight**.

Note: States should adjust the time period to fit their situations.

WR.005 If BUS USE = **School** for at least 1 vehicle, then SCHOOL-BUS-RELATED should = **Yes**.

- WR.006 If FIRST HARMFUL EVENT = **Working Motor Vehicle**, then WORK ZONE Subfield 1 should = **Construction, Maintenance, Utility, or Work Zone, Type Unknown**, and Subfields 2, 3, 4, and 5 should not = **Not Applicable (Not Within or Related to a Work Zone)**.
- WR.007 If MOTOR VEHICLE MODEL YEAR is not = **Unknown**, then MOTOR VEHICLE MODEL YEAR should not be greater than CRASH DATE Year plus 1.
- WR.008 If SCHOOL-BUS-RELATED = **Yes**, then SPECIAL USE should = **Vehicle Used for School Transport or Vehicle Used for School-Related Activity** for at least one vehicle.
- WR.009 If SCHOOL-BUS-RELATED = **Yes**, then BUS USE should = **School** for at least one vehicle.
- WR.010 If CRASH DATE Month = **May, June, July, August, or September**, then ROADWAY SURFACE CONDITION should not = **Ice or Frost, Slush, or Snow**.
Note: States should adjust the months to fit their situations.
- WR.011 If any SEQUENCE OF EVENTS = **Traffic Sign or Support** for any vehicle, then TRAFFIC CONTROL DEVICE should = **Stop Sign; Yield Sign; Railroad Crossing Sign; School Zone Sign or Device; Work Zone Reduced Speed Limit; Warning Sign (not railroad crossing); Other Regulatory Sign; or Regulatory Sign, Type Unknown** for at least one vehicle.
- WR.012 If any SEQUENCE OF EVENTS = **Traffic Signal or Support** for any vehicle, then TRAFFIC CONTROL DEVICE should = **Traffic Control Signal; Flashing Traffic Control Signal; Lane Use Control Signal; Railroad Flashing-Light Signal With Gates; Railroad Flashing-Light Signal Without Gates; Other Traffic Signal; or Unknown Traffic Signal** for at least one vehicle.
- WR.013 If SEATING POSITION = **Enclosed Passenger or Cargo Area**, then MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1, Body Type Category should = **Limousine, Passenger Van, School Bus, Transit Bus, Motorcoach, or Other Large Passenger or Bus**.
- WR.014 If any AIR BAG DEPLOYED = **Curtain; Front; Side (door or seatback); Other (knee, airbelt, etc.); Combination; Deployed-Unknown Location; or Deployment Unknown**; then MOTOR VEHICLE MODEL YEAR should be greater than 1997 for the vehicle identified in OCCUPANT'S MOTOR VEHICLE UNIT NUMBER.
- WR.015 If any AIR BAG DEPLOYED = **Curtain; Front; Side (door or seatback); Other (knee, airbelt, etc.); Combination; Deployed-Unknown Location; or Deployment Unknown**, then SEATING POSITION should = **Front Row, Left Side; Front Row, Right Side; Second Row, Left Side; Second Row, Right Side; Third Row, Left Side; or Third Row, Right Side**.
- WR.016 If SPEEDING-RELATED = **Yes, Exceeded Speed Limit**, then MOTOR VEHICLE POSTED OR STATUTORY SPEED LIMIT should not = **Not Applicable or Unknown**.

- WR.017 If SPEEDING-RELATED = **Yes, Racing; Yes, Exceeded Speed Limit; or Yes, Too Fast for Conditions**, then CITATIONS ISSUED should not = **None** or **Unknown**.
- WR.018 If LAW ENFORCEMENT SUSPECTS ALCOHOL INVOLVEMENT = **Yes, Alcohol Suspected**, then ALCOHOL TEST Subfield 1: Test Status should = **Test Given**.
- WR.019 If NON-MOTORIST CONTRIBUTING CIRCUMSTANCES = **Dart or Dash**, then NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT should = **Crossing**.
- WR.020 If MODEL YEAR is greater than 1981, then VEHICLE IDENTIFICATION NUMBER should be 17 characters.
- WR.021 If FIRST HARMFUL EVENT = **Striking or Struck by Object, Cargo, or Person From Other Motor Vehicle In-Transport**, then MANNER OF COLLISION OF THE FIRST HARMFUL EVENT should = **Other**.
- WR.022 If BUS USE = **School**, then SPECIAL USE should = **Vehicle Used for School Transport** or **Vehicle Used for School-Related Activity**.
- WR.023 If SPECIAL USE = **Vehicle Used for School Transport**, then BUS USE should = **School**.
- WR.024 If SPECIAL USE = **Vehicle Used for School Transport**, then SCHOOL-BUS-RELATED should = **Yes**.

MMUCC Error Rules

- ER.001 GLOBAL POSITION (LATITUDE, LONGITUDE) must be within the boundary of COUNTY OR EQUIVALENT.
- ER.002 If FIRST HARMFUL EVENT = **Non-Motorist**, then at least one person record must have PERSON TYPE = **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying; Bicyclist; Other Cyclist; Pedestrian on Personal Conveyance; Pedestrian in or on a Building; or Unknown Type of Non-Motorist**.
- ER.003 If FIRST HARMFUL EVENT = **Motor Vehicle In-Transport**, then MANNER OF COLLISION OF THE FIRST HARMFUL EVENT must = **Angle; Front to Front; Front-to-Rear or Rear-to-Front; Rear to Rear; Rear to Side or Side to Rear; Sideswipe, Opposite Direction; Sideswipe, Same Direction; Other; or Unknown**.
- ER.004 If FIRST HARMFUL EVENT = **Parked Motor Vehicle**, then VEHICLE STATUS PRIOR TO CRITICAL EVENT must = **Parked** for at least one vehicle.
- ER.005 If any SEQUENCE OF EVENTS = **Non-Motorist**, then VEHICLE NUMBER OF MOTOR VEHICLE STRIKING NON-MOTORIST, NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT, NON-MOTORIST DISTRACTION, NON-MOTORIST CONTRIBUTING CIRCUMSTANCES, NON-MOTORIST AT INTERSECTION, NON-MOTORIST IN CROSSWALK, NON-MOTORIST SPECIFIC LOCATION, NON-MOTORIST SAFETY EQUIPMENT, NON-

MOTORIST DEVICE TYPE, and NON-MOTORIST TRAFFIC CONTROL DEVICE must not = null.

- ER.006 If FIRST HARMFUL EVENT does not = **Motor Vehicle In-Transport**, then MANNER OF COLLISION OF THE FIRST HARMFUL EVENT must = **The First Harmful Event Was Not a Collision With a Motor Vehicle In-Transport**.
- ER.007 FIRST HARMFUL EVENT must = a SEQUENCE OF EVENTS harmful event for at least one vehicle.
- ER.008 If FIRST HARMFUL EVENT = **Harmful Event, Details Unknown**, then MANNER OF COLLISION OF THE FIRST HARMFUL EVENT must = **Unknown**.
- ER.009 If LOCATION OF FIRST HARMFUL EVENT RELATIVE TO THE TRAFFICWAY = **In Parking Lane or Zone**, then RELATION TO JUNCTION Subfield 1, Within Interchange Area must not = **Yes**.
- ER.010 If TYPE OF INTERSECTION = **Not an Intersection**, then RELATION TO JUNCTION Subfield 2: Specific Location must not = **Intersection or Related**.
- ER.011 If TYPE OF INTERSECTION = **T-Intersection, Y-Intersection, L-Intersection, Four-Leg Intersection, Five or More Legs and Not Circular, Circular Intersection (e.g., Roundabout, Traffic Circle)**, or **Other Intersection Type**, then RELATION TO JUNCTION Subfield 2: Specific Location must = **Intersection or Related**.
- ER.012 If RELATION TO JUNCTION Subfield 2: Specific Location = **Non-Junction, Acceleration or Deceleration Lane, Crossover-Related, Driveway Access or Related, Entrance or Exit Ramp or Related, Railway Grade Crossing, Shared-Use Path or Trail, Through Roadway, Other Location Within an Interchange Area (median, shoulder, and roadside)**, or **Unknown**, then TYPE OF INTERSECTION must = **Not an Intersection**.
- ER.013 If RELATION TO JUNCTION Subfield 2: Specific Location = **Intersection or Related**, then TYPE OF INTERSECTION must = **T-Intersection, Y-Intersection, L-Intersection, Four-Leg Intersection, Five or More Legs and Not Circular, Circular Intersection (e.g., Roundabout, Traffic Circle)**, or **Other Intersection Type**.
- ER.014 If FIRST HARMFUL EVENT = **Motor Vehicle In-Transport**, then MOTOR VEHICLE UNIT TYPE must = **Motor Vehicle In-Transport** for at least two vehicles.
- ER.015 If FIRST HARMFUL EVENT = **Parked Motor Vehicle**, then MOTOR VEHICLE UNIT TYPE must = **Parked Motor Vehicle** for at least one vehicle and **Motor Vehicle In-Transport** for at least one other vehicle.
- ER.016 If FIRST HARMFUL EVENT = **Working Motor Vehicle**, then MOTOR VEHICLE UNIT TYPE must = **Working Motor Vehicle** for at least one vehicle and **Motor Vehicle In-Transport** for at least one other vehicle.

- ER.017 If MOTOR VEHICLE UNIT TYPE = **Motor Vehicle In-Transport**, then VEHICLE STATUS PRIOR TO CRITICAL EVENT must not = **Parked** for the same vehicle.
- ER.018 If MOTOR VEHICLE UNIT TYPE = **Parked Motor Vehicle**, then VEHICLE STATUS PRIOR TO CRITICAL EVENT must = **Parked** for the same vehicle.
- ER.019 If VEHICLE TRAILING = **No Trailers**, then TRAILER VIN Subfield 1: First Trailer must = **No trailing units**; Subfield 2: Second Trailer must = **No trailing units**; and Subfield 3: Third Trailer must = **No trailing units**.
- ER.020 If VEHICLE TRAILING = **One Trailer**, then TRAILER VIN Subfield 1: First Trailer must = **No VIN Required, Not a Vehicle for Road Use**; an actual VIN; or **Unknown (information unavailable)**; Subfield 2: Second Trailer must = **No trailing units**; and Subfield 3: Third Trailer must = **No trailing units**.
- ER.021 If VEHICLE TRAILING = **Two Trailers**, then TRAILER VIN Subfield 1: First Trailer must = **No VIN Required, Not a Vehicle for Road Use**; an actual VIN; or **Unknown (information unavailable)**; Subfield 2: Second Trailer must = **No VIN Required, Not a Vehicle for Road Use**; an actual VIN; or **Unknown (information unavailable)**; and Subfield 3: Third Trailer must = **No trailing units**.
- ER.022 If VEHICLE TRAILING = **Three or More Trailers**, then TRAILER VIN Subfield 1: First Trailer must = **No VIN Required, Not a Vehicle for Road Use**; an actual VIN; or **Unknown (information unavailable)**; Subfield 2: Second Trailer must = **No VIN Required, Not a Vehicle for Road Use**; an actual VIN; or **Unknown (information unavailable)**; and Subfield 3: Third Trailer must = **No VIN Required, Not a Vehicle for Road Use**; an actual VIN; or **Unknown (information unavailable)**.
- ER.023 If VEHICLE TRAILING = **No Trailers**, then TRAILER BODY TYPE Subfield 1: First Trailer must = **No Trailer**; Subfield 2: Second Trailer must = **No Trailer**; and Subfield 3: Third Trailer must = **No Trailer**.
- ER.024 If VEHICLE TRAILING = **One Trailer**, then TRAILER BODY TYPE Subfield 1: First Trailer must not = **No Trailer**; Subfield 2: Second Trailer must = **No Trailer**; and Subfield 3: Third Trailer must = **No Trailer**.
- ER.025 If VEHICLE TRAILING = **Two Trailers**, then TRAILER BODY TYPE Subfield 1: First Trailer must not = **No Trailer**; Subfield 2: Second Trailer must not = **No Trailer**; and Subfield 3: Third Trailer must = **No Trailer**.
- ER.026 If VEHICLE TRAILING = **Three or More Trailers**, then TRAILER BODY TYPE Subfield 1: First Trailer must not = **No Trailer**; Subfield 2: Second Trailer must not = **No Trailer**; and Subfield 3: Third Trailer must not = **No Trailer**.
- ER.027 If MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1: Body Type Category = **Passenger Van, School Bus, Transit Bus, Motorcoach, or Other Large Passenger or Bus**; then BUS USE must = **Childcare or Daycare; School; Intercity; Charter or Tour; Transit or Commuter; Shuttle; Personal Use; Bus, Unknown Use**; or **Unknown**.

- ER.028 If EMERGENCY RESPONSE Subfield 1: Engaged in Emergency Response = **Yes**, then SPECIAL USE must = **Fire Truck, Military, Ambulance, Law Enforcement, Other Emergency Services Vehicle, Safety Service Patrols – Incident Response, Towing - Incident Response, or Other Incident Response.**
- ER.029 If VEHICLE STATUS PRIOR TO CRITICAL EVENT = **Parked**, then MOTOR VEHICLE UNIT TYPE must = **Parked Motor Vehicle.**
- ER.030 If DAMAGED AREAS = **No Damage**, then EXTENT OF DAMAGE must = **No Damage.**
- ER.031 If any SEQUENCE OF EVENTS = **Non-Motorist**, then at least one person record must have PERSON TYPE = **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying; Bicyclist; Other Cyclist; Pedestrian on Personal Conveyance; Pedestrian in or on a Building; or Unknown Type of Non-Motorist.**
- ER.032 If MOTOR VEHICLE UNIT TYPE = **Motor Vehicle In-Transport** for this vehicle and any SEQUENCE OF EVENTS = **Motor Vehicle In-Transport**, then there must be at least one other vehicle record with MOTOR VEHICLE UNIT TYPE = **Motor Vehicle In-Transport.**
- ER.033 If MOTOR VEHICLE UNIT TYPE = **Motor Vehicle In-Transport** for this vehicle and any SEQUENCE OF EVENTS = **Parked Motor Vehicle**, then there must be at least one other vehicle record with MOTOR VEHICLE UNIT TYPE = **Parked Motor Vehicle.**
- ER.034 If MOTOR VEHICLE UNIT TYPE = **Motor Vehicle In-Transport** for this vehicle and any SEQUENCE OF EVENTS = **Working Motor Vehicle**, then there must be at least one other vehicle record with MOTOR VEHICLE UNIT TYPE = **Working Motor Vehicle.**
- ER.035 If SEQUENCE OF EVENTS includes only one harmful event for this vehicle, then MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE must = that same harmful event.
- ER.036 If any SEQUENCE OF EVENTS = **Cross Centerline**, then TRAFFICWAY FLOW must = **Two-Way** or **Two-Way With a Continuous Left-Turn Lane** and MEDIAN BARRIER PRESENCE must = **Not Applicable (no median, e.g., centerline, two-way left-turn lane)** for this vehicle.
- ER.037 If any SEQUENCE OF EVENTS = **Cross Median**, then TRAFFICWAY FLOW must = **Two-Way** and MEDIAN BARRIER PRESENCE must = **Median Without a Traffic Barrier (e.g., grass, vegetation, flush or painted > 4', curb) or Median With Traffic Barrier (e.g., guardrail, cable barrier, concrete barrier).**
- ER.0038 If MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE = **Non-Motorist**, then PERSON TYPE must = **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying; Bicyclist; Other Cyclist; Pedestrian on Personal Conveyance; Pedestrian in or on a Building; or Unknown Type of Non-Motorist** for at least one person record.
- ER.039 At least one SEQUENCE OF EVENTS for this vehicle must = the MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE.

- ER.040 The MOST HARMFUL EVENT FOR THIS MOTOR VEHICLE must = at least one SEQUENCE OF EVENTS for this vehicle.
- ER.041 If PERSON TYPE = **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying; Bicyclist; Other Cyclist; Pedestrian on Personal Conveyance; Pedestrian in or on a Building; Occupant of a Non-Motor Vehicle Transport Device;** or **Unknown Type of Non-Motorist**, then VEHICLE NUMBER OF MOTOR VEHICLE STRIKING NON-MOTORIST, NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT, NON-MOTORIST DISTRACTION, NON-MOTORIST CONTRIBUTING CIRCUMSTANCES, NON-MOTORIST AT INTERSECTION, NON-MOTORIST IN CROSSWALK, NON-MOTORIST SPECIFIC LOCATION, NON-MOTORIST SAFETY EQUIPMENT, NON-MOTORIST DEVICE TYPE, and NON-MOTORIST TRAFFIC CONTROL DEVICE must not = null.
- ER.042 If PERSON TYPE = **Driver of a Motor Vehicle In-Transport, Passenger of a Motor Vehicle In-Transport,** or **Unknown Occupant Type in a Motor Vehicle in-Transport**, then MOTOR VEHICLE UNIT TYPE must = **Motor Vehicle In-Transport** for the vehicle number identified in OCCUPANT'S MOTOR VEHICLE UNIT NUMBER.
- ER.043 If PERSON TYPE = **Occupant of Motor Vehicle Not In-Transport**, then MOTOR VEHICLE UNIT TYPE must = **Parked Motor Vehicle** or **Working Motor Vehicle** for the vehicle number identified in OCCUPANT'S MOTOR VEHICLE UNIT NUMBER.
- ER.044 If MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1, Body Type Category = **Moped, 2-Wheeled Motorcycle, 3-Wheeled Motorcycle (trike), All-Terrain Vehicle or All-Terrain Cycle (ATV or ATC),** or **Snowmobile** for the vehicle in OCCUPANT'S MOTOR VEHICLE UNIT NUMBER, then RESTRAINT SYSTEM USE Subfield 1: Type of Restraint System in Use must = **None Used or Not Applicable**.
- ER.045 If RESTRAINT SYSTEM USE Subfield 1: Type of Restraint System in Use = **Shoulder and Lap Belt Used, Lap Belt Only Used, Shoulder Belt Only Used, Booster Seat, Child Restraint System – Forward-Facing, Child Restraint System – Rear-Facing, Child Restraint – Type Unknown, Racing-Style Harness Used,** or **Restraint Used – Type Unknown**, then MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1: Body Type Category must = **Passenger Car; Sport Utility Vehicle; Mini-Van or Van (up to 8 seats); Motor Home or Recreational Vehicle; Limousine; Passenger Van; School Bus; Transit Bus; Motorcoach; Other Large Passenger or Bus; Cargo Van; Pickup Truck; Single-Unit Truck (2 axles and GVWR > 10,000 lb); Single-Unit Truck (3 or more axles); Truck-Tractor, With or Without Trailers (bobtail, semi, doubles, or triples); Truck, Unknown Type; Construction Equipment (e.g., backhoe, bulldozer, forklift); Farm Equipment (e.g., tractor, combine harvester); Golf Cart; Multipurpose Off-Highway Utility Vehicle (MOHUV) or Recreational Off-Highway Vehicle (ROV); Low-Speed Vehicle; Autocycle;** or **Other** for the vehicle identified in OCCUPANT'S MOTOR VEHICLE UNIT NUMBER.

- ER.046 If MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1: Body Type Category = **Passenger Car; Sport Utility Vehicle; Mini-Van or Van (up to 8 seats); Motor Home or Recreational Vehicle; Limousine; Passenger Van; School Bus; Transit Bus; Motorcoach; Other Large Passenger or Bus; Cargo Van; Pickup Truck; Single-Unit Truck (2 axles and GVWR > 10,000 lb); Single-Unit Truck (3 or more axles); Truck-Tractor, With or Without Trailers (bobtail, semi, doubles, or triples); Truck, Unknown Type; Construction Equipment (e.g., backhoe, bulldozer, forklift); or Farm Equipment (e.g., tractor, combine harvester)** for the vehicle in OCCUPANT'S MOTOR VEHICLE UNIT NUMBER, then HELMET USE Subfield 1: Helmet Use must = **Not Applicable** and HELMET USE Subfield 2: Indication of Helmet Misuse must = **None Used or Not Applicable**.
- ER.047 If MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1: Body Type Category = **All-Terrain Vehicle or All-Terrain Cycle (ATV or ATC), Snowmobile, Moped, 2-Wheeled Motorcycle, or 3-Wheeled Motorcycle (trike)** for the vehicle identified in OCCUPANT'S MOTOR VEHICLE UNIT NUMBER, then HELMET USE Subfield 1: Helmet Use must = **No Helmet; DOT-Compliant Motorcycle Helmet; Helmet, Other Than DOT-Compliant Motorcycle Helmet; Helmet, Unknown If DOT-Compliant; or Unknown if Helmet Worn**.
- ER.048 If AIR BAG DEPLOYED = **Front**, then SEATING POSITION must = **Front Row, Left Side; Front Row, Middle; Front Row, Right Side; Front Row, Other; or Front Row, Unknown**.
- ER.049 If MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1: Body Type Category = **Moped or 2-Wheeled Motorcycle** for the vehicle in OCCUPANT'S MOTOR VEHICLE UNIT NUMBER, then EJECTION must = **Not Applicable**.
- ER.050 If EJECTION = **Not Ejected, Partially Ejected, or Totally Ejected**, then SEATING POSITION must not = **Riding on Exterior of Vehicle (non-trailing unit) or Appended to a Motor Vehicle for Motion**.
- ER.051 If RELATED FACTORS - DRIVER LEVEL = **Not Applicable (no driver)**, then ATTEMPTED AVOIDANCE MANEUVER must = **No Driver Present or Unknown if Driver Present**.
- ER.052 If ATTEMPTED AVOIDANCE MANEUVER = **Lay Down Motorcycle**, then MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1: Body Type Category must = **2-Wheeled Motorcycle** for this vehicle.
- ER.053 If MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1: Body Type Category = **School Bus, Transit Bus, or Motorcoach**, then CARGO BODY TYPE (POWER UNIT ONLY) must = **Bus**.
- ER.054 If NON-MOTORIST CONTRIBUTING CIRCUMSTANCES = **Improper Passing or Improper Turn or Merge**, then PERSON TYPE must = **Bicyclist, Other Cyclist, Pedestrian on Personal Conveyance, Occupant of a Non-Motor Vehicle Transport Device, or Unknown Type of Non-Motorist**.

- ER.055 If NON-MOTORIST CONTRIBUTING CIRCUMSTANCES = **Distracted**, then NON-MOTORIST DISTRACTION must = **Mobile-Electronic-Device-Related** or **Other Distractions**.
- ER.056 If NON-MOTORIST AT INTERSECTION = **Yes** and FIRST HARMFUL EVENT = **Non-Motorist**, then TYPE OF INTERSECTION must = **T-Intersection, Y-Intersection, L-Intersection, Four-Leg Intersection, Five or More Legs and Not Circular, Circular Intersection (e.g., Roundabout, Traffic Circle)**, or **Other Intersection Type** and RELATION TO JUNCTION Subfield 2: Specific Location must = **Intersection or Related**.
- ER.057 If NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type = **None (no device)**, then PERSON TYPE must = **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying** or **Pedestrian in or on a Building**.
- ER.058 If PERSON TYPE = **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying** or **Pedestrian in or on a Building**, then NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type must = **None (no device)**.
- ER.059 If NON-MOTORIST DEVICE TYPE, Subfield 2: Device Motorization = **Not Applicable**, then PERSON TYPE must = **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying; Pedestrian in or on a Building; Occupant of a Non-Motor Vehicle Transport Device; or Unknown Type of Non-Motorist**.
- ER.060 If PERSON TYPE = **Pedestrian Walking, Running, Jogging, Hiking, Sitting, Lying; Pedestrian in or on a Building; Occupant of a Non-Motor Vehicle Transport Device; or Unknown Type of Non-Motorist**, then NON-MOTORIST DEVICE TYPE, Subfield 2: Device Motorization must = **Not Applicable**.
- ER.061 If PERSON TYPE = **Unknown Type of Non-Motorist**, then NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type must = **Unknown if Non-Motorist Was Operating a Device**.
- ER.062 If NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type = **Unknown if Non-Motorist Was Operating a Device**, then PERSON TYPE must = **Unknown Type of Non-Motorist**.
- ER.063 If NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type = **Bicycle**, then PERSON TYPE must = **Bicyclist**.
- ER.064 If PERSON TYPE = **Bicyclist**, then NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type must = **Bicycle**.
- ER.065 If NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type = **Other Cycle**, then PERSON TYPE must = **Other Cyclist**.
- ER.066 If PERSON TYPE = **Other Cyclist**, then NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type must = **Other Cycle**.
- ER.067 If NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type = **Ridden Animal or Animal-Drawn Conveyance** or **Railroad Vehicle** or **Road Vehicle on Rails**, then PERSON TYPE must = **Occupant of a Non-Motor Vehicle Transport Device**.

- ER.068 If PERSON TYPE = **Occupant of a Non-Motor Vehicle Transport Device**, then NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type must = **Ridden Animal or Animal-Drawn Conveyance or Railroad Vehicle or Road Vehicle on Rails**.
- ER.069 If NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type = **Wheelchair or Other Mobility Aid Device, Skates, Skateboard, Self-Balancing Board, Scooter (standing or seated), Personal Conveyance, Other, or Personal Conveyance, Unknown Type**, then PERSON TYPE must = **Pedestrian on Personal Conveyance**.
- ER.070 If PERSON TYPE = **Pedestrian on Personal Conveyance**, then NON-MOTORIST DEVICE TYPE, Subfield 1: Device Type must = **Wheelchair or Other Mobility Aid Device, Skates, Skateboard, Self-Balancing Board, Scooter (standing or seated), Personal Conveyance, Other, or Personal Conveyance, Unknown Type**.
- ER.071 If TRANSPORTED TO FIRST MEDICAL FACILITY BY = **Not Transported for Treatment**, then EMS RESPONSE AGENCY Subfields 1 and 2 and MEDICAL FACILITY RECEIVING PATIENT must = null.
- ER.072 If MOTOR CARRIER OR RESPONSIBLE ENTITY IDENTIFICATION Subfield 1: U.S. DOT Number = an actual number or Subfield 2: MC or MX (ICC) Number = an actual number, then TYPE OF MOTOR CARRIER OR RESPONSIBLE ENTITY must = **Interstate Motor Carrier or Intrastate Motor Carrier**.
- ER.073 If POWER UNIT GROSS VEHICLE WEIGHT RATING = **Light (10,000 lb or less GVWR)** and HAZARDOUS MATERIALS Subfields 1 and 2 both = **No**, then CARGO BODY TYPE (POWER UNIT ONLY) must = **Not Applicable (motor vehicle 10,000 lb or less, not displaying hazardous materials placard)**.
- ER.074 If POWER UNIT GROSS VEHICLE WEIGHT RATING = **Medium (10,001 – 26,000 lb GVWR)** or **Heavy (Greater than 26,000 lb GVWR)**, then CARGO BODY TYPE (POWER UNIT ONLY) must not = **Not Applicable (motor vehicle 10,000 lb or less, not displaying hazardous materials placard)**.
- ER.075 If POWER UNIT GROSS VEHICLE WEIGHT RATING = **Medium (10,001 – 26,000 lb GVWR)** or **Heavy (Greater than 26,000 lb GVWR)** and MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1: Body Type Category = **Pickup Truck**, then CARGO BODY TYPE (POWER UNIT ONLY) must = **Other (carrying capability not listed, pickup 10,001 lb or more, etc.)**.
- ER.076 If MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1: Body Type Category = **Truck-Tractor, With or Without Trailers (bobtail, semi, doubles, or triples)**, then CARGO BODY TYPE (POWER UNIT ONLY) must = **No Cargo Body (bobtail, fire truck, tow truck, light Motor Vehicle with hazardous materials placard, etc.)**.
- ER.077 If VEHICLE TRAILING = **Vehicle Towing Another Motor Vehicle – Fixed Linkage or Vehicle Towing Another Motor Vehicle – Non-Fixed Linkage**, then at least one TRAILER BODY TYPE Subfield must = **Towed Vehicle**.

- ER.078 If NON-MOTORIST STATUS PRIOR TO CRITICAL EVENT = **Incident Responder Working**, then SPECIAL FUNCTION must = **Emergency Medical Service (EMS), Fire and Rescue, Law Enforcement, Towing and Recovery, or Safety Service Patrol** for this person.
- ER.079 If SEQUENCE OF EVENTS values for this motor vehicle do not include **Motor Vehicle In-Transport, Parked Motor Vehicle, or Working Motor Vehicle**, then VEHICLE UNDERRIDE OR OVERRIDE must = **None or Not Applicable** for this vehicle.
- ER.080 If TRAFFIC CONTROL DEVICE = **No Traffic Controls**, then DEVICE FUNCTIONING must = **No Controls**.
- ER.081 If DEVICE FUNCTIONING = **No Controls**, then TRAFFIC CONTROL DEVICE must = **No Traffic Controls**.
- ER.082 If this vehicle's first harmful event in its SEQUENCE OF EVENTS = **Rollover or Overturn; Cargo or Equipment Loss, Shift, or Damage (harmful); Fell or Jumped From Motor Vehicle; Fire or Explosion; Immersion, Full or Partial; Jackknife (harmful to this vehicle); Thrown or Falling Object; Pavement Surface Irregularity (ruts, potholes, grates, etc.); or Other Non-Collision**, then INITIAL CONTACT POINT must = **Non-Collision** for this vehicle.
- ER.083 If INITIAL CONTACT POINT = **Non-Collision**, then this vehicle's first harmful event in its SEQUENCE OF EVENTS must = **Rollover or Overturn; Cargo or Equipment Loss, Shift, or Damage (harmful); Fell or Jumped From Motor Vehicle; Fire or Explosion; Immersion, Full or Partial; Jackknife (harmful to this vehicle); Thrown or Falling Object; Pavement Surface Irregularity (ruts, potholes, grates, etc.); or Other Non-Collision**.
- ER.084 If EXTENT OF DAMAGE = **No Damage**, then DAMAGED AREAS must = **No Damage**.
- ER.085 If SEQUENCE OF EVENTS values for this motor vehicle do not include **Fire or Explosion**, then FIRE OCCURRENCE must = **No** for this vehicle.
- ER.086 If SEQUENCE OF EVENTS values for this motor vehicle includes **Fire or Explosion**, then FIRE OCCURRENCE must = **Yes** for this vehicle.
- ER.087 If DRIVER PRESENCE = **No Driver Present or Not Applicable**, then DRIVER ADDRESS must = **No Driver Present or Unknown if Driver Present**.
- ER.088 If DRIVER PRESENCE = **No Driver Present or Not Applicable**, then DRIVER LICENSE JURISDICTION Subfield 1: Type must = **Not Applicable** and Subfield 2: ANSI State FIPS or ISO County Code must = **Not Applicable**.
- ER.089 If DRIVER PRESENCE = **No Driver Present or Not Applicable**, then DRIVER LICENSE NUMBER must = **No Driver Present or Unknown if Driver Present**.
- ER.090 If DRIVER PRESENCE = **No Driver Present or Not Applicable**, then SPEEDING-RELATED must = **No**.
- ER.091 If DRIVER PRESENCE = **No Driver Present or Not Applicable**, then DRIVER DISTRACTION must = **No Driver Present or Unknown if Driver Present**.

- ER.092 If DRIVER PRESENCE = **No Driver Present or Not Applicable**, then ATTEMPTED AVOIDANCE MANEUVER must = **No Driver Present or Unknown if Driver Present**.
- ER.093 If DRIVER PRESENCE = **No Driver Present or Not Applicable**, then DRIVER'S VISION OBSCURED BY must = **No Driver Present or Unknown if Driver Present**.
- ER.094 If DRIVER PRESENCE = **No Driver Present or Not Applicable**, then RELATED FACTORS – DRIVER LEVEL must = **Not Applicable (no driver)**.
- ER.095 If DRIVER LICENSE JURISDICTION Subfields 1 and 2 = **Not Licensed**, then DRIVER LICENSE NUMBER must = **Not Licensed**.
- ER.096 If MANNER OF COLLISION OF THE FIRST HARMFUL EVENT = **Sideswipe, Same Direction** or **Sideswipe, Opposite Direction**, then there must be at least two vehicles with INITIAL CONTACT POINT = **01-05, 07-11**, or **Unknown**.
- ER.097 If MANNER OF COLLISION OF THE FIRST HARMFUL EVENT = **Front-to-Rear** or **Rear-to-Front**, then INITIAL CONTACT POINT for one vehicle in the FIRST HARMFUL EVENT must = **12**, and INITIAL CONTACT POINT for the other vehicle in the FIRST HARMFUL EVENT must = **06**.
- ER.098 If MANNER OF COLLISION OF THE FIRST HARMFUL EVENT = **Front-to-Front**, then INITIAL CONTACT POINT for one vehicle in the FIRST HARMFUL EVENT must = **12**, and INITIAL CONTACT POINT for the other vehicle in the FIRST HARMFUL EVENT must = **12**.
- ER.099 If MANNER OF COLLISION OF THE FIRST HARMFUL EVENT = **Angle**, then INITIAL CONTACT POINT for one vehicle in the FIRST HARMFUL EVENT must = **01, 11, 12**, or **Unknown**, and INITIAL CONTACT POINT for the other vehicle in the FIRST HARMFUL EVENT must = **01-05, 07-11**, or **Unknown**.
- ER.100 If MANNER OF COLLISION OF THE FIRST HARMFUL EVENT = **Rear-to-Side** or **Side-to-Rear**, then INITIAL CONTACT POINT for one vehicle in the FIRST HARMFUL EVENT must = **06**, and INITIAL CONTACT POINT for the other vehicle in the FIRST HARMFUL EVENT must = **01-05, 07-11**, or **Unknown**.
- ER. 101 If MANNER OF COLLISION OF THE FIRST HARMFUL EVENT = **Rear-to-Rear**, then INITIAL CONTACT POINT for one vehicle in the FIRST HARMFUL EVENT must = **06**, and INITIAL CONTACT POINT for the other vehicle in the FIRST HARMFUL EVENT must = **06** or **Unknown**.
- ER.102 If SPECIAL USE = **Truck Operating With Crash Attenuator Equipment**, then MOTOR VEHICLE UNIT TYPE for this vehicle must = **Working Motor Vehicle**.
- ER.103 If SPECIAL USE = **Rental Truck (Over 10,000 lb)**, then MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1: Body Type Category for this vehicle must = **Cargo Van, Pickup Truck, Single-Unit Truck (2 axles and GVWR > 10,000 lb), Single-Unit Truck (3 or more axles), Truck-Tractor, With or Without Trailers (bobtail, semi, doubles, or triples)**, or **Truck, Unknown Type** and POWER UNIT GROSS VEHICLE WEIGHT RATING for this vehicle must =

Medium (10,001 – 26,000 lb GVWR), Heavy (Greater than 26,000 lb GVWR), or Unknown.

- ER.104 If SPECIAL USE = **No Special Use; Vehicle Used for School Transport; Trafficway Construction, Maintenance, or Utility; USPS Mail Carrier; Other Package Delivery Vehicle (e.g., UPS, DHL, FedEx, Amazon), Truck Operating With Crash Attenuator Equipment, Taxi, Motor Vehicle in Service for Electronic Ride-hailing, Rental or Car-Share Vehicle, or Rental Truck over 10,000 lb**, then all three subfields of EMERGENCY RESPONSE must = **Not Applicable**.
- ER.105 If MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1: Body Type Category does not = **Passenger Van, School Bus, Transit Bus, Motorcoach, Other Large Passenger or Bus, or Unknown**, then BUS USE must = **Not a Bus**.
- ER.106 If VEHICLE STATUS PRIOR TO CRITICAL EVENT = **Lane Splitting or Filtering**, then MOTOR VEHICLE BODY TYPE CATEGORY Subfield 1: Body Type Category must = **2-Wheeled Motorcycle or Moped**.
- ER.107 If RELATION TO JUNCTION = **Railway Grade Crossing**, then at least one RELATED FACTORS – CRASH LEVEL must = **Railroad-Related**.

Appendix C: MMUCC Standard Data Elements

The following is a complete list of the data elements included in the MMUCC guideline 6th edition data standard and used to assess State alignment.

Identifier	Data Element Name
S1	State Unique Crash ID
S2	Agency (Police Jurisdiction)
S3	Police-Reported
S4	State Reportable Crash
C1	Crash Date
C2	Crash Time
C3	Date of Roadway Clearance
C4	Time of Roadway Clearance
C5	County or Equivalent
C6	Global Position (Latitude, Longitude)
C7	First Harmful Event
C8	Location of First Harmful Event Relative to the Trafficway
C9	Manner of Collision of the First Harmful Event
C10	Atmospheric Conditions
C11	Light Condition
C12	Relation to Junction
C13	Type of Intersection
C14	School-Bus-Related
C15	Work Zone
C16	Secondary Crash
C17	Related Factors – Crash Level
C18	Route Number or Road Name
V1	Motor Vehicle Number
V2	Vehicle Identification Number
V3	Motor Vehicle Unit Type
V4	Vehicle Owner and Address
V5	Motor Carrier or Responsible Entity Identification
V6	Type of Motor Carrier or Responsible Entity
V7	Motor Carrier or Responsible Entity Name and Address

V8	Motor Vehicle Registration State or Country
V9	Motor Vehicle License Plate Number
V10	Motor Vehicle Make
V11	Motor Vehicle Model Year
V12	Motor Vehicle Model
V13	Motor Vehicle Body Type Category
V14	Power Unit Gross Vehicle Weight Rating
V15	Cargo Body Type (Power Unit Only)
V16	Hazardous Materials
V17	Vehicle Trailing
V18	Trailer VIN
V19	Trailer Body Type
V20	Total Occupants in Motor Vehicle
V21	Special Use
V22	Bus Use
V23	Emergency Response
V24	Motor Vehicle Posted or Statutory Speed Limit
V25	Trafficway Flow
V26	Median Barrier Presence
V27	Number of Open Lanes in Vehicle's Environment
V28	Roadway Alignment
V29	Roadway Grade
V30	Roadway Surface Condition
V31	Traffic Control Device
V32	Device Functioning
V33	Vehicle Status Prior to Critical Event
V34	Initial Contact Point
V35	Damaged Areas
V36	Extent of Damage
V37	Sequence of Events
V38	Most Harmful Event for This Motor Vehicle
V39	Hit-and-Run
V40	Vehicle Towed

V41	Contributing Circumstances, Motor Vehicle
V42	Vehicle Underride or Override
V43	Fire Occurrence
V44	Related Factors – Vehicle Level
D1	Driver Presence
D2	Driver Address
D3	Driver License Jurisdiction
D4	Driver License Number
D5	Speeding-Related
D6	Driver Distraction
D7	Attempted Avoidance Maneuver
D8	Driver’s Vision Obscured by
D9	Citations Issued
D10	Related Factors – Driver Level
P1	Person Number
P2	Name of Person Involved
P3	Date of Birth
P4	Sex or Gender
P5	Person Type
P6	Special Function
P7	Injury Status
P8	Transported to First Medical Facility by
P9	EMS Response Agency
P10	Medical Facility Receiving Patient
P11	EMS UUID
P12	Occupant’s Motor Vehicle Unit Number
P13	Seating Position
P14	Restraint System Use
P15	Helmet Use
P16	Air Bag Deployed
P17	Ejection
P18	Law Enforcement Suspects Alcohol Involvement
P19	Alcohol Test

P20	Law Enforcement Suspects Drug Involvement
NM1	Vehicle Number of Motor Vehicle Striking Non-Motorist
NM2	Non-Motorist Status Prior to Critical Event
NM3	Non-Motorist Distraction
NM4	Non-Motorist Contributing Circumstances
NM5	Non-Motorist at Intersection
NM6	Non-Motorist in Crosswalk
NM7	Non-Motorist Specific Location
NM8	Non-Motorist Safety Equipment
NM9	Non-Motorist Device Type
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