

Minimum Uniform Crash Criteria for North Carolina

# DMV 349 CRASH REPORT DATA ELEMENT DICTIONARY

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# Minimum Uniform Crash Criteria for North Carolina

**Motor Vehicle Crash** – A motor vehicle crash involves a motor vehicle in transport resulting in an un-stabilized situation, which includes at least one harmful event. An un-stabilized situation is a set of events not under human control, which originates when control is lost and terminates when control is regained or when all persons and property are at rest.

In North Carolina, the DMV-349 crash report is required for any motor vehicle crash in which any person is killed or injured or in which the total property damage resulting from the crash is \$1,000.00 or greater, or which there is property damage of any amount to a vehicle seized.

# (\*) items should be explained in crash narrative.

# I. CRASH LEVEL

The crash level data elements describe the overall characteristics of the crash.

# C1. Crash Case Identifier

- Definition: The unique number within a given year that identifies a given crash within a state.
- Source: Refer to crash ID Number on DMV-349 Form.
- Attribute: 9-digit sequential number
- Rationale: This number, assigned by the DMV Traffic Records Section, facilitates the linkage of crash file sub-components, such as location and unit information with control information, as well as linkage of the traffic records sub-files back to the crash data file.

# C2. Local Report Number

- Definition: Optional number assigned by originating police department.
- Attributes: According to Crash Reporting Surveyed, thirty percent of respondents indicate that they use 8 characters when assigning case numbers to files. Twenty-one percent and 17% of departments use 7 and 6 characters, respectively. Few respondents assign more than 10 characters to a case number.
- Rationale: Used by local law enforcement to index crash reports.

### C3. Crash Date

Definition: The date (month, day and year) at which the crash occurred. The time (hour and minute) at which crash occurred. Source: Refer to crash date on DMV-349 Form.

Attribute: Date

MMDDCCYY

#### Subfield 1:Month

- 01 January
- 02 February
- 03 March
- 04 April
- 05 May
- 06 June
- 07 July
- 08 August
- 09 September
- 10 October
- 11 November
- 12 December

#### Subfield 2: Day

DD Day of Month

#### Subfield 3:Year

CCYY Year

Rationale: Rationale: Important for management/administration, evaluation, and linkage. Changed 2-position code for year to 4-position in preparation for the year 2000.

#### C4. Crash Time

Definition: The time (hour and minute) at which a crash occurred.

Source: Refer to crash time on DMV-349 Form.

Attribute: Time

- Subfield 1: Hour HH 0-23, representing the time on a 24 hour clock
- Subfield 2: Minute nn Minutes

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

# C5. Crash County

- Definition: The code identifying the county in which a crash occurred.
- Source: Refer to county block on DMV-349 Form.

Attribute: The full Name of the county is recorded on the DMV-349. The first five positions of the County name are entered into an automated file and converted to a 2-digit code.

00	Alamance	33	Forsyth	66	Onslow
01	Alexander	34	Franklin	67	Orange
02	Alleghany	35	Gaston	68	Pamlico
03	Anson	36	Gates	69	Pasquotank
04	Ashe	37	Graham	70	Pender
05	Avery	38	Granville	71	Perquimans
06	Beaufort	39	Greene	72	Person
07	Bertie	40	Guilford	73	Pitt
08	Bladen	41	Halifax	74	Polk
09	Brunswick	42	Harnett	75	Randolph
10	Buncombe	43	Haywood	76	Richmond
11	Burke	44	Henderson	77	Robertson
12	Cabarrus	45	Hertford	78	Rockingham
13	Caldwell	46	Hoke	79	Rowan
14	Camden	47	Hyde	80	Rutherford
15	Carteret	48	Iredell	81	Sampson
16	Caswell	49	Jackson	82	Scotland
17	Catawba	50	Johnston	83	Stanly
18	Chatham	51	Jones	84	Stokes
19	Cherokee	52	Lee	85	Surry
20	Chowan	53	Lenoir	86	Swain
21	Clay	54	Lincoln	87	Transylvania
22	Cleveland	55	Macon	88	Tyrell
23	Columbus	56	Madison	89	Union
24	Craven	57	Martin	90	Vance
25	Cumberland	58	McDowell	91	Wake
26	Currituck	59	Mecklenburg	92	Warren
27	Dare	60	Mitchell	93	Washington
28	Davidson	61	Montgomery	94	Watauga
29	Davie	62	Moore	95	Wayne
30	Duplin	63	Nash	96	Wilkes
31	Durham	64	New Hanover	97	Wilson

- 32 Edgecombe 65 Northhampton 98 Yadkin 99 Yancey
  - Rationale: Important for analyses of county area programs such as "Safe Communities." Critical for data linkage of the crash file to other state data files (such as EMS, hospital, roadway, etc.). Important for intrastate comparisons.

#### C6. Crash City/Place

- Definition: The code identifying the city/place in which a crash occurred.
- Source: Refer to county block on DMV-349 Form.
- Attribute: The full Name of the Municipality is recorded on the DMV-349. Up to twenty-two positions of the Name are entered into an automated file. If a municipality is not on the list, the coding changes to a Rural report and only the County code is used.
- Rationale: Important for analyses of local area programs such as "Safe Communities." Critical for data linkage of the crash file to other state data files (such as EMS, hospital, roadway, etc.).

#### C7. Locality

- Definition: The general type and level of development in the vicinity of the crash. For example, if the estimated total development is less than 30% or about 1/3 of road frontage on both sides over a substantial distance from the scene of the crash, then enter a "1" for rural development.
- Source: Refer to block # 1 left side of DMV-349 Form.
- Attributes: 1 Rural (30% developed)
  - 2 Mixed (30% to 70% developed)
  - 3 Urban (>70% developed)
- Rationale: Important for analyses of programs by area development (rural vs. urban).

#### C8. Relation to Roadway

Definition: The location of the First Harmful Event as it relates to its position within or outside the trafficway. This data element also relates to other data elements; including Location, Sequence of Events, Non-Motorist Location, and the

Reference to Roadway subfield for the data element Direction of Travel.

Source: Refer to block 33 on the DMV-349 Form.

#### Attributes: 1 On Roadway (surface) Off Roadway

- 2 Shoulder
- 3 Median
- 4 Roadside
- 5 Outside-Trafficway
- 6 Unknown

Rationale: Important to provide further information concerning the location of the First harmful Event and to identify highway geometric deficiencies.

#### C9. Crash Roadway Location

- Definition: Exact location on the roadway indicating where the crash occurred. The following is contained on the DMV-349.
- Source: Refer to location block on DMV-349 Form.

In or near a Municipality

\_\_\_\_ Miles N,S,E,W outside Municipality

On \_\_\_\_\_ Highway No., Street Name, etc.

At \_\_\_\_\_ RR Crossing No.

\_\_\_\_ Miles, Feet N,S,E,W from Highway No., Street Name, etc.

\_\_\_\_ Miles, Feet N,S,E,W toward Highway No., Street Name, etc.

Attributes: County (2 digits) Municipality (22 Position code) On Road (20 position code) containing: Highway Class (2 position code) **Highway Number** Alternate Direction (1 position) Private Property/Non-Traffic Code Street Name Public Vehicular Area Code Interchange Ramp (check block) From Road (20-position code) containing: County State Street Name Highway Class, Number, Alternate, etc. Toward Road (20-position code) containing: County State Street name Highway Class, Number, Alternate, etc. Direction (2 position code) - N,S,E,W, NE, NW, etc. Distance in Miles (M) or Feet (F) - (3 digit code) followed by M or F Railroad Crossing Number (7 position code) Latitude, Longitude & Altitude (X, Y, Z)

Rationale: Important for preventive programs, engineering evaluations, and linkage purposes. As Geographic Information System (GIS), and Global Positioning System (GPS) technologies become more available, they will be used to supplement and enhance the current location methods to identify potentially hazardous locations.

### C10. Predominant Development Type

- Definition: The predominant type of development in the area in which the crash occurred. Examples are: *Commercial (mainly retail stores), Institutional (schools, hospitals, government buildings, etc.).*
- Source: Refer to location block on DMV-349 Form.
- Attributes: 1 Farms, woods, pastures
  - 2 Residential
  - 3 Commercial
  - 4 Institutional
  - 5 Industrial

Rationale: Important for analyses of programs by area development (residential vs. commercial, etc.).

# C11. First Harmful Event (at Crash Level)

- Definition: The injury of damage producing event, which characterizes the crash type and identifies the nature of the first harmful event. This data element focuses on the First Harmful event <u>at the Crash Level</u>, rather than at the Vehicle Level.
- Source: Refer to ANSI D16.1 Classification Manual for definitions of specific attributes and block 10 on DMV-349 Form.
- Attributes: 00 Unknown

## **Non-Collision**

- 01 Ran Off Road Right
- 02 Ran Off Road Left
- 03 Ran Off Road Straight
- 04 Jackknife
- 05 Overturn/rollover
- 13 Other Non-Collision\*

### **Collision of Motor Vehicle With**

- 14 Pedestrian
- 15 Pedalcyclist
- 16 RR Train, Engine
- 17 Animal
- 18 Movable Object
- 19 Fixed Object\*

#### **Collision of Two or More Motor Vehicles**

- 20 Parked Motor Vehicle
- 21 Rear End, Slow or Stop
- 22 Rear End, Turn
- 23 Left Turn, Same Roadway
- 24 Left Turn, Different Roadways
- 25 Right Turn, Same Roadway
- 26 Right Turn, Different Roadways
- 27 Head On
- 28 Sideswipe, Same Direction
- 29 Sideswipe, Opposite Direction
- 30 Angle
- 31 Backing up
- 32 Other Collision with Vehicle\*
- 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** (V32).

#### C12. Most Harmful Event (at Crash Level)

Definition: Event that produced the greatest property damage or most severe injury in the crash. Refer to ANSI D16.1 for definitions of specific attributes.

- Source: Refer to ANSI D16.1 Classification Manual for definitions of specific attributes and block 11 on DMV-349 Form.
- Attributes: 00 Unknown Non-Collision
  - 01 Ran Off Road Right
  - 02 Ran Off Road Left
  - 03 Ran Off Road Straight
  - 04 Jackknife
  - 05 Overturn/rollover
  - 13 Other Non-Collision\*

# **Collision of Motor Vehicle With**

- 14 Pedestrian
- 15 Pedalcyclist
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- 27 Right Turn, Different Roadways
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- 28 Sideswipe, Same Direction
- 29 Sideswipe, Opposite Direction
- 30 Angle
- 31 Backing up
- 32 Other Collision with Vehicle\*
- Rationale: Important for use in conjunction with Sequence of Events (V20) to generate complete information about the crash.

# C13. Crash Narrative

Definition: Provide a word description of events occurring prior to, during, and after the crash which are not elsewhere on the form. Note all pertinent and unusual aspects of the crash. Statements made in this narrative should be in the opinion of the investigating officer.

- Source: Refer to block 85 on the DMV-349 Form.
- Attributes: Refer to list of abbreviation codes used to enter this information.
- Rationale: The crash narrative or description provides valuable information to traffic researchers, enabling them to design and promote Highway Safety Programs.

#### C14. Crash Diagram

- Definition: A drawing by the investigating officer of the crash site, including roads, features, involved vehicles, marks and other pertinent information of the crash. Any roadway or roadside feature that might possibly have been a contributing factor in the crash should be shown. For example, if a vehicle is struck while exiting a driveway, the name of any business located there or the name of the resident at the private driveway is listed.
- Source: Refer to block 84 on the DMV-349 Form.
- Attributes: The crash diagram should include:
  - 1. Roads and intersecting roads, widths of roads, shoulders and median strips,
  - 2. Direction of travel for each traffic lane,
  - 3. All roadside features pertinent to the crash (parked cars, trees, buildings, traffic signs and signals, etc.),
  - 4. Path of travel for involved vehicles and pedestrians prior to, at and after the crash,
  - 5. Tire marks and debris, if important in the crash or otherwise needed,
  - 6. Measurements pertinent to the location of the point of impact (tape measurements for distances up to and including 500 feet; odometer measurements for distances over 500 feet) are acceptable.
- Rationale: The crash diagram enables the investigating officer to illustrate the special relationships that existed between the vehicles and environment at the time of the crash.

# C15. Additional Property Damage – Type

Definition: Any property other than motor vehicles that was damaged in the crash (check block for state property damaged).

Source: Refer to block 86 on the DMV-349 Form.

Attributes: Specific property that was damaged. Examples include signs, buildings, mailboxes, fences, etc.

Rationale: For statistical purposes, and possible action by property owner to recover damages.

#### C16. Additional Property Damage - Owner Name, Address, Phone

- Definition: Name, address, and telephone number of owner of property damaged in the crash, other than motor vehicles.
- Source: Refer to block 86 on the DMV-349 Form.
- Attributes: Name, address, and telephone number(s).
- Rationale: For contacting property owners, who may seek reimbursement as they make repairs.

#### C17. Estimated Damage to Additional Property

- Definition: Estimate of the cost to restore the damaged property to its condition just prior to the crash.
- Source: Refer to block 86 on the DMV-349 Form.
- Attributes: 9999999. Not stated nnnnnn. Actual dollar estimate 9999998.Damage exceeds 9999998
- Rationale: Used in calculating the costs of motor vehicle traffic crashes for estimating the cost benefit of highway safety programs and improvements. Used in possible recovery of cost to repair damaged property, such as "State Property". Also used in classifying property damage only (PDO) crashes.

#### C18. Weather Condition

- Definition: The general atmospheric conditions that existed at the time of a crash.
- Source: Refer to blocks 4-6 on DMV-349 Form.

# Attributes: Subfield 1 - First Weather Condition

- 1 Clear
- 2 Cloudy
- 3 Rain
- 4 Snow
- 5 Fog, smog, smoke
- 6 Sleet, hail (freezing rain or drizzle)
- 7 Severe crosswinds
- 8 Blowing sand, dirt, snow
- 9 Other\*

#### Subfield 2 - Second Weather Condition

See Codes in Subfield 1

Subfield 3 - Weather condition(s) contributed to the crash

- 1 Yes 2 No 3 Unknown
- Rationale: Important for management/administration and evaluation. Critical for preventive programs and engineering evaluations.

#### C19. Ambient Light

- Definition: The type of light that exists at the time of a motor vehicle crash.
- Source: Refer to block 7 on DMV-349 Form.
- Attributes: 1 Daylight
  - 2 Dusk
    - 3 Dawn
    - 4 Dark lighted roadway
    - 5 Dark roadway not lighted
    - 6 Dark unknown roadway lighting
    - 7 Other\*
    - 8 Unknown
- Rationale: Important for management/administration and evaluation. Critical for preventive programs and engineering evaluations.

### C20. Road Surface Condition

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

Source: Refer to block 3 on DMV-349 Form.

Attributes: 01 Dry 02 Wet 03 Water (standing, moving) 04 Ice 05 Snow 06 Slush 07 Sand, Mud, Dirt, Gravel 08 Fuel Oil 09 Other\* 10 Unknown

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

### C21. Contributing Circumstances, Roadway

- Definition: Apparent condition of the road, which contributed to the crash.
- Source: Refer to blocks 12 13 on DMV-349 Form.

### Attributes: Subfield 1 - First Contributing Circumstance

- 00 None (no unusual conditions)
- 01 Road Surface Condition
- 02 Debris
- 03 Rut, Holes, Bumps
- 04 Work Zone
  - (construction/maintenance/utility)
- 05 Worn, Travel-Polished Surface
- 06 Obstruction in Roadway
- 07 Traffic Control Device Inoperative, Not Visible or Missing
- 08 Shoulders Low, Soft, or High
- 09 No Shoulders
- 10 Non-Highway Work
- 11 Other\*
- 12 Unknown

# Subfield 2 - Second Contributing Circumstance

#### See Codes in Subfield 1

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

#### C22. Road Feature

- Definition: A road feature is either an intersection or the connection between a driveway access and a roadway other than a driveway access.
- Source: Refer to block 69 on DMV-349 Form.

Attributes: 00 No special feature

- 01 Bridge
- 02 Bridge approach
- 03 Underpass
- 04 Driveway, public
- 05 Driveway, private
- 06 Alley intersection

Intersection of roadways

- 07 Four-way intersection
- 08 T -intersection
- 09 Y -intersection
- 10 Traffic circle/roundabout
- 11 Five-point, or more
- 12 Related to intersection
- 13 Non-intersection median crossing
- 14 End or beginning of divided highway

#### Interchange

- 15 Off-ramp entry
- 16 Off-ramp proper
- 17 Off-ramp terminal on crossroad
- 18 Merge lane between on and off ramp
- 19 On-ramp entry
- 20 On-ramp proper
- 21 On ramp terminal on crossroad
- 22 Railroad crossing
- 23 Tunnel
- 24 Shared-use paths or trails
- 25 Other\*
- Rationale: Important for site-specific safety studies to identify actual or potential safety problem locations. Bridge approach describes the area within 500 feet of the bridge, which leads up to the bridge. Related to Intersection refers to the influence area, which is caused by the operation of the intersection. The distance to which the influence area extends from the intersection depends on the intersection design, and traffic control as well as the operating characteristics.

# C23. Road Surface (Type)

- Definition: Actual surface type of the roadway in the area in which the crash occurred. Examples are Grooved Concrete (areas where the concrete surface has been sawed, scratched or molded to form grooves intended to improve traction or to make tire noise), Soil (dirt surfaces not identifiable as sand, gravel, or any paved type).
- Source: Refer to block 72 on DMV-349 Form.

#### Attributes: 1 Concrete

- 2 Grooved concrete
- 3 Smooth asphalt
- 4 Coarse asphalt
- 5 Gravel
- 6 Sand
- 7 Soil
- 8 Other\*

#### C24. Traffic Control Operating

- Definition: Determination of whether traffic control device was operating properly at the time of the crash.
- Attributes: 1 Yes 2 No 3 Unknown

#### C25. Horizontal and Vertical Alignment (Road Character)

- Definition: The change in horizontal and vertical direction of a roadway, determined at the point of curvature.
- Attributes: 1 Straight, level 2 Straight, hillcrest 3 Straight, grade 4 Straight; bottom (sag) 5 Curve, level 6 Curve, hillcrest 7 Curve, grade 8 Curve, bottom (sag) 9 Other\*
- Rationale: Curve data is used in searching for and diagnosing high crash locations. Important for determining relationship between horizontal/vertical alignment related crashes to guide future highway design, speed limits, and driver skill training (e.g., motorcycle curve-entering speed).

## C26. Road Classification

- 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. Refer to ANSI 016.1 for definitions of specific attributes.
- Source: Refer to block 71 on DMV-349 Form.
- Attributes: 1 Interstate 2 US Route 3 NC.Route 4 State Secondary Route 5 Loca I Street 6 Public Vehicular Area 7 Private Road, Property or Driveway 8 Other\*
- 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 generalized study of the highways in a region or state.

#### C27. Number of Lanes

- Definition: Total number of thru lanes of the "road on" at the point of the crash (if two-way, total for both directions). Do not count turning lanes unless they are continuous between intersections.
- Source: Refer to block 75 on DMV-349 Form.
- Attributes: Total number of lanes. Enter "0" for parking lots.
- Rationale: Used in studying broad categories as well as identifying the environment of a particular crash.

#### C28. Road Configuration

Definition: A code indicating whether or not a trafficway 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 more than an easily traversable centerline. Refer to ANSI D16.1 for definitions of specific attributes.

- Source: Refer to block 73 on DMV-349 Form.
- Attributes: 1 One-way, not divided 2 Two-way, not divided 3 Two-way, divided, unprotected median 4 Two-way, divided, positive median barrier 5 Unknown
- Rationale: Used in classifying crashes as well as identifying the environment of a particular crash. Note that data must be in a road inventory file or collected by the reporting officer. It is not readily derived from the other road data such as classification or route. Important to guide future trafficway design and traffic control.

### C29. 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: Refer to block 74 on DMV-349 Form.
- Attributes: 1 No Access Control permits private access (driveway, etc.)

2 Full Access Control - provides access only at interchanges (interstate, etc.)

- 3 Partial Access Control provides no private access
- Rationale: Access control is highly correlated with crash rates. Road inventory files or police reported data on access control is used in identifying High hazard locations. Important to guide future highway design and traffic control.

#### C30. RR Crossing ID

- Definition: A unique number assigned to a railroad crossing by a state highway agency in cooperation with the Federal Railroad Administration for identification purposes (US DOT/AAR number).
- Source: Refer to **C9 Crash Roadway Location** and the location block on DMV-349 Form.

- Attributes: State specific number assigned by a state in cooperation with the American Association of Railroads.
- Rationale: The data is used in high crash locations as well as high risk corridors. The RR Crossing ID is important for determining the need for additional controls and evaluating the efficiency of various types of controls.

# C31. School Bus-Related

- Definition: Indicates if a school bus is related to the crash. The "school bus", with or without a pupil on board, must be directly involved as a contact vehicle or indirectly involved as a non-contact vehicle. A "school bus" is a yellow vehicle, with the name "school bus" on the front and rear and lettering on both sides identifying the school, school district served, or company operating the bus.
- Source: Refer to block 67 68 on DMV-349 Form.
- Attributes: 1 Yes, school bus directly involved (contact vehicle)
  2 Yes, school bus indirectly involved (non-contact vehicle)
  3 No
  - 4 Unknown
- Rationale: Important in determining where and how school children are at the greatest risk of injury when being transported by school bus and the extent to which school bus operations affect overall traffic safety.

#### C32. Work Zone-Related

- Definition: A crash, which occurs in or near a construction, maintenance or utility work zone.
- Source: Refer to block 78-81 on DMV-349 Form.

Attributes: Subfield 1: Did crash occur in or near-

- 1 Construction work area
- 2 Maintenance work area
- 3 Utility work area
- 4 Intermittent/moving work e.g., patching pothole
- 5 No

#### Subfield 2: Work activity at the time of the crash

- 1 On-going
- 2 No apparent activity

# Subfield 3: Work area marked with warning signs, cones, etc.

- í 1 Ýes
- 2 No

# Subfield 4: Location of crash

- 1 Before work area (after first warning sign and before lane shift/closure)
- 2 In work area approach taper (where lane closed or shifted)
- 3 Adjacent to actual work area
- Rationale: Important for assessing the impact of various types of onhighway work activity on traffic safety and evaluating Traffic Control Plans used at work zones and to make adjustments to the traffic control plans to enhance safety to workers and traveling public.

### C33. Source of Information

- Definition: Identity of the source providing the information on the crash report.
- Source: Refer to officer name, officer number and department on DMV-349 Form.
- Attributes: Police Reporting Agency (Department) identifier (The following values would be derived from the Agency identifier)
  - Municipal Police
     Sheriff
     Rural or County Police
     Highway Patrol
     Other Traffic Investigating Agency
- Rationale: This data element is important for quality control and identification purposes. The Police Reporting Agency identifier is to track the reporting of Safetynet crashes for quality control and training purposes.

#### C34. Officer Name

- Definition: Name of officer preparing the crash report.
- Source: Refer to officer name, officer number and department on DMV-349 Form.

Attributes: Actual name.

Rationale: Important in following up, when completing a report or with specific questions regarding a particular crash investigation.

#### C35. Officer Number

Definition:	Number of officer preparing the crash report.
Source:	Refer to officer name, officer number and department on DMV-349 Form.
Attributes:	Law enforcement badge number assigned to officer.
Rationale:	Linked to previous data element. Provides specific code for each officer.

#### C36. Patrol Area

Definition:	Area of Enforcement.
Source:	Refer to DMV-349 Form.
Attributes:	Assigned at the local level.
Rationale:	Reserved for local law enforcement use.

# C37. Date and Time Reported to Law Enforcement Agency

- Definition: The date (year, month, and day) and time (00:00-23:59) at which the law enforcement agency was notified about the crash.
- Source: Refer to date and time block on DMV-349 Form.

#### Attributes:

- YYYYMMDDHHMM
- See Appendix B for coding instructions. Midnight is defined as 00:00 to represent the beginning of a new day.
- Unknown

Rationale: Useful as a surrogate for time of the crash.

# C38. Manner of Crash/Collision Impact

- Definition: The events in sequence for this vehicle.
- Source: Refer to ANSI D16.1 for definitions of specific attributes and refer to blocks 52 56 and block 48 on DMV-349 Form.

Attributes:

### Subfield 1 - First Event

- 00 Unknown Non-Collision
- 01 Ran off road right
- 02 Ran off road left
- 03 Ran off road straight ahead
- 04 Jackknife
- 05 Overturn/rollover
- 06 Crossed centerline/median
- 07 Downhill runaway
- 08 Cargo/equipment loss or shift
- 09 Fire/explosion
- 10 Immersion
- 11 Equipment fair (blown tire, brake failure, etc.)
- 12 Separation of units
- 13 Other non-collision\*

#### **Collision of Motor Vehicle With**

- 14 Pedestrian
- 15 Pedalcyclist
- 16 Railway vehicle (e.g., train, engine)
- 17 Animal
- 18 Movable object

#### **Collision of Two or More Motor Vehicles**

- 20 Parked motor vehicle
- 21 Rear end, slow or stop
- 22 Rear end, turn
- 23 Left turn, same roadway
- 24 Left turn, different roadways
- 25 Right turn, same roadway
- 26 Right turn, different roadways
- 27 Head on
- 28 Sideswipe, same direction
- 29 Sideswipe, opposite direction
- 30 Angle
- 31 Backing up
- 32 Other collision with vehicle\*

#### Collision with fixed object

- 33 Tree
- 34 Utility Pole (with or without light)
- 35 Luminaire Pole (non-breakaway)
- 36 Luminaire Pole (breakaway)
- 37 Official Highway Sign (non-breakaway)

- 38 Official Highway Sign (breakaway)
- 39 Overhead Sign Support
- 40 Commercial Sign
- 41 Guardrail End on Shoulder
- 42 Guardrail Face on Shoulder
- 43 Guardrail End in Median
- 44 Guardrail Face in Median
- 45 Shoulder Barrier End (non-guardrail)
- 46 Shoulder Barrier Face (non-guardrail)
- 47 Median Barrier End (non-guardrail)
- 48 Median Barrier Face (non-guardrail)
- 49 Bridge Rail End
- 50 Bridge Rail Face
- 51 Overhead Part of Underpass
- 52 Pier on Shoulder of Underpass
- 53 Pier in Median of Underpass
- 54 Abutment (supporting wall) of Underpass
- 55 Traffic island Curb or Median
- 56 Catch Basin or Culvert on Shoulder
- 57 Catch Basin or Culvert in Median
- 58 Ditch
- 59 Embankment
- 60 Mailbox
- 61 Fence or Fence Post
- 62 Construction Barrier
- 63 Crash Cushion
- 64 Other Fixed Object\*

Subfield 2 - **Second Event** See Codes in Subfield 1

Subfield 3 - **Third Event** See Codes in Subfield 1

Subfield 4 - **Fourth Event** See Codes in Subfield 1

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.

# **II. VEHICLE LEVEL**

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

Vehicle Data Elements Collected on the DMV-349

# V1. Vehicle Unit Number Unique to the Crash

- Definition: Motor vehicle unit type and number assigned to uniquely identify each motor vehicle involved in the crash. This number is not assigned to pedestrians or bicyclists. (See **Non-Motorist Number (P21.)**
- Source: Refer to Unit block on DMV-349 Form.

# Attributes: Subfield 1:

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

# Subfield 2:

- Number
- Sequential number (alphanumeric and numeric characters)
- Rationale: Uniquely identifies each motor vehicle unit involved in the crash. Permits occupants to be assigned to the appropriate motor vehicle.

# V2. 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 vehicle.
- Source: Refer to owner block on DMV-349 Form.
- Attributes: Alphanumeric identifier assigned by the State, foreign country, US. government, Indian Nation, etc., and CCYY for the year.

# Subfield 1 - State

State – 2 position abbreviation of state issuing license plate.

If State is unknown, use **"OS"** If no plate is available, leave blank

# Subfield 2 - Year

- Year 4-digit year license plate issued. Must be current, prior or next year, otherwise contains zeroes
- Rationale: This element is critical in providing linkage between the crash and vehicle registration files to access the vehicle identification number.

### V3. Vehicle License Plate Number

- Definition: The alphanumeric identifier or other characters, exactly as displayed, on the registration plate or tag affixed to the vehicle. For combination trucks, vehicle plate number is obtained from the power unit or tractor.
- Source: Refer to owner block on DMV-349 Form.
- Attributes: Alphanumeric identifier assigned by the State, foreign country, U.S. government, or Indian Nation. Up to 8 positions (characters). This data element does not include Temporary Plates or Permits. Refer to ANSI D16.1 for definitions of specific attributes.
- Rationale: This element is critical in providing linkage between the crash and vehicle registration files to assess the vehicle identification number.

# V4. Vehicle Identification Number (VIN)

- Definition: A unique combination of alphanumeric characters assigned to a specific vehicle and formulated by the manufacturer. When the technology is available, this number can also be obtained by using a bar code reader while the vehicle is at the scene.
- Source: Refer to owner block on DMV-349 Form.
- Attributes: A manufacturer assigned number permanently affixed to the vehicle. When an officer makes a match of the Registration Master File, using a program such as VIN assist, and verifies the number in the field using a check digit, the VIN can be obtained by the officer. The following fields are contained in the (17) character VIN for vehicles from 1981 to the present:

# <u>Character</u> <u>Description</u>

- 1st Country of Origin
- 2nd Manufacturer
- 3rd Vehicle Type
- 4th\_8th The following five categories are covered by the 4th through 8<sup>th</sup> characters of the VIN (not necessarily in this order)
  - Line, e.g., Buick "Road master"
  - Series
  - Body Type
  - Engine Type
  - Restraint System
  - 9th Check Digit
  - 10th Model Year
  - 11th Assembly Plant
- 12th\_17th Production Sequence Number
- Rationale: Important for evaluation of specific vehicle design characteristics and occupant protection systems.

#### V5. Vehicle Make

- Definition: The distinctive (coded) name applied to a group of vehicles by a manufacturer.
- Source: Refer to owner block on DMV-349 Form.
- Attributes: Assigned by vehicle manufacturer
- Rationale: Important for use in identifying vehicle make, for evaluation, research and crash comparison purposes.

#### V6. Commercial Vehicle

- Definition: Indication as to whether a commercial vehicle was involved in the crash. A commercial motor vehicle (CMV) is defined as a motor vehicle or combination of motor vehicles used in commerce to transport passengers or property if the motor vehicle:
  - a. Has a gross combination weight rating of 10,001 or more pounds inclusive of a towed unit, or
  - b. Is designed to transport 16 or more passengers including the driver, or
  - c. Is of any size and is used in the transportation of materials found to be hazardous for the purposes of the Hazardous Materials Transportation Act and which require the motor vehicle to be placarded

under the Hazardous Materials Regulations. (49 CFR Part 172, Subpart F)

Attributes: Check block provided in the Unit 1, Unit 2 area, etc. of the crash report.

### V7. Carrier Name

- Definition: The name of an individual, partnership or corporation responsible for the transportation of persons or property.
- Attributes: **Subfield 1:** Carrier Name See Appendix C
  - Subfield 2: Carrier Name Source Truck, shipping papers, driver or trip manifest (bus) or logbook Other\*
- Rationale: The Federal Highway Administration's Office of Motor Carriers has the authority to fine and sanction truck and bus companies that are judged to be unsafe. A key to identifying such carriers is to collect crash data by the name of the company. Carrier crash data allows the OMC to focus enforcement efforts on truck and bus companies that have the largest number of crashes.

#### V8. Carrier Street Address

- Definition: The street address of the carrier.
- Attributes: See Appendix D
- Rationale: Since the Office of Motor Carriers has the authority to visit carriers to conduct review of compliance with FMCSRs, the street address of the carrier is important. The street address is also a way of cross-checking the correct identity of the carrier.

#### V9. Carrier Identification Number

- Definition: A unique number, found on the power unit, and assigned by the U.S. Department of Transportation, Interstate Commerce Commission, or by the state to a motor carrier.
- Attributes: Subfield 1: Identification Number

Subfield 2: Issuing Authority

U.S. Department of Transportation Number (US DOT) Interstate Commerce Commission Number (ICC MC) International Fuel Tax Agreement Number (IFTA) Fuel Tax Account# is comprised of:

- State Exemption Number (Intrastate Passenger Carrier, and Carrier of Household Goods)
- FEI (Federal Employee Identification) Number
- Fleet Number

Mexico Canada

Subfield 3: Source of Number

Shipping papers (truck) or trip manifest (bus) or logbook Other\*

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

# V10. Vehicle Style (Type)

- Definition: Indicates the general configuration of vehicle. Refer to ANSI D16.1 for definitions of specific attributes.
- Source: Refer to block 41 on DMV-349 Form.
- Attributes: 01 Passenger Car 02 Pickup 03 Light Truck (mini-van, panel) 04 Sport Utility 05 Van 06 Commercial Bus 07 School Bus 08 Activity Bus 09 Other Bus\* 10 Single unit truck (2 axle, 6-tire) 11 Single-unit truck (3-or-more axles) 12 Truck/Trailer 13 Truck Tractor (bobtail) 14 Tractor/Semi-trailer 15 Tractor/Doubles 16 Unknown heavy truck 17 Taxicab 18 Farm Equipment 19 Farm Tractor 20 Motorcvcle 21 Moped 22 Motor/Scooter or Motor Bike

- 23 Pedalcycle
- 24 Pedestrian
- 25 Motor home/Recreational Vehicle
- 26 Other\*
- 27 All-Terrain Vehicle (ATV)
- 28 Firetruck
- 29 EMS Vehicle, Ambulance, Rescue Squad
- 30 Military
- 31 Police
- 32 Unknown
- Rationale: This data element provides information about the general configuration of the vehicle which is important to evaluate the types of vehicles that have the most crashes and the effectiveness of various safety counter-measures. It should be collected for all crashes, not just those involving trucks.

# V11. Cargo Body Type

- Definition: Coded for commercial motor vehicles (CMV), see V6.
- Attributes: 01 Bus (seats for 16 or more people, including driver)
  - 02 Bus (seats for less than 16 people, including driver)
  - 03 Van/enclosed box
  - 04 Grain/Chips/Gravel truck
  - 05 Pole truck
  - 06 Cargo tank
  - 07 Flatbed
  - 08 Dump
  - 09 Concrete mixer
  - 10 Auto transporter
  - 11 Garbage/refuse
  - 12 Log truck
  - 13 Other\*
  - 14 Intermodal Cargo Container
- Rationale: This data element provides more information about the vehicle, including all major cargo body types. The information it provides can be important in helping OMC make decisions on regulatory strategies for different types of vehicles.

# V12. Hazardous Materials Involvement (Cargo Only)

- Definition: Indication that a motor vehicle had a hazardous materials placard as required by federal regulations.
- Source: Refer to back of the DMV-349 Form.

Attributes: Subfield 1: Was this vehicle carrying hazardous materials?

1 Yes 2 No

**Subfield 2:** Did this vehicle have a hazardous materials placard?

- 1 Yes 2 No
- Subfield 3: If yes, record from the hazardous materials placard,
  - 4-digit placard number or name taken from the middle of the diamond or from the rectangular box; and
  - 1-digit placard number from bottom of diamond.

Subfield 4: Hazardous Materials, Cargo Released from the Cargo Compartment

- 1 Yes Hazardous materials released
- 2 No Hazardous materials not released
- Rationale: Getting good data on crashes involving trucks carrying hazardous materials (HM) is important to the OMC as a result, OMC imposes tighter regulations on carriers that operate vehicles that transport HM, pulls over sample HM carrying vehicles for roadside inspections, and conducts compliance reviews on a higher percent of HM carriers. This data element asks the reporting officer to observe:
  - (1) Whether or not the vehicle is carrying hazardous materials,
  - (2) Whether or not the vehicle has a hazardous material placard,
  - (3) Record what is on the placard, and
  - (4) Indicate if the hazardous materials spilled out of the cargo compartment. By recording this information, the FHWA will obtain good information about the types of hazardous materials involved in a crash and the crash scenes which were potential hazards because HM material escaped its packaging.

# V13. Weight Rating of Power Unit

Definition: A gross vehicle weight rating (GVWR) is a value specified by the manufacturer for a single-unit truck, truck tractor or

trailer, or the sum of such values for the units, which make up a truck combination.

Source: Refer to block 20 on DMV-349 Form.

### Attributes: Weight Rating of Power Unit of the Truck

- <10,000 pounds
- 10,001-26,000
- >26,000
- Rationale: Two break points used for FHWA regulation of motor carriers and their vehicles. This variable cannot be derived since some trucks are from out-of-state.

#### V14. Trailer Type

- Definition: Actual description of the type of trailer. A semi-trailer is one where a significant portion of its weight is supported by the towing vehicle.
- Source: Refer to block 82 on DMV-349 Form.

#### Attributes:

00 No trailer

#### Non-semi-trailers

- 01 Boat
- 02 Camper
- 03 Utility
- 04 Horse
- 05 House trailer (mobile home)
- 06 Towed vehicle
- 07 Other non-semi\*

#### Semi-trailers

- 08 Tanker
- 09 Enclosed van
- 10 Flatbed or platform
- 11 Other semi-trailer\*
- 12 Double trailer
- Rationale: Semi-trailers should have the length, width, and number of axles. Dual trailers should have the length, width and number of axles for each separate trailer. The maximum length and width for semi-trailers are:
  - Length: Single unit 48 feet, Dual trailer 28 feet (each trailer)

• Width: Designated routes 102 inches, Otherwise 96 inches

#### V15. Overwidth Trailer Permit Number

- Definition: Actual permit number allowing a 12', 14', or 16' mobile home to be transported on a roadway.
- Attributes: Actual permit number
- Rationale: Provide the identification of crashes involving overwidth mobile homes, identify the specifics involved in these crashes and allow tracking of the individual permit numbers.

#### V16. Length of Trailer 1

Definition: Actual length of trailer number 1 (in feet).

Attributes:	nn Length in feet of trailer
	99 If double trailer and length is not stated

#### V17. Width of Trailer 1

Definition: Actual width of trailer number 1 (in inches).

Attributes: nnn Width in inches of trailer 999 Not stated

#### V18. Length of Trailer 2

Definition: Actual length of trailer number 2 (in feet).

Attributes: nnn Length in feet of trailer 999 If double trailer and length is not stated

#### V19. Width of Trailer 2

- Definition: Actual width of trailer number 2 (in inches).
- Attributes: nnn Width in inches of trailer 999 Not stated

#### V20. Number of Axles - Trailer 1

- Definition: Number of axles for trailer number 1. If the trailer is a semitrailer, only the axles under the first trailer are recorded.
- Attributes: n Number of axles 9 Not stated

#### V21. Number of Axles - Trailer 2

Definition: The number of axles for trailer number 2.

Attributes: n Number of axles 9 Not stated

#### V22. Vehicle Defects

- Definition: Mechanical defects of the vehicle involved in the crash.
- Source: Refer to block 59 on DMV-349 Form.
- Attributes: Subfield 1 First Defect 0 None detected 1 Brakes 2 Headlights 3 Rear lights 4 Steering 5 Tires 6 Other defects\* 7 Unknown

**Subfield 2:** - Second Defect See Codes in Subfield 1

Rationale: Provides defect information for a vehicle involved in a crash and possible related factors, which may have contributed to the crash.

#### V23. Vehicle Authorized Speed Limit

- Definition: Authorized speed limit for the vehicle at the time of the crash. The Authorized Value may be indicated by the posted speed limit, blinking sign at construction zones, restricted speed for permitted vehicles, etc.
- Source: Refer to block 60 on DMV-349 Form.
- Attributes: Authorized Value
- Rationale: Important for evaluation purposes in spite of the fact that the speed of the vehicle at the time of the crash may differ significantly from the authorized speed limit.

#### V24. Estimate of Original Vehicle Speed

- Definition: Estimated speed in miles per hour for each vehicle involved may exceed 100 mph. Estimates reflect the speed of each vehicle at the moment the driver initially perceived an existing hazard.
- Source: Refer to block 61 on DMV-349 Form.
- Attributes: 999 Not stated nnn Estimate of original vehicle speed
- Rationale: For help in determining the circumstances of the crash.

#### V25. Estimated Speed at Impact

- Definition: Estimated speed in miles per hour for each vehicle involved in the crash. Estimates reflect the speed of each vehicle at the moment of impact.
- Attributes: 999 Not stated nnn Estimate of vehicle speed at impact 98 Speed is at least 98 miles per hour
- Rationale: For help in determining the circumstances of the crash.

#### V26. Tire Impressions Before Impact

- Definition: Length (in feet) of the tire impressions (skid marks, tire print, yaw) for each vehicle involved in the crash, prior to impact.
- Source: Refer to block 63 on DMV-349 Form.
- Attributes: 999 Not stated nnn Length in feet of tire impressions
- Rationale: For help in determining the circumstances of the crash.

#### V27. Distance Traveled After Impact

- Definition: Distance (in feet) each vehicle or pedestrian traveled after impact as a result of the force of the crash.
- Source: Refer to block 64 on DMV-349 Form.
- Attributes: 999 Not stated nnn Distance in feet traveled after impact

Rationale: For help in determining the circumstances of the crash.

#### V28. Direction of Travel Before Crash

- Definition: The direction or a vehicle's normal, general 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, for a state designated north-south highway, the direction must be either northbound or southbound even though a vehicle may have been traveling due east as a result of a short segment of the highway having an east-west orientation.
- Source: Refer to block 84 on DMV-349 Form.

Attributes: **Subfield 1:** Direction

01 North 02 North East 03 North West 04 South 05 South East 06 South West 07 East 08 West 09 Not on Roadway 10 Unknown

#### Subfield 2: Reference to Roadway

- 1 Vehicle on "On Road"
- 2 Vehicle on "From/Reference Road"
- 3 Vehicle on neither of the above
- Rationale: Important to indicate direction the vehicle was traveling before the crash for evaluation purposes.

#### V29. Traffic Control Device Type

- Definition: The type of traffic control, if any, at crash location.
- Source: Refer to block 76 on DMV-349 Form.
- Attributes: 00 No Control Present
  - 01 Stop Sign
  - 02 Yield Sign
  - 03 Stop and Go Signal
  - 04 Flashing signal with Stop Sign
  - 05 Flashing Signal without Stop Sign
  - 06 RR Gate and Flasher

- 07 RR Flasher
- 08 RR Crossbucks Only
- 09 Human Control
- 10 Warning Sign
- 11 School Zone Signs
- 12 Flashing Stop and Go Signal
- 13 Double Yellow Line, No Passing Zone
- 14 Other\*
- 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. Important for ascertaining the relationship between the use of various traffic control devices (TCDs) and crashes and identifying the need for upgraded TCDs at specific crash locations.

#### V30. Vehicle Maneuver/Action

- Definition: What the vehicle was doing prior to the crash.
- Source: Refer to block 49 on DMV-349 Form.
- Attributes: 01 Stopped in Travel Lane 02 Parked Out of Travel Lanes 03 Parked in Travel Lanes 04 Going Straight Ahead 05 Changing Lanes or Merging 06 Passing 07 Making Right Turn 08 Making Left Turn 09 Making U Turn 10 Backing 11 Slowing or Stopping 12 Starting in Roadway
  - 13 Parking
  - 14 Leaving Parked Position
  - 15 Avoiding Object in Road
  - 16 Other\*
- Rationale: Important for evaluation purposes, particularly when combined with Direction of Travel.

#### V31. Point of Impact

- Definition: The portion of the vehicle that impacted first in a crash.
- Source: Refer to block 48 on DMV-349 Form.

- Attributes: Up to four 2 position codes describing the Location of Initial Contact 0 Pedestrians 0 Non-Contact Vehicle 1-26 Vehicle (Passenger Cars/Small Trucks) 1-40 Vehicle (Tractor-Trailers) 27-30 Motorcycles, Bicycles, Mopeds, and All Terrain Vehicles (ATV)
- Rationale: Important for use in evaluating injury severity in relation to vehicle impact and crash severity.

#### V32. Sequence of Events for this Vehicle

- Definition: The events in sequence for this vehicle. Refer to ANSI D16.1 for definitions of specific attributes.
- Source: Refer to block 52-56 on DMV-349 Form.
- Attributes: Subfield 1 First Event

00 Unknown

#### Non-Collision

- 01 Ran off road right
- 02 Ran off road left
- 03 Ran off road straight ahead
- 04 Jackknife
- 05 Overturn/rollover
- 06 Crossed centerline/median
- 07 Downhill runaway
- 08 Cargo/equipment loss or shift
- 09 Fire/explosion
- 10 Immersion
- 11 Equipment failure (blown tire, brake failure, etc.)
- 12 Separation of units
- 15 Other non-collision\*

#### **Collision of Motor Vehicle With**

- 14 Pedestrian
- 15 Pedalcyclist
- 16 Railway vehicle (e.g., train, engine)
- 17 Animal
- 18 Movable object

#### **Collision of Two or More Motor Vehicles**

- 20 Parked motor vehicle
- 21 Rear end, slow or stop

- 22 Rear end, turn
- 23 Left turn, same roadway
- 24 Left turn, different roadways
- 25 Right turn, same roadway
- 26 Right turn, different roadways
- 27 Head on
- 28 Sideswipe, same direction
- 29 Sideswipe, opposite direction
- 30 Angle
- 31 Backing up
- 32 Other collision with vehicle\*

#### Collision with fixed object

33 Tree

- 34 Utility Pole (with or without light)
- 35 Luminaire Pole (non-breakaway)
- 36 Luminaire Pole (breakaway)
- 37 Official Highway Sign (non-breakaway)
- 38 Official Highway Sign (breakaway)
- 39 Overhead Sign Support
- 40 Commercial Sign
- 41 Guardrail End-on Shoulder
- 42 Guardrail Face on Shoulder
- 43 Guardrail End in Median
- 44 Guardrail Face in Median
- 45 Shoulder Barrier End (non-guardrail)
- 46 Shoulder Barrier Face (non-guardrail)
- 47 Median Barrier End (non-guardrail)
- 48 Median Barrier Face (non-guardrail)
- 49 Bridge Rail End
- 50 Bridge Rail Face
- 51 Overhead Part of Underpass
- 52 Pier on Shoulder of Underpass
- 53 Pier in Median of Underpass
- 54 Abutment (supporting wall) of Underpass
- 55 Traffic island Curb or Median
- 56 Catch Basin or Culvert on Shoulder
- 57 Catch Basin or Culvert in Median
- 58 Ditch
- 59 Embankment
- 60 Mailbox
- 61 Fence or Fence Post
- 62 Construction Barrier
- 63 Crash Cushion
- 64 Other Fixed Object\*
- Subfield 2 Second Event
- See Codes in Subfield 1

Subfield 3 - Third Event See Codes in Subfield 1 Subfield 4 - Fourth Event See Codes in Subfield 1

Rationale: Important for use in conjunction with most harmful event to generate complete information about a vehicle involved in the crash.

#### V33. Most Harmful Event for this Vehicle

- Definition: The most harmful event in terms of property damage and injury caused by this vehicle. Refer to ANSI D16.1 for definitions of specific attributes.
- Source: Refer to block 52 56 on DMV-349 Form.
- Attributes: 00 Unknown

#### **Non-Collision**

- 01 Ran off road right
- 02 Ran off road left
- 03 Ran off road straight ahead
- 04 Jackknife
- 05 Overturn/rollover
- 06 Crossed centerline/median
- 07 Downhill runaway
- 08 Cargo/equipment loss or shift
- 09 Fire/explosion
- 10 Immersion
- 11 Equipment failure (blown tire, brake failure, etc.)
- 12 Separation of units
- 13 Other non-collision\*

#### **Collision of Motor Vehicle With**

- 14 Pedestrian
- 15 Pedalcyclist
- 16 Railway vehicle (e.g., train, engine)
- 17 Animal
- 18 Movable object

#### **Collision of Two or More Motor Vehicles**

- 20 Parked motor vehicle
- 21 Rear end, slow or stop
- 22 Rear end, turn
- 23 Left turn, same roadway
- 24 Left turn, different roadways
- 25 Right turn, same roadway

- 26 Right turn, different roadways
- 27 Head on
- 28 Sideswipe, same direction
- 29 Sideswipe, opposite direction
- 31 Angle
- 31 Backing up
- 32 Other collision with vehicle

#### Collision with fixed object

33 Tree

- 34 Utility Pole (with or without light)
- 35 Luminaire Pole (non-breakaway)
- 36 Luminaire Pole (breakaway)
- 37 Official Highway Sign (non-breakaway)
- 38 Official Highway Sign (breakaway)
- 39 Overhead Sign Support
- 40 Commercial Sign
- 41 Guardrail End on Shoulder
- 42 Guardrail Face on Shoulder
- 43 Guardrail End in Median
- 44 Guardrail Face in Median
- 45 Shoulder Barrier End (non- guardrail)
- 46 Shoulder Barrier Face (non-guardrail)
- 47 Median Barrier End (non-guardrail)
- 48 Median Barrier Face (non-guardrail)
- 49 Bridge Rail End
- 50 Bridge Rail Face
- 51 Overhead Part of Underpass
- 52 Pier on Shoulder of Underpass
- 53 Pier in Median of Underpass
- 54 Abutment (supporting wall) of Underpass
- 55 Traffic island Curb or Median
- 56 Catch Basin or Culvert on Shoulder
- 57 Catch Basin or Culvert in Median
- 58 Ditch
- 59 Embankment
- 60 Mailbox
- 61 Fence or Fence Post
- 62 Construction Barrier
- 63 Crash Cushion
- 64 Other Fixed Object\*
- Rationale: Important for use in conjunction with the sequence of events to generate complete information about the crash.

#### V34. Distance & Direction from Road to Object Struck

- Definition: For crashes in which an object was struck, a code describing the distance and direction from the edge of the roadway to the object in question. The edge of the roadway is where the roadway meets the shoulder.
- Source: Refer to block 57 on DMV-349 Form.
- Attributes: 0 None or not applicable 1 In road 2 Right of road, 0-10 ft. 3 Right of road, 11-30 ft. 4 Right of road, over 30 ft. 5 Left of road, 0-10 ft. 6 Left of road, 0-10 ft. 7 Left of road, over 30 ft. 8 Straight-ahead,0-10 ft. 9 Straight-ahead, 11-30 ft. 10 Straight ahead, over 30 ft.
- Rationale: For help in determining the circumstances of the crash.

#### V35. Post-Crash Fire

- Definition: Indication as to whether there was fire after the crash involving this vehicle.
- Source: Refer to block 66 on DMV-349 Form.
- Attributes: 0 Not stated 1 Yes 2 No
- Rationale: Provides another measure of the circumstances as well as the severity of the crash.

#### V36. Underride/Override

- Definition: An underride refers to a vehicle sliding under another vehicle during a crash. An override refers to a vehicle riding up over another vehicle. Both can occur with a parked vehicle.
- Source: Refer to block 58 on DMV-349 Form.
- Attributes: 1 Underride 2 Override 3 Neither Underride or Override

4 Unknown

Rationale: This information is needed to identify the magnitude of crashes in which an underride or override occurs to support NHTSA rulemaking activities.

### V37. Damaged Area of Vehicle/Extent of Deformity

- Definition: Based on the Traffic Accident Damage (TAD) Ratings, a 4position field is used to record the location and severity of damage on the vehicle from the crash. Each part of the damaged vehicle is described in the first 3 positions and the severity of the damage is denoted in the last position. Three 4~position fields may be recorded per vehicle.
- Source: Refer to block 43 on DMV-349 Form.
- Attributes: **Subfield 1** Damaged Areas

FC Front Center **FD** Front Distributed FL Front Left Corner FR Front Right Corner **BC Hear Center BD** Rear Distributed **BL Rear Left Corner** BR Rear Right Corner LP Left Side (door) RP Right Side (door) LFQ Left Side Front Quarter **RFQ Right Side Front Quarter** LBO Left Side Rear Quarter **RBQ Right Side Rear Quarter** LD Left Side Distributed **RD** Right Side Distributed L&T Left Side & Top (rollover) R& T Right Side & Top (rollover) TOP Top **UND Underneath** 

## Subfield 2 - Extent of Deformity

The Severity of Damage is based on a Scale of "0" being no damage and "7" being the most severe damage.

Rationale: Important for evaluation in particular in conjunction with speed and vehicle crash severity.

#### V38. Estimated Amount of Vehicle Damage

- Definition: Dollar estimate of the cost to restore the vehicle to its condition just prior to the crash or the value of the vehicle before the crash, whichever is less. A vehicle that is (being towed by another is part of the towing vehicle and its damage should be included.
- Source: Refer to block 44 on DMV-349 Form.
- Attributes: 9999999. Not stated

nnnnnn. Actual dollar estimate (for a "totaled" vehicle, a dollar estimate of the retail value of the vehicle prior to the crash)

9999998. Damage exceeds 9999998

Rationale: Used in classifying property damage only (PDO) crashes, and in calculating the costs of motor vehicle traffic crashes for purposes of estimating the cost benefit of highway safety programs and improvements.

#### V39. Vehicle Drivable

- Definition: Vehicle is disabled by damage severe enough to prevent driving it. Determination as to whether or not vehicle is in a drivable condition to permit it to be driven from the scene of the crash.
- Source: Refer to block 42 on DMV-349 Form.
- Attributes: 1 Yes 2 No 3 Unknown
- Rationale: Determining whether the vehicle sustained disabling damage from a crash so the it could not be safely driven from the scene is key to consistent collection of crash data.

#### V40. Vehicle Towed To/By

- Definition: Description of where the vehicle was moved following the crash.
- Source: Refer to front of DMV-349 Form.
- Attributes: Actual name of garage, lot or other Location

Rationale: Important for management of crash consequences for later reference by persons involved in the crash as well as further need for investigation.

#### V41. Insurance Company Name

- Definition: Name of the insurance company for the vehicle involved in the crash.
- Source: Refer to owners block on DMV-349 Form.
- Attributes: Actual name of company.

Rationale: Tracking of financial responsibility.

#### V42. Policy Number

- Definition: Insurance policy number for the vehicle involved in the crash.
- Source: Refer to owners block on DMV-349 Form.

Attributes: Actual policy number.

# III. Person Level

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

#### Person Level 1: All Persons Involved

#### P1. Person Type

- Definition: Type of person involved in a crash. Refer to ANSI D16.1 Classification Manual for definitions of specific attributes.
- Source: Refer to block 22 on DMV-349 Form.

Attributes: 1 Driver 2 Passenger

#### Non-motorist

- 3 Pedestrian
- 4 Pedacyclist (bicycle, tricycle, Unicycle, pedalcycle)
- 5 Roller skater, roller blader
- 6 Other\*
- 7 Unknown
- Rationale: Need to know person type for classification purposes to evaluate specific countermeasure designed for specific people.

#### P2. Name

- Definition: The full name of the person.
- Source: Refer to Unit block on DMV-349 Form.
- Attributes: 1 Complete First, Middle and Last Name, or 2 'Hit and Run' if Hit and Run and no Driver's Name is shown, or
  - 3 The Owner's Name if parked vehicle and no Driver. May be Individual Name or Company 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 on-line linkage if the technology exists at the state level).

#### P3. Address

- Definition: Current address of person, including street address or rural road number. **Post office box numbers** are not acceptable for the street address. The street address is recorded if (1) No North Carolina driver's license is shown, or (2) Address is Different than shown on North Carolina driver's license. Check box provided to indicate whether this is the same address as indicated on the driver's license. A mailing address is generated if the record exists on the Driver's License Master File. The address is filled in by the system if the address is the same as shown on the North Carolina's driver's license.
- Source: Refer to Unit block on DMV-349 Form.

## Attributes: Subfield 1 - Street Address

26 position -street address15 position - limit for out of state addresses

#### Subfield 2 - City of Residence

Current city of residence of person. A five position "city code" is provided on all North Carolina addresses when the city is validated by the system. 22 position - city of residence 12 position - limit for out-of-state cities

#### Subfield 3 - State of Residence

Current state of residence of person. 2 position abbreviation *DC* coded for "other country"

#### Subfield 4 - Residence Zip Code

Current zip code of residence of person. The zip code is optional for out-of-state addresses.

nnnnn Zip code

Rationale: Need for any follow-up contact of the persons(s) involved in the crash.

#### P4. Home/Work Phone Numbers

- Definition: Telephone number(s) of the person, including area code.
- Source: Refer to Unit block on DMV-349 Form.
- Attributes: Telephone numbers recorded in hard copy form only.

Rationale: For follow-up contacts to persons involved in a crash, for additional information.

#### P5. Date of Birth/Approximate Age

- Definition: The month, day, and year of birth of person involved in a crash. If not available, record the approximate age. Source: Refer to Unit block on DMV-349 Form.
- Attributes: Date of Birth MMDDCCYY Approximate Age
- Rationale: Uses of accurate reporting of age include assessing effectiveness of occupant protection systems for specific age groups, and identifying the need for safety programs directed toward them. This element is also critical in providing linkage between the crash, EMS, and hospital records.

protection systems and vehicle design characteristics.

#### P6. Gender

Definition:	The sex of person involved in a crash.
Source:	Refer to block 26 on DMV-349 Form.
Attributes:	M Male F Female
Rationale:	Necessary to evaluate the effect of gender on occupant

#### P7. Ethnicity

Definition: The ethnic affiliation of person involved in a crash.

Source: Refer to block 25 on DMV-349 Form.

Attributes: W White B Black N Native American H Hispanic A Asian O Other\* U Unknown

#### P8. Injury Status

- Definition: The most severe injury to a person involved in a crash. Refer to ANSI D16.1Classification Manual for definitions of specific attributes.
- Source: Refer to block 32 on DMV-349 Form. Attributes: 1 Killed (Comparable with Fatal Injury) 2 A Type Injury (incapacitating Injury) 3 B Type Injury (Evident Injury) 4 C Type Injury (Possible Injury) 5 No Injury 6 Unknown
- Rationale: Necessary for injury outcome analysis and evaluation. This element is also critical in providing linkage between the crash, EMS, and hospital records.

#### P9. Occupant's/ Non-motorist Vehicle Unit Number Unique to Crash

- Definition: The number assigned to the vehicle in which the person was an occupant, or to identify the vehicle that struck the non-motorist in the crash.
- Source: Refer to block 21 on DMV-349 Form.
- Attributes: Number to indicate in which vehicle the occupant was located, or to indicate vehicle that struck the non-motorist.
- Rationale: Important to link occupants back to vehicles in which they were involved. Necessary to evaluate the effect vehicle type and specific make/model have on occupant protection effectiveness and injury status. For the non-motorist, important for tracking when multiple vehicles are involved in the crash.

## Person Level 2: All Occupants

#### P10. Seating Position

Definition: The location for this occupant in, on, or outside of the motor vehicle prior to the impact of a crash. Source: Refer to block 23 on DMV-349 Form. (Occupant Seating Position) Attributes: 01 Front seat - Left side (motorcycle driver) 02 Front seat - Middle 03 Front seat - Right side 04 Second seat - Left side (motorcycle passenger) 05 Second seat - Middle 06 Second seat - Right side 07 Third row - Left side (motorcycle passenger) 08 Third row - Middle 09 Third row - Right side 10 Sleeper section of cab (truck) 11 Passenger in other enclosed passenger or cargo area, e.g. non-trailing unit, bus, etc. (refer to separate attachment - records up to 20 rows/60 seats) 12 Passenger in unenclosed, passenger or cargo area (nontrailing unit, i.e., pickup, etc.) 13 Trailing unit 14 Riding on vehicle exterior (non-trailing unit) 15 Unknown Rationale: Without known seating position for each person in the vehicle, it is not possible to fully evaluate the effect of

# occupant protection programs. P11. Occupant/Non-Motorist Protection System Use

- Definition: The safety protection in use by occupant or non-motorist at the time of the crash.
- Source: Refer to block 27 on DMV-349 Form.
- Attributes: 0 None used
  - 1 Lap belt only used
  - 2 Shoulder and lap belt used
  - 3 Shoulder belt only
  - 4 Child restraint
  - 5 Helmet (motorcyclist or non-motorist)
  - Codes 6-8 Non-Motorist only
  - 6 Protective pads

- 7 Reflective clothing8 Lighting9 Other\*10 Unable to determine
- Rationale: Proper classification of the use of available safety devices/protection systems would be used to evaluate the effectiveness of such equipment.

#### P12. Air Bag Deployed

- Definition: Deployment status of an air bag, relative to each specific occupant.
- Source: Refer to blocks 28 and 29 on DMV-349 Form.

#### Attributes: Subfield 1 - Deployment

- 0 No Air Bag(s) 1 Not Deployed 2 Deployed – front
  - 3 Deployed side
  - 4 Deployed both front/side
  - 5 Deployment unknown

#### Subfield 2 – Switch Status

- No ON-OFF switch
   Switch in ON position
   Switch in OFF position
   Unknown if ON-OFF switch present
   Unknown position in vehicle
- Rationale: Necessary to evaluate the effectiveness of air bags and other occupant protection equipment, especially at a time when air bags are rapidly increasing in the vehicle population and when consumers are allowed to have the air bag disconnected under certain conditions.

#### P13. Ejection

- Definition: The location of each occupant's body as being completely or partially thrown from the vehicle as a result of a crash.
- Source: Refer to blocks 30 and 31 on DMV-349 Form.
- Attributes: 1 Not ejected
  - 2 Totally ejected
  - 3 Partially ejected
  - 4 Unknown

Rationale: Occupant protection systems prevent or mitigate ejections to different extent. Crash injury outcome may depend on information from this element.

## P14. Trapped

Definition:	Persons who are restrained in the vehicle by damaged vehicle components.
Source:	Refer to blocks 30 and 31 on DMV-349 Form.
Attributes:	1 Yes 2 No 3 Unknown
Rationale:	This element would be used to evaluate vehicle integrity and the impact of the need for means to extricate vehicle occupants and the medical outcome for victims who are entrapped.

## Person Level 3: All Drivers

#### P15. Driver License State/Province

- Definition: A code identifying the state or province issuing a driver license to an individual. Includes the states of the United States (including the District of Columbia and outlying areas), Indian Nation, U.S. Government, Canadian provinces, and Mexican states (including the Distrito Federal), as well as other jurisdictions.
- Source: Refer to driver block on DMV-349 Form.
- Attributes: Not Licensed State code (See Appendix A) 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 from the crash file to driver license file.

#### P16. Driver License Number

- Definition: A unique number assigned by the authorizing agent issuing a driver license to an individual. Indication as to whether driver license is a CDL license or not.
- Source: Refer to driver block and online access to State Automated Driver License System.
- Attributes: Specific code assigned by the respective State, foreign country, U.S. government, Indian Nation, etc. ANSI D16.1 Standard allows 25 positions for OLN.
- Rationale: This element is critical in providing linkage between the crash and driver license files at the state level. The DLN provides a single unique index or key useful within a jurisdiction to locate a driver.

#### P17. Commercial Driver License (CDL)

Definition: Indication as to whether driver license is a CDL license or not.

Source: Refer to Unit block on DMV-349 Form.

Attributes: Check block under space for driver license number.

#### P18. Contributing Circumstances, Driver.

- Definition: The actions of the driver, which may have contributed to the crash.
- Source: Refer to blocks 14 19 on DMV-349 Form.

Attributes: Subfield 1 First Contributing Circumstance

- 0 No contributing circumstances indicated
- 1 Disregarded yield sign
- 2 Disregarded stop sign
- 3 Disregarded other traffic signs
- 4 Disregarded traffic signals
- 5 Disregarded road markings
- 6 Exceeded authorized speed limit
- 7 Exceeded safe speed for conditions
- 8 Failure to reduce speed
- 9 Improper turn
- 10 Right turn on red
- 11 Crossed centerline/going wrong way
- 12 Improper lane change
- 13 Use of improper lane
- 14 Overcorrected/oversteered
- 15 Passed stopped school bus
- 16 Passed on hill
- 17 Passed on curve
- 18 Other improper passing
- 19 Failed to yield right of way
- 20 Inattention
- 21 Improper backing
- 22 Improper parking
- 23 Driver distracted
- 24 Improper or no signal
- 25 Followed too closely
- 26 Operated vehicle in erratic, reckless, careless, negligent or aggressive manner
- 27 Swerved or avoided due to wind, slippery surface, vehicle, object, non-motorist in roadway, etc.
- 28 Visibility obstructed
- 29 Operated defective equipment
- 30 Alcohol use
- 31 Drug Use
- 32 Other\*
- 33 Unable to determine

- 34 Unknown
- 35 Driver distracted by electronic communication device (cell phone, texting, etc.)
- 36 Driver distracted by other electronic device (navigation device, DVD player, etc.)
- 37 Driver distracted by other inside the vehicle
- 38 Driver distracted by external distraction (outside vehicle)
- Subfield 2 Second Contributing Circumstance See Codes in Subfield 1
- Subfield3 Third Contributing Circumstance See Codes in Subfield 1
- Rationale: Important for evaluating the effect that dangerous driver behavior has on the crash.

#### P19. Traffic Violations

Definition: Person charged with a traffic violation.

Subfield 1 - Name of Person

Subfield 2 - Charge(s)

- Source: Refer to "Traffic Violations" block on DMV-349 Form.
- Rationale: For use at the local level. Citation numbers are optional, also for local use only.

#### Vehicle Seizure (DWI)

Check box for crashes involving alcohol or other drugs in sufficient amount to constitute a DWI and the vehicle is "seized."

Source: Refer to block 40 on DMV-349 Form.

## Person Level 4: All Drivers and Non-Motorists

#### P20. Alcohol/Drug Suspected

- Definition: Investigating police officer's assessment of whether alcohol or other drugs were used by the vehicle driver or non-motorist.
- Source: Refer to block 37 on DMV-349 Form.

#### Attributes: 0 No

- 1 Yes alcohol, impairment suspected
- 2 Yes alcohol, no impairment detected
- 3 Yes other drugs, impairment suspected
- 4 Yes other drugs, no impairment detected
- 5 Yes alcohol and other drugs, impairment suspected
- 6 Yes alcohol and other drugs, no impairment detected 7 Unknown
- Rationale: Alcohol and other drug related crashes remain a serious traffic safety problem. Identifying crashes in which alcohol or other drugs may have been involved will help evaluate the effectiveness of programs to decrease the incidence of drunk driving or to identify problem areas and so enforcement programs can be targeted to these areas.

#### P21. Test for Alcohol/Other Drugs

- Definition: Whether or not a test was given, including the type, or whether a test was refused.
- Source: Refer to block 38 on DMV-349 Form.

#### Attributes: Test Status

- 0 No test
- 1 Alcohol test
- 2 Test for drugs other than alcohol
- 3 Test for alcohol and other drugs
- 4 Test refused
- 5 Unknown

#### P22. Test Results

- Definition: Indication of the degree of presence of alcohol or other drugs through testing.
- Source: Refer to block 39 on DMV-349 Form.

Attributes: 0 No test

- 1 No alcohol or other drugs
- 2 Alcohol (percent BAC)
- 3 Other drugs reported
- 4 Contaminated sample/unusable
- 5 Pending
- 6 Unknown
- Rationale: Alcohol remains the most prevalent drug involved in motor vehicle crashes. Capturing the test result whenever a driver or non-motorist is tested will provide a more accurate assessment of the extent of involvement. Drugs other than alcohol are increasingly involved in traffic crashes. Identifying drug related crashes will help develop and evaluate programs directed at reducing their involvement. Whenever evidence of other drug use is available, it should be captured.

#### P23. Driver Condition

- Definition: The condition of the driver and/or non-motorist at the time of the crash.
- Source: Refer to block 35 on DMV-349 Form.
- Attributes: 01 Apparently normal
  - 02 Illness
  - 03 Fatigue
  - 04 Fell asleep, fainted, loss of consciousness
  - 05 Impairment due to medications/drugs/alcohol
  - 06 Medical condition
  - 07 Other physical impairment
  - 08 Restriction not complied with
  - 09 Emotional (e.g., depression, angry, disturbed)
  - 10 Other\*
  - 11 Unknown
- Rationale: Important for evaluating the effect that driver fatigue, medications, alcohol, drugs, or other conditions have on the crash. Information about the condition of the non-motorist is needed to develop engineering, educational, and enforcement countermeasures to reduce crashes involving non-motorists.

#### P24. Vision Obstruction

- Definition: Description of what prevented the driver or non-motorist from seeing whether or not such movement(s) could be made in a safe manner.
- Source: Refer to block 34 and 85 on DMV-349 Form.

Attributes: 00 None

- 01 Vehicle window(s) obscured 02 Trees, crops, brush, etc. 03 Building(s) 04 Embankment 05 Sign(s) 06 Hillcrest 07 Parked vehicle(s) 08 Vehicle(s) in traffic/moving 09 Blinded, headlights 10 Blinded, sunlight 11 Blinded, other lights 12 Other\* 13 Unknown
- Rationale: For help in determining the circumstances of the crash.

## Person Level 5: Non-motorists

#### P25. Non-motorist Number

- Definition: The unique number assigned to the non-motorist involved in a crash.
- Source: Refer to block 22 on DMV-349 Form.
- Attributes: Sequential number uniquely identifying the non-motorist involved in a crash.
- Rationale: Important for management/administration and evaluation. Needed to determine the number and type of non-motorists involved in crash. Needed to track non-motorists preceding crash action and sustained injury.

#### P26. Non-motorist Action Prior to Crash

- Definition: The actions of the non-motorist prior to the crash.
- Source: Refer to block 50 on DMV-349 Form.

#### Attributes:

- 01 Entering of crossing specified location
- 02 Walking, riding, running/jogging **with** traffic
- 03 Walking, riding, running/jogging against traffic
- 04 Working
- 05 Pushing vehicle
- 06 Approaching or leaving vehicle
- 07 Playing
- 08 Standing
- 09 Other\*
- Rationale: Needed to develop engineering, educational, and enforcement countermeasures to reduce non-motorist crashes and to evaluate effect of existing countermeasures.

#### P27. Non-Motorists Actions at Time of Crash

- Definition: Actions that the non-motorist was undertaking at the time of the crash.
- Source: Refer to blocks 50 and 85 on DMV-349 Form.

Attributes:

- 01 Entering of crossing specified location
- 02 Walking, riding, running/jogging with traffic

- 03 Walking, riding, running/jogging **against** traffic
- 04 Working
- 05 Pushing vehicle
- 06 Approaching or leaving vehicle
- 07 Playing
- 08 Standing
- 09 Other\*
- Rationale: Important for evaluating the effect that dangerous or risky non-motorist behavior has on motor vehicle crashes.

#### P28. Non-Motorist Condition at Time of Crash

- Definition: Any relevant condition of the non-motorist that is directly related to the crash
- Source: Refer to blocks 35 and 85 on DMV-349 Form.

Attributes:

- 1 Apparently normal
- 2 Illness
- 3 Fatigue
- 4 Fell asleep, fainted, loss of consciousness
- 5 Impairment due to medications/drugs/alcohol
- 6 Medical condition
- 7 Other physical impairment
- 8 Restriction not complied with
- 9 Other\*
- 10 Unknown
- Rationale: Important for evaluating the effect that non-motorist fatigue, medications/alcohol/drugs, or other conditions have on the crash.

#### P29. Non-Motorist Contributing Circumstances

- Definition: The actions of the non-motorist that may have contributed to the crash.
- Source: Refer to blocks 8 9 on DMV-349 Form.
- Attributes: 00 None
  - 01 Coming from behind parked vehicle
  - 02 Darting
  - 03 Lying and/or illegally in roadway
  - 04 Failure to yield right of way
  - 05 Not visible (dark clothing, etc.)
  - 06 Inattentive (talking, eating, etc.)

07 Failure to obey traffic signs, signals08 Wrong side of road09 Other\*10 Unknown

Rationale: Important for evaluating the effect that dangerous risky nonmotorist behavior has on motor vehicle crashes.

#### P30. Non-Motorist Location at Time of Crash

- Definition: The non-motorist's location with respect to the roadway prior to impact.
- Source: Refer to block 51 on DMV-349 Form.

Attributes:

- 01 Marked crosswalk at intersection
- 02 At intersection but no crosswalk
- 03 Non-intersection crosswalk
- 04 Driveway access crosswalk
- 05 In roadway
- 06 Not in roadway
- 07 Median (but not on shoulder)
- 08 Island
- 09 Shoulder
- 10 Sidewalk
- 11 Within 10 feet of roadway (not on shoulder, median, sidewalk, or Island)
- 12 Beyond 10 feet of roadway (within trafficway)
- 13 Outside trafficway
- 14 Shared-use path or trails
- Rationale: Non-motorist location information is used in developing engineering, educational, and enforcement countermeasures for both motorists and non-motorists to reduce non-motorist crashes. Needed to determine "fault" of crash. Needed to evaluate effect of existing, if any, countermeasures that have been applied.

#### P31. Non-Motorist Safety Equipment

- Definition: The safety protection in use by occupant or the non-motorist at the time of the crash.
- Source: Refer to block 27 on DMV-349 Form.

Attributes:

0 None used

- 1 Lap belt only
- 2 Shoulder and lap belt
- 3 Shoulder belt only
- 4 Child restraint
- 5 Helmet (motorcyclist or non-motorist)

#### Codes 6-8 Non-Motorist only

- 6 Protective pads
- 7 Reflective clothing
- 8 Lighting
- 9 Other\*
- 10 Unable to determine
- Rationale: Proper classification of the use of available safety devices/protection systems would be used to evaluate the effectiveness of such equipment.

#### P32. Unit Number of Motor Vehicle Striking Non-Motorist

- Definition: Number assigned to identify the motor vehicle that struck the non-motorist in the crash.
- Source: Refer to blocks 84 and location block on DMV-349 Form.
- 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.

#### P33. EMS Responding to the Crash

- Definition: Actual name of emergency medical service (EMS) that responded to the crash.
- Source: Refer to blocks 46 and 47 on DMV-349 Form.
- Attributes: Actual name of EMS. When recorded on the DMV-349, the EMS name should be preceded by the unique letter designation (from column 1) in the Person Level section of the form, for the injured person being transported.
- Rationale: For help in tracking the injury control/emergency response treatment provided for person(s) injured in the crash.

#### P34. Injured Taken by EMS to

Definition: Destination of injured person(s) if they were taken to a hospital, clinic, doctor's office, or other place of emergency medical aid.

- Source: Refer to blocks 46 and 47 on DMV-349 Form.
- Attributes: Name of treatment facility and city or town. When recorded on the DMV-349, the destination should be preceded by the unique letter designation (from column 1) in the Person Level section of the form, for the injured person being transported.
- Rationale: Important for follow-up and to be able to trace victim from the scene to the particular place of emergency medical aid.

# IV. CRASH DERIVED DATA ELEMENTS

Derived data elements<sup>3</sup> are not collected by the police using the DMV-349. Instead they are obtained by recoding information contained in existing data elements that have already been collected and computerized. The data element source is listed for each of the derived data elements.

#### 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 (P8) for each person involved in the crash.
- Attributes: 1 Property Damage Only (no injury) 2 Non-fatal Injury 3 Fatal Injury 4 Unknown
- Rationale: Provides the user a classification of the severity of the crash 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

- Definition: The total number of motor vehicles (e.g., automobiles, single-unit trucks, truck combinations, and other motor vehicle types that are in motion or on a roadway) involved in a crash.
- Source: Derived by counting the number of vehicles involved in a crash as indicated in Vehicle Unit Number Unique to Crash (V1).
- Attributes: Total Number of Vehicles
- Rationale: Provides the user a count of the number of vehicles involved in the crash without having to count the number of vehicle records. This simplifies the use of the crash data file for producing reports in which the number of involved vehicles is needed.

<sup>&</sup>lt;sup>3</sup>Source – Guideline of Minimum Uniform Crash Criteria (MUCC) sponsored by the National Highway Traffic Safety Administration. Federal Highway Administration and the National Association of Governor's Highway Safety Representatives.

#### CD3. Number of Occupants in Vehicle

- Definition: The total number of occupants in this vehicle involved in the crash including persons in or on the vehicle at the time of the crash.
- Source: Derived by counting the number of drivers and passengers involved in the crash in block 22 on DMV-349 Form as indicated in **Person Type (P1).**
- Attributes: Total number of occupants including the driver. - Unknown
- Rationale: Important for use in evaluating total involved in crash and injury/severity.

#### CD4. Number of Non-motorists

- Definition: The total number of non-motorists (pedestrian, pedalcyclists, etc.) involved in a crash.
- Source: Derived by counting the number of non-motorists involved in the crash in block 22 on DMV-349 Form as indicated in **Person Type (P1)**.
- Attributes: Number of Non-Motorists
- Rationale: Provides the user with a count of the number of nonmotorists 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. Total Non-Fatal Injuries

- Definition: The total number of persons injured, excluding fatalities within 30 days, in the crash.
- Source: Derived by counting the number of persons injured in the crash from Injury Status in (P8). Refer to block 32 on DMV-349 Form.
- Attributes: Total Number of Injured Persons.
- Rationale: Provides the user with 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. Total Fatal Injuries

- Definition: The total number of fatalities (motorists and non-motorists) which resulted from injuries sustained as the result of a specific road vehicle crash. In reporting fatality statistics, a 30-day counting rule is generally used for highway safety statistics. These rules provide that only those deaths, which occur within 30 days of a crash will be counted for statistical purposes.
- Source: Derived by counting the number of persons fatally injured in the crash from Injury Status (P8). Refer to block 32 on DMV-349 Form.
- Attributes: Total Number of Persons Killed within12 months after the crash.
- Rationale: Provides the user with 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/Drug Involvement

- Definition: Investigating police officer's assessment of whether alcohol or drug use was suspected or demonstrated to be present by test for any vehicle driver or non-motorist in the crash.
- Source: Derived from the Driver and Non-motorist, Alcohol, Drug Data Elements (P20-P22). Refer to blocks 37-39 on DMV-349 Form.
- Attributes: 0 Neither alcohol nor other drugs 1 Yes alcohol, impairment suspected 2 Yes alcohol, no impairment detected 3 Yes other drugs, impairment suspected 4 Yes other drugs, no impairment detected 5 Yes alcohol and other drugs, impairment suspected 6 Yes alcohol and other drugs, no impairment detected 7 Unknown
- Rationale: Provides the user with the ability to easily identify alcohol/drug related crashes 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 alcohol/drug involved crashes is needed or in identifying crashes involving alcohol or drugs.

#### CD8. Day of Week

- Definition: The day of the week on which a crash occurred.
- Source: Derived from the Crash Date (C3).
- Attributes: 1 Monday 2 Tuesday 3 Wednesday 4 Thursday 5 Friday 6 Saturday 7 Sunday
- Rationale: Crash occurrences are often a function of day of week. This element provides this Classification for the user without having to translate the date.

# V. VEHICLE DERIVED DATA ELEMENTS

#### VD1. Vehicle Model Year

- Definition: The year, which is assigned to a vehicle by the manufacturer.
- Source: Derived from the 10th position of the Vehicle identification number (V4) for 1981 to the present. Prior to 1981, the position for the model year varied by manufacturer. This information can also be obtained separately from the Vehicle Registration File.
- Attributes: Assigned by vehicle manufacturer.
- Rationale: Important for use in identifying vehicle model year for evaluation, research and crash comparison purposes.

#### VD2. Vehicle Model

- Definition: The manufacturer assigned code denoting a family of vehicles (within a make) which has a degree of similarity in construction, such as body, chassis, etc.
- Source: Derived (usually) from positions 4, 5, 6, and 7 of Vehicle Identification Number (V4) for 1981 to the present. Prior to 1981, the position for the model varied by manufacturer. This information can also be obtained separately from the Vehicle Registration File.
- Attributes: Assigned by vehicle manufacturer.
- Rationale: Important for use in identifying vehicle model, for evaluation, research and crash comparison purposes.

#### VD3. Vehicle Body Type

- Definition: Code used in the Vehicle Identification Number to indicate the general configuration or shape or a vehicle distinguished by characteristics such as number of doors, seats, windows, roof line, hardtop or convertible.
- Source: Derived from the Vehicle Identification Number (V4).

Attributes:	Passen	ger Vehicles
	AM	Ambulance
	CB	Cab & Chassis (Luv)
	CP	Coupe

CV HB HR HT LB LM NB	Convertible Hatchback* Hearse Hardtop* Liftback Limousine Notchback
PK	Pickup** Panel**
PN RO	Roadster
SB	Sport Hatchback
SC	Sport Coupe
SO	Sedan*
SV	Sport Van
SW	Station Wagon
UT	Utility**
WW	Wide Wheel Wagon
2D	Sedan, 2-door
2F	Formal Hardtop, 2-door
2H	(81-03) Hatchback, 2-door
2L	Liftback, 3-door
2P	Pillard Hardtop, 2-door
2T	Hardtop, 2-door
2W	Wagon, 2-door
3D	Runabout, 3-door
4D	Sedan, 4-door
4H	(81-03) Hatchback, 4-door
4L	Liftback, 5-door
4P	Pillard Hardtop, 4-door
4T 4W	Hardtop, 4-door
4vv 5D	Wagon, 4-door
50	Sedan, 5-door

## <u>Trucks</u>

- AC Auto Carrier
- AR Armored Truck
- BU Bus
- CS Chassis and cab
- CC Conventional Cab
- CG Cargo Van
- CH Crew Chassis
- CL Club Chassis
- CM Concrete or Transit Mixer
- CR Crane
- CS Super Cab/Chassis Pickup
- CU Custom Pickup
- CV Convertible (Jeep Commando, Suzuki. Samurai, Dodge Dakota)

CW CY DP SE ES EV W FF FF FT G G L NO IC IE G L M MV MY PO K MN S D R D	Crew Pickup Cargo Cutaway Dump Tractor Truck (diesel) Extended Cargo Van Extended Sport Van Extended Van Extended Window Van Flat-bed or platform Forward Control Farm Equipment Fire Truck Farm Tractor Garbage or Refuse Gliders Grain Hopper Incomplete Chassis Incomplete Extended Van Logger Suburban and Carry All Motorized Home Multi-purpose Maxi Van Motorized Cutaway Club Cab Pickup Parcel Delivery Pickup Pickup with Camper mounted on bed Panel Super Cab Pickup Roadster (Jeep, Jeep Commando)
Motor	cycles
AT	All Terrain
EN MK	Enduro Mini-bike
MN	Mini Moto Cross
MP	Moped
MR	Mini Road/Trail
MS MX	Motor Scooter Moto Cross
MY	Mini Cycle
RC	Racer
RS	Road/Street
RT	Road/Trail
T TL	Dirt Trail/Dirt
. –	

Trail

\* Use when more detail is unknown. \*\*To code trucks commonly registered as passengers.

Rationale: Important for use in identifying the specific type of vehicle involved in a crash for evaluation and comparison purposes.

## V04. Total Trailers Attached to Truck

TR

- Definition: Total number of trailers attached to a large truck.
- Attributes: Derived by counting the number of trailers attached to a truck as indicated by Trailer Type and/or trailer length/Width (V14-V19) data elements.
- Rationale: This information is important to evaluate safety issues relative to truck, doubles, triples, etc.

## VI. PERSON LINKED DATA ELEMENTS

## **Driver Linked Data Elements**

## PL1. Driver License Class

- Definition: The type of commercial or noncommercial vehicle that a licensed driver has been examined on and approve to operate.
- Attributes: Class A vehicles any combination of vehicles with a GVWR of 26,001 or more pounds, provided the GVWR of the vehicle(s) being towed is in excess of 10,000 pounds (holders of a Class A license may with the appropriate endorsement operate all class B & C vehicles).
  Class B vehicles 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 (holders of a Class B license may, with the appropriate endorsement, operate all class C vehicles).
  Class C vehicles any single vehicle less than 26,001 pounds GVWR, or any such vehicle towing a vehicle not in excess of 10,000 pounds GVWR.

**Class M vehicles** - motorcycles, mopeds, motor-driven cycles. Never held a license or state can no longer provide this information.

Rationale: Used to identify those drivers who were not complying with the limitations of their operator's license.

## PL2. Driver License Status, CDL

- Definition: The current status of an individual's federally-approved commercial driver license (CDL).
- Attributes: E Eligible L Licensed N Not Eligible R Reported Deceased
- Rationale: Used to identify those truck and bus drivers--operating vehicles in interstate commerce and vehicles carrying hazardous materials in intrastate commerce--who were not complying with the limitations of their operator's license and who were involved in crashes. Federal law mandates the commercial driver's license. The OMC has jurisdiction over this federal program, and the identification of drivers not having valid CDLs and those

having crashes is vital data for the OMC's drivers license program.

## PL3. Commercial Motor Vehicle Endorsements

- Definition: Issued to drivers after successfully completing a specialized test that qualifies them to operate a specific type of commercial motor vehicle.
- Source: Obtained by linking **Driver License Number and Class** (P16) for in-state drivers to the driver license number in the driver history data system. Law Enforcement Officers' have mainframe access to endorsement information.

### Attributes:

- T-Double/Triple Trailer (Applies to Class A)
- P-Passenger Vehicle (Applies to transportation of 16 or more passengers including the driver)
- N-Tank Vehicle (Required on any A, B, C classified license for vehicles transporting, as its primary cargo, any liquid or gaseous material within a tank attached to the vehicle)
- H-Required To Be Placarded For Hazardous Materials (Required on all Class A, B, C licenses for any vehicle transporting hazardous materials requiring placarding as defined by USDOT regulations)
- X-Combined Tank/HAZ-MAT (Qualifies a driver for both the Tank endorsement and the Hazardous Material endorsement)
- Other (Used to represent state-specific endorsements that are not generally covered by the endorsements above)
- Rationale: Important to evaluate issues related to licensing policies for drivers of commercial motor vehicles.

## PL4. Driver License Status, Non-CDL

- Definition: The current status of an individual's driver license other than a federally approved commercial driver license (CDL).
- Attributes: E Eligible L Licensed N Not Eligible R Reported Deceased

Rationale: Used to identify drivers who were not complying with the limitations of their operator's license and who were involved in crashes.

## PL5. Driver License Restrictions

- Definition: Restrictions assigned to an individual's driver license by the license examiner. This data element is generated by the system; however, officers will continue to record restriction information from the driver's license onto the DMV-349.
- Source: Refer to block 36 on DMV-349 Form.
- Attributes: Actual restriction(s) as shown on the driver license.

## **Driver Restrictions 1**

- L NO AIR BRAKES
- S SCHOOL BUS
- 0 NONE
- 1 CORRECTIVE LENSES
- 2 45 MPH/NO INTERSTATE
- 3 DAYLIGHT DRIVING ONLY
- 4 NC INTRASTATE ONLY-CDL
- 5 WRECKER ONLY
- 6 MOBILE HOME TRANSPORT ONLY
- 7 OUTSIDE MIRRORS
- 8 NO TRACTOR TRAILER
- 9 OTHER AS SHOWN
- 10 ACCOMPANIED BY CLASS DRIVER
- 11 FLEET VEHICLES ONLY
- 12 DRIVE 6AM-8PM
- 13 AUTO TRANSMISSION
- 14 PASSENGER CLASS B & C ONLY
- 15 PASSENGER CLASS C ONLY
- 16 GRAD LIC LEVEL 1 RESTRICTION
- 17 GRAD LIC LEVEL 2 RESTRICTION
- 18 NO PASSENGER
- 19 BLOOD/ALCOHOL CONC. .04
- 20 BAC .04/IGNITION INTERLOCK
- 21 BLOOD/ALCOHOL CONC. .00
- 22 BAC .00/IGNITION INTERLOCK
- 23 IGNITION INTERLOCK ONLY

## Subfield 2

See attributes in Driver Restrictions 1

## Subfield 3

See attributes in Driver Restrictions 1

Rationale: Used to identify drivers with limitations on their operator's license who were involved in a crash.

## VII. Injured Person Linked Data Elements

## PL6. 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 (P5), Sex (P6), Transported to Medical Facility By (P33), and crash location information including Crash City/Place (C6), Crash Location (C7), Date and Time Crash Reported to Law Enforcement Agency (C3-C4), etc., to pre-hospital EMS, emergency department, and/or hospital discharge data files. Refer to block 85 on DMV-349 Form.
- Attributes: Types of areas are indicated by a matrix or narrative in the EMS records or as an injury or billing code (ICD-9-CM, etc.) in the emergency department, hospital or insurance records. The following list represents the major areas of the body subject to injury.
  - 1 Head/Brain
  - 2 Face
  - 3 Neck
  - 4 Spine
  - 5 Back
  - 6 Chest
  - 7 Upper extremities
  - 8 Abdomen
  - 9 Lower extremities
  - 10 Other\*
  - 11 Injured, area unknown
- Rationale: This type of information will help to distinguish between multiple injured in the same crash.

## PL7. Injury Description

Definition: Type of injury inflicted to primary Injury Area (PL6).

- 1 Visible bleeding
- 2 Visible broken bone
- 3 Visible burn
- 4 Complaint of pain

- 5 Apparently unconscious
- 6 Other visible or expressed injury
- 7 Injury type not otherwise specified and not
- visible
- 8 Unknown
- Rationale: This type of information will help to distinguish between multiple injured in the same crash.

## VIII. Roadway Linked Data Elements

Linking the crash to the roadway inventory and hardware data files when these data files exist in the state generates linked roadway data elements. The data elements used for linkage include **Crash Roadway Location (C9)** or mile marker, node, etc., depending upon the type of roadway inventory system implemented by the state. North Carolina will continue its efforts to record selected roadway data elements on the DMV-349, with the understanding that when data becomes available for all of the Roadway data elements for all roadways in the state, it will be obtainable by linkage and will no longer be a responsibility for the officer to collect in the field.

## RL1. Bridge/Structure Identification

- Definition: A unique code assigned to a bridge, underpass, overpass, or tunnel.
- Attributes: Number as described in the Recording and Coding guide for the Structure Inventory and Appraisal of the Nation's Bridges, December 1988, Federal Highway Administration item 8. HPMS/90, item 77.
- Rationale: Identifying the bridge can link to the specific geometric data describing the bridge for problem identification analysis. Important for determining the relationship between structure characteristics and crashes.

## RL2. Grade

- Definition: The inclination of a roadway, expressed in the rate of rise or fall in feet/meters per 100 feet/meters of horizontal distance.
- Attributes: **Subfield 1:** Direction of slope Up or down
  - Subfield 2: Percent of slope Nearest percent of slope
- Rationale: Grade is used in diagnosing possible causes and countermeasures for a high crash site.

## RL3. Part of National Highway System

Definition: Designation as part of the national highway system.

Attributes: 1 Yes 2 No 3 Unknown Rationale: Important to monitor highway safety on national highway system.

## RL4. Annual Average Daily Traffic

- Definition: The average number of vehicles passing a point on a trafficway in a day, for all days of the year, during a specified calendar year.
- Attributes: **Subfield 1:** Calendar year

Subfield 2: Vehicles per day (AADT)

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

## RL5. Shoulder Type/Width

- Definition: Width of lane or shoulder where crash occurred.
- Attributes: Subfield 1: Shoulder Type

Subfield 2: Width

Rationale: Important to monitor the association of shoulder type/width and the frequency of crashes.

## RL6. Lane Width

- Definition: Width of lane where crash occurred.
- Attributes: Number of Feet
- Rationale: Important to monitor the association of shoulder/lane width and the frequency of crashes.

### RL7. Median Type/Width

- Definition: A median is an area of a trafficway between parallel roads separating travel in opposite directions.
- Attributes: Subfield 1: Median Type

Subfield 2: Width Less than four feet Four feet or greater Unknown Rationale: Important to monitor the unmet need for medians to protect motorists from oncoming traffic.

## RL8. Roadway Lighting

- Definition: The type of illumination at a point on the roadway.
- Attributes: No lighting Spot Illumination Continuous lighting
- Rationale: Lighting is recognized as having a benefit to safe highway operations. The presence of lighting is an important element in the analysis of a spot location, a section of highway, or a network analysis. Important for determining the effects of highway illumination on nighttime crashes to guide future installations.

## **RL9.** 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 Function and Color Centerline, skip-dash, yellow Centerline, solid, yellow Centerline, solid double, yellow No passing barrier, right or left, yellow Lane line, skip-dash, white Lane line, solid, white Edge line, left, yellow Edge line, right, white Left turn lane lines, combination of solid and skipdash, yellow Turn arrow symbols, right, through, left, or combination of two Unknown
  - Subfield 2 Material Paint Thermoplastic Paised Markers
    - Raised Markers Permanent inlay Tape Other Unknown

Rationale: Knowledge of the existence of pavement markings is necessary to the analysis of crash data. Important for determining the affects of various types of longitudinal markings on various types of crashes to guide future applications.

## RL10. Bikeway

- Definition: Any road, path or way which in some manner 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 (Refer to ANSI D16.1 for definitions of specific attributes).
- Attributes: No Bikeway Bicycle Route (signed) Bicycle Lane (striped) - right only Bicycle Lane (striped) - both sides Bicycle Lane (striped) - left only Separate Bicycle Path/Trail Unknown
- Rationale: Needed to determine usage of bicycle facilities. Needed to determine location of bicycle crashes in relation to bicycle facility. Information is used to design facilities to more safely accommodate both bicycles and motor vehicles. Important for ascertaining the relative safety performance of various types/classes of bike paths to guide future design/operation decisions.

## **RL11. Delineator Presence**

- Definition: The presence or absence of a series of reflecting devices mounted at regular intervals along the side of the road to indicate the alignment of the roadway.
- Attributes: None Delineators, right Delineators, left Delineators, both sides Unknown
- Rationale: Important for determining the effectiveness of delineation on nighttime and run off-the-road crashes and guide future installations.

## **RL12. Clearzone Distance**

Definition: The total roadside border area, starting at the edge of the traveled way, available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and/or a clear run-out area. The desired width is dependent on the traffic volumes and speeds, and roadside geometry. A clear run-out area is the area at the toe of a non-recoverable slope available for safe use by an errant vehicle.

## RL13. Sideslope

Definition: The part of the highway that tapers the traveled way with the existing terrain. The relative steepness of the terrain is expressed as a ratio or percentage. Slopes may be categorized as positive (backslope) or negative (foreslope) and as parallel or cross slopes in relation to the direction of traffic, A side slope typically seen on the interstates is a negative parallel slope that has a drainage facility in the median.

## **RL14. Roadway Functional Class**

- Definition: The character of service or function of streets or highways. The classification of rural and urban is determined by the 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 (C9)** to the Roadway Inventory data. Refer to block 71 on DMV-349 Form.
- Attributes: 1 Interstate 2 US Route 3 NC Route 4 State Secondary Route 5 Local Street 6 Public Vehicular Area 7 Private Road, Driveway

## **RL15. Access Control**

Definition: The degree that access to abutting land is fully, partially or not controlled by a public authority. Full access control provides no private access. No access control permits private access (driveway, etc). Source: Obtained by linking **Crash Location (C9)** to the Roadway Inventory data. Refer to block 74 on DMV-349 Form.

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.

## RL16. Railway Crossing ID

- Definitions: 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 (C9) to state or Federal Railway Administration data. Refer to location block on DMV-349 Form.
- Attributes: 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 highrisk corridors. Important for determining the need for additional controls and evaluating the efficacy of various types of controls.

## **RL17. Traffic Control Type at Intersection**

- Definition: The type of traffic control, if any, at crash location.
- Source: Refer to block 76 on DMV-349 Form.

- 00 No Control Present
- 01 Stop Sign
- 02 Yield Sign
- 03 Stop and Go Signal
- 04 Flashing Signal with Stop Sign
- 05 Flashing Signal without Stop Sign
- 06 RR Gate and Flasher
- 07 RR Flasher
- 08 RR Crossbucks Only
- 09 Human Control
- 10 Warning Sign
- 11 School Zone Signs

- 12 Flashing Stop and Go Signal
- 13 Double Yellow Line, No Passing Zone
- 14 Other\*
- 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. Important for ascertaining the relationship between the use of various TCDs and crashes and identifying the need for upgraded TCDs at specific crash locations.

## **RL18. Mainline Number of Lanes at Intersection**

- Definition: Number of "thru" lanes on the mainline approaches of an intersection, including all lanes with "thru" movement ("thru" and left-turn, or "thru and right-turn) but not exclusive turn lanes.
- Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data. Refer to blocks 84 and 75 on DMV-349 Form.

## Attributes:

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

Rationale: Important to describe the intersection.

## RL19. Side-Road Number of Lanes at Intersection

- Definition: Number of "thru" lanes on the side-road approaches at intersection including all lanes with "thru" movement ("thru" and left-turn, or "thru" and right-turn) but not exclusive turn lanes.
- Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data. Refer to blocks 75 and 84 on DMV-349 Form.

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

Unknown

Rationale: Important to describe the intersection.

## RL20. Roadway Curvature

- Definition: The measurement of the curvature in the roadway expressed in terms of its radius, length, and super elevation.
- Source: Obtained by linking **Crash Location (C5)** to the Roadway Inventory data. See **Roadway Alignment and Grade (V16).** Refer to block 70 on DMV-349 Form.

- 1 Straight, level
- 2 Straight, hillcrest
- 3 Straight, grade
- 4 Straight, bottom (sag)
- 5 Curve, level
- 6 Curve, hillcrest
- 7 Curve, grade
- 8 Curve, bottom (sag)
- 9 Other\*
- 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).

## **APPENDIX A: State and Province Codes**

## **United States (US)**

AL	01	Alabama	MT	30	Montana
AK	02	Alaska	NE	31	Nebraska
AZ	04	Arizona	NV	32	Nevada
AR	05	Arkansas	NH	33	New Hampshire
CA	06	California	NJ	34	New Jersey
CO	08	Colorado	NM	35	New Mexico
СТ	09	Connecticut	NY	36	New York
DE	10	Delaware	NC	37	North Carolina
DC	11	District of Columbia	ND	38	North Dakota
FL	12	Florida	OH	39	Ohio
GA	13	Georgia	OK	40	Oklahoma
HI	15	Hawaii	OR	41	Oregon
ID	16	Idaho	PA	42	Pennsylvania
IL	17	Illinois	RI	44	Rhode Island
IN	18	Indiana	SC	45	South Carolina
IA	19	lowa	SD	46	South Dakota
KS	20	Kansas	ΤN	47	Tennessee
KY	21	Kentucky	ТΧ	48	Texas
LA	22	Louisiana	UT	49	Utah
ME	23	Maine	VT	50	Vermont
MD	24	Maryland	VA	51	Virginia
MA	25	Massachusetts	WA	53	Washington
MI	26	Michigan	WV	54	West Virginia
MN	27	Minnesota	WI	55	Wisconsin
MS	28	Mississippi	WY	56	Wyoming
MO	29	Missouri	DS	57	US Dept. of State

- AS 60 American Somoa
- PZ 61 Panama Canal Zone
- FM 64 Federated States of Micronesia
- GU 66 Guam
- MP 69 Northern Mariana Islands
- PW 70 Palau
- PR 72 Puerto Rico
- UM 74 U.S. Minor Outlying Islands
- MH 75 Marshall Islands
- VI 78 Virgin Islands of the U.S.
- WK 79 Wake Island

## Canada (CN)

AB	01	Alberta	NS	07	Nova Scotia
BC	02	British Columbia	ON	08	Ontario
MB	03	Manitoba	PE	09	Prince Edward Island
NB	04	New Brunswick	PQ	10	Quebec
NF	05	Newfoundland	SN	11	Saskatchewan
NT	06	Northwest Territory	ΥT	12	Yukon Territory

## Mexico (MX)

AG	01	Aguascalientes	MR	17	Morelos
BA	02	Baja California Norte	NA	18	Nayarit
BJ	03	Baja California Sur	NL	19	Nuevo Leon
CM	04	Campeche	OA	20	Oaxaca
CI	05	Chiapas	PB	21	Puebla
CH	06	Chicuahua	QU	22	Queretero de Arteaga
CU	07	Coahuila de Zaragoza	QR	23	Quintana Roo
CL	08	Colima	SL	24	San Luis Potosi
DF	09	Distrito Federal	SI	25	Sinaloa
DO	10	Durango	SO	26	Sonora
GT	11	Guanajuato	ΤВ	27	Tobasco
GR	12	Guerrero	ΤA	28	Tamaulipas
HL	13	Hidalgo	ΤL	29	Tlaxcala
JL	14	Jalisco	VC	30	Veracruz-Llava
MX	15	Mexico	YU	31	Yucatan
MC	16	Michoacan de Ocampo	ZA	32	Zacatecas

## **Other Jurisdictions (OT)**

- OT 99 Jurisdictions other than states or provinces of the United States, Canada, and Mexico
- Note: Code with country and state or province. Where there is no chance of ambiguity, state or province codes may be used without the country code (Note that state and province codes are unique within each country but may be duplicated in other countries).

## **APPENDIX B: Dates and Times**

Numbers are always right justified. Use leading zeroes when necessary.

## Date Subfield 1: Month

01	January	09	September
02	February	10	October
03	March	11	November
04	April	12	December
05	Мау	77	Permanent
06	June	88	Indefinite
07	July	99	Unknown

### Subfield 2: Day

- nn Day of Month
- 77 Permanent
- 88 Indefinite
- 98 Unknown

## Subfield 3: Year

ccyy Calendar Year7777 Permanent8888 Indefinite9999 Unknown

Example: The fifth of March, nineteen ninety-two is coded 03051992

## Time

## Subfield 1: Hour

- nn 0-23, representing the time on a 24-hour clock
- 99 Unknown

## Subfield 2: Minute

- nn Minute
- 99 Unknown
- Example: 11:55 p.m. would be coded 2355. Midnight is coded 0000 and is the beginning of a new day, not the end of the preceding day.

## **APPENDIX C: Names**

The length and type of a name field is 35/ANS

## NAMES OF PERSONS

There are four subfields within the name and each ends in a spacer ("@") except for the final field. SUFFIX. Spacers must be used to differentiate the name subfields. From left to right, the code is composed of LAST NAME, @,FIRST NAME, @ MIDDLE NAMES SEPARATED BY SPACES, @, SUFFIX. A spacer must follow every subfield except for SUFFIX, even when the subfields contain no data.

## Irregular Names

If a person has only one name, that name must be coded in the Last Name subfield. An asterisk (\*\*\*) in the First Name subfield indicates the person has no first name. If the person's first name is unknown put no data into the First Name subfield except for the spacer.

This Middle Name subfield will accommodate multiple middle names. Multiple middle names should be separated by blank spaces.

The only special character allowed in the Last Name subfield is a hyphen ("-"), which may occur only once and must be embedded between two alphabetic characters (as in the last name "Stuart-Washington").

Prefixes and titles are not allowed in any subfield of the name, and only the defined suffix codes may be used.

## Long Names

If a coded name exceeds 35 characters, it may be truncated by the following rules:

- 1 If the coded name exceeds 35 characters, including spacers @, the suffix subfield will not be coded.
- 2 If, after (1), the name code still exceeds 35 characters, the middle name is truncated. Truncation begins at the end of the last occurring middle name. If necessary, the middle name subfield may be reduced to the first initial of the first occurring middle name. *The first initial of the first occurring middle name shall always be coded.*
- If, after (1) and (2), the name code still exceeds 35 characters, the first name is truncated. Truncation begins at the last character of the first name. If necessary, the first name subfield may be reduced to the first initial of the first name. *The first initial of the first name shall always be coded.*

4 If, after (1), and (2), and (3), the name code still exceeds 35 characters, the last name is truncated. Truncation proceeds with the last character of the last name and continues until the name code is 35 characters in length, including spacers and first and middle initials.

 Description LAST NAME, @ FIRST NAME, @MIDDLE NAMES SEPARATED BY SPACES, @, SUFFIX

## Suffixes (if present)

JR	Junior
SR	Senior
1 <sup>ST</sup> (or I)	First
2 <sup>nd</sup> (or II)	Second
1 <sup>ST</sup> (or I) 2 <sup>nd</sup> (or II) 3 <sup>RD</sup> (or III)	Third
4 <sup>TH</sup> (or IV) 5 <sup>TH</sup> (or V)	Fourth
5 <sup>TH</sup> (or V)	Fifth

Example: DOE@JOHN@X is the proper code for "John X Doe." "John Winston Smith Doe, Jr. is coded <u>DOE@JOHN@WINSTON</u> <u>SMITH@JR</u>. "Kimberly Allen Beauregard Churchill-Rockwell, IV" is coded <u>CHURCHILL-OCKWELL@KIMBERLY@ALLEN@</u> (the suffix is eliminated, and the second middle name is truncated).

## **Other Names**

Names not belonging to persons, such as those of businesses, organizations, or state governments, are coded without the use of subfields, but use the following two rules:

- 1 When possible, use standard abbreviations, such as CO for "company", INC for 'Incorporated', or US for "United States."
- 2 If, after abbreviating the name still exceeds 35 characters, truncate the end of the name as necessary.

Example: The code for "John Smith Trade and Transportation Company" is JOHN SMITH TRADE & TRANSPORTATION C. DOE ELECTRONICS, INC. is the code for "Doe Electronics, Incorporated." "Wilson & Co." remains WILSON & CO. Source: Based on Driver History Record Data Dictionary, May 22, 1990, pages B5-B6.

## **APPENDIX D: Addresses**

Address fields are variable length composite fields with a maximum length of 71 or 108. Following are descriptions of how to set up the fields for both. Each subfield contains one type of data followed by either a delimiter, @, to indicate the end of the subfield or an ending delimiter, ",", to show the end of the address code. The spacers must be used to differentiate the name positions. The name and maximum length and type of each subfield is shown in the table below. The maximum length for each subfield includes one space for the delimiter.

<u>SUBFIELD</u>		MAXIMUM <u>71</u>	LENGTH/TYPE <u>108</u>
Subfield 1	Street Address A (and delimiter)	21/ANS	36/ANS
Subfield 2	Street Address B (and delimiter)	21/ANS	36/ANS
Subfield 3	City or Town (and delimiter)	16/ANS	21/ANS
Subfield 4	Alphabetic State Code(and delimiter)		3/ANS
Subfield 5	Zip Code (and delimiter)		12/ANS

The code is composed in the basic format:

Street Address A@Street Address B@City or Town@State@Zip Code;

If data for any of the five subfields is omitted, that subfield's delimiter must still be coded.

Use standard abbreviations for street and place names if necessary. Abbreviations for use in addresses are listed in *National Five—Digit Zip Code & Post Office Directory* U.S. Postal Service, 1991, pages 2-3 through 2-11.

Use the two-character alphabetic codes for the state subfield. Alphabetic abbreviations of state names are available in Appendix A.

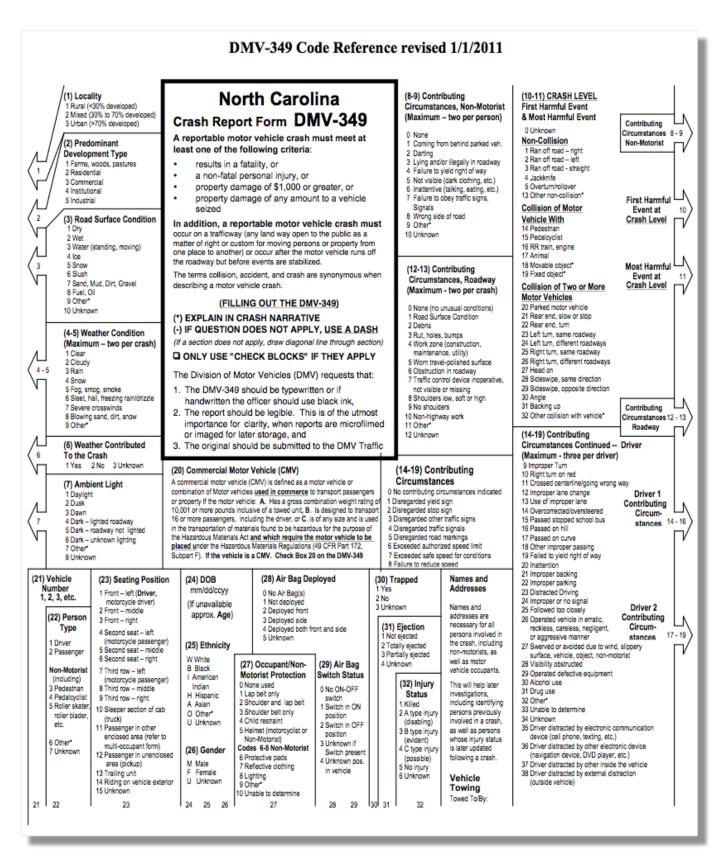
Example: For 29293 Abbot Farms Court, Suite #40, Trenton, New Jersey, 08610 the code is: 29293 ABBOT FARMS CT @SUITE 40@TRENTON@NJ@08610

For 1234 South Elm Avenue, Springfield, Illinois 62703, the code is: 1234 E ELM AVENUE@SPRINGFIELD@IL@62703;

Note the two delimiters following Street Address A in the second example, which indicate that there is no Street Address B.

Source: Based on Driver History Record Data Dictionary, October 1994.

## **APPENDIX E: Code Reference Cover Sheet**



1 On Roadway (Surface) Off Roadway 2 Shoulder 3 Median 4 Roadside 5 Outside Trafficway 6 Unknown

#### (34) Vision Obstruction

- 0 None 1 Vehicle window(s) obscured 2 Trees, crops, brush, etc. 3 Building(s) 4 Embankment 5 Sign(s) 6 Hilcrest 7 Parked vehicle(s) 8 Vehicle(s) in traffic/moving 9 Blinded, headlights 10 Blinded, sunlight 11 Blinded, other lights 12 Other
- 13 Unknown

#### (35) Physical Condition

- 1 Apparently normal 2 Ilness 3 Fatique 4 Fell asleep, fainted, loss of consciousness 5 Impairment due to medica-tions, drugs, alcohol 6 Medical condition Other physical impairment 8 Restriction not complied with 9 Other\* 10 Unknown
- (39) Alcohol/Druas Test Results 0 No test 1 No alcohol or other drugs 2 Alcohol (percent BAC) 3 Other drugs reported 4 Contaminated sample/unusable 5 Pending 6 Unknowr

(36) Driver License

driver license by the license exar

1 Yes - alcohol, impairment

2 Yes - alcohol, no impairment

3 Yes - other drugs, impairment

5 Yes - alcohol and other drugs.

6 Yes - alcohol and other drugs.

4 Yes - other drugs, no impairment

impairment suspected

no impairment deter

suspected

detected

suspected

detected

(38) Alcohol/Drugs

2 Test for other drugs 3 Alcohol & other drugs test

7 Unknown

Test Status

1 Alcohol test

4 Test refused

5 Unknown

0 No test

License. For out-of-state drivers, write out

Restrictions

the restriction.

(40) Vehicle Seizure (DWI) Check this box if the crash Restrictions assigned to an individual's involves alcohol or other drugs in sufficient amount to constitute a DWI, and the Indicate restrictions shown on the Driver's

#### (41) Vehicle Style (Type) Passenger car

vehicle is "seized.

2 Pickup (37) Alcohol/Drugs Suspected 3 Light truck (mini-van, panel) 4 Sport utility 5 Van 6 Commercial bus 7 School bus 8 Activity bus 9 Other bus 10 Single unit truck (2-axle, 6-tire) 11 Single unit truck (3 or more axles) 12 Truck/trailer 13 Truck/tractor (i.e., hobtail) 14 Tractor/semi-trailer 15 Tractor/doubles 16 Unknown heavy truck 17 Taxicab 18 Farm equipment 19 Farm tractor 20 Motorcycle 21 Moped 22 Motor scooter or motor bike 23 Pedalcycle 24 Pedestrian 25 Motor home/recreational vehicle 26 Other\* 27 All terrain vehicle (ATV) 28 Firetruck 29 EMS Vehicle, Ambulance, Rescue Souad 30 Military 31 Police 32 Linknown

#### (42) Vehicle Drivable

KEY DEFINITIONS

Vehicle is disabled by damage severe enough to prevent driving it. For comparison purposes, this data element could be used as a minimum reporting threshold for "property damage only" crashes.

#### (43) TAD

#### Damaged Areas

- Front concentrated Front distributed FC FD
- FL Front left corner FR Front right comer
- BC Rear concentrated
- BD Rear distributed BL Rear left corne
- BR Rear right come LP Left side (door)
- RP Right side (door) I FO
- Left side front quarter Right side front quarter RFO
- LBO Left side rear quarter Right side rear quarter RBQ
- LD Left side distributed
- RD Right side distributed
- L&T Left side & too (rollover) R&T Right side & top (rollover)
- TOP Top UND Underneath

### Extent of Deformity

#### The Severity of Damage is based on a scale of "0" being no damage and "7" being the most severe damage

#### (44) Estimated Damage

Dollar estimate of the cost, to restore the vehicle to its condition just prior to the crash, or the estimated value of the vehicle before the crash. whichever is less. For a "totaled" vehicle, enter a dollar estimate of the retail value of the vehicle prior to the crash. Do not enter the word "totaled".

A vehicle being towed by another is part of the towing vehicle and its damage should be included in the "Parts Damaged" and "Amount of Damage" categories.

5 Pole truck 6 Caroo tank 7 Flatbed 8 Dump 9 Concrete mixer 14 Intermodal Caroo Container (46) Name of EMS Record the name of the EMS (or

(45) Cargo Body

including driver)

3 Van/enclosed box

1 Bus (seats for 16 or more.

4 Grain/chips/gravel truck

including driver) 2 Bus (seats for less than 16,

Type

EMS unit number if available) that responded to the crash. A letter designation, unique to each injured person is provided in the first column of the Occupant and Non-Motorist Section. This unique identifier must precede the name of the EMS for each injured person being transported.

Example: A - Cumberland County Ambulance

#### (47) Injured Taken by EMS to

Record the destination of the injured person preceded by the unique lette designation (from the first column) for the person involved, if they were taken to a hospital, clinic, doctor's office, or other place of emergency medical aid. Include both name of treatment facility and city or town.

Example: A - N.C. Memorial, Chapel Hill: B - Duke Hospital, Durham, etc.

#### CRASH/MOTOR VEHICLE/UNIT

A motor vehicle crash is any event that results in death, injury or property damage attributable directly to a motor vehicle or its load in transport, but not involving alcoraft or watercraft. It must occur on a trafficway or after the motor vehicle runs off the roadway but before events are stabilized.

A motor vehicle is any mechanically or electrically powered device, not operated on rails, upon which any person or property may be transported or drawn upon a highway.

A unit is any motor vehicle, pedestrian, pedalcyclist, moped or other road vehicle, excluding railway vehicles, which can be shown on the report as "other" RR train.

#### DRIVERLESS MOTOR VEHICLE

A driverless motor vehicle, though previously parked, or a motor vehicle out of control while being towed or pushed, is considered to be a motor vehicle in transport. Also, an abandoned motor vehicle, upon a roadway, is considered to be a motor vehicle in transport. This principle does not apply to such devices as farm or industrial machinery, highway graders, construction machinery, or similar devices which are not in use at the time of the crash for transport.

#### HIT & RUN

A hit & run vehicle is one which was involved in the crash as the "striking vehicle" or as the "vehicle struck" but which left the scene. The appropriate box must be checked, e.g., vehicle 1, vehicle 2, etc. and any information that is known, included in the Driver and/or Vehicle areas.

NON-CONTACT VEHICLE OR NON-MOTORIST

Non-contact phantom motor vehicles or non-motorists are units that caused the crash but left the scene. They should not be counted in the number of units. but should be referred to in the narrative

Non-contact motor vehicles or non-motorists are units that caused the crash and remained at the scene. They should be counted as units with identifying information, and referred to in the narrative. A school bus could be an example of a non-contact vehicle that is related to a crash (refer to data element # 68).

#### SCHOOL BUS

A motor vehicle used for the transportation of any school pupil at or below the 12th-grade level to or from a public or private school or school-related activity.

A school bus must be externally identifiable by the color vellow, the words "school bus", flashing red lights located on the front and rear, and identifying lettering on both sides indicating the school or school district served, or the company operating the bus

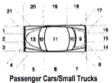
#### MOTOR VEHICLE STATUS

The use of the device at the time of the crash is the primary criterion for establishing motor vehicle status. For example:

- A registered motor vehicle is being drawn by a 1. team of horses on a city street; it is considered other road vehicle.
- 2 A registered motor vehicle is being used to draw a plow engaged in breaking ground on a farm: it is considered farm machinery while engaged in plowing.
- A registered truck is engaged in spreading concrete at a road construction site; it is construction machinery.
- A motorized highway grader, under its own power, is moving from one work place to another on a public way; it is considered a motor vehicle in transport.
- 5 A registered truck, with a blade attached, is engaged in plowing snow from a trafficway; it is considered road maintenance machinery.
- A riding, motorized lawn mower, under its own power, is being driven from one home to another on a city street; it is considered a motor vehicle in transport.
- 7. A military tank is being moved, under its own power, from the firing range to the motor pool, on a land way of a military post; it is considered a motor vehicle in transport.

10 Auto transporter 11 Garbage/refuse 12 Log truck 13 Other\*





#### (49) Vehicle Maneuver/Action

Stopped in travel lane 2 Parked out of travel lanes 3 Parked in travel lanes 4 Going straight ahead 5 Changing lanes or merging 6 Passing 7 Making right turn 8 Making left turn 9 Making U turn 10 Backing 11 Slowing or stopping 12 Starting in roadway 13 Parking 14 Leaving parked position 15 Avoiding object in road 16 Other\*

- (50) Non-motorist Action 1 Entering or crossing specified location 2 Walking, riding, running/jogging with traffic 3 Walking, riding, running/jogging against traffic 4 Working 5 Pushing vehicle 6 Approaching or leaving vehicle 7 Playing
- 8 Standing 9 Other

#### (51) Non-motorist Location Prior to Crash 1 Marked crosswalk at intersection

- 2 At intersection but no crosswalk 3 Non-intersection crosswall 4 Driveway access crosswalk 5 In roadway 6 Not in roadway 7 Median (but not on shoulder) 8 Island 9 Shoulder 10 Sidewalk 11 Within 10 feet of roadway (not on shoulder, median, sidewalk, island)
- 12 Beyond 10 feet of roadway (within trafficway) 13 Outside trafficway 14 Shared-use path or trails

#### (52-56) VEHICLE LEVEL

#### Crash Sequence of Harmful Events (First Second, Third, Fourth), fields 52-55, and Most Harmful Event, field 56 for each Unit (Vehicle)

If a vehicle has only one event, then only one code is required. Vehicles can have up to 4 harmful events. The Most Harmful Event may or may not be one of the 4 events. 0 Unknown

Non-Collision 1 Ran off road right

32 Other or

2 Ran off road lef 3 Ran off road straight ahead 4 Jackknife 5 Overturn/rollover 6 Crossed centerline/median 7 Downhill runaway 8 Cargo/equipment loss or shift 9 Fire/explosion 10 Immersion 11 Equipment failure (tires, brakes, etc.) 12 Separation of units 13 Other non collision Collision of Motor Vehicle With 14 Pedestrian 15 Pedalcyclist 16 RR train, engine 17 Animal 18 Movable object\* Collision of Two or More Motor Vehicles 20 Parked motor vehicle 21 Rear end, slow or stop 22 Rear end, turn 23 Left turn, same roadway 24 Left turn, different roadways 25 Right turn, same roadway 26 Right turn, different roadways 27 Head on 28 Sideswipe, same direction 29 Sideswipe, opposite direction 30 Angle 31 Backing up

ision with vehicle\*

### 4. 5 1

21

0 Pedestrian & Non-Contact Vehicle 20

> 13 (12 1) 15

19

17

### (57) Distance & Direction from Road to Object Struck 0 None 1 In road 2 Right of road, 0-10 ft.

3 Right of road, 11-30 ft 4 Right of road, over 30 ft. 5 Left of road, 0-10 ft. 6 Left of road, 11-30 ft. 7 Left of road, over 30 ft 8 Straight ahead, 0-10 ft Straight ahead, 11-30 f 10 Straight ahead, over 30 ft. (58) Vehicle Underride/Override An underride refers to a vehicle sliding under another

#### vehicle during a crash. An override refers to a vehicle riding up over another vehicle. Both can occur with a parked vehicle

#### (59) Vehicle Defects Maximum of two per Vehicle 0 None detected 1 Brakes 2 Headlights 3 Rear lights Steering

5 Tires 6 Other defects 7 Unknown

## (60) Authorized Speed Limit Authorized speed limit for the vehicle at the time of the crash. The authorization may be indicated by the posted speed

limit, blinking sign at construction zones, restricted speed for permitted vehicles (61) Estimate of Original Speed Estimated speed in miles per hour for each vehicle involved in the collision. Estimates reflect the speed of each

# vehicle at the moment the driver initially perceived an existing hazard.

Collision with Fixed Object 33 Tree 34 Utility pole (with or without light) 35 Luminaire pole (non-breakaway) 36 Luminaire pole (breakaway) 37 Official highway sign (non-breakaway) 38 Official highway sign (breakaway) 39 Overhead sign support 40 Commercial circ 40 Commercial sign 41 Guardrail end on shoulde 42 Guardral face on shoulder 43 Guardral end in median 44 Guardrail face in median 45 Shoulder barrier end (non-guardrail) 46 Shoulder barrier face (non-guardrail) 47 Median barrier end (non-guardrail) 48 Median barrier face (non-quardrail 49 Bridge rail end 50 Bridge rail face 51 Overhead part of underpass 52 Pier on shoulder of undernass 53 Pier in median of underpass 54 Abutment (supporting wall) of underpass 55 Traffic island curb or median 56 Catch basin or culvert on shoulder 57 Catch basin or culvert in median 58 Ditch 59 Embankment 60 Mailbox 61 Fence or fence post 62 Construction barrier 63 Crash cushion 64 Other fixed object\*

#### 32 31 Tractor-Trailers (62) Estimate of Speed at Impact Estimated speed in miles per hour for each vehicle involved in the collision. Estimates reflect the

39

38

40

37

34 35

34

33

moment of impact. (63) Tire Impressions Before Impact Length (in feet) of the tire impressions (skid marks, tire print yaw) for each vehicle involved in the collision, prior to impact.

speed of each vehicle at the

(64) Distance Traveled After Impact Distance (in feet) each vehicle or pedestrian traveled after impact as a result of the force of the collision.

(65) Emergency Vehicle Use Indicates hicles which are on an emergency response, i.e., traveling with physical emergency signals in use; lights, siren sounding, etc. Firetruck

2 EMS Vehicle, Ambulance, Rescue Squad, etc. 3 Military 4 Police 5 Other

#### (66) Post Crash Fire Yes" check block

(67) School Bus - Contact Vehicle "Yes" check block. This data element is used to determine "school bus related." The school bus, with or without a pupil on board, is directly involved as a contact vehicle.

(68) School Bus - Noncontact Vehicle If "Yes" check block. This data element is used to determine "school bus related." The school bus, with or without a pupil on board, is indirectly involved as a noncontact vehicle

#### (69) Road Feature

0 No special feature 1 Bridge 2 Bridge approach 3 Underpass 4 Driveway, public 5 Driveway, private 6 Alley intersection

#### Intersection of roadways (7-12)

7 Four-way intersection 8 T-intersection 9 Y-intersection 10 Traffic circle/roundabout 11 Five-point, or more 12 Related to intersection 13 Non-intersection median crossing

#### Interchange (15-21)

15 Off-ramp entry 16 Off-ramp proper 17 Off-ramp terminal on crossroad 18 Merge lane between on and off ramp 19 On-ramp entry 20 On-ramp proper 21 On-ramp terminal on crossroad 22 Railroad crossing

14 End or beginning-divided highway

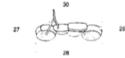
23 Tunnel 24 Shared-use paths or trails 25 Other

#### (70) Road Character - Horizontal and Vertical Alignment

1 Straight, level 2 Straight, hillcrest 3 Straight, grade 4 Straight, bottom (sag)

5 Curve, level 6 Curve, hillcrest 7 Curve, grade

8 Curve, bottom (sag) 9 Other



#### Motorcycle, Bicycle, Moped or ATV

(71) Road Classification 1 Interstate 2 LIS Route 3 NC Route 4 State Secondary Route 5 Local Street 6 Public Vehicular Area Private Road, Driveway

#### (72) Road Surface Type

1 Concrete 2 Grooved concrete 3 Smooth asphalt 4 Coarse asphal 5 Gravel 6 Sand / Soil 8 Other\*

8 Other\*

UNDERNEATH: 22 Front, 23 Center, 24 Rear, 25 Rollover, 26 Unknown

#### (73) Road Configuration (Trafficway Description)

1 One-way, not divided 2 Two-way, not divided 3 Two-way, divided, unprotected

median 4 Two-way, divided, positive median barrie 5 Unknown

(74) Access Control No access control 2 Full access control 3 Partial access control

(75) Number of Lanes Total number of lanes in both directions in the trafficway. If parking lot,

### (76) Traffic Control Device

0 No control present 1 Stop sign 2 Yield sign 3 Stop and go signal 4 Flashing signal with stop sign 5 Flashing signal without stop sign 6 RR gate and flasher 7 RR flasher 8 RR crossbucks only 9 Human control 10 Warning sign 11 School zone signs 12 Flashing stop and go signal

13 Double vellow line no passing zone 14 Other\*

#### (77) Traffic Control Operating 1 Yes

2 No 3 Unknow

#### (78 - 81) Work Zone Related

#### (78) Did crash occur in

or near 1 Construction work area 2 Maintenance work area 3 Utility work area 4 Intermittent/moving work

e.g., patching pothole 5 No

(79) Work activity at time of crash

1 On going 2 No apparent activity

### (82) Trailer Type 0 No trailer Non-semi trailers

1 Boat 2 Campe 3 Utility 4 Horse 5 House trailer (mobile home) 6 Towed vehicle 7 Other non-semi Semi trailers 8 Tanker 9 Enclosed van 10 Flatbed or platform 11 Other semi trailer

#### 12 Double trailer (83) Overwidth Trailer/Mobile

Home Enter the number of the vehicle pulling overwidth trailer, including overwidth mobile home, followed by the permit number

#### (84) Crash Diagram

The diagram should include: 1 Roads, and intersecting roads: if a vehicle is struck exiting a driveway, give the name of the business or resident 2 Direction of travel for each lane 3 All pertinent roadside features 4 Paths of travel for vehicles, pedestrians, bicyclists, etc. 5 Tire marks and debris 6 Measurements pertinent to the location of the point of impact. Use a tape for distances up to 500 feet. Use an odomete

For crashes within an Interchange: 1 Add a small line sketch of the interchange and show an "x" where the crash occurred 2 Sketch should be less than 25% of the total diagram area, and 3 Conform to the north arrow 4 Identify number, name of the road(s), ramps, and service roads show

#### (85) Crash Narrative

Provide a word description of events occurring prior to, during, and after the crash which are not elsewhere on the form. Note all pertinent and inusual aspects of the crash. Statements made in this narrative should be in the opinion of the investigating officer

#### (86) Additional Property Damage

Enter any property other than motor vehicles that was damaged, identify property and its owner and enter an estimate of the dollar damage. Damage to signs, buildings, mailboxes, fences, etc., should be entered here

#### (80) Work area marked with warning signs, cones

1 Yes 2 No

### (81) Location of crash

1 Before work area 2 In work area approach taper 3 Adjacent to actual work area

97 | Page

## **APPENDIX F: DMV-349 (Front)**

7		nits Involved		f	L Sup	plemental F			Non-Reportable		Dat	e Received by DMV
	Crast	Date		County			Time		Lo	cal Use/Patrol Area		
-	172201	/dd/ccyy				(24	Hour Ck	ock)				outside municipality
	33 Relat L Roadwa O	y Surface OCCU	sh 🛛 In Irred 🗌 Near .		lân	icipality	1		(O) haqab arts.	or •	Miles N S E	
	C on						Imp or	(R.R.Cro	ossing #	) •	Miles (0 ftintersecti	t. N S E W
	Ţ	hway Number, or High	way, Street, (If ramp	or service road,	indicate on In	ne) Serv	rice Roa	d			Latitude	(if available)
-	O at or fro N	Use Highway Nur	nber, Street Name	x Adjacent Coun	ty or State Lin		SE		ardUse Highway Numbe	er, Street Name or Adjacent County o	r State Line Altbude	
ſ	UNIT#		STATISTICS OF TAXABLE PARTY.	CHARLES IN COLUMN 2 IN COLUMN 2	OCTATION OF THE OWNER.		OMME	RCIAL	UNIT#		A COLUMN TWO IS NOT THE OWNER.	] OTHER
		and state				20	VEH	ICLE				and a statute resident dashe had
	Driver	First	l N	iddle	1	Last		Suffix	Driver	First N	iddle I	Last Suffix
-	Address								Address	an the second second		and the second
	City			S		_ Zip	- Mi		City		State	Zip
	Same Address	on Driver's Dri	ver's H (		1.151				Same Address on Driv		)	
-	License?	Yes 🛄 No 🛛 Nu	mbers W (	).	D.L.				License? Yes	No Numbers W (	)	
	D.L. #C	DL License			Class	1000	_State		D.L. #CDL Lice	ense 🔲	Class	State
1	DOB	0	34 Vision bstruction	35 Physi	cal xn	36 D.L. Restricti	ons _		DOB	34 Vision Obstruction	35 Physical Condition	36 D.L
-	37 Alcohol/	d/ccyy	38 Alcohol/		Results		40 Vet		mm/dd/ccy 37 Alcohol/	38 Alcohol/	39 Results	40 Vehicle
+	Drugs Suspe	cted	Drugs Test	(if )	nown)	9	elzure	(DWI)	Drugs Suspected_	Drugs Test	(if known)	Seizure (DWI)
	Owner	me as Driver?							Owner	Driver?		<u> </u>
	Address	me Address as Driver?	11		1.99		10.00		Address	tress as Driver?		A CONTRACTOR
	City	THE MULTERS AS LATIVET?		S	late	_ Zip			City		State	Zip
-	Plate #				Plate State		ate	527	Plate #		Plate State	Plate
	VIN				Otato		201			State rear		
	Vehicle	Ve	hicle	41 Vehicle Style (Type)		42 V	ehicle	Yes No	Vehicle	Vehicle Year	41 Vehicle Style (Type)	42 Vehicle Yes
	Make		ear				rivable	LI No	Make 43 TAD	Year		Drivable 🗆 No
	Insurance				amage	19		5	Insurance		Damage	
	Company				an a		6 2	2 August	Company Policy #	and the second		
	and design to the second	RCIAL VEHICL	E: Cargo, Cai	rier Name, I	Address,	Source	So	urce:	A CONTRACTOR OF THE OWNER	cation Numbers, GVWR,	Axles	
	Unit	45 Cargo Bod	у Туре	_ 🗌 Same A	ddress as O	wner?		Truck	US DOT#	ICC#	Au	des on Vehicle
							- 🗆	Shipping		ate #		cluding Trailers
	-						-	papers Driver		F	Gross Vehi	cle
	21 22	23 24	25 2	27 28	29 30	31 32	Name	s and Addre	CONTRACTOR OF THE OWNER OF THE OWNER	(Unit 1/Unit 2 Drv, Ped, etc S		
A	T	Unit1-Drv1, Ped1					see above		Towed To/By:	(		
в		see above Unit2-Drv2, Ped2 see above	.,etc.				see above	Veh#1	Towed To/By:			
c		and an inclusion of the state										
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H		1	and the					******				
100	46 Name of E	LIC .	and a second second		Andreas Alexandra	A REAL PROPERTY OF		and the second second	46 Name of EMS	ne in a second and the second		

## DMV-349 (Back)

A8 POINTS OF INITIAL Unit#	in the h	VEHICLE	: INFO.	Veh.#	Voh.W	ROADW	AY INFO.	WORK ZON	E RELATE	:0
(Write in Codes) Unit#		60 Authorized Speed	Limit		1	69 Road Featu	re	78 Workzone Area		
RASH SEQUENCE (Unit Level)	Unit# Unit	# 61 Estimate of Origin	al Traveling Speed		201	70 Road Chara	icter	79 Work Activity 60 Work Area Marked		
Vehicle Maneuver/Action		62 Estimate of Speed	d at Impact			71 Road Class	ification	61 Crash Location		
Non-Motorist Action		63 Tire Impressions F	Before Impact (ft.)		0/194	72 Road Surfa	ce Type			
Non-Motorist Location Prior to Impact		64 Distance Traveled	After Impact (ft.)			73 Road Confi	guration	TRAILER INFO.	Unit.#	Unit.B.
Crash Sequence - First Event for This Unit	Land .	65 Emergency Vehic	le Use		mil	74 Access Con	trol	82 Trailer Type		
3 Crash Sequence - Second Event	Arris 2	66 Post Crash Fire (it	f "Yes" check block)			75 Number of	Lanes	1st Trailer No. Axles		
Crash Sequence - Third Event		67 School Bus - Cont	tact Vehicle *			76 Traffic Cont	rol Type	Width (inches)		
Crash Sequence - Fourth Event	-75.94	68 School Bus - None	contact Vehicle			77 Traffic Cont	rol Oper	Length (feet)		
Most Harmful Event for This Unit	10.1.1.1.1.1		AL VEHICLE: Ha	cardous M	aterials in	volvement Unit	$- \wedge$	2nd Trailer No. Axles Width (inches)	·	
7 Distance/Direction to Object Struck			Yes No			rom Placard indic	Contraction of the second s	Langth (feet)		
8 Vehicle Underride/Override		Hazardous Carg Released idea	Ves No		-digit placard ame from dia	mond or box bol	igit number from form from form of diamond	83 Unic# Overwidth Permit # Overwidth Trailer and Overwidth Mohile Home		
9 Vehicle Defects			at 🗌 Yes 🗌 No							
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Owner		Phone					Phane M			
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## APPENDIX G: Completing the DMV 349 & Supplemental Reports

Completing the Crash Report Form DMV-349

A reportable motor vehicle crash must meet at least one of the following criteria:

- results in a fatality, or
- a non-fatal personal injury, or
- property damage of \$1,000 or greater, or
- property damage of any amount to a vehicle seized

In addition, a reportable motor vehicle crash must occur on a trafficway (any land way open to the public as a matter of right or custom for moving persons or property from one place to another) or occur after the motor vehicle runs off the roadway but before events are stabilized.

The terms collision, accident, and crash are synonymous when describing a motor vehicle crash.

## (FILLING OUT THE DMV-349)

(\*) EXPLAIN IN CRASH NARRATIVE
(-) IF QUESTION DOES NOT APPLY, USE A DASH
(If a section does not apply, draw diagonal line through section)
ONLY USE "CHECK BLOCKS" IF THEY APPLY

The Division of Motor Vehicles (DMV) requests that:

- 1. The DMV-349 should be typewritten or if handwritten the officer should use black ink,
- 2. The report should be legible. This is of the utmost importance for clarity, when reports are microfilmed or imaged for later storage, and
- 3. The original should be submitted to the DMV Traffic Records Section.

## COMPLETING A SUPPLEMENTAL

When completing a supplemental report note that:

- It is not necessary to rewrite most of the information as listed on be original DMV-349 (report). Supplemental reports must be reported on a separate DMV-349 from the original report. The location must be completed in addition to the date, and time of the crash.
- List only the names of drivers (or owner, if no driver) as shown on the original report.
- List the additional information or correction to be made.

• If the original report included a hit and run driver and the driver has been apprehended the supplement must include all information for that respective driver and vehicle on the front and back of the report.

## Supplemental traffic crash reports must be submitted when:

- 1. The original report was incomplete because of lack of information or an incomplete investigation.
- 2. A correction on the original report is necessary because of inaccurate information.
- 3. A person dies of injuries sustained in a traffic crash within one year of the crash.

## APPENDIX H: Crashes Involving Commercial Motor Vehicles

## CRASHES INVOLVING COMMERCIAL MOTOR VEHICLES (CMV)

The reporting of motor vehicle crashes involving CMV's has been incorporated into the DMV-349. All of the data requirements to meet the Office of Motor Carrier, Federal Highway Administration requirements for SAFETYNET, and the seven motor carrier specific data elements recommended by the National Governor's Association have been addressed.

The DMV-349 is designed to record information for a single CMV involved in a crash. Questions concerning hazardous materials involvement may be found on the reverse side of the DMV-349 in rare instances where two or more CMV's are involved in the same crash, a second DMV-349 must be submitted with the appropriate information for subsequent CMVs.

# COMMERCIAL MOTOR VEHICLES CARRIER IDENTIFICATION NAME, NUMBERS, AND ADDRESS

This Information is provided as a quick reference to aid law enforcement in correctly identifying the carrier identification numbers for purposes of reporting crashes or inspections. When a commercial motor vehicle crash report and/or inspection report is filled out, the correct motor carrier will receive credit (good and bad) for the crash and/or inspection.

The Federal Highway Administration and States use the crash and/or inspection reports in determining safety fitness ratings of motor carriers and targeting unsafe motor carriers for in depth investigations. To avoid improperly identifying the name and address of a motor carrier the officer should rely on more than a single document or item when identifying the motor carrier. The officer should review as many of the following items as possible to determine the name and address of the motor carrier.

Side of the Vehicle - the correct name, address and US DOT#/ICC# of the motor carrier may or may not be marked on the side of the vehicle. If the marking on the side of the vehicle matches the name on the other items, the correct motor carrier is probably identified. The US DOT# is required if the vehicle is an interstate private carrier. The ICC MC# is required if the vehicle is an interstate for hire carrier. The State Exemption Numbers, also contained on the side of the vehicle, are required for intrastate passenger carriers and/or carriers of household goods.

## Driver interview - The officer should ask questions, such as;

- 1. Is the vehicle leased or rented?
- 2. Who is the motor carrier that is responsible for this load?
- 3. Who is directing and controlling the movement of this vehicle?
- 4. Where is the motor carrier's principal place of business?

Lease Agreement - This document is excellent for identifying the name of the lessee.

Driver's Log - When logs are required; they will contain the name of the motor carrier and the city and state where the motor carrier's principal place of business is located,

Shipping Papers (Bill of Lading) - generally this document will provide the officer with the name of the motor carrier who is responsible for the load. The shipping papers are the written transportation contract between the shipper and the carrier. They identify the freight, who is to receive it, and the place of delivery and give the terms of the agreement.

Vehicle Registration -These documents are good for identifying the owner and/or registrant who may or may not be the responsible motor carrier. Even when the registration identifies the responsible motor carrier, it may or may not show the address of the motor carrier's principal place of business because carriers with terminals in multiple states generally register their vehicles in the state of domicile. Therefore, the address may be a terminal address.

The vehicle registration or "Cab Card" also contains the IFTA# (International Fuel Tax Agreement Number) and the Fuel Tax Account #, which is comprised of the State, FEI# (Federal Employee Identification Number and Fleet Number.)

## **APPENDIX I: Important Definitions**

## **CRASH/MOTOR VEHICLE/UNIT**

A motor vehicle crash is any event that results in death, injury or property damage attributable directly to a motor vehicle or its load in transport, but not involving aircraft or watercraft. It must occur on a trafficway or after the motor vehicle runs off the roadway but before events are stabilized.

A motor vehicle is any mechanically or electrically powered device, not operated on rails, upon which any person or property may be transported or drawn upon a highway.

A unit is any motor vehicle, pedestrian, pedalcyclist, moped or other road vehicle, excluding railway vehicles, which can be shown on the report as "other" RR train.

## DRIVERLESS MOTOR VEHICLE

A driverless motor vehicle, though previously parked, or a motor vehicle out of control while being towed or pushed, is considered to be a motor vehicle in transport. Also, an abandoned motor vehicle, upon a roadway, is considered to be a motor vehicle in transport. This principle does not apply to such devices as farm or industrial machinery, highway graders, construction machinery, or similar devices which are not in use at the time of the crash for transport.

## HIT & RUN

A hit & run vehicle is one which was involved in the crash as the "striking vehicle" or as the "vehicle struck" but which left the scene. The appropriate box must be checked, e.g., vehicle 1, vehicle 2, etc. and any information that is known, included in the Driver and/or Vehicle areas.

## NON-CONTACT VEHICLE OR NON-MOTORIST

Non-contact phantom motor vehicles or non-motorists are units that caused the crash but left the scene. They should not be counted in the number of units, but should be referred to in the narrative.

Non-contact motor vehicles or non-motorists are units that caused the crash and remained at the scene. They should be counted as units with identifying information, and referred to in the narrative. A school bus could be an example of a non-contact vehicle that is related to a crash (refer to data element # 68).

## Important Definitions (cont.)

## SCHOOL BUS

A motor vehicle used for the transportation of any school pupil at or below the 12th-grade level to or from a public or private school or school-related activity.

A school bus must be externally identifiable by the color yellow, the words "school bus", flashing red lights located on the front and rear, and identifying lettering on both sides indicating the school or school district served, or the company operating the bus.

## MOTOR VEHICLE STATUS

The use of the device at the time of the crash is the primary criterion for establishing motor vehicle status. For example:

- 1. A registered motor vehicle is being drawn by a team of horses on a city street; it is considered other road vehicle.
- 2. A registered motor vehicle is being used to draw a plow engaged in breaking ground on a farm; it is considered farm machinery while engaged in plowing.
- 3. A registered truck is engaged in spreading concrete at a road construction site; it is construction machinery.
- 4. A motorized highway grader, under its own power, is moving from one work place to another on a public way; it is considered a motor vehicle in transport.
- 5. A registered truck, with a blade attached, is engaged in plowing snow from a trafficway; it is considered road maintenance machinery.
- 6. A riding, motorized lawn mower, under its own power, is being driven from one home to another on a city street; it is considered a motor vehicle in transport.
- 7. A military tank is being moved, under its own power, from the firing range to the motor pool, on a land way of a military post; it is considered a motor vehicle in transport.

# Fatal injury - Any injury that results in death within 12 months after the crash occurred.

A Type Injury (disabling) - An injury obviously serious enough to prevent the injured person from performing his or her normal activities for at least one day beyond the day of the crash. Massive loss of blood, broken bone, unconsciousness of more than momentary duration are examples.

B Type Injury (evident) - an obvious injury, other than a fatality or A Type injury, which is evident at the scene. Bruises, swelling, limping, soreness, are examples. This injury would not necessarily prevent the person from carrying on his or her normal activities.

C Type Injury (possible) - No visible injury, but person complains of pain, or has been momentarily unconscious.

**Derived Data Elements** - These are data elements which are not necessarily collected at the scene by the police. Instead, they can be obtained by counting or recoding information that has already been collected on the DMV-349. Examples include:

- 1. Day of week
- 2. Number of motorists
- 3. Number of non-motorist
- 4. Vehicle body type
- 5. Crash severity
- 6. Total persons injured
- 7. Total persons killed