

NOTE: The proposed changes that follow (indicated by underscoring and red font) represent the consensus of the MMUCC Expert Panel that is charged with developing the 4th Edition of the MMUCC Guideline, which will be published in the spring of 2012. When consensus was reached to change an element but the specific details of that change have not received consensus approval, options being considered are noted. All new attributes will be given glossary definitions (and many existing glossary entries will be redefined). Changes also reflect input received at the August 3rd MMUCC Workshop in Charlotte, NC (refer to element footnotes).

MMUCC Data Elements Collected at Scene

These data elements should be included on the State Police Accident Report (PAR) and collected at the scene of each crash.

CRASH DATA ELEMENTS

The crash level data elements describe the overall characteristics of the crash. See Glossary for the D16.1 definition of a motor vehicle crash.

C1. Case Identifier

Definition:

The unique identifier within a given year that identifies a given crash within a State.

Attribute: • State Specific Identifier

Rationale:

Used to document a specific crash. If this identifier is available at the scene, it can also be recorded on the EMS record for linkage purposes. Enables subfiles to be created for analyses and linked back to the crash data file.

C2. Crash Classification¹

Definition: The determination of whether an injury of fatality

¹ Glossary definitions to be added for all 5 new attributes

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producing motor vehicle crash occurred on public or private property and on a trafficway (and on the road or not) or on a non-trafficway area.

Attributes²:

Subfield 1

- Public property
- Private property

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Subfield 2

- Traffic road crash
- Traffic non-road crash
- Non-traffic crash

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C32. Crash Date and Time

Definition:

The date (year, month, and day) and time (00:00-23:59) at which the crash occurred.

Attribute: • Date and Time (YYYYMMDDHHMM)

Absence of year should result in an edit check. In rare situations MMDDHHMM can be unknown. Midnight is designated as 00:00 and is considered the start of a new day.

Rationale: Important for management/administration, evaluation, and linkage.

C43. Crash County

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

Attribute: • Name of the County

² The 5 total attributes of the two subfields shown here have not received consensus approval from the MMUCC Expert panel. No consensus reached in favor or against this new element at the Charlotte meeting on August 3rd

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Record the county or equivalent entity in which a crash occurred. If codes are used instead of name, use the GSA Geographic Locator Codes (GLC) that can be found at: www.gsa.gov. See Appendix G. If State-assigned codes are used, they should be convertible to the GSA/ FIPS format.

Rationale:

Important for analyses of county area programs such as “Safe Communities.” Critical for linkage of the crash file to other State data files (EMS, hospital, roadway, etc.).
Important for intrastate comparisons.

C4C5. Crash City/Place (political jurisdiction)

Definition: The city/place (political jurisdiction) in which the crash occurred.

Attribute: • Name of the Political Jurisdiction

Record the name identifying the city/place in which the crash occurred. If codes are used instead of names, use the GSA Geographic Locator Codes (GLC) that can be found at www.gsa.gov. See Appendix D. If State-assigned codes are used, they should be convertible to the GSA/FIPS format.

Rationale:

Important for analyses of local area programs such as “Safe Communities.” Critical for linkage of the crash file to other state data files (EMS, hospital, roadway, etc.).

C65. Crash Location

Definition:

The exact location on the roadway to document where the first harmful event of the crash occurred.

Attributes: • Latitude/Longitude Coordinates

The optimum definition of Crash Location is a route name and GPS (global positioning system)/GIS (geographic information system), if a highway agency has a linear referencing system that can relate geographic coordinates to specific locations in road inventory, traffic, driver, and other files. The location information in a crash file must have the capability to be linked to location information in these other important files required to study

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site-specific safety issues. GPS/GIS provides the latitude/longitude coordinates indicating where the crash occurred.

- Linear Referencing System (LRS)

An LRS can create complex overlays of multiple events or occurrences along a route to support corridor planning, pavement rehabilitation, or other complex analysis. An LRS permits users to share information maintained by different data providers across different data layers. An LRS is not created by the geographic information system (GIS), but is actually replicated to model what is in the field. All linear data (traffic volumes, pavement types, speed limit zones, etc.) and point data (crashes, signs, etc.) collection efforts need only specify the location or endpoint locations in terms of the LRS components.

- Link Node System (not recommended)

Note: States with no system or a link node system should plan to develop or upgrade to a linear referencing system or one that documents latitude/longitude coordinates.

Rationale: Critical for problem identification, prevention programs, engineering evaluations, mapping, and linkage purposes.

C76. First Harmful Event

Definition: The first injury or damage-producing event that characterizes the crash type.

Attributes: ■ Non-Collision:

- Overturn/Rollover
- Fire/Explosion
- Immersion
- Jackknife
- Cargo/Equipment Loss or Shift
- Fell/Jumped From Motor Vehicle
- Thrown or Falling Object
- Other Non-Collision

- Collision With Person, Motor Vehicle, or Non-Fixed Object:

- Pedestrian

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- Pedalcycle
- Other non-motorist
- Railway Vehicle (train, engine)
- Animal (live)
- Motor Vehicle in Transport
- Parked Motor Vehicle
- - Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle
- Work Zone / Maintenance Equipment
- Other Non-Fixed Object
- Collision With Fixed Object:
 - Impact Attenuator/Crash Cushion
 - Bridge Overhead Structure
 - Bridge Pier or Support
 - Bridge Rail
 - Cable Barrier
 - Culvert
 - Curb
 - Ditch
 - Embankment
 - Guardrail Face
 - Guardrail End
 - Concrete Traffic Barrier
 - Other Traffic Barrier
 - Tree (standing)
 - Utility Pole/Light Support
 - Traffic Sign Support
 - Traffic Signal Support
 - Fence
 - Mailbox
 - Other Post, Pole or Support

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- Other Fixed Object (wall, building, tunnel, etc.)
- Unknown

Rationale:

Needed for uniformity in reported motor vehicle crash statistics, understanding crash causation, and identifying possible crash avoidance countermeasures. For analytic purposes it may be desirable to collect and use information about subsequent events, some of which may be harmful. See **Sequence of Events (V20)**.

C87. Location of First Harmful Event Relative to the Trafficway

Definition:

The location of the first harmful event as it relates to its position within or outside the trafficway. See Appendix E for a diagram of the trafficway.

Attributes: • On Roadway

- Shoulder
- Median
- Roadside
- Gore
- Separator
- In Parking Lane or Zone
- Off Roadway, Location Unknown
- Outside Right-of-Way (trafficway)
- Unknown

Rationale: Important to identify highway geometric deficiencies.

C98. Manner of Crash/Collision Impact

Definition:

The identification of the manner in which two motor vehicles in transport initially came together without regard to the direction of force. This data element refers only to crashes where the first harmful event involves a collision between two motor vehicles in transport. See Appendix F for a diagram of the manner of collision.

Attributes: • Front to rear

- Front to front

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- Angle
- Sideswipe, same direction
- Sideswipe, opposite direction
- Rear to side
- Rear to rear
- Other
- Unknown

Rationale:

Important for evaluation of occupant injuries and structural defects. This data element can be used in conjunction with **Motor Vehicle Maneuver/Action (V18)** to describe the crash.

C109. Source of Information

Definition: Affiliation of the person completing the crash report.

Attributes: ■ Source of Information:

- Law Enforcement Agency Identifier
- Motorist

Rationale:

Important for quality control and identification purposes. The law enforcement reporting agency identifier is critical to report SAFETynet crashes.

C110. Weather Conditions

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

Attributes: **Subfield 1:**

- Weather Condition 1
 - Clear
 - Cloudy
 - Fog, Smog, Smoke
 - Rain
 - Sleet, or Hail (~~freezing rain or drizzle~~)
 - Freezing rain or freezing drizzle
 - Snow

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- Blowing Snow
- Severe Crosswinds
- Blowing Sand, Soil, Dirt
- Other
- Unknown

Subfield 2:

- Weather Condition 2
See attributes in Subfield 1

Rationale:

Important for management/administration and evaluation.
Critical for prevention programs and engineering evaluations.

C124. Light Condition

Definition: The type/level of light that existed at the time of the motor vehicle crash.

Attributes: • Daylight

- Dawn
- Dusk
- Dark-Lighted
- Dark-Not Lighted
- Dark-Unknown Lighting
- Other
- Unknown

Rationale:

Important for management/administration and evaluation.
Critical for prevention programs and engineering evaluations.

C132. Roadway Surface Condition

Definition: The roadway surface condition at the time and place of a crash.

Attributes: • Dry

- Wet
- Snow
- Slush
- Ice/Frost

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- Water (standing, moving)
- Sand
- Mud, Dirt, Gravel
- Oil
- Other
- Unknown

Rationale:

Important to identify and correct high wet-surface crash locations and provide information for setting coefficient of pavement friction standards. Critical for prevention programs and engineering evaluations.

C143. Contributing Circumstances, Environment

Definition: Apparent environmental conditions which may have contributed to the crash.

Attributes: **Subfield 1:**

- Environmental Circumstances 1
 - None
 - Weather Conditions
 - ~~Physical-Visual~~ Obstruction(s)
 - Glare
 - Animal(s) in Roadway
 - Other
 - Unknown

Subfield 2:

- Environmental Circumstances 2
See attributes for Subfield 1

Subfield 3:

- Environmental Circumstances 3
See attributes for Subfield 1

Rationale:

Important to determine existence of unusual conditions that could be useful in determining the need for additional traffic control devices or geometric improvements. (Pedestrians and pedalcyclists are covered in traffic units.)

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C154. Contributing Circumstances, Road

Definition: Apparent condition of the road which may have contributed to the crash.

Attributes: **Subfield 1:**

- Road Circumstances 1
 - None
 - Backup due to prior crash³
 - Backup due to prior non-recurring incident
 - Road Surface Condition (wet, icy, snow, slush, etc.)
 - Debris
 - Rut, Holes, Bumps
 - Work Zone (construction/maintenance/utility)
 - Worn, Travel-Polished Surface
 - Obstruction in Roadway
 - Traffic Control Device Inoperative, Missing, or Obscured
 - Shoulders (none, low, soft, high)
 - Non-Highway Work
 - Other
 - Unknown

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Subfield 2:

- Road Circumstances 2
See attributes in Subfield 1

Subfield 3:

- Road Circumstances 3
See attributes in Subfield 1

Rationale: Important to determine highway maintenance and possible engineering needs.

C165. Relation to Junction⁴

Definition: The ~~location of the first harmful event in relation to a~~

³ These two new attributes received consensus approval at the August 3rd meeting in Charlotte.

⁴ Changes to this element received consensus approval at the August 3rd meeting in Charlotte

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junction coding of this data element is based on the location of the first harmful event of the crash. It identifies the crash's location with respect to presence in a junction or proximity to components typically in junction or interchange areas. See Appendices G and H.

Attributes:

Subfield 1:

▪ Within Interchange Area

- No
- Yes
- Unknown

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Subfield 2:

▪ Junction Specific location

- Non-Junction
- Intersection
- Intersection-Related
- Entrance/Exit Ramp
- Entrance/Exit Ramp-Related
- Railway Grade Crossing
- Crossover-Related
- Driveway Access
- Driveway Access-Related
- ~~Driveway/Alley Access-Related~~
- Shared-Use Path or Trail
- Acceleration/Deceleration Lane
- Through Roadway
-
- Other location not listed above within an interchange area (median, shoulder and roadside)
- Unknown

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Subfield 2:

▪ ~~Within Interchange Area~~

• ~~No~~

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~~• Yes~~

~~• Unknown~~

Rationale:

Important for site-specific safety studies to identify locations with actual or potential problems.

C176. Type of Intersection

Definition: An intersection consists of two or more roadways that intersect at the same level. See Appendix H for a diagram of the intersection.

Attributes: • Not at Intersection

- Four-Way Intersection
- T-Intersection
- Y-Intersection
- L-Intersection
- Traffic Circle
- Roundabout
- Five-Point, or More

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Rationale:

Important for site-specific safety studies to identify actual or potential safety problem locations.

C187. School Bus-Related

Definition:

Indicates whether a school bus or motor vehicle functioning as a school bus for a school-related purpose is involved in the crash. The "school bus," with or without a passenger on board, must be directly involved as a contact motor vehicle or indirectly involved as a non-contact motor vehicle (children struck when boarding or alighting from the school bus, two vehicles colliding as the result of the stopped school bus, etc.).

Attributes: • No

- Yes, School Bus Directly Involved
- Yes, School Bus Indirectly Involved

Rationale:

Important in determining where and how school children are at the greatest risk of injury when being transported by school

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bus and the extent to which school bus operations affect overall traffic safety.

C198. Work Zone-Related (Construction/Maintenance/Utility)⁵

Definition:

A crash that occurs in or related to a construction, maintenance, or utility work zone, whether or not workers were actually present at the time of the crash. "Work zone-related" 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 Appendix I for a diagram of the work zone area.

Attributes:

Subfield 1:

- Was the crash in or near a construction, maintenance, or utility work zone?
 - Yes (complete Subfields 2-5)
 - No
 - Unknown

Subfield 2:

- Location of the Crash:
 - Before the First Work Zone Warning Sign
 - Advance Warning Area
 - Transition Area
 - Activity Area
 - Termination Area

Subfield 3:

- Type of Work Zone:
 - Lane Closure
 - Lane Shift/Crossover
 - Work on Shoulder or Median
 - Intermittent or Moving Work
 - Other

Subfield 4:

⁵ [Glossary definition to be added for Law Enforcement Vehicle Only Present](#)

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- Workers Present:
 - No
 - Yes
 - Unknown

Subfield 5:

- Law Enforcement Present:
 - No
 - Officer Present
 - Law Enforcement Vehicle Only Present

Rationale:

Important to assess the impact on traffic safety of various types of on-highway work activity, to evaluate Traffic Control Plans used at work zones, and to make adjustments to the Traffic Control Plans for the safety of workers and the traveling public. This data element needs to be collected at the scene because work zones are relatively short-term or moving operations that are not recorded in permanent road inventory files.

VEHICLE DATA ELEMENTS

The motor vehicle data elements describe the characteristics, events, and consequences of the motor vehicle(s) involved in the crash.

V1. Motor Vehicle Identification Number (VIN)

Definition:

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

Attribute: • Manufacturer assigned number (permanently affixed to the motor vehicle)

Rationale:

Important to identify specific motor vehicle design characteristics and occupant protection systems for effectiveness evaluations.

V2. Motor Vehicle Unit Type and Number

Definition:

Motor vehicle unit type and number assigned to uniquely

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identify each motor vehicle involved in the crash. This number is not assigned to pedestrians or bicyclists. (See **Non-Motorist Number (P21)**.)

Attributes: **Subfield 1:**

- Type:
 - Motor Vehicle in Transport
 - Parked Motor Vehicle
 - Working Vehicle/Equipment

Subfield 2:

- Number
 - Sequential number

Rationale:

Uniquely identifies each motor vehicle unit involved in the crash. Permits occupants to be assigned to the appropriate motor vehicle.

V3. Motor Vehicle Registration State and Year

Definition:

The State, commonwealth, territory, Indian nation, U.S. Government, foreign country, etc., issuing the registration plate and the year of registration as indicated on the registration plate displayed on the motor vehicle. For foreign countries, MMUCC requires only the name of the country. Border States may want to collect the name of individual Canadian Provinces or Mexican states.

- Attributes:
- State Identifier
 - State, foreign country, U.S. government, Indian Nation, etc.
 - Year of Motor Vehicle Registration (YYYY)

Rationale:

This element is critical in providing linkage between the crash and motor vehicle registration files to access the motor vehicle identification number.

V4. Motor Vehicle License Plate Number

Definition:

The alphanumeric identifier or other characters, exactly as displayed, on the registration plate or tag affixed to the motor vehicle. For combination trucks, motor vehicle plate number

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is obtained from the power unit or tractor.

Attribute: • Alphanumeric Identifier

Assigned by the State, foreign country, U.S. Government, or Indian Nation.

Rationale: Critical for linkage between the crash and motor vehicle registration files.

V5. Motor Vehicle Make

Definition:

The distinctive (coded) name applied to a group of motor vehicles by a manufacturer.

Attribute: • Name

Assigned by motor vehicle manufacturer.

Rationale: Important for use in identifying motor vehicle make, for evaluation, research and crash comparison purposes.

V6. Motor Vehicle Model Year

Definition: The year which is assigned to a motor vehicle by the manufacturer.

Attribute: • Model Year

YYYY as assigned by motor vehicle manufacturer (obtain from the vehicle registration).

Rationale:

Important for use in identifying motor vehicle model year for evaluation, research, and crash comparison purposes.

V7. Motor Vehicle Model

Definition:

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

Attribute: • Code for model

Assigned by motor vehicle manufacturer (obtain from the vehicle registration).

Rationale:

Important for use in identifying the motor vehicle model for evaluation, research, and crash comparison purposes.

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V8. Motor Vehicle Body Type Category

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. Personal conveyances – such as skateboards, motorized toy cars, and wheelchairs are not considered motor vehicles.

Attributes:

- Passenger Car
- (Sport) Utility Vehicle
- Passenger Van
- Cargo Van (10,000 lbs or less)
- Pickup
- Motor Home
- School Bus
- Transit Bus
- Motor Coach
- Other Bus
- Motorcycle
- Moped
- Low Speed Vehicle
- Golf Cart
- All Terrain Vehicle (ATV)
- Snowmobile
- Non-traditional vehicle⁶
- Other Light Trucks (10,000 lbs or less)
- Medium/Heavy Trucks (more than 10,000 lbs)
- Other (e.g., farm equipment, heavy machinery)

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Rationale:

Important to identify the specific type of motor vehicle involved in the crash for evaluation and comparison purposes.

V9. Total Occupants in Motor Vehicle

⁶ A majority voted against this attribute at the August 3rd meeting in Charlotte, meaning it likely will not be included in the 4th Edition.

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Definition:

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

Attribute: • Total number of injured and uninjured occupants including the driver.

Rationale:

Important for the officer at the scene to indicate how many people (injured and uninjured) are involved for reporting purposes. Useful for evaluating the effectiveness of countermeasures that prevent or reduce injury and injury severity.

V10. Special Function of Motor Vehicle in Transport⁷

Definition:

The type of special function being served by this vehicle regardless of whether the function is marked on the vehicle.

Attributes: • No Special Function

- Taxi
- Vehicle Used as School Bus
- Vehicle Used as Other Bus
- Military
- Police
- Ambulance
- Fire Truck
- Other Authorized Emergency Services Vehicle
- Highway incident response
- Unknown

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Rationale:

Important to evaluate the outcome of vehicles used for special uses that are involved in crashes.

V11. Emergency Motor Vehicle Use⁸

⁷ Changes to this element received consensus approval at the August 3rd meeting in Charlotte

⁸ Changes to this element received consensus approval at the August 3rd meeting in Charlotte

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Definition:

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 actually engaged in such response.

Select "Yes" only if the motor vehicle involved in the crash was on an emergency response, regardless of whether the emergency warning equipment was in use.

Attributes:

- No
- ~~Yes~~Emergency operation, emergency warning equipment In use
- Emergency operation, emergency warning equipment not in use
- Non-emergency operation
- Unknown

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Rationale:

Driver behavior related to emergency vehicle response is an emerging national issue. This is true for both operators of emergency vehicles and operators of vehicles in the vicinity of an emergency vehicle engaged in a response. It is the intent of this element to gather information that will guide development of training or other countermeasures to reduce the number of crashes involving emergency vehicle response.

V12. Motor Vehicle Posted/Statutory Speed Limit

Definition:

The posted/statutory speed limit for the motor vehicle at the time of the crash. The authorization may be indicated by the posted speed limit, blinking sign at construction zones, etc.

- Attributes:
- Posted/Statutory Value (miles per hour)
 - Not Applicable
 - Unknown

Rationale:

Important for evaluation purposes (even though the speed of the motor vehicle at the time of the crash may differ

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significantly from the authorized speed limit).

V13. Direction of Travel Before Crash

Definition:

The direction of a motor vehicle's travel on the roadway before the crash. Notice that this is not a compass direction, but a direction consistent with the designated direction of the road. For example, the direction of a State-designated north-south highway must be either northbound or southbound even though a motor vehicle may have been traveling due east as a result of a short segment of the highway having an east-west orientation.

Attributes: • Northbound

- Southbound
- Eastbound
- Westbound
- Not on Roadway
- Unknown

Rationale:

Important to indicate direction the motor vehicle was traveling before the crash for evaluation purposes.

V14. Trafficway Description

Definition: Indication of whether or not the trafficway for this vehicle is divided and whether it serves one-way or two-way traffic. (A divided trafficway is one on which roadways for travel in opposite directions are physically separated by a median. See Appendix E for diagram of the trafficway.)

Attributes: • Two-Way, Not Divided

- Two-Way, Not Divided, With a Continuous Left Turn Lane
- Two-Way, Divided, Unprotected (Painted >4 Feet) Median
- Two-Way, Divided, Positive Median Barrier
- One-Way Trafficway
- Unknown

Rationale:

Used in classifying crashes as well as identifying the environment of a particular crash. Note that the data must be in a road inventory file or collected by the reporting officer at

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the scene. It is not readily derived from other road data such as classification or route. Important to guide future trafficway design and traffic control.

V15. Total Lanes in Roadway

Definition: Total number of lanes in the roadway on which this motor vehicle was traveling.

Attributes: ■ For undivided highways:

- Enter the total through lanes in both directions, excluding designated turn lanes.

■ For divided highways:

- Enter the total through lanes for the roadway on which the motor vehicle under consideration was traveling. See Appendix E for diagram of the trafficway.

Rationale:

Used in studying roadway safety issues as well as identifying the environment of a particular crash.

V16. Roadway Alignment and Grade

Definition:

The geometric or layout and inclination characteristics of the roadway in the direction of travel for this vehicle.

Attributes: **Subfield 1:**

- Horizontal Alignment:
 - Straight
 - Curve Left
 - Curve Right

Subfield 2:

- Grade:
 - Level
 - Hillcrest
 - Uphill
 - Downhill
 - Sag (bottom)

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Rationale:

Important to document the horizontal alignment and grade of the roadway as it relates to this specific vehicle involved in the crash for the purpose of evaluating vehicles that run-off-road, rollover, or are runaways.

V17. Traffic Control Device Type

Definition:

The type of traffic control device (TCD) applicable to this motor vehicle at the crash location.

Attributes: **Subfield 1:**

- Type TCD:
 - No Controls
 - Person (including flagger, law enforcement, crossing guard, etc.)
 - Traffic Control Signal
 - Flashing Traffic Control Signal
 - School Zone Sign/Device
 - Stop Sign
 - Yield Sign
 - Warning Sign
 - Railway Crossing Device
 - Other
 - Unknown

Subfield 2:

- Inoperative/Missing?
 - Yes
 - No
 - Unknown

Rationale:

This element needs to be collected at the scene because the presence of specific devices is better verified at the time of the crash. It is also important for ascertaining the relationship between the use of various traffic control devices (TCD) and crashes and identifying the need for upgraded TCDs at specific crash locations.

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V18. Motor Vehicle Maneuver/Action

Definition:

The controlled maneuver for this motor vehicle prior to the beginning of the sequence of events.

Attributes: • Movements Essentially Straight Ahead

- Backing
- Changing Lanes
- Overtaking/Passing
- Turning Right
- Turning Left
- Making U-Turn
- Leaving Traffic Lane
- Entering Traffic Lane
- Slowing
- Negotiating a Curve
- Parked
- Stopped in Traffic
- Other
- Unknown

Rationale:

Important for evaluation purposes, particularly when combined with sequence of events.

V19. Area(s) of Impact Vehicle Damage⁹¹⁰

Definition:

~~The area of the motor vehicle that received the initial impact and the area that was most damaged in a crash. This element is intended to collect the approximate impact point on this vehicle associated with its initial collision event, all areas damaged on the vehicle as a result of the crash, and the extent of damage. If the initial harmful event does not involve a collision, then code non-collision (refer to glossary).~~

Attributes: **Subfield 1:**

⁹ Subfield 3 has been moved from what was V24 Extent of Damage/Removal. Subfield 2
¹⁰ Changes to this element received consensus approval at the August 3rd meeting in
Charlotte

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■ ~~Area of Initial Impact~~ Contact Point on Vehicle:

- Non-Collision
- 12-point Clock Diagram (Appendix J)
- Top (roof)
- Undercarriage
- Unknown

Subfield 2:

■ ~~Most Damaged Area~~ Damaged Areas:

See attributes in Subfield 1

■ Extent of Damage

- No Damage
- Minor Damage
- Functional Damage
- Disabling Damage
- Unknown

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Rationale:

Important for use in evaluating injury severity in relation to motor vehicle impact and crash severity.

V20. Sequence of Events

Definition:

The events in sequence related to this motor vehicle, including both non-collision as well as collision events. For examples, refer to Appendix L.

Attributes: **Subfield 1:**

- First Event
- Non-Collision:
 - Overturn/Rollover
 - Fire/Explosion
 - Immersion
 - Jackknife
 - Cargo/Equipment Loss or Shift
 - Equipment Failure (blown tire, brake failure, etc.)

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- Separation of Units
- Ran Off Roadway Right
- Ran Off Roadway Left
- Cross Median
- Cross Centerline
- Downhill Runaway
- Fell/Jumped From Motor Vehicle
- Reentering Roadway
- Thrown or Falling Object
- Other Non-Collision
- Collision With Person, Motor Vehicle, or Non-Fixed Object:
 - Pedestrian
 - Pedalcycle
 - Other non-motorist

 - Railway Vehicle (train, engine)
 - Animal (live)
 - Motor Vehicle In Transport
 - Parked Motor Vehicle
 -
 - Struck By Falling, Shifting Cargo or Anything Set in Motion By Motor Vehicle
 - Work Zone/Maintenance Equipment
 - Other Non-Fixed Object
- Collision With Fixed Object:
 - Impact Attenuator/Crash Cushion
 - Bridge Overhead Structure
 - Bridge Pier or Support
 - Bridge Rail
 - Cable Barrier
 - Culvert
 - Curb

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- Ditch
- Embankment
- Guardrail Face
- Guardrail End
- Concrete Traffic Barrier
- Other Traffic Barrier
- Tree (standing)
- Utility Pole/Light Support
- Traffic Sign Support
- Traffic Signal Support
- Other Post, Pole, or Support
- Fence
- Mailbox
- Other Fixed Object (wall, building, tunnel, etc.)
- Unknown

Subfield 2:

- Second Event
See attributes in Subfield 1

Subfield 3:

- Third Event
See attributes in Subfield 1

Subfield 4:

- Fourth Event
See attributes in Subfield 1

Rationale:

Important for use in conjunction with most harmful event and motor vehicle maneuver to generate complete information about the crash.

V21. Most Harmful Event for this Motor Vehicle

Definition: Event that resulted in the most severe injury or, if no injury, the greatest property damage involving this motor vehicle.

Attributes: ▪ Non-Collision:
• Overturn/Rollover

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- Fire/Explosion
- Immersion
- Jackknife
- Cargo/Equipment Loss or Shift
- Fell/Jumped From Motor Vehicle
- Thrown or Falling Object
- Other Non-Collision
- Collision With Person, Motor Vehicle, or Non-Fixed Object:
 - Pedestrian
 - Pedalcycle
 - Other non-motorist
 -
 - Railway Vehicle (train, engine)
 - Animal (live)
 - Motor Vehicle in Transport
 - Parked Motor Vehicle
 -
 - Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle
 - Work Zone / Maintenance Equipment
 - Other Non-Fixed Object
- Collision With Fixed Object:
 - Impact Attenuator/Crash Cushion
 - Bridge Overhead Structure
 - Bridge Pier or Support
 - Bridge Rail
 - Cable Barrier
 - Culvert
 - Curb
 - Ditch
 - Embankment
 - Guardrail Face

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- Guardrail End
- Concrete Traffic Barrier
- Other Traffic Barrier
- Tree (standing)
- Utility Pole/Light Support
- Traffic Sign Support
- Traffic Signal Support
- Fence
- Mailbox
- Other Post, Pole, or Support
- Other Fixed Object (wall, building, tunnel, etc.)
- Unknown

Rationale:

Important for use in conjunction with the **Sequence of Events (V20)** to generate complete information about the crash.

V22. Bus Use

Definition:

This element describes the common type of bus service this vehicle was being used as at the time of the crash. Buses are any motor vehicle with seats to transport nine (9) or more people, including the driver's seat. This element does not include vans which are owned and operated for personal use. Refer to the Glossary for attribute definitions.

Attributes: • Not a Bus

- School
- Transit/Commuter
- Intercity
- Charter/Tour
- Shuttle

Rationale:

This data element provides additional information to evaluate the outcome of motor vehicles used as buses that are involved in crashes.

V23. Hit and Run

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Definition:

Refers to cases where the vehicle, or the driver of the vehicle, in transport is a contact vehicle in the crash and departs the scene without stopping to render aid or report the crash.

- Attributes:
- No, Did Not Leave Scene
 - Yes, Driver or Car and Driver Left Scene

Rationale: Important for uniformity, quality control and identification purposes in reported motor vehicle crash statistics.

V24. ~~Extent of Damage / Vehicle~~ Removal¹¹

Definition:

~~Estimation of total damage to motor vehicle from crash.~~
Disabling damage implies damage to the motor vehicle that is sufficient to require the motor vehicle to be towed or carried from the scene. **Towed Due to Disabling Damage** identifies whether a vehicle involved in a crash is removed from the scene. “Yes” is used for vehicles towed due to *disabling* damage in the crash. “No” is used for those that are driven from the scene or towed for other reasons (i.e., the driver is arrested or without required license, vehicle is placed out of service because it is unsafe to drive or impounded, etc.). Towing assistance without removal of the vehicle from the scene, such as pulling a vehicle out of a ditch, is not considered to be “towed” for the purposes of this element.

NOTE: For states requiring a more detailed set of damage description attributes on the crash report (e.g.; moderate/severe, severe, very severe), **Towed Due to Disabling Damage** is important to specifically identify if the vehicle was towed due to disabling vehicle damage.

Attributes: **Subfield 1:**

- ~~■ Extent of Damage~~
- No Damage
- Minor Damage
- Functional Damage
- Disabling Damage
- Unknown

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¹¹ Changes to this element received consensus approval at the August 3rd meeting in Charlotte

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Subfield 2:

- Towed Due to Disabling Damage
 - Yes
 - No

Rationale:

~~Standardizing the extent of damage a motor vehicle sustains in a crash is essential to consistent collection of crash data.~~

Towed Due to Disabling Damage is important to identifying non-injury, “tow-away” crashes involving any vehicle towed due to damage sustained in the crash. This information is vital to Federal Motor Carrier Safety Administration in their selection criteria for truck and bus crashes.

V25. Contributing Circumstances, Motor Vehicle¹²

Definition:

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

Attributes: • None

Subfield 1:

- Motor Vehicle Circumstance 1:
 - Brakes
 - Exhaust System
 - Body, Doors
 - Steering
 - Power Train
 - Suspension
 - Tires
 - Wheels
 - Lights (head, signal, tail)
 - Windows/Windshield
 - Mirrors
 - Wipers
 - Truck Coupling / Trailer Hitch / Safety Chains
 - Other

¹² [Glossary definition added to I](#)

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- Unknown

Subfield 2:

- Motor Vehicle Circumstance 2
See attributes in Subfield 1

Rationale:

Important for determining the significance of pre-existing problems, including equipment and operation, in motor vehicles involved in crashes that could be useful in determining the need for improvements in manufacturing and consumer alerts.

V26. Motor Carrier Identification**

Definition:

The identification number, name and address of an individual, partnership or corporation responsible for the transportation of persons or property as indicated on the shipping manifest.

Attributes: **Subfield 1:**

- US DOT Number
(7 digits, right justified)

Subfield 2:

- If no US DOT Number, State Issued
Identification Number and State name

Subfield 3:

- Name

Subfield 4:

- Street Address
 - Street or P.O. Box
 - City
 - State (two-letter code)
 - Zip Code
 - Country

Subfield 5:

- Commercial/Non-Commercial
 - Interstate Carrier
 - Intrastate Carrier

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- Not in Commerce/Government
- Not in Commerce/Other Truck

Rationale:

(**Required by the Federal Motor Carrier Safety Administration CFR 350.201.) The Federal Motor Carrier Safety Administration (FMCSA) has the authority to fine and sanction unsafe interstate (and some intrastate) truck and bus companies. A key way to identify potentially unsafe motor carriers is to collect crash data by the identification number, name, and address of the company. The street address allows FMCSA to visit carriers to conduct review of compliance with Federal Motor Carrier Safety Regulations and provides a crosscheck for the correct identity of the carrier. The identification number (found on the power unit, and assigned by the U.S. DOT or by a State) is a key element for carrier identification in the FMCSA databases for crashes and other carrier information. This data element is collected at the scene to meet FMCSA 90 day reporting requirements.

V27. Gross Vehicle Weight Rating / Gross Combination Weight Rating**

Definition:

The Gross Vehicle Weight Rating (GVWR) is the amount recommended by the manufacturer as the upper limit to the operational weight for a motor vehicle and any cargo (human or other) to be carried. The Gross Combination Weight Rating (GCWR) is the sum of all GVWRs for each unit in a combination unit motor vehicle. Thus for single-unit trucks there is no difference between the GVWR and the GCWR. For combination trucks (truck tractors pulling a single semi-trailer, truck tractors pulling double or triple trailers, trucks pulling trailers, and trucks pulling other motor vehicles) the GCWR is the total of the GVWRs of all units in the combination.

- Attributes:
- Not Applicable
 - 10,000 lbs or less
 - 10,001-26,000 lbs
 - More than 26,000 lbs

Rationale:

(**Required by the Federal Motor Carrier Safety Administration CFR 350.201.) The Federal Motor Carrier Safety Administration (FMCSA) imposes certain regulations

DRAFT

on all single or combination-unit trucks that have a Gross Combination Weight Rating (GCWR) of more than 10,000 lbs. Additional regulations are imposed on all motor vehicles with GCWRs of more than 26,000 lbs. This data element is collected at the scene because FMCSA requires reporting within 90 days.

V28. Vehicle Configuration **

Definition:

Indicates the general configuration of this motor vehicle. (Refer to Appendix K for chart displaying types of truck configurations.)

Attributes: • Vehicle 10,000 pounds or less placarded for hazardous materials

- Single-Unit Truck (2-axle and GVWR more than 10,000 lbs)
- Single-Unit Truck (3 or more axles)
- Truck Pulling Trailer(s)
- Truck Tractor (bobtail)
- Truck Tractor/Semi-Trailer
- Truck Tractor/Double
- Truck Tractor/Triple
- Truck More Than 10,000 lbs, Cannot Classify
- Bus/Large Van (seats for 9-15 occupants, including driver)
- Bus (seats for more than 15 occupants, including driver)
- Unknown

Rationale:

(**Required by the Federal Motor Carrier Safety Administration CFR 350.201.) This data element provides information about the general configuration of the motor vehicle that is important to evaluate the types of motor vehicles that have the most crashes and the effectiveness of various safety countermeasures. This data element is collected at the scene because FMCSA requires reporting within 90 days.

V29. Cargo Body Type**

Definition: The type of body for buses and trucks more than 10,000 lbs GVWR. ([Refer to Appendix K for chart displaying types of cargo body types.](#))

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Attributes: •

- No Cargo Body – (bobtail, light motor vehicle with hazardous materials [HM] placard, etc.)
- Bus
- Van/Enclosed Box
- Grain/chips/gravel
- Pole-Trailer
- Cargo Tank
- Log
- Intermodal Container Chassis
- Vehicle Towing Another Vehicle
- Flatbed
- Dump
- Concrete Mixer
- Auto Transporter
- Garbage/Refuse
- Other
-
- Not Applicable – (motor vehicle 10,000 lbs or less not displaying HM placard)
- Unknown

Rationale:

(**Required by the Federal Motor Carrier Safety Administration CFR 350.201.) 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. This data element is collected at the scene because FMCSA requires reporting within 90 days.

V30. Hazardous Materials (Cargo Only)**

Definition:

Indication of whether or not the motor vehicle had a hazardous materials placard as required by Federal/State regulations, and whether or not ~~harzardous~~ hazardous materials were released. (Refer to Appendix K for chart

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displaying hazardous materials classes and reporting information.)

Attributes:

Subfield 1:

■ Did this motor vehicle display a hazardous materials (HM) placard?

- Yes (go to Subfield 2)
- No
- Not Applicable

Subfield 2:

■ If Subfield 1 answer is “Yes,” record from the hazardous materials placard:

- (1) •
4-digit Hazardous Materials ID number or name taken from the middle of the diamond or from the rectangular box; and
- (2) • 1-digit Class number from bottom of diamond

Subfield 3:

■ Release of hazardous materials from the package (cargo compartment):

Hazardous materials that were released from the **package (cargo compartment)** should be documented whether or not the motor vehicle displayed a placard.

- Yes
- No
- Not Applicable

Rationale:

(**currently required by the Federal Motor Carrier Safety Administration CFR 350.201.) FMCSA devotes special attention to motor carriers that transport hazardous materials (HM), including calculating risk assessments, determining response methods, imposing tighter regulations and conducting compliance reviews on a higher percentage of HM carriers. Getting good data on crashes involving trucks carrying HM and whether HM are spilled during the crashes helps FMCSA focus law enforcement efforts. This data

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element is collected at the scene because FMCSA requires reporting within 90 days.

PERSON DATA ELEMENTS

The person data elements describe the characteristics, actions, and consequences to the persons involved in the crash.

LEVEL 1: ALL PERSONS INVOLVED

P1. Name of Person Involved¹³

Definition: The full name of the individual involved in the crash.

Attributes: • Name

Rationale:

This data element should be collected to facilitate linkage when names are available in the health and insurance files and to corroborate the driver license number of drivers. When possible, obtain this information from the driver license.

P24. Date of Birth

Definition:

The year, month, and day of birth, (or age to be used only when date of birth cannot be obtained), of the person involved in a crash.

Attributes: **Subfield 1:**

- Date of Birth
 - YYYYMMDD
 - Unknown

Subfield 2:

- Age
 - AAA

Rationale:

Accurate reporting of date of birth is used to assess the effectiveness of occupant protection systems for specific age groups, and to identify the need for safety programs directed

¹³ Changes to this element received consensus approval at the August 3rd meeting in Charlotte

DRAFT

toward them. This element is also critical in providing linkage between the crash, EMS, and hospital records.

P32. Sex

Definition: The sex of the person involved in the crash.

- Attributes:
- Male
 - Female
 - Unknown

Rationale:

Necessary, for example, to evaluate the effect of sex of the person involved on occupant protection systems and motor vehicle design characteristics.

P43. Person Type

Definition: Type of person involved in a crash.

- Attributes:
- Motorist
 - Driver
 - Passenger
 - Non-Motorist (nonoccupant of vehicle in transport):
 - Pedestrian
 - Other Pedestrian (wheelchair, person in a building, skater, personal conveyance, etc.)
 - Bicyclist
 - Other Cyclist
 - Occupant of Motor Vehicle Not in Transport (parked, etc.)
 - Occupant of a Non-Motor Vehicle Transportation Device
 - Unknown Type of Non-Motorist
 - Unknown

Rationale:

Need to know person type for classification purposes to evaluate specific countermeasure designed for specific people.

P54. Injury Status Two proposals -- Option 1 entails only improving the glossary definitions of the existing KABCO attributes. Option 2 entails replacing KABCO attributes with a

4-attribute scale].¹⁴

Definition: The injury severity level for a person involved in crash.

Option 1 [with improved glossary definitions]

Attributes: ■ Fatal Injury (K)

- Nonfatal Injury
 - Incapacitating (A)
 - Non-incapacitating (B)
 - Possible (C)
- No injury (O)
- Unknown

Option 2 [with attribute glossary definitions provided for consideration]

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- **Fatal Injury (killed):** A fatal injury is 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 “Fatal Injury.”

- **Suspected Serious Injury:** A suspected serious injury is an injury other than fatal which results in one or more of the following:
 - Severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood
 - Broken or distorted extremity (arm or leg)
 - Crush injuries to the body
 - Suspected skull, chest or abdominal injury other than bruises or minor lacerations
 - Unconsciousness when taken from the crash scene
 - Paralysis

- **Suspected Minor Injury:** A minor injury is 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

¹⁴ Based on response at the August 3 meeting in Charlotte, Option 2 has been modified so that it is now a 5-point scheme

DRAFT

surface with minimal bleeding and no exposure of deeper tissue/muscle) or single digit (finger or toe) amputations.

- **Possible injury:** A possible injury is any injury reported or claimed which 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 which are reported by the person or are indicated by his/her behavior, but no wounds or injuries are readily evident.
- **No apparent injury:** No apparent injury is 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.

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Rationale:

Necessary for injury outcome analysis and evaluation. This element is also critical in providing linkage between the crash, EMS, and hospital records.

LEVEL 2: ALL OCCUPANTS

P~~65~~⁶⁵. Occupant's Motor Vehicle Unit Number

Definition:

The unique number assigned for this crash to the motor vehicle in which this person was an occupant. Persons ejected or who fall from a vehicle are still considered occupants.

Attribute:

- Number to indicate in which motor vehicle the occupant was located.

Rationale:

Important to link occupants back to motor vehicles in which they were riding. Necessary, for example, to evaluate the effect motor vehicle type and specific make/model have on occupant protection effectiveness and injury status.

P~~76~~⁷⁶. Seating Position¹⁵¹⁶

¹⁵ Glossary definition added for attribute "Seat, Other" to indicate that "lying across seat" is

DRAFT

Definition:

The location for this occupant in, on, or outside of the motor vehicle prior to the first event in the sequence of events. See Appendix N.

Attributes: **Subfield 1:**

- Row:
 - Front
 - Second
 - Third
 - Fourth
 - Other Row (bus, 15 passenger van, etc.)
 - Unknown

Subfield 2:

- Seat:
 - Left (usually the motor vehicle or motorcycle driver except for postal vehicles and some foreign vehicles)
 - Middle
 - Right
 - Other
 - Unknown

Subfield 3:

- Other Location¹⁷:
 - Not Applicable
 - Sleeper Section of Cab (truck)
 - Other Enclosed Cargo Area
 - Unenclosed Cargo Area
 - Trailing Unit
 - Riding on Motor Vehicle Exterior (non-trailing unit)

included

¹⁶ Proposed changes to Appendix N related to ambulance seating was rejected at the August 3rd meeting in Charlotte

¹⁷ The MMUCC Expert Panel is considering a proposal to identify the location of EMS personnel in the rear of an ambulance

DRAFT

- Unknown

Rationale:

Without known seating position for each person in the motor vehicle, it is not possible to fully evaluate, for example, the effect of occupant protection programs.

P87. Restraint Systems / Motorcycle Helmet Use¹⁸

Definition:

The restraint equipment in use by the occupant, or the helmet use by a motorcyclist, at the time of the crash.

Attributes: **Subfield 1:**

- Restraint Systems
 - Not Applicable
 - None Used–Motor Vehicle Occupant
 - Shoulder and Lap Belt Used
 - Shoulder Belt Only Used
 - Lap Belt Only Used
 - Restraint Used–Type Unknown
 - Child Restraint System–Forward Facing
 - Child Restraint System–Rear Facing
 - Booster Seat
 - Child Restraint Type Unknown
 - Other
 - Unknown

Subfield 2:

- Motorcycle Helmet Use
 - DOT-Compliant Motorcycle Helmet
 - ~~Other Helmet~~Helmet, other than DOT-compliant motorcycle helmet
 - Helmet, unknown if DOT-compliant motorcycle helmet
 - No Helmet
 - Unknown if helmet worn

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¹⁸ Changes to this element received consensus approval at the August 3rd meeting in Charlotte

DRAFT

Rationale:

Proper classification of the use of available occupant restraint systems and helmet use is vital to evaluating the effectiveness of such equipment.

P98. Air Bag Deployed

Definition:

Deployment status of an air bag relative to the position in the vehicle for this occupant. Refer to Appendix M for a diagram of air bag types.

Attributes: • Not Applicable

- Not Deployed
- Deployed-Front
- Deployed-Side
- **Deployed-Curtain**
- Deployed-Other (knee, air belt, etc.)
- Deployed-Combination
- **Deployed-Curtain**
- Deployment Unknown

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Rationale:

Necessary to evaluate the effectiveness of air bags and other occupant protection equipment, especially at a time when air bags are becoming standard equipment.

P109. Ejection

Definition:

Occupant completely or partially thrown from the interior of the motor vehicle, excluding motorcycles, as a result of a crash.

Attributes: • Not Ejected

- Ejected, Partially
- Ejected, Totally
- Not Applicable
- Unknown

Rationale:

Occupant protection systems prevent or mitigate ejections to various degrees. Analyses of the effectiveness of safety **belts**

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systems depend on information from this data element.

LEVEL 3: ALL DRIVERS

P110. Driver License Jurisdiction

Definition:

The geographic or political entity issuing a driver license. Includes the States of the United States (including the District of Columbia and outlying areas), Indian Nations, U.S. Government, Canadian Provinces, and Mexican States (including the Distrito Federal), as well as other jurisdictions.

Attributes: • Not Applicable

- Not Licensed
- State
- Indian Nation
- U.S. Government
- Canadian Province
- Mexican State
- International License (other than Mexico, Canada)
- Unknown

Rationale:

Necessary to evaluate the effectiveness of various licensing laws. This element is also critical in providing linkage between the crash and driver license files at the State level.

P124. Driver License Number, Class, CDL and Endorsements**

Definition: A unique set of alphanumeric characters assigned by the authorizing agent issuing a driver license to the individual.

Attributes: **Subfield 1:**

- License Number – Alphanumeric identifier assigned by the authorizing jurisdiction (State, foreign country, U.S. government, Indian Nation, etc.).

Subfield 2:

- Class
This indicates the type of driver's license issued by the State and the type of motor vehicle the driver is qualified to

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drive.

- None
- Not Applicable
- Class A

Any combination of vehicles with a gross combination weight rating (GCWR) of 26,001 pounds or more provided the GVWR of the vehicle(s) being towed is in excess of 10,000 pounds.

- Class B

Any single vehicle with a GVWR of 26,001 or more pounds, or any such vehicle towing a vehicle not in excess of 10,000 pounds GVWR.

- Class C

Any single vehicle, or combination of vehicles, that does not meet the definition of Class A or Class B, but is either designed to transport 16 or more passengers, including the driver, or is used in the transportation of materials found to be hazardous which require the motor vehicle to be placarded.

- Regular Driver's License Class

Any regular or standard driver's license issued for the operation of automobiles and light trucks by States that separate these vehicles from Class "C". Other class designation codes such as "D", "R" and others may be used by States to indicate a regular driver's license class.

- Class M

Motorcycles, Mopeds, Motor-Driven Cycles

Subfield 3:

- Commercial Driver License (CDL)

This indicates whether the driver's license is a commercial driver license (CDL). Also, this information is important to separate the non-commercial licenses included by some States in Class C with the commercial licenses.

- No
- Yes

Subfield 4:

- Endorsements

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This indicates any endorsements to the driver's license, both commercial and non-commercial.

- None/Not Applicable
- T - Double/Triple Trailers
- P - Passenger
- N - Tank Vehicle
- H - Hazardous Materials
- X - Combination of Tank Vehicle and Hazardous Materials
- S - School
- Other non-commercial license endorsements (e.g.; motorcycle, etc.)

~~P12. Driver Name¹⁹~~

~~Definition: The full name of the individual driver.~~

~~Attributes: • Name~~

~~Rationale:~~

~~This data element should be collected to corroborate the driver license number and to facilitate linkage when names are available in the health and insurance files. When possible, obtain this information from the driver license (via a bar code or "smart" license or via online linkage).~~

P13 Speeding Related

Definition: Indication of whether the investigating officer suspects that the driver involved in the crash was "speeding," based on verbal or physical evidence and not on speculation alone.

Attributes:

- Racing
- Exceeded speed limit
- Too fast for conditions
- No
- Unknown

Rationale: Important for evaluating preventive programs and engineering assessments.

¹⁹ See new P1 Name of Person Involved

P143. Driver Actions at Time of Crash

Definition:

The actions by the driver that may have contributed to the crash. This data element is based on the judgment of the law enforcement officer investigating the crash and need not match **Violation Codes (P14)**.

Attributes: **Subfield 1:**

- Driver Action 1
 - No Contributing Action
 - Ran Off Roadway
 - Failed to Yield Right-of-Way
 - Ran Red Light
 - Ran Stop Sign
 - Disregarded Other Traffic Sign
 - Disregarded Other Road Markings
 - ~~Exceeded Posted Speed Limit~~
 - ~~Drove Too Fast For Conditions~~
 - Improper Turn
 - Improper Backing
 - Improper Passing
 - Wrong Side or Wrong Way
 - Followed Too Closely
 - Failed to Keep in Proper Lane
 - Operated Motor Vehicle in Erratic, Reckless, Careless, Negligent or Aggressive Manner
 - Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway, etc.
 - Over-Correcting/Over-Steering
 - Other Contributing Action
 - Unknown

Subfield 2:

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- Driver Action 2
See attributes in Subfield 1

Subfield 3:

- Driver Action 3
See attributes in Subfield 1

Subfield 4:

- Driver Action 4
See attributes in Subfield 1

Rationale:

Important for evaluating the effect that dangerous driver behavior has on crashes.

P154. Violation Codes

Definition: All motor vehicle-related violations codes, if any, which apply to this driver.

Attributes: **Subfield 1:**

- Violation Code 1
 - No Violation
 - (Violation Code)
 - Unknown

Subfield 2:

- Violation Code 2
See codes in Subfield 1

Rationale:

Important for evaluation of safety laws and enforcement practices. This information is not available from the driver license file.

P165. Driver Distracted By²⁰

Definition:

Distractions which may have influenced the driver performance. The distractions can be inside the motor vehicle (internal) or outside the motor vehicle (external).

Attributes:

- Not Distracted

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²⁰ Proposed changes received support but not consensus approval at the August 3rd meeting in Charlotte.

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- Manually operating an electronic communication device (texting, typing, dialing)
- Talking on hands-free electronic device
- Talking on hand-held electronic device
- Other activity, electronic device
- Passenger
- Other Inside the Vehicle (eating, personal hygiene, and unspecified details)
- Outside the vehicle (includes unspecified external distractions)
- Unknown if Distracted

• Not Distracted

~~• Electronic Communication Device~~

~~• Other Electronic Device (navigation device, DVD player, etc.)~~

~~• Other Inside the Vehicle~~

~~• External Distraction (outside the vehicle)~~

~~• Unknown~~

Rationale: Important ~~for evaluating the effect that driver behavior has on crashes~~ to identify specific driver behavior during a crash and understand and mitigate the effects of distracting activities.

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LEVEL 4: ALL DRIVERS AND NON-MOTORISTS

P176. Condition at Time of the Crash

Definition:

Any relevant condition of the individual (motorist or non-motorist) that is directly related to the crash.

Attributes:

Subfield 1 Condition 1

- Apparently Normal

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- Physically Impaired
- Emotional (depressed, angry, disturbed, etc.)
- Ill (sick), Fainted
- Asleep ~~or Fatigued~~
- Fatigued
- Under the Influence of Medications/Drugs/Alcohol
- Other
- Unknown

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Subfield 2 Condition 2:

See attributes in Subfield 1

Rationale: Important for evaluating the effect that fatigue, medications/alcohol/drugs, or other conditions have on the crash.

P187. Law Enforcement Suspects Alcohol Use

Definition:

Driver or non-motorist involved in the crash suspected by law enforcement to have used alcohol.

- Attributes:
- No
 - Yes
 - Unknown

Rationale:

Alcohol-related crashes remain a serious traffic safety problem. Identifying crashes in which alcohol may have been involved will help evaluate the effectiveness of programs to decrease the incidence of drunk driving or to identify problem areas.

P198. Alcohol Test

Definition: Indication of the presence of alcohol by test, type, and result.

Attributes: **Subfield 1:**

- Test Status:
 - Test Not Given
 - Test Refused
 - Test Given

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- Unknown if Tested

Subfield 2:

- Type of Test:
 - Blood
 - Breath
 - Urine
 - Other

Subfield 3:

- BAC Test Result:
 - Value
 - Pending
 - Unknown

Rationale:

Alcohol remains the most prevalent drug involved in motor vehicle crashes. Capturing alcohol concentration whenever a driver or non-motorist is tested will provide an accurate assessment of the role of alcohol involvement. The type of test used to obtain the alcohol concentration also is important information to collect.

P4209. Law Enforcement Suspects Drug Use

Definition:

Driver or non-motorist involved in the crash suspected by law enforcement to have used drugs.

- Attributes:
- No
 - Yes
 - Unknown

Rationale:

Drug-related crashes remain a serious traffic safety problem. Identifying crashes in which drugs may have been involved will help evaluate the effectiveness of programs to decrease the incidence of driving while under the influence of drugs.

P210. Drug Test

Definition:

Indication of the presence of drug test, type, and result. Excludes drugs administered post-crash. See **Drug Test**

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Result (PL3) to document drug name and value.

Attributes: **Subfield 1:**

- Test Status:
 - Test Not Given
 - Test Refused
 - Test Given
 - Unknown if Tested

Subfield 2:

- Type of Test:
 - Blood
 - Urine
 - Other

Subfield 3:

- Drug Test Result:
 - Positive
 - Negative
 - Unknown

Rationale:

Identifying drug-related crashes help develop and evaluate programs directed at reducing their involvement. Whenever evidence of other drug use is available, it should be captured.

LEVEL 5: NON-MOTORISTS (INCLUDES OCCUPANTS OF MOTOR VEHICLES NOT IN TRANSPORT AND OCCUPANTS OF NON-MOTOR VEHICLE TRANSPORTATION DEVICES)

P221. Non-Motorist Number

Definition: The unique number assigned to the non-motorist involved in the crash.

Attribute:

- Sequential Number (uniquely identifying the non-motorist involved in the crash)

Rationale:

Important for management/administration and evaluation.
Needed to determine number and type of non-motorists

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involved in crash. Needed to track non-motorist action before the crash as well as injuries sustained.

P232. Non-Motorist Action/Circumstance Prior to Crash

Definition:

The action of the non-motorist immediately prior to the crash and an indication of whether the non-motorist was walking/cycling to/from school.

Attributes:

Subfield 1 Action/Circumstances:

- Crossing Roadway
- Waiting to Cross Roadway
-
- Walking/Cycling Along Roadway with Traffic (In or Adjacent to Travel Lane)
-
- Walking/Cycling Along Roadway Against Traffic (In or Adjacent to Travel Lane)
- Walking/Cycling on Sidewalk
- In Roadway – Other (~~Working, Playing, Etc.~~)
- Adjacent to Roadway (e.g., Shoulder, Median)
- ~~Going to or from School (K-12)~~
- Working in Trafficway (Incident Response)
- Other
- None
- Unknown

Subfield 2 Going to or from School (K-12)²¹

- No
- Yes
- Unkown

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Rationale:

The development of effective roadway design and operation, education, and enforcement measures to accommodate pedestrians and bicyclists and prevent crashes with motor vehicles is enhanced by the collection of the actions and

²¹ Adding this subfield received consensus approval at the August 3rd meeting in Charlotte

DRAFT

circumstances prior to the crash.

P243. Non-Motorist Actions/Circumstances at Time of Crash

Definition:

The actions/circumstances of the non-motorist that may have contributed to the crash. This data element is based on the judgment of the law enforcement officer investigating the crash.

Attributes: **Subfield 1:**

- Non-Motorist Contributing Action/Circumstance 1
 - No Improper Action
 - Dart/Dash
 - Failure to Yield Right-Of-Way
 - Failure to Obey Traffic Signs, Signals, or Officer
 - In Roadway Improperly (Standing, Lying, Working, Playing)
 - Disabled Vehicle Related (Working on, Pushing, Leaving/Approaching)
 - Entering/Exiting Parked/Standing Vehicle
 - Inattentive (Talking, Eating, Etc.)
 - Not Visible (Dark Clothing, No Lighting, Etc.)
 - Improper Turn/Merge
 - Improper Passing
 - Wrong-Way Riding or Walking
 - Other
 - Unknown

Subfield 2:

- Non-Motorist Contributing Action/Circumstance 2
See attributes in Subfield 1

Rationale:

The development of effective roadway design and operation, education, and enforcement measures to accommodate pedestrians and cyclists and prevent crashes with motor vehicles is enhanced by the collection of the actions and circumstances at the time of the crash.

P254. Non-Motorist Location at Time of Crash

Definition:

The location of the non-motorist with respect to the roadway at the time of crash.

Attributes: • Intersection – Marked Crosswalk

- Intersection – Unmarked Crosswalk
- Intersection – Other
- Midblock – Marked Crosswalk
- Travel Lane – Other Location
- Bicycle Lane
- Shoulder/Roadside
- Sidewalk
- Median/Crossing Island
- Driveway Access
- Shared-Use Path or Trail
- Non-Trafficway Area
- Other
- Unknown

Rationale:

The development of effective roadway design and operation, education, and enforcement measures to accommodate pedestrians and cyclists and prevent crashes with motor vehicles is enhanced by the collection of the location of the non-motorist at the time of crash.

P265. Non-Motorist Safety Equipment

Definition: The safety equipment(s) used by the non-motorist.

Attributes: **Subfield 1:**

- Safety Equipment Used by Non-Motorist
 - None
 - Helmet
 - Protective Pads Used (elbows, knees, shins, etc.)
 - Reflective Clothing (jacket, backpack, etc.)
 - Lighting

DRAFT

- Other
- Not Applicable
- Unknown

Subfield 2:

- Safety Equipment Used by Non-Motorist
See attributes in Subfield 1

Rationale:

Used to evaluate effectiveness of non-motorist safety equipment. Important to calculate usage statistics for the development and evaluation of the effectiveness of educational countermeasures. The use of two sub-fields allows for the recording of two types of safety equipment, such as a helmet and reflective clothing.

P276. Unit Number of Motor Vehicle Striking Non-Motorist

Definition:

Number assigned to identify the motor vehicle that struck the non-motorist in the crash.

Attribute:

- Unit number of motor vehicle that was the first motor vehicle to strike the non-motorist

Rationale:

Used for tracking. Important when multiple motor vehicles are involved in the crash.

LEVEL 6: ALL INJURED

P287. Transported to Medical Facility By

Definition:

Type and identity of unit providing transport to the medical facility receiving the patient.

Attributes: **Subfield 1:**

- Source of Transport
 - Not Transported
 - EMS Air
 - EMS Ground
 - Law Enforcement
 - Other

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- Unknown

Subfield 2:

- EMS Response Agency Identifier
ID for EMS agency that responds

Subfield 3:

- EMS Response Run Number

Subfield 4:

- Name or Number of Medical Facility Receiving Patient

Rationale:

Important to trace victim from the scene of crash through the health care system. Facilitates linkage of injured crash victims with Emergency Medical Services data files.

Derived and Linked Data Elements

These data elements should be derived from the data elements collected at scene or extracted from other databases linked to the crash database.

CRASH DATA ELEMENTS DERIVED FROM COLLECTED DATA

Crash-derived data elements are derived from the computerized crash scene information. Depending on the system used, they could be derived automatically by electronic data collection systems or they could be generated when the data are computerized and merged at the local, regional or State level. These derived data elements are generally not collected by law enforcement at the scene.

CD1. Crash Severity

Definition:

The severity of a crash based on the most severe injury to any person involved in the crash.

Source: Derived from **Injury Status (P4)** for each person involved in the crash.

- Attributes:
- Fatal Injury (K)
 - Incapacitating Injury (A)
 - Non-incapacitating Injury (B)
 - Possible Injury (C)
 - Property-Damage-Only (O)

DRAFT

- Unknown

Rationale:

Provides a classification of the severity of the crash for the user without having to search through the person level records. This simplifies the use of the crash data file for producing reports by crash severity.

CD2. Number of Motor Vehicles Involved

Definition:

The total number of motor vehicles (automobiles, single-unit trucks, truck combinations, motorcycles, etc.) that are involved in the crash.

Source:

Derived by counting the number of motor vehicles involved in a crash as indicated in **Motor Vehicle Unit Type and Number (V2)**.

Attribute: • Number of motor vehicles involved

Rationale:

Provides for the user a count of the number of motor vehicles involved in the crash without having to count the number of motor vehicle records. This simplifies the use of the crash data file for producing reports in which the number of involved motor vehicles is needed.

CD3. Number of Motorists

Definition:

The total number of motorists refers to the count of occupants of motor vehicles in transport involved in the crash.

Source:

Derived by counting the number of motorists involved in the crash as indicated in **Occupant's Motor Vehicle Unit Number (P5), Seating Position (P6)** and excluding the occupants of motor vehicles not in transport listed in **Person Type (P3)**.

Attribute: • Number of Motorists

Rationale:

Provides for the user a count of the number of occupants of motor vehicles involved in the crash without having to count the number of person level records. This simplifies the use of the crash data file for producing reports or carrying out analyses in which the number of motorists is needed or in

DRAFT

identifying crashes involving motorists.

CD4. Number of Non-Motorists

Definition:

The total number of non-motorists refers to the count of non-occupants (pedestrians, pedalcyclists, etc.) or occupants of motor vehicles not in transport involved in a crash.

Source:

Derived by counting the number of non-motorists involved in the crash as indicated in **Non-Motorist Number (P21)**.

Attribute: • Number of Non-Motorists

Rationale:

Provides for the user a count of the number of non-motorists involved in the crash without having to count the number of non-motorist records. This simplifies the use of the crash data file for producing reports in which the number of non-motorists is needed or in identifying crashes involving non-motorists.

CD5. Number of Non-Fatally Injured Persons

Definition:

The total number of persons injured, excluding fatalities within 30 days, in the crash

Source:

Derived by counting the number of persons with incapacitating, non-incapacitating or possible injuries resulting from the crash as indicated in **Injury Status (P4)**.

Attribute: • Number of Non-Fatally Injured Persons

Rationale:

Provides for the user a count of the number of persons injured in the crash without having to search through the person level records. This simplifies the use of the crash data file for producing reports in which the number of injured persons is needed.

CD6. Number of Fatalities

Definition:

The total number of fatalities (motorists and non-motorists) that resulted from injuries sustained as the result of a specific motor vehicle crash. In reporting fatality statistics, a 30-day counting rule is generally used for highway safety statistics.

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This rule provides that only deaths that occur within 30 24-hour periods of a crash will be counted for statistical purposes.

Source: Derived by counting number of persons fatally injured in the crash from Fatal Injury (K) listed in **Injury Status (P4)**.

Attribute: • Number of Fatalities (persons killed within 30 24-hour periods of a crash).

Rationale:

Provides for the user a count of the number of persons fatally injured in the crash without having to search through the person level records. This simplifies the use of the crash data file for producing reports in which the number of fatalities is needed or in identifying crashes involving a fatality.

CD7. Alcohol Involvement

Definition:

Law enforcement suspected or documented that at least one driver or non-motorist involved in the crash had used alcohol. Includes both alcohol use under the legal limit and at or over the legal limit.

Source:

Derived from the driver and non-motorist **Law Enforcement Suspects Alcohol Use (P17), Alcohol Test (P18)**.

Attributes: • No
• Yes
• Unknown

Rationale:

Provides a way for the user to easily identify alcohol-related crashes without having to search through the person level records.

CD8. Drug Involvement

Definition: Law enforcement suspected or documented that at least one driver or non-motorist involved in the crash had used drugs.

Source: Derived from the driver and non-motorist **Law Enforcement Suspects Drug Use (P19), Drug Test (P20)**.

Attributes: • No
• Yes

DRAFT

- Unknown

Rationale: Provides a way for the user to easily identify drug-related crashes without having to search through the person level records.

CD9. Day of Week

Definition: The day of the week on which the crash occurred.

Source: Derived from the **Crash Date and Time (C2)**.

Attributes: • Sunday

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday

Rationale: Permits the user to quickly obtain this information for crash analyses without having to translate the date.

PERSON DATA ELEMENTS DERIVED FROM COLLECTED DATA

This data element is easily generated after the crash data are collected at the scene and computerized. Depending on the system used, it could be derived automatically by electronic data collection systems, or it could be generated when data are merged at the local, regional and/or State level.

PD1. Age

Definition: The age in years of the person involved in the crash

Source: This data element is derived from **Date of Birth (P1)** and **Crash Date and Time (C2)**.

Attribute: • Age in years

Rationale: Age is necessary to determine the effectiveness of safety countermeasures appropriate for various age groups.

PERSON DATA ELEMENTS OBTAINED AFTER LINKAGE TO OTHER DATA

Person "linked" data elements are obtained after linkage to crash, driver history, injury and/or other State data. When a State does not have the

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capability to link to other State data, as many of the person “linked” data elements as possible should be collected at the scene.

LEVEL 3: ALL DRIVERS

PL1. Driver License Restrictions

Definition: Restrictions assigned to an individual’s driver license by the license examiner.

Source: Obtained by linking **Driver License Number, Class, CDL and Endorsement (P11)** for in-State drivers to the driver license number in the driver history data system.

Attributes: **Subfield 1:**

- Driver Restrictions 1
 - None
 - Corrective Lenses
 - Mechanical Devices (special brakes, hand controls, or other adaptive devices)
 - Prosthetic Aid
 - Automatic Transmission
 - Outside Mirror
 - Limited to Daylight Only
 - Limited to Employment
 - Learner’s Permit Restrictions
 - Intermediate License Restrictions
 - Limited-Other
 - CDL Intrastate Only
 - Motor Vehicles Without Air Brakes
 - Military Vehicles Only
 - Except Class A Bus
 - Except Class A and Class B Bus
 - Except Tractor-Trailer
 - Farm Waiver
 - Other

Subfield 2:

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- Driver Restriction 2
See attributes for Subfield 1

Subfield 3:

- Driver Restriction 3
See attributes for Subfield 1

Rationale: Used to identify drivers with limitations on their operators' licenses who were involved in crashes.

PL2. Driver License Status

Definition: The current status of an individual's driver license at the time of the crash.

Source: Obtained by linking **Driver License Number, Class, CDL and Endorsement (P11)** with the Driver History data file.

Attributes: **Subfield 1:**

- Type Applicable for This Person
 - Non-CDL Driver's License
 - Non-CDL Restricted Driver's License (Learner's permit, Temporary/Limited, Graduated Driver's License, etc.)
 - Commercial Driver License (CDL)

Subfield 2:

- Status
 - Not Licensed
 - Valid License
 - Suspended
 - Revoked
 - Expired
 - Canceled or Denied
 - Disqualified (CDL)
 - Unknown

Rationale: Used to identify drivers involved in crashes who are not in compliance with the limitations of their operator's licenses.

PL3. Drug Test Result

Definition: Results of tests performed to determine presence of drugs.

Source: Obtained by linking **Driver Driver License Number, Class,**

DRAFT

CDL and Endorsement (P11), Driver Name (P12), and Drug Test (P20) to the information in the data system containing test results.

Attributes: **Subfield 1:**

- Drug 1
 - Marijuana
 - Cocaine
 - Opiate
 - Amphetamine
 - PCP
 - Other Controlled Substance
 - Other Drug (excludes post-crash drugs ~~and nicotine, Aspirin, etc.~~)

Subfield 2:

- Drug 2
 - See attributes in Subfield 1

Subfield 3:

- Drug 3
 - See attributes in Subfield 1

Subfield 4:

- Drug 4
 - See attributes in Subfield 1

Rationale: Drug test results are needed to verify drug use to help develop and evaluate programs directed at reducing their involvement. Whenever evidence of “other drug” use is available, it should be captured.

LEVEL 6: ALL INJURED PERSONS

PL4. Injury Area

Definition: The primary or most obvious area of the person’s body injured during the crash.

Source: Obtained by linking current identifiers for the person, such as **Date of Birth (P1), Sex (P2), Transported to Medical Facility By (P27)**, and crash location information including **Crash Date and Time (C2), Crash County (C3), Crash City/Place (C4), Crash Location (C5), Source of**

DRAFT

Information (C9), etc., to pre-hospital EMS, emergency department, and/or hospital discharge data files. [Linkage to the National Emergency Medical Services Information Service \(NEMSIS\) is recommended, if possible, to obtain this data.](#)

Attributes: Area of injury as indicated in a matrix or narrative in the EMS records or as a hospital discharge code (ICD-9-CM, or ICD-10, if implemented) in the emergency department, hospital or insurance records. The following list represents the major areas of the body subject to injury.

- Head
- Face
- Neck
- Thorax (chest)
- Abdomen and Pelvis
- Spine
- Upper Extremity
- Lower Extremity
- Unspecified

Rationale: This type of information will help to distinguish between multiple injuries in the same crash and help evaluate motor vehicle design, restraint, and safety equipment.

PL5. Injury Description

Definition: Type of injury inflicted to primary **Injury Area (PL4)**.

Source: Obtained from linked crash and injury data systems (EMS, emergency department, and/or hospital discharge). [Linkage to the National Emergency Medical Services Information Service \(NEMSIS\) is recommended, if possible, to obtain this data.](#)

Attribute: • Description of the injury according to data elements included in the files being linked such as the body areas and types of injuries listed on the crash and EMS records and/or the ICD-9 (or ICD-10, if implemented) codes listed on the hospital discharge records.

Rationale: Important to distinguish between multiple injuries in the same crash and help evaluate motor vehicle design, restraint and safety equipment.

DRAFT

ROADWAY DATA ELEMENTS OBTAINED AFTER LINKAGE TO OTHER DATA

Roadway data elements are generated by linking crash to roadway inventory and hardware data. The data elements used for linkage include **Crash Location (C5)** and others as necessary depending upon the type of roadway inventory system implemented by the State. When a State does not have a roadway inventory, as many of the data elements as possible should be collected at the scene.

Roadway Data Elements Obtained After Linkage to Other Data

Roadway data elements are generated by linking crash to roadway inventory and hardware data. The data elements used for linkage includee Crash Location (C6) and others as necessary depending upon the type of roadway inventory system implemented by the State. When a State does not have a roadway inventory, as many of the data elements as possible should be collected at the scene.

~~In 2009, the Model **Minimum Inventory of Roadway Elements (MMIRE)** Guideline is expected to be published. MMIRE will~~ complements MMUCC and ~~will~~ greatly expands on the number of MMUCC Roadway Data Elements.

RL1. Bridge/Structure Identification Number

Definition: A unique federal inspection/inventory identifier assigned to a bridge, underpass, overpass, or tunnel bridge/structure that is also linkable to the national bridge inventory.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

Attribute: • Number as described in *Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges*, December 1988, Federal Highway Administration, item 8 and HPMS/90, item 77.

Rationale: Important to link specific geometric data describing the bridge for problem identification analysis and for determining the relationship between bridge structure characteristics and crashes.

RL2. Roadway Curvature

Definition: The measurement of the curvature in the roadway

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expressed in terms of its radius, length, and superelevation.
The unit of measurement is feet.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data. See **Roadway Alignment and Grade (V16)**.

Attributes: • Not Applicable

Subfield 1:

- Curve:
 - Radius

Subfield 2:

- Length

Subfield 3:

- Superelevation

Rationale: Curve data is used in searching for and diagnosing high-crash locations. Important for determining relationship between horizontal alignment-related crashes to guide future highway design, speed limits, and driver skill training (motorcycle curve entering speed, etc.).

RL3. Grade

Definition: The inclination of the roadway, expressed in the rate of rise or fall in feet per 100 feet of horizontal distance.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data. See **Roadway Alignment and Grade (V16)**.

Attributes: **Subfield 1:**

- Direction of Slope:
 - Up (+) or Down (-)

Subfield 2:

- Percent of Slope:
 - Nearest Percent of Slope

Rationale: Used to identify possible causes and countermeasures for a high crash site.

RL4. Part of National Highway System

Definition: Designation as part of the National Highway System.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

DRAFT

Attributes: • Yes

- No
- Unknown

Rationale: Important to monitor highway safety on the National Highway System.

RL5. Roadway Functional Class

Definition: The character of service or function of streets or highways. The classification of rural and urban is determined by State and local officials in cooperation with each other and approved by the Federal Highway Administration, U.S. Department of Transportation.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

Attributes: ■ Rural:

- Principal Arterial-Interstate
- Principal Arterial-Other
- Minor Arterial
- Major Collector
- Minor Collector
- Local
- Unknown Rural

■ Urban:

- Principal Arterial-Interstate
- Principal Arterial-Other Freeway or Expressway
- Principal Arterial-Other
- Minor Arterial
- Collector
- Local
- Unknown Urban

■ Unknown

Rationale: Important for comparing crash rates/safety experience of highways of similar design characteristics so as to identify those highways or highway sections that have abnormal rates/experience for future improvements as well as

DRAFT

generalized study of the highways in a region or State.
Knowledge of the land use is needed in analyzing crashes as part of a network analysis.

RL6. Annual Average Daily Traffic

Definition: The average number of motor vehicles passing a point on a trafficway in a day, for all days of the year, during a specified calendar year.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

Attributes: **Subfield 1:**

- AADT Year

Subfield 2:

- AADT

Subfield 3:

- Truck (over 10,000 lbs.) Percentage

Subfield 4:

- Motorcycle Percentage

Rationale: Important to normalize crash data to account for exposure.

RL7. Widths of Lane(s) and Shoulder(s)

Definition: Widths (in feet) of the lane(s) and of the shoulder(s) where crash occurred.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

Attributes: **Subfield 1:**

- Lane Width

Subfield 2:

- Right Shoulder Width

Subfield 3:

- Left Shoulder Width

Rationale: Important to monitor the association of lane/shoulder widths and the frequency of crashes.

RL8. Width of Median

DRAFT

Definition: Width from travel lane edge to travel lane edge of the portion of divided highway separating the road for traffic in opposing directions where the crash occurred. If a crash occurs at a mid-block section, the median width is based on the mid-block section. If the crash occurs at an intersection, the median width is based on the median widths at the intersection.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

Attribute: • Width of Median

Rationale: Important to monitor the need for medians to protect motorists from oncoming traffic.

RL9. Access Control

Definition: The degree that access to abutting land is fully, partially, or not controlled by a public authority. Full access control provides access only at interchanges (interstate, etc.). Partial access control provides no private access. No access control permits private access (driveway, etc.).

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

Attributes: • Full Access Control
• Partial access Control
• No Access Control

Rationale: Highly correlated with crash rates and, therefore, useful in identifying high hazard locations. Important to guide future highway design and traffic control.

RL10. Railway Crossing ID

Definition: A unique US DOT/AAR number assigned for identification purposes to a railroad crossing by a state highway agency in cooperation with the Federal Railroad Administration.

Source: Obtained by linking **Crash Location (C5)** to State or Federal Railway Administration data.

Attribute: • State specific number assigned by a State in cooperation with the American Association of Railroads.

Rationale: The data are used in high crash locations as well as high-risk corridors. Important for determining the need for additional controls and evaluating the efficacy of various

DRAFT

types of controls.

RL11. Roadway Lighting

Definition: Type of roadway illumination.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

- Attributes:
- No Lighting
 - Spot Illumination on One Side
 - Spot Illumination on Both Sides
 - Continuous Lighting on One Side
 - Continuous Lighting on Both Sides

Rationale: Recognized as having a benefit to safe highway operations. Information about the presence of lighting is an important element in analysis of a spot location, a section of highway, or a network analysis. Important for determining the affects of highway illumination on nighttime crashes to guide future installations.

RL12. Pavement Markings, Longitudinal

Definition: The longitudinal markings (paint, plastic, or other) used on the roadway surface to guide or control the path followed by drivers.

Attributes: **Subfield 1:**

- Edgeline Presence/Type
 - No Marked Edgeline
 - Standard Width Edgeline
 - Wide Edgeline
 - Other

Subfield 2:

- Centerline Presence/Type
 - No Marked Centerline
 - Standard Centerline Markings
 - Centerline With Centerline Rumble Strip

Subfield 3:

- Lane Line Markings

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- No Lane Markings
- Standard Lane Line
- Wide Lane Line

Rationale: Important to know about the existence of pavement markings for the analysis of crash data. Useful for determining the effects of various types of longitudinal markings on various types of crashes to guide future applications.

RL13. Presence/Type of Bicycle Facility

Definition: Any road, path, or way which is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

Attributes: **Subfield 1:**

- Facility
 - None
 - Wide Curb Lane
 - Marked Bicycle Lane
 - Unmarked Paved Shoulder
 - Separate Bicycle Path/Trail
 - Unknown

Subfield 2:

- Signed Bicycle Route
 - Yes
 - No
 - Unknown
 - Not Applicable

Rationale: Needed to determine usage and safety of bicycle facilities. Needed to determine the location of bicycle crashes in relation to a bicycle facility. Important for ascertaining the relative safety performance of various types/classes of bike paths to guide future design/operation decisions.

DRAFT

RL14. Traffic Control Type at Intersection

Definition: Type of traffic control device at intersection where crash occurred.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

- Attributes:
- No Control
 - Stop Signs on Cross Street Only
 - All-Way Stop Signs
 - All-Way Flasher (red on cross street)
 - All-Way Flasher (red on all legs)
 - Yield Signs on Cross Street Only
 - Signals Pre-Timed (2 Phase)
 - Signals Pre-Timed (multi-phase)
 - Signals Semi-Actuated (2 Phase)
 - Signals Semi-Actuated (multi-phase)
 - Signals Fully Actuated (2 Phase)
 - Signals Fully Actuated (multi-phase)
 - Other
 - Unknown

Rationale: Important to understand the relationship between crashes at intersections and the type of traffic control device present.

RL15. Mainline Number of Lanes at Intersection

Definition: Number of through lanes on the mainline approaches of an intersection, including all lanes with through movement (through and left-turn, or through and right-turn) but not exclusive turn lanes.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

- Attributes:
- One Lane
 - Two Lanes
 - Three Lanes
 - Four to Six Lanes
 - Seven or More Lanes

DRAFT

- Unknown

Rationale: Important to describe the intersection.

RL16. Side-Road Number of Lanes at Intersection

Definition: Number of through lanes on the side-road approaches at intersection including all lanes with through movement (through and left-turn, or through and right-turn) but not exclusive turn lanes.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

- Attributes:
- One Lane
 - Two Lanes
 - Three Lanes
 - Four to Six Lanes
 - Seven or More Lanes
 - Unknown

Rationale: Important to describe the intersection.

RL17. Total Volume of Entering Vehicles

Definition: Total entering vehicles for all approaches of an intersection.

Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data.

Attributes: **Subfield 1:**

- AADT Year

Subfield 2:

- AADT

Rationale: Important to understand volume of crashes as a measure of exposure for the mainline approaches.