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Crash Report Sampling System CRSS Analytical User's Manual 2016-2019

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CRSS Analytical User's Manual 2016 – 2019

U. S. Department of Transportation

National Highway Traffic Safety Administration National Center for Statistics and Analysis Washington, D.C. 20590

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New in 2019 CRSS

Data Elements with Changes in Attributes

Below is a list of CRSS data elements that have substantial changes for 2019. Changes are denoted in bold/italics for additions and strikethrough for deletions. More detailed information on each data element can be found in the FARS/CRSS Coding and Validation Manual. NHTSA's National Center for Statistics and Analysis (NCSA) publishes these manuals for each year of data collection and they can be found at:

NCSA Publications- Manuals and Documentation

| DATA ELEMENT ID | DATA ELEMENT NAME | SAS TABLE.NAME | COMMENTS |
|-----------------------|--|--|--|
| C18B | Area of Impact (This Vehicle) | Cevent.AOI1, Vevent.AOI1, Vsoe.AOI | Revised Attribute: 19 (Other Objects or Person Set-In-Motion) |
| C18D | Area of Impact (Other Vehicle) | Cevent.AOI2, Vevent.AOI2 | ■ Revised Attribute: 19 (Other Objects or Person Set-In-Motion) |
| C19 | First Harmful Event | Accident.HARM_EV, Parkwork.PHARM_EV | ■ New Attribute: 98 (Harmful Event, Details Not Reported) |
| C20 | Manner of Collision of the First Harmful Event | Accident.MAN_COLL, Accident.PMAN_COLL | Revised Data Element Name: Manner of Collision of the First Harmful Event Revised Attribute: 00 (The First Harmful Event was Not a Collision with a Motor Vehicle in Transport) |
| C21AI | Imputed Relation to Junction- Within Interchange Area | Accident.RELJCT1_IM | Discontinued Data Element (no longer imputed) |
| C32 | Related Factors – Crash Level | Accident.CF1, Accident.CF2, Accident.CF3 | ■ Revised Definition ■ New Attributes: ○ 30 (Obstructed Crosswalks) ○ 31 (Related to a Bus Stop) ■ Revised Attributes: ○ 26 (Backup Due to Prior Non-Recurring Incident) ○ 28 (Backup Due to Regular Congestion) |

| DATA ELEMENT ID | DATA ELEMENT NAME | SAS TABLE.NAME | COMMENTS |
|-------------------------|--|---|---|
| V23 | Special Use | Vehicle.SPEC_USE, Parkwork.PSP_USE | ■ Removed Attribute: 13 (Incident Response) ■ New Attributes: |
| V29 | Areas of Impact – Initial Contact Point | Vehicle.IMPACT1, Parkwork.PIMPACT1 | Revised Attribute: 19 (Other Objects or Person Set-in-Motion) |
| V32 | Sequence of Events | Cevent.SOE, Vevent.SOE, Vsoe.SOE | ■ New Attribute: 98 (Harmful Event, Details Not Reported) |
| V33 | Most Harmful Event | Vehicle.M_HARM, Parkwork.PM_HARM | ■ New Attribute: 98 (Harmful Event, Details Not Reported) |
| V35 to <i>V34</i> | Fire Occurrence | Vehicle.FIRE_EXP, Parkwork.PFIRE | ■ Changed Data Element ID from V35 to V34 |
| NEW V35 | Motor Vehicle Automated Driving System(s) | Vehicle.ADS_PRES, Vehicle.ADS_LEV, Vehicle.ADS_ENG | ■ New Data Element |
| V34 to <i>V36</i> | Related Factors – Vehicle Level | Vehicle.VEH_SC1, Vehicle.VEH_SC2, Parkwork.PVEH_SC1, Parkwork.PVEH_SC2 | Changed Data Element ID from V34 to V36 Revised Definition New Attribute: 29 (Default Code Used for Vehicle Numbering) Removed Attribute: 40 (Highway Incident Response Vehicle) |

| DATA ELEMENT ID | DATA ELEMENT NAME | SAS TABLE.NAME | COMMENTS |
|-----------------------|--|---|---|
| D24 | Related Factors – Driver Level | Vehicle.DR_SF1, Vehicle.DR_SF2, Vehicle.DR_SF3, Vehicle.DR_SF4 | ■ Revised Definition ■ Removed Attribute: 09 (Emergency Services Personnel) ■ New Attributes: ○ 29 (Intentional Illegal Driving Off the Roadway) ○ 94 (Emergency Medical Service Personnel) ○ 95 (Fire Personnel) ○ 96 (Tow Operator) ○ 97 (Transportation (i.e., maintenance workers, safety service patrol operators, etc.) |
| PC13 | Traffic Control Device Functioning | Vehicle.VTCONT_F | ■ New Attribute: 4 (Device Not Functioning or Device Functioning Improperly, Specifics Unknown) |
| PC16 | Driver Distracted By | Distract.MDRDSTRD | ■ Revised Definition ■ Revised Attributes: ○ 05 (While Talking or Listening to Mobile Phone) ○ 06 (While Manipulating Mobile Phone) ○ 15 (Other Mobile Phone Related) |
| PC19 | Critical Event – Precrash (Event) | Vehicle.P_CRASH2 | ■ Revised Attributes: ○ 05 (Suddenly Encountered Poor Road Conditions [Puddle, Pot Hole, Ice, Etc.]) ○ 06 (Traveling Too Fast for Conditions or Road Configuration) ○ 59 (Unknown Travel Direction/Speed of Other Motor Vehicle in Lane) |
| P9 | Seating Position | Person.SEAT_POS | ■ New Attribute: 56 (Appended to a Motor Vehicle for Motion) |

| DATA ELEMENT ID | DATA ELEMENT NAME | SAS TABLE.NAME | COMMENTS |
|--|--|-------------------|---|
| P10 to <i>P10A</i> | Restraint System/ Helmet Use to Restraint System Use | Person.REST_USE | Revised Data Element Revised Definition New Attribute: 6 (Racing-Style Harness Used) Removed Attributes: 5 (DOT-Compliant Motorcycle Helmet) 16 (Helmet, Other than DOT-Compliant Motorcycle Helmet) 17 (No Helmet) 19 (Helmet, Unknown if DOT-Compliant) 29 (Unknown if Helmet Worn) |
| P11 to <i>P10B</i> | Indication of Misuse of Restraint System/Helmet to Indication of Restraint System Mis- Use | Person.REST_MIS | ■ Revised Data Element ■ Revised Definition ■ Revised Attributes |
| NEW P11A | Helmet Use | Person.HELM_USE | ■ New Data Element |
| NEW P11B | Indication of Helmet Mis- Use | Person.HELM_MIS | ■ New Data Element |
| P16/NM15 to <i>P16/NM16</i> | Police Reported Alcohol Involvement | Person.DRINKING | ■ Changed Data Element ID from NM15 to NM16 |
| P18A/ NM17A to <i>P18A/</i> <i>NM18A</i> | Alcohol Test – Alcohol Test Status | Person.ALC_STATUS | ■ Changed Data Element ID from NM17A to <i>NM18A</i> |
| P18B/ NM17B to <i>P18B/</i> <i>NM18B</i> | Alcohol Test – Alcohol Test Type | Person.ATST_TYP | ■ Changed Data Element ID from NM17B to <i>NM18B</i> |
| P18C/ NM17C to P18C/ NM18C | Alcohol Test – Alcohol Test Result | Person.ALC_RES | ■ Changed Data Element ID from NM17C to NM18C |

| DATA ELEMENT ID | DATA ELEMENT NAME | SAS TABLE.NAME | COMMENTS |
|------------------------------------|---|--|---|
| P19/NM18 to <i>P19/NM19</i> | Police Reported Drug Involvement | Person.DRUGS | ■ Changed Data Element ID from NM18 to <i>NM19</i> |
| P22/NM21 to <i>P22/NM</i> 22 | Transported to First Medical Facility By | Person.HOSPITAL | ■ Changed Data Element ID from NM21 to <i>NM22</i> |
| P26/NM25 to P26/NM26 | Related Factors – Person Level | Person.P_SF1, Person.P_SF2, Person.P_SF3 | ■ Changed Data Element ID from NM25 to NM26 ■ Revised Definition ■ Removed Attribute: 86 (Emergency Services Personnel) ■ New Attributes: ○ 53 (Non-Motorist Previously Used a Motor Vehicle for Motion) ○ 54 (Non-Motorist Attempting to Use a Motor Vehicle for Motion) ○ 55 (Non-Motorist Attempting to Use or Previously Used a Motor Vehicle for Motion, Details Not Reported) ○ 94 (Emergency Medical Services Personnel) ○ 95 (Fire Personnel) ○ 96 (Tow Operator) ○ 97 (Transportation (i.e., maintenance workers, safety service patrol operators, etc.) |
| NM12 | Non-Motorist Contributing Circumstances | Nmcrash.MTM_CRSH | ■ Revised Attributes: o 01 (Dart-Out – Visual Obstruction Noted) o 11 (Dash – Run, No Visual Obstruction Noted) |
| NEW NM13 | Non-Motorist Distracted By | Nmdistract.NMDRSTRD | ■ New Data File (allows for multiple selections) ■ New Data Element |
| NM13A to <i>NM14A</i> | Non-Motorist Safety Equipment – Helmet Use | Safetyeq.NMHELMET | ■ Changed Data Element ID from NM13A to <i>NM14A</i> |
| NM13B to <i>NM14B</i> | Non-Motorist Safety Equipment – Use of Protective Pads | Safetyeq.NMPROPAD | ■ Changed Data Element ID from NM13B to <i>NM14B</i> |

| DATA ELEMENT ID | DATA ELEMENT NAME | SAS TABLE.NAME | COMMENTS |
|-----------------------------|--|-------------------|---|
| NM13C to NM14C | Non-Motorist Safety Equipment – Use of Other Protective Safety Equipment | Safetyeq.NMOTHPRO | ■ Changed Data Element ID from NM13C to NM14C |
| NM13D to <i>NM14D</i> | Non-Motorist Safety Equipment – Use of Reflective Clothing/ Carried Item | Safetyeq.NMREFCLO | ■ Changed Data Element ID from NM13D to NM14D |
| NM13E to NM14E | Non-Motorist Safety Equipment – Use of Lighting | Safetyeq.NMLIGHT | ■ Changed Data Element ID from NM13E to NM14E |
| NM13F to <i>NM14F</i> | Non-Motorist Safety Equipment – Use of Other Preventive Safety Equipment | Safetyeq.NMOTHPRE | ■ Changed Data Element ID from NM13F to NM14F |
| NM14 to <i>NM15</i> | Non-Motorist Condition (Impairment) at Time of Crash | Nmimpair.NMIMPAIR | ■ Changed Data Element ID from NM14 to NM15 |

Summary of the SAS Naming Changes

| Locator Code | 2018 SAS Name | New 2019 SAS Name | Data Element Name |
|-----------------|------------------|----------------------|------------------------------|
| P11A | N/A | Person.HELM_USE | Helmet Use |
| P11B | N/A | Person.HELM_MIS | Indication of Helmet Mis-Use |
| NM13 | N/A | Nmdistract.NMDRSTRD | Non-Motorist Distracted By |
| | | None | |

The data elements in RED are new to 2019 CRSS.

The data elements in BLUE are changed in 2019 CRSS.

New and Noteworthy

The Analytical User's Manual is updated annually to reflect necessary revisions and ensure quality data collection and analysis. CRSS data elements evolve based on any number of factors including the needs of end-users. Changes are made with careful consideration and collaboration among key stakeholders. Below are the notable changes, challenges, reclassifications or other issues the analyst should be aware of for this year.

Addition of Automated Driving System Data Elements

Automated Driving System (ADS) data elements were added to CRSS to start collecting information on autonomous vehicles. Motor Vehicle Automated Driving System(s) are defined by the Model Minimum Uniform Crash Criteria (MMUCC) 5th ed. as "The hardware and software that are collectively capable of performing part or all of the dynamic driving task on a sustained basis; this term is used generically to describe any system capable of level 1-5 driving automation." The automation level refers to the SAE International standard (SAE J3016). For details on Automated Driving Systems, see NHTSA's website.

Three ADS data elements were added: one to capture the presence of an Automation System or Systems in the vehicle (ADS_PRES); a second to capture the highest level of automation present in the vehicle (ADS_LEV); and a third to capture the highest level of automation that was known to have been engaged in this vehicle at the time of the crash (ADS_ENG). Currently, information on ADS is not available on most crash reports and is limited in the data decoded from VINs, but states are beginning to update crash reports to collect information on autonomous vehicles. The addition of these data elements to CRSS prepares for future enhanced collection of ADS in vehicles involved in crashes.

Separation of Restraint System/Helmet Use into Two Data Elements

The change to *Restraint System/Helmet Use* is in response to more vehicle types where the use of both helmets and belt restraints are possible (e.g., three-wheel motorcycles and ROVs). Splitting the data element into two data elements, *Restraint System Use* and *Helmet Use*, allows both pieces of information to be captured. Analysts will be able to examine the varying state safety equipment laws for both seat belt and helmet use, and will no longer need to rely on focus groups and observational studies on use. *Restraint System Use* retained the SAS name REST_USE and the new SAS name for *Helmet Use* is HELM_USE.

A similar change to *Indication of Misuse* of *Restraint System/Helmet* was made to correspond to the change in *Restraint System/Helmet Use*. This data element was also split into two new data elements, *Restraint System Misuse* and *Helmet Misuse*. *Restraint System Misuse* retained the SAS name REST_MIS and the new SAS name for *Helmet Misuse* is HELM_MIS.

Addition of Attributes for Incident Responders

The Related Factors—Driver Level and Related Factors—Person Level data elements were modified to capture information on specific types of emergency services personnel, tow operators, and transportation workers involved in crashes. This may provide more detail for analyses and evaluation of "move over" laws, which require other drivers to slow down and move over for emergency vehicles and hazard vehicles. Specifically, attribute 86 (Emergency Services Personnel) was replaced with 94 (Emergency Medical Services Personnel), 95 (Fire Personnel), 96 (Tow Operator), and 97 (Transportation (i.e., maintenance workers, safety service patrol operators, etc.)). Existing attribute 87 (Police or Law Enforcement Officer) remains unchanged.

Addition of the Nmdistract Data File and Non-Motorist Distracted By Data Element

The data element *Non-Motorist Distracted By* was added to CRSS to begin capturing non-motorist distractions. Previously CRSS only captured distractions for drivers of motor vehicles in-transport. The data element is defined as identifying the attribute(s) which best describe the non-motorist's attention prior to their involvement in the crash. Distraction, for a non-motorist, occurs when a non-motorist's attention is diverted from the task of navigating in public to some other activity. Also, daydreaming or lost in thought are identified as distractions by NHTSA. Physical conditions/impairments (fatigue, alcohol, medical condition, etc.) or psychological states (anger, emotional, depressed, etc.) are not identified as distractions by NHTSA.

Non-Motorist Distracted By is structured the same as the current Driver Distracted By data element, both of which allow all applicable attributes to be recorded. Therefore, a separate Nmdistract data file is necessary to store (potentially) multiple distraction records for each non-motorist. Details on this new data element and data file can be found in The Nmdistract Data File section.

Removal of Relation to Junction- Within Interchange Area from Imputation

The data element *Relation to Junction-Within Interchange Area* was removed from the CRSS imputation process due to an increase in the number of unknown cases. The data element's unknown rate increased to over 60 percent during the 2019 data collection year. This increase is attributed to additional quality control measures during the data collection process. CRSS imputation heavily relies on reported data to produce reliable results for unknown and not reported cases. NHTSA determined continuing to impute this data element was impractical given the limited reported data. More details on the imputation process can be found in CRSS Imputation section.

Introduction

One of the primary objectives of the National Highway Traffic Safety Administration (NHTSA) is to reduce the human toll and property damage that motor vehicle traffic crashes inflict on our society. Crashes each year result in thousands of lives lost, hundreds of thousands of injured victims, and billions of dollars in property damage. Accurate data are required to support the development, implementation, and assessment of highway safety programs aimed at reducing this toll. NHTSA uses data from many sources, including the Crash Report Sampling System (CRSS). CRSS is a sample of police-reported crashes involving all types of motor vehicles, pedestrians, and cyclists, ranging from property-damage-only crashes to those that result in fatalities. CRSS is used to estimate the overall crash picture, identify highway safety problem areas, measure trends, drive consumer information initiatives, and form the basis for cost and benefit analyses of highway safety initiatives and regulations.

The CRSS obtains its data from a nationally representative probability sample selected from the more than six million police-reported crashes which occur annually. Although various sources suggest that there are many more crashes that are not reported to the police, the majority of these unreported crashes involve only minor property damage and no significant personal injury. By restricting attention to police-reported crashes, the CRSS concentrates on those crashes of greatest concern to the highway safety community and the general public.

This multi-year analytical user's manual provides documentation on the evolution of coding practices of the CRSS. The manual will continue to grow each year and present the historical coding of the CRSS from inception through present. It includes documentation on the data elements that are contained in the CRSS and other useful information that will enable the users to become familiar with the data system. The FARS/CRSS Coding and Validation Manual provides more detailed definitions and coding rules for each data element and attribute. This manual is available at:

NCSA Publications- Manuals and Documentation- CRSS.

The compilation of CRSS data is a priority for NHTSA. These data store valuable information that will be preserved over time and are available for present and future use. This analytical user's manual should help improve the usefulness and accessibility of the data. With the exception of personal notes, there is no reason to keep older versions of this reference manual. All information in earlier editions has been retained in this newer version.

CRSS Sample Design

Beginning 2016, as part of the effort to modernize NHTSA's data collection system, NCSA designed two new national probability-based crash sampling systems – the Crash Report Sampling System (CRSS) – to replace the National Automotive Sampling System General Estimates System (NASS GES) and the Crash Investigation Sampling System (CISS) to replace the NASS Crashworthiness Data System (CDS). CRSS was designed completely independent of GES or CISS. CRSS has the same scope as GES: all police reported motor vehicle crashes that occur on a trafficway. The source of the information for CRSS continues solely to be the police crash report.

The CRSS police crash report sample is selected in multiple stages to produce a nationally representative probability sample since nationwide direct selection is infeasible. A brief description of the selection process at each of the three stages is given below.

1st Stage- PSU Sample: At the first stage, 3,117 counties in the country were grouped into 707 primary sampling units (PSU). US territories, some remote areas in Alaska, and small islands in Hawaii were excluded. A CRSS PSU is either a county or a group of counties. The 707 PSUs in the PSU frame were stratified into 50 strata by the four Census regions, urbanicity, vehicle miles traveled, total number of crashes, total truck miles traveled, and road miles. First, 101 PSUs were selected using a stratified probability proportional to size (PPS) sampling method. Then a sequence of sub-samples was selected from the original 101 PSU sample and strata were collapsed if necessary. This produced a sequence of nested PSU samples with different sample sizes selected from the collapsed strata. This sequence of nested PSU samples provides NHTSA flexibility to change and scale the PSU sample size in the future without reselecting the sample. Therefore, the final PSU sample was the result of a multiphase sampling mechanism in which the PSU selection probability is still approximately PPS. In the 2019 CRSS, 61 PSUs were selected from 25 PSU strata and 60 PSUs responded. (Note: In the 2016 CRSS, 60 PSUs were selected and 53 responded.)

2nd **Stage – PJ Sample**: The secondary sampling units (SSU) are police jurisdictions (PJs) or groups of police jurisdictions. Within each selected PSU, PJs were stratified into three strata by their measure of size (MOS) which is a combination of crash counts in six categories of interest. A Pareto sampling method was used to select PJ samples from each PJ strata. This method produces overlapping samples when the sample is reselected. This method reduces the potential of changes to the existing PJ sample when a new PJ sample has to be selected because of PJ frame changes. The PJ inclusion probability under Pareto sampling is approximately PPS. In the 2016 CRSS, a total of 350 SSUs were selected. In the 2019 CRSS, 326 PJs were selected, and 313 PJs responded.

Weight adjustments were made to mitigate the potential bias caused by the non-responding PJs. For some PSUs, NHTSA receives police crash reports (i.e., tertiary sampling unit) in electronic format through the Electronic Data Transfer (EDT) system. In these EDT PSUs, the police crash report sample can be selected directly from all police crash reports of the EDT PSU. Starting from 2019, the second stage sample selection is conducted for 14 EDT PSUs by assigning all police crash reports to one consolidated (pseudo) PJ within an EDT PSU and selecting that PJ with certainty. This leads to a reduction in the number of selected PJs. NHTSA expects more PSUs to provide PCRs through the EDT system in the future.

3rd Stage – Police Crash Report Sample: The tertiary sampling units (TSU) are the police crash reports. The CRSS data collectors periodically obtain police crash reports from each selected PJ. During each collection, all new police crash reports accumulated since the last collection are sequentially stratified into nine police crash report strata (see table below). These

nine strata were formed based on the results of NHTSA's internal and public data needs assessments. The stratification allows NHTSA to over-sample in Strata 2-6.

From each stratum, a systematic sampling method is used to select the police crash report sample. The sampling intervals are determined in such a way that the final weights are approximately equal for all the police crash reports in the same stratum with the ultimate aim of reducing the sampling variance for the domain estimates. The target annual sample size is approximately 50,000 PARs.

Please refer to the NHTSA Technical Reports <u>Crash Report Sampling System: Sample Design and Weighting</u> and <u>Crash Report Sampling System: Design Overview, Analytic Guidance, and FAQs</u> for more in-depth discussions of the CRSS sample design.

CRSS Police Crash Report Domain Definition, Target Sample Allocation, and Population Distribution

| Stratum | Description (Hierarchical Structure) | | Estimated Percent of Population ¹ |
|---------|---|-----|---|
| 2 | Crashes with killed or injured pedestrian | 9% | 2.0% |
| 3 | Crashes with killed or injured motorcycle rider | 6% | 1.1% |
| 4 | LMY passenger vehicle crashes with killed or incapacitated occupant | 4% | 0.4% |
| 5 | NLMY passenger vehicle crashes with killed or incapacitated occupant | 7% | 1.3% |
| 6 | LMY passenger vehicle crashes with injured occupant | 14% | 7.2% |
| 7 | Crashes involving medium or heavy truck or bus | 6% | 7.8% |
| 8 | NLMY passenger vehicle crashes with injured occupant | 12% | 13.2% |
| 9 | LMY passenger vehicle crashes AND no one is killed or injured | 22% | 30.9% |
| 10 | Crashes not in strata 2-9 | 20% | 36.3% |
| | el Year (LMY) passenger vehicle: ≤ 4 years old, Model Year (NLMY) passenger vehicle: ≥ 5 years old | | , |

¹ Estimated percent of population is based on 2019 CRSS estimates.

CRSS Operations

The CRSS obtains its data from a nationally representative probability sample selected from the more than six million police-reported crashes that occur annually. To be eligible for the CRSS sample, a crash report must be completed by the police; it must involve at least one motor vehicle traveling on a trafficway; and the crash must result in property damage, injury, or death.

These crash reports are chosen from 60 selected sites across the United States that reflect the geography, population, miles driven, and crashes in the United States. CRSS data collectors review crash reports from hundreds of law enforcement agencies within the sites, systematically sampling tens of thousands of crash reports each year. The collectors obtain copies of the selected crash reports and send them to a central location for coding. No other data is collected beyond that in the selected crash reports.

Trained personnel interpret and code data directly from the crash reports into an electronic data file. Approximately 120 data elements are coded into a common format. After coding, quality checks are performed on the data to ensure validity and consistency. When these are completed, CRSS data files and coding documentation become publicly available.

The CRSS data are also used to respond to requests from the international and national highway safety communities, state and local governments, the Congress, federal agencies, research organizations, industry, the media, and the public.

National Estimates

The CRSS police crash report sample is a complex multi-stage, stratified sample with unequal selection probabilities. Estimates from CRSS data must be properly weighted to ensure unbiased and robust estimates. The CRSS weights were created using the following steps:

- Calculate base weights the inverse of selection probabilities at all three stages (PSU, PJ, and Police Crash Report) to correct the selection bias caused by the unequal selection probabilities.
- 2. Adjust the base weights for non-response at all three stages to correct potential non-response bias.
- 3. Adjust the weights for duplicate crashes that were identified post sampling.
- 4. Calibrate PJ and Police Crash Report weights using the PSU level total crash report stratum counts to further correct potential non-response bias and coverage bias.
- Calibrate case weights by benchmarking Census resident population counts and FARS crash counts.

The final CRSS weight variable that incorporates the above steps is called WEIGHT in the CRSS analysis file. Please refer to the NHTSA Technical Report <u>Crash Report Sampling</u> <u>System: Sample Design and Weighting</u> for a more in-depth discussion on the CRSS weighting procedure.

Complex sample design features employed in CRSS data collection should be considered in analysis of the CRSS data. Treating the CRSS sample as a simple random sample in estimation may cause severe bias to both point estimates and standard error estimates. Specialized computer software for complex survey data analysis, such as SAS PROC SURVEY procedures and SUDAAN procedures, should be used for CRSS data analysis along with proper design statements. Because of the low PSU level sampling rates, the CRSS PSU sample can be treated as a with-replacement sample with unequal selection probabilities. This simplifies the variance estimation.

In the CRSS analysis file, the variable PSUSTRAT defines the PSU strata, and PSU_VAR identifies sampled PSUs for variance estimation. Also, certainty PSU is treated as a stratum in PSUSTRAT. The PJs selected in the certainty PSU are treated as PSUs in PSU_VAR.

Because of the limited PSU sample size, CRSS data is mainly for national or major domain estimates. For other smaller analysis domains, the point estimates may have large standard errors.

Please refer to the NHTSA Technical Report <u>Crash Report Sampling System: Design Overview</u>, <u>Analytic Guidance</u>, and <u>FAQs</u> for more detailed information on CRSS estimation and examples.

CRSS Imputation

CRSS data are obtained either directly from an item on the police crash report or by interpreting the information provided in the crash report through a review of the crash diagrams, the police officer's written summary of the crash, or combinations of data elements on the report. During this process of data acquisition, some records of the data elements are found missing or entered as 'unknown' or 'not reported' resulting in incomplete data for analysis. To offer more complete CRSS data for analysis, NHTSA imputes selected data elements from the Accident, Vehicle, and Person files as follows:

- Accident file: Alcohol Involved in Crash, Atmospheric Conditions, Crash Date (Day of Week), Crash time (Hour), Crash Time (Minute), First Harmful Event, Light Condition, Manner of Collision, Maximum Injury Severity in Crash, Number of Injured in Crash, Relation to Junction - Specific Location;
- Vehicle file: Areas of Impact- Initial Contact Point, Body Type, Driver Drinking in Vehicle, Hit and Run, Number of Injured in Vehicle, Maximum Injury Severity in Vehicle, Most Harmful Event, Vehicle Model Year, Movement Prior to Critical Event;
- **Person file**: Age, Police-Reported Alcohol Involvement, Ejection, Injury Severity, Seating Position, Sex.

The above data elements are consistent with the ones imputed in the corresponding three files of NASS GES data from 2010 to 2015. More details about GES data imputation in 2015 and earlier years are available in the <u>1988-2015 NASS GES Analytical User's Manual</u>.

The imputation process for CRSS data imputes a single value for each unknown or not reported value. In other words, instead of filling in an unknown or not reported value with a set of plausible values, a single estimated value is used to replace the unknown or not reported value. The procedure is a multivariate imputation of each selected data element by means of its covariates. If this process produces inconsistent imputed values, a separate univariate imputation is conducted to impute the inconsistent imputed values. In the case of 'Body Type', however, imputation is done by univariate imputation only.

The multivariate imputation is carried out by sequential regression modeling in which logistic regression models estimate unknown or not reported values for the categorical data elements, and linear regression models for the continuous data elements. In each case, the stepwise regression algorithm automatically selects the covariates and computes the imputed (predicted) values of the data element. This process is done using the SAS callable software "IVEware" developed at the University of Michigan (http://www.isr.umich.edu/src/smp/ive/). This multivariate imputation procedure may produce imputed values inconsistent with other observed values or may terminate prematurely because of the number of iterations or other convergence criteria provisioned in the software. Then the univariate imputation procedure will be used to impute the inconsistent values or the remaining unknown or not reported values. All data elements, except "Body Type", are first imputed by the multivariate regression method.

It should be noted that the data elements produced by the imputation do not replace the originals; all original data elements are kept intact in the CRSS data files. Rather, new imputed data elements are created from the original data elements having each unknown or not reported value substituted by the estimated value. The imputed data elements, identified by the suffix _IM (e.g. AGE_IM, WEATHER_IM for the data elements AGE and WEATHER, respectively) are added as additional data elements to their respective files. It is also worth noting that:

- the imputed maximum severity MAXSEV_IM and imputed number of injured NO_INJ_IM
 at the accident level are derived from INJSEV_IM which contains the imputed values of
 the Injury Severity at the person level;
- the imputed maximum severity MXVSEV_IM and imputed number of injured NUMINJ_IM at the vehicle level are derived from INJSEV_IM which contains the imputed values of the Injury Severity at the person level;
- the imputed police reported alcohol involvement ALCHL_IM at the accident level is derived from PERALCH_IM which contains the imputed values of alcohol involvement at the person level;
- the imputed police reported alcohol involvement V_ALCH_IM at the vehicle level is derived from PERALCH_IM which contains the imputed values of alcohol involvement at the person level.

Overall, the CRSS imputation process employs IVEware software and several other programs written in SAS. Some text files input to this software provide additional controls to accurately and efficiently obtain the best estimates of the unknown or not reported values. In addition, the process makes provision for edit- and consistency-checks on the data to avoid any implausible value that might have been predicted by the applicable regression models. Please refer to the NHTSA Technical Report Crash Report Sampling System: Imputation for a more in-depth discussion on the CRSS imputation procedure.

The table below shows the SAS names and the corresponding SAS labels of the selected data elements for both the original and imputed versions for the Accident, Vehicle, and Person files.

| Data Elements and Their Imputed Counterparts | - SAS Names and Labels |
|--|------------------------|
|--|------------------------|

| | Data Element Imputed Data Element | | | |
|----------|-----------------------------------|---|----------------------|---|
| SAS Data | | Data Element | imputed Data Element | |
| File | SAS Name | SAS Label | SAS Name | SAS Label |
| Accident | | | | |
| Accident | ALCOHOL | Alcohol Involved in Crash | ALCHL_IM | Imputed Alcohol Involved in Crash |
| Accident | DAY_WEEK | Crash Date (Day of Week) | WKDY_IM | Imputed Day of Week |
| Accident | HARM_EV | First Harmful Event | EVENT1_IM | Imputed First Harmful Event |
| Accident | HOUR | Crash Time (Hour) | HOUR_IM | Imputed Hour |
| Accident | LGT_COND | Light Condition | LGTCON_IM | Imputed Light Condition |
| Accident | MINUTE | Crash Time (Minute) | MINUTE_IM | Imputed Minute |
| Accident | MAN_COLL | Manner of Collision | MANCOL_IM | Imputed Manner of Collision |
| Accident | MAX_SEV | Maximum Injury Severity in Crash | MAXSEV_IM | Imputed Maximum Injury Severity in Crash |
| Accident | NUM_INJ | Number Injured in Crash | NO_INJ_IM | Imputed Number Injured in Crash |
| Accident | RELJCT2 | Relation to Junction – Specific Location | RELJCT2_IM | Imputed Relation to Junction – Specific Location |

Data Elements and Their Imputed Counterparts - SAS Names and Labels *(continued)*

| SAS Data | | Data Element | Imputed Data Element | | |
|----------|----------|---|----------------------|---|--|
| File | SAS Name | SAS Label | SAS Name | SAS Label | |
| Accident | WEATHER | Atmospheric Conditions | WEATHR_IM | Imputed Atmospheric Conditions | |
| Vehicle | | | | | |
| Vehicle | IMPACT1 | Area of Impact – Initial Contact Point | IMPACT1_IM | Imputed Area of Impact – Initial Contact Point | |
| Vehicle | BODY_TYP | Body Type | BDYTYP_IM | Imputed Body Type | |
| Vehicle | VEH_ALCH | Driver Drinking in Vehicle | V_ALCH_IM | Imputed Driver Drinking in Vehicle | |
| Vehicle | HIT_RUN | Hit and Run | HITRUN_IM | Imputed Hit and Run | |
| Vehicle | MAX_VSEV | Maximum Injury Severity in Vehicle | MXVSEV_IM | Imputed Maximum Injury Severity in Vehicle | |
| Vehicle | MOD_YEAR | Vehicle Model Year | MDLYR_IM | Imputed Vehicle Model Year | |
| Vehicle | P_CRASH1 | Pre-Event Movement | PCRASH1_IM | Imputed Pre-Event Movement | |
| Vehicle | M_HARM | Most Harmful Event | VEVENT_IM | Imputed Most Harmful Event | |
| Vehicle | NUM_INJV | Number Injured in Vehicle | NUMINJ_IM | Imputed Number Injured in Vehicle | |
| Person | | | | | |
| Person | AGE | Age | AGE_IM | Imputed Age | |
| Person | EJECTION | Ejection | EJECT_IM | Imputed Ejection | |
| Person | INJ_SEV | Injury Severity | INJSEV_IM | Imputed Injury Severity | |
| Person | DRINKING | Police-Reported Alcohol Involvement | PERALCH_IM | Imputed Police Rep. Alcohol Inv. | |
| Person | SEAT_POS | Seating Position | SEAT_IM | Imputed Seating Position | |
| Person | SEX | Sex | SEX_IM | Imputed Sex | |

The following table shows percentages of 'Not Reported' and 'Reported as Unknown' values for the selected data elements for the Accident, Vehicle, and Person files in CRSS 2019 data.

Data Elements and Percentages of Unknown and Not Reported Values

| SAS Data | | Data Element | | | |
|----------|----------|---|----------------------------|--|--|
| File | SAS Name | SAS Label | Not Reported Percentage | | |
| Accident | Accident | | | | |
| Accident | ALCOHOL | Alcohol Involved in Crash | 31.82% | | |
| Accident | DAY_WEEK | Crash Date (Day of Week) | 0.00% | | |
| Accident | HARM_EV | First Harmful Event | 0.07% | | |
| Accident | HOUR | Crash Time (Hour) | 0.62% | | |
| Accident | LGT_COND | Light Condition | 0.99% | | |
| Accident | MINUTE | Crash Time (Minute) | 0.62% | | |
| Accident | MAN_COLL | Manner of Collision | 0.39% | | |
| Accident | MAX_SEV | Maximum Injury Severity in Crash | 1.62% | | |
| Accident | NUM_INJ | Number Injured in Crash | 1.62% | | |
| Accident | RELJCT2 | Relation to Junction – Specific Location | 27.91% | | |
| Accident | WEATHER | Atmospheric Conditions | 6.48% | | |
| Vehicle | | | | | |
| Vehicle | IMPACT1 | Area of Impact – Initial Contact Point | 2.39% | | |
| Vehicle | BODY_TYP | Body Type | 4.69% | | |
| Vehicle | VEH_ALCH | Driver Drinking in Vehicle | 27.70% | | |
| Vehicle | HIT_RUN | Hit and Run | 0.01% | | |
| Vehicle | MAX_VSEV | Maximum Injury Severity in Vehicle | 3.84% | | |
| Vehicle | MOD_YEAR | Vehicle Model Year | 4.03% | | |

Data Elements and Percentages of Unknown and Not Reported Values *(continued)*

| SAS Data | | Data Element | | |
|----------|----------|-------------------------------------|----------------------------|--|
| File | SAS Name | SAS Label | Not Reported Percentage | |
| Vehicle | P_CRASH1 | Pre-Event Movement | 1.87% | |
| Vehicle | M_HARM | Most Harmful Event | 0.04% | |
| Vehicle | NUM_INJV | NUM_INJV Number Injured in Vehicle | | |
| Person | Person | | | |
| Person | AGE | Age | 5.61% | |
| Person | EJECTION | Ejection | 5.60% | |
| Person | INJ_SEV | Injury Severity | 3.15% | |
| Person | DRINKING | Police-Reported Alcohol Involvement | 43.03% | |
| Person | SEAT_POS | Seating Position | 1.41% | |
| Person | SEX | Sex | 4.10% | |

CRSS SAS Data Files

CRSS data are made available to the public in Statistical Analysis System (SAS) data files as well as comma-separated values (CSV) files. For the current data collection year, there are 20 data files. The current data files are: Accident, Vehicle, Person, Parkwork, Pbtype, Cevent, Vevent, Vsoe, Damage, Distract, Drimpair, Factor, Maneuver, Violatn, Vision, Nmcrash, Nmdistract, Nmimpair, Nmprior, and Safetyeq data files. Eleven of these data files contain one data element each: Damage, Distract, Drimpair, Factor, Maneuver, Violatn, Vision, Nmcrash, Nmdistract, Nmimpair, and Nmprior. For the data elements in these data files, the coder could code multiple responses (i.e., "select all that apply"); thus, there is a record for each response.

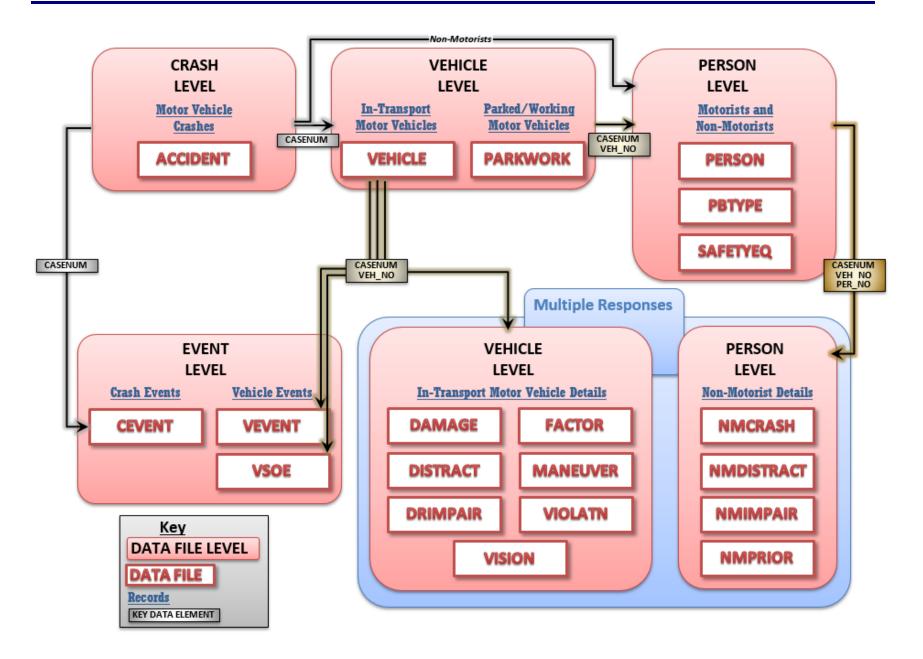
The data files are presented with their data elements in the Data Elements Definitions and Codes section. For each of the data elements, a brief definition is provided along with any additional information which could assist analyses. SAS names and values are also provided for the data elements. Discontinued data elements are moved to the end of the data file.

The SAS data files are:

- **Accident** (2016-current): This data file contains information about crash characteristics and environmental conditions at the time of the crash. There is one record per crash.
- Vehicle (2016-current): This data file contains information describing the in-transport motor vehicles and the drivers of in-transport motor vehicles who are involved in the crash. There is one record per in-transport motor vehicle. Parked and working vehicle information is in the Parkwork data file.
- **Person** (2016-current): This data file contains information describing all persons involved in the crash including motorists (i.e., drivers and passengers of in-transport motor vehicles) and non-motorists (e.g., pedestrians, pedalcyclists, and occupants of not-in-transport motor vehicles). It provides information such as age, sex, vehicle occupant restraint use, and injury severity. There is one record per person.
- Parkwork (2016-current): This data file contains information about parked and working vehicles which were involved in CRSS crashes. A parked vehicle is a motor vehicle which is stopped off the roadway. A working vehicle is a motor vehicle involved in trafficway maintenance, construction, or utility activities. It excludes vehicles performing private maintenance, construction, or utility activities. Data users are strongly advised to consult the annual FARS/CRSS Coding and Validation Manuals for a detailed description. There is one record per parked/working vehicle.
- Pbtype (2016-current): This data file contains information about crashes between
 motor vehicles and pedestrians, people on personal conveyances and bicyclists. Data
 from the crash are enter into the Pedestrian and Bicycle Crash Analysis Tool (PBCAT).
 The output fields from PBCAT, including the pre-crash actions of the parties involved
 (crash type), are included in this data file. There is one record for each pedestrian,
 bicyclist or person on a personal conveyance.
- **Cevent** (2016-current): This data file contains information for all of the qualifying events (both harmful and non-harmful) which occurred in the crash. It details the chronological sequence of events resulting from an unstabilized situation that constitutes a motor vehicle traffic crash. There is one record per event. Included in each record is a description of the event or object contacted (e.g., ran off road-right, crossed center line, quardrail, parked motor vehicle), the vehicles involved, and the vehicles' area of impact.

- **Vevent** (2016-current): This data file contains the sequence of events for each intransport motor vehicle involved in the crash. This data file has the same data elements as the Cevent data file. In addition, this data file has a data element that records the sequential event number for each vehicle (VEVENTNUM). There is one record for each event for each in-transport motor vehicle.
- **Vsoe** (2016-current): This data file contains the sequence of events for each in-transport motor vehicle involved in the crash. This data file has a subset of the data elements contained in the Vevent data file (It is a simplified Vevent data file). There is one record for each event for each in-transport motor vehicle.
- **Damage** (2016-current): This data set contains information about all of the areas on this vehicle that were damaged in the crash. There is one record per damaged area.
- **Distract** (2016-current): This data file contains information about driver distractions. Each distraction is a separate record. There is at least one record per in-transport motor vehicle.
- **Drimpair** (2016-current): This data file contains information about physical impairments of drivers of motor vehicles. There is one record per impairment and there is at least one record for each driver of an in-transport motor vehicle.
- **Factor** (2016-current): This data file contains information about vehicle circumstances which may have contributed to the crash. Each factor is a separate record. There is at least one record per in-transport motor vehicle.
- **Maneuver** (2016-current): This data file contains information about actions taken by the driver to avoid something or someone in the road. Each maneuver is a separate record. There is at least one record per in-transport motor vehicle.
- **Violatn** (2016-current): This data file contains information about violations which were charged to drivers. Each violation is a separate record. There is at least one record per in-transport motor vehicle.
- **Vision** (2016-current): This data file contains information about circumstances which may have obscured the driver's vision. Each obstruction is a separate record. There is at least one record per in-transport motor vehicle.
- Nmcrash (2016-current): This data file contains information about contributing circumstances or improper actions of people who are not occupants of motor vehicles (e.g., pedestrians and bicyclists) noted on the police report. There is one record per action and there is at least one record for each person who is not an occupant of a motor vehicle.
- **Nmdistract** (2019-current): This data file contains information about non-motorist distractions. Each distraction is a separate record. There is at least one record for each person who is not an occupant of a motor vehicle.
- Nmimpair (2016-current): This data file contains information about physical
 impairments of people who are not occupants of motor vehicles. There is one record per
 impairment and there is at least one record for each person who is not an occupant of a
 motor vehicle.
- **Nmprior** (2016-current): This data file contains information about the actions of people who are not occupants of motor vehicles (e.g., pedestrians and bicyclists) at the time of their involvement in the crash. There is one record per action and there is at least one record for each person who is not an occupant of a motor vehicle.

• **Safetyeq** – (2016-current): This data file contains information about safety equipment used by people who are not occupants of motor vehicles. In 2016, the file contains a record for each type of safety equipment used by a person who is not an occupant of a motor vehicle. From 2017 onwards, the file contains multiple safety equipment data elements and only one record for each person who is not an occupant of a motor vehicle.



CRSS Data Element List

The following lists all SAS data elements with their SAS data file locations.

DATA ELEMENT LIST

| | Key Data Elements 35 | | |
|------------|--|------------|----|
| | Case Number | CASENUM | 36 |
| | Primary Sampling Unit (PSU) | PSU | 37 |
| | Primary Sampling Unit for Variance Estimation | PSU_VAR | 38 |
| | Primary Sampling Unit Stratum | PSUSTRAT | 39 |
| | Region of the Country | REGION | 40 |
| | Urbanicity | URBANICITY | 41 |
| C34 | Stratum | STRATUM | 42 |
| C35 | Police Jurisdiction (PJ) | PJ | 43 |
| | Case Weight | WEIGHT | 44 |
| V3/D3/PC3/ | | | |
| P3/NM4 | Vehicle Number | VEH_NO | 45 |
| P4/NM3 | Person Number | PER_NO | 46 |
| C18 | Event Number | EVENTNUM | 47 |
| C18 | Vehicle Event Number | VEVENTNUM | 47 |
| | The ACCIDENT Data File 40 | | |
| C3 | The ACCIDENT Data File 48 Number of Persons Not in Motor Vehicles | PEDS | 49 |
| C3A | Number of Persons Not in Motor Vehicles | | |
| | in Transport (MVIT) | PERNOTMVIT | 49 |
| C4 | Number of Total Motor Vehicles | VE_TOTAL | 50 |
| C4A | Number of Motor Vehicles in Transport (MVIT) | VE_FORMS | 50 |
| C4B | Number of Parked/Working Vehicles | PVH_INVL | 51 |
| C5A | Number of Persons in Motor Vehicles | | |
| | in Transport (MVIT) | PERMVIT | 52 |
| C8A | Month of Crash | MONTH | 53 |
| C8C | Day of Week | DAY_WEEK | 54 |
| C8CI | Imputed Day of Week | WKDY_IM | 54 |
| C8D | Year of Crash | YEAR | 54 |
| C9A | Hour of Crash | HOUR | 55 |
| C9AI | Imputed Hour of Crash | HOUR_IM | 55 |
| C9B | Minute of Crash | MINUTE | 56 |
| C9BI | Imputed Minute of Crash | MINUTE_IM | 56 |
| C19 | First Harmful Event | HARM_EV | 57 |
| C19I | Imputed First Harmful Event | EVENT1_IM | 58 |
| | | | |

| C20 | Manner of Collision of the First Harmful Event | MAN_COLL | 59 |
|-------|--|-------------|-----|
| C20I | Imputed Manner of Collision of the First | | |
| | Harmful Event | MANCOL_IM | 59 |
| C21A | Relation to Junction- Within Interchange Area | RELJCT1 | 60 |
| C21B | Relation to Junction- Specific Location | RELJCT2 | 61 |
| C21BI | Imputed Relation to Junction- Specific | DEL IOTO IM | 0.4 |
| | Location | RELJCT2_IM | 61 |
| C22 | Type of Intersection | TYP_INT | 62 |
| C23 | Relation to Trafficway | REL_ROAD | 63 |
| C24 | Work Zone | WRK_ZONE | 64 |
| C25 | Light Condition | LGT_COND | 65 |
| C25I | Imputed Light Condition | LGTCON_IM | 65 |
| C26 | Atmospheric Conditions | WEATHER | 66 |
| C26 | Atmospheric Conditions | WEATHER1 | 66 |
| C26 | Atmospheric Conditions | WEATHER2 | 66 |
| C26I | Imputed Atmospheric Conditions | WEATHR_IM | 66 |
| C27 | School Bus Related | SCH_BUS | 67 |
| C32 | Related Factors- Crash Level | CF1 | 68 |
| C32 | Related Factors- Crash Level | CF2 | 68 |
| C32 | Related Factors- Crash Level | CF3 | 68 |
| C33 | Interstate Highway | INT_HWY | 69 |
| C90 | Maximum Injury Severity in Crash | MAX_SEV | 70 |
| C90I | Imputed Maximum Injury Severity in Crash | MAXSEV_IM | 70 |
| C91 | Number Injured in Crash | NUM_INJ | 71 |
| C91I | Imputed Number Injured in Crash | NO_INJ_IM | 71 |
| C92 | Alcohol Involved in Crash | ALCOHOL | 72 |
| C92I | Imputed Alcohol Involved in Crash | ALCHL_IM | 72 |
| | Imputed Relation to Junction- Within | | |
| | Interchange Area (discontinued) | RELJCT1_IM | 73 |
| | The VEHICLE Data File 73 | | |
| V4 | Number of Occupants | NUMOCCS | 75 |
| V5 | Unit Type | UNITTYPE | 76 |
| V6 | Hit and Run | HIT_RUN | 77 |
| V6I | Imputed Hit and Run | HITRUN_IM | 77 |
| V9 | Vehicle Make | MAKE | 78 |
| V10 | Vehicle Model | MODEL | 82 |
| V10 | Body Type | BODY TYP | 83 |
| V11I | Imputed Body Type | BDYTYP IM | 85 |
| V111 | Vehicle Model Year | MOD_YEAR | 86 |
| V12I | Imputed Vehicle Model Year | MDLYR_IM | 86 |
| | · | VIN | |
| V13 | Vehicle Identification Number (VIN) | | 87 |
| V14 | Vehicle Trailing | TOW_VEH | 88 |

| V15 | Trailer Vehicle Identification Number | TRLR1VIN | 89 |
|----------|--|------------|-----|
| V15 | Trailer Vehicle Identification Number | TRLR2VIN | 89 |
| V15 | Trailer Vehicle Identification Number | TRLR3VIN | 89 |
| V16 | Jackknife | J_KNIFE | 90 |
| V17 | Motor Carrier Identification Number (MCID) | MCARR_ID | 91 |
| V17A | MCID Issuing Authority | MCARR_I1 | 92 |
| V17B | MCID Identification Number | MCARR_I2 | 94 |
| V18 | Gross Vehicle Weight Rating | GVWR | 95 |
| V19 | Vehicle Configuration | V_CONFIG | 96 |
| V20 | Cargo Body Type | CARGO_BT | 97 |
| V21A/HM1 | Hazardous Materials Involvement | HAZ_INV | 98 |
| V21B/HM2 | Hazardous Materials Placard | HAZ_PLAC | 98 |
| V21C/HM3 | Hazardous Material Identification Number | HAZ_ID | 98 |
| V21D/HM4 | Hazardous Material Class Number | HAZ_CNO | 99 |
| V21E/HM5 | Release of Hazardous Material from the | | |
| | Cargo Compartment | HAZ_REL | 99 |
| V22 | Bus Use | BUS_USE | 100 |
| V23 | Special Use | SPEC_USE | 101 |
| V24 | Emergency Motor Vehicle Use | EMER_USE | 102 |
| V25 | Travel Speed | TRAV_SP | 103 |
| V27 | Rollover | ROLLOVER | 104 |
| V28 | Location of Rollover | ROLINLOC | 105 |
| V29A | Area of Impact – Initial Contact Point | IMPACT1 | 106 |
| V29AI | Imputed Area of Impact – Initial Contact Point | IMPACT1_IM | 106 |
| V30 | Extent of Damage | DEFORMED | 107 |
| V31 | Vehicle Removal | TOWED | 108 |
| V33 | Most Harmful Event | M_HARM | 109 |
| V33I | Imputed Most Harmful Event | VEVENT_IM | 110 |
| V34 | Fire Occurrence | FIRE_EXP | 111 |
| V35A | Automation System or Systems Present in Vehicle | ADS_PRES | 112 |
| V35B | Highest Automation System Level Present in Vehicle | ADS_LEV | 112 |
| V35C | Highest Automation System Level Engaged at Time of Crash | ADS_ENG | 113 |
| V36 | Related Factors- Vehicle Level | VEH_SC1 | 114 |
| V36 | Related Factors- Vehicle Level | VEH_SC2 | 114 |
| V90 | Maximum Injury Severity in Vehicle | MAX_VSEV | 115 |
| V90I | Imputed Maximum Injury Severity in Vehicle | MXVSEV_IM | 115 |
| V91 | Number Injured in Vehicle | NUM_INJV | 116 |
| V91I | Imputed Number Injured in Vehicle | NUMINJ_IM | 116 |
| V92 | Driver Drinking in Vehicle | VEH_ALCH | 117 |
| V92I | Imputed Driver Drinking in Vehicle | V_ALCH_IM | 117 |
| | | | |

| V100 | Make Model Combined | MAK_MOD | 118 |
|---------|--|------------|-----|
| D4 | Driver Presence | DR_PRES | 119 |
| D6 | Driver's Zip Code | DR_ZIP | 120 |
| D22 | Speeding Related | SPEEDREL | 121 |
| D24 | Related Factors- Driver Level | DR_SF1 | 122 |
| D24 | Related Factors- Driver Level | DR_SF2 | 122 |
| D24 | Related Factors- Driver Level | DR_SF3 | 122 |
| D24 | Related Factors- Driver Level | DR_SF4 | 122 |
| PC5 | Trafficway Description | VTRAFWAY | 124 |
| PC6 | Total Lanes in Roadway | VNUM_LAN | 125 |
| PC7 | Speed Limit | VSPD_LIM | 126 |
| PC8 | Roadway Alignment | VALIGN | 127 |
| PC9 | Roadway Grade | VPROFILE | 128 |
| PC11 | Roadway Surface Condition | VSURCOND | 129 |
| PC12 | Traffic Control Device | VTRAFCON | 130 |
| PC13 | Traffic Control Device Functioning | VTCONT_F | 131 |
| PC17 | Pre-Event Movement | | |
| | (Prior to Recognition of Critical Event) | P_CRASH1 | 132 |
| PC17I | Imputed Pre-Event Movement | | |
| | (Prior to Recognition of Critical Event) | PCRASH1_IM | 132 |
| PC19 | Critical Event- Precrash | P_CRASH2 | 133 |
| PC20 | Attempted Avoidance Maneuver | P_CRASH3 | 135 |
| PC21 | Pre-Impact Stability | PCRASH4 | 136 |
| PC22 | Pre-Impact Location | PCRASH5 | 137 |
| PC23 | Crash Type | ACC_TYPE | 138 |
| | The PERSON Data File | 141 | |
| P5/NM5 | Age | AGE | 142 |
| P5/NM5I | Imputed Age | AGE IM | 142 |
| P6/NM6 | Sex | SEX | 143 |
| P6/NM6I | Imputed Sex | SEX_IM | 143 |
| P7/NM7 | Person Type | PER_TYP | 144 |
| P8/NM8 | Injury Severity | INJ_SEV | 145 |
| P8/NM8I | Imputed Injury Severity | INJSEV IM | 145 |
| P9 | Seating Position | SEAT_POS | 146 |
| P9I | Imputed Seating Position | SEAT_IM | 147 |
| P10A | Restraint System Use | REST_USE | 148 |
| P10B | Indication of Restraint System Misuse | REST MIS | 149 |
| P11A | Helmet Use | HELM_USE | 150 |
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| P12 | Air Bag Deployed | AIR_BAG | 152 |
| P13 | Ejection | EJECTION | 153 |
| P13I | Imputed Ejection | EJECT_IM | 153 |
| . 101 | Impatoa Ejouton | LULUI_IIVI | 100 |

| P16/NM16 | Police-Reported Alcohol Involvement | DRINKING | 154 |
|------------|--|--------------|-----|
| P16/NM16I | Imputed Police-Reported Alcohol Involvement | PERALCH_IM | 154 |
| P18A/NM18A | Alcohol Test Status | ALC_STATUS | 155 |
| P18B/NM18B | Alcohol Test Type | ATST_TYP | 155 |
| P18C/NM18C | Alcohol Test Result | ALC_RES | 156 |
| P19/NM19 | Police Reported Drug Involvement | DRUGS | 157 |
| P22/NM22 | Transported to First Medical Facility By | HOSPITAL | 158 |
| P26/NM26 | Related Factors- Person Level | P_SF1 | 159 |
| P26/NM26 | Related Factors- Person Level | P_SF2 | 159 |
| P26/NM26 | Related Factors- Person Level | P_SF3 | 159 |
| NM4 | Vehicle Number of Motor Vehicle Striking Non-Motorist | STR_VEH | 161 |
| NM10 | Non-Motorist Location at Time of Crash | LOCATION | 162 |
| | Drug Test Status (discontinued) | DSTATUS | 163 |
| | Drug Test Type (discontinued) | DRUGTST1 | 162 |
| | Drug Test Type (discontinued) | DRUGTST2 | 162 |
| | Drug Test Type (discontinued) | DRUGTST3 | 162 |
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Data Element Definitions and Codes

This section represents the majority of the manual. It provides detailed information on the data elements, including definitions, SAS names, attribute codes and attribute labels. Over the years, changes have been made to the data collected. Some data elements have been dropped, new ones added, and attribute codes of individual data elements have changed. Element changes and the years for which individual attributes are available are shown for each data element.

The data elements are listed under the data file in which they are stored. Some data elements are provided in more than one data file to facilitate analyses. For example, Month of Crash (MONTH) is a crash-level data element but for convenience it is also provided in the Vehicle, Parkwork and Person files. For such elements, they are listed under the primary data file only.

All data elements are numeric except the following which are character:

- V13 Vehicle Identification Number (VIN, PVIN) [12]
- V16 & V16B Motor Carrier ID (MCARR_ID) [11], (MCARR_I2) [9]
- V21C/HM3 Hazardous Material Identification Number (HAZ_ID) [4]
- D6 Driver's Zip Code (DR_ZIP) [5]
- NM9-PB37 Pedestrian Scenario (PEDSNR) [10]
- V200-V280 VIN decoded data elements in the Vindecode data file [255]

For a detailed description of each data element including coding instructions and attribute definitions, see the FARS/CRSS Coding and Validation Manual. The Coding Manual is published for each year of data collection and is available at:

NCSA Publications - Manuals & Documentation.

In addition, a SAS program (format[YY].sas) and catalog (formats.sas7bcat) accompany the public SAS files for applying the labels and formats to the attributes.

Key Data Elements

All of the data files contain the following nine (9) crash-level data elements:

Case Number

Definition: This data element is the unique case number assigned to each crash. It appears on each data file and is used to merge information from the data files together.

Additional Information: This data element is assigned by the data entry system to each crash and is the unique identifier for the crash within the year. It is used as the key, when any two of these files from the same year are merged.

SAS Name: CASENUM

Attribute Codes

2016-Later

xx Case Number

Primary Sampling Unit (PSU)

Definition: This data element identifies the general geographic location from where the police report was sampled. A PSU is either a large central city, a county surrounding a city, or a group of counties.

Additional Information: See the section CRSS Sample Design for more information.

SAS Name: PSU

Attribute Codes

2016-Later

10-83 CRSS Primary Sampling Unit Number

Primary Sampling Unit for Variance Estimation

Definition: This data element provides the PSU identifier to be used for variance estimation.

Additional Information: See <u>Appendix E: Rules for Derived Data Elements</u> for an explanation of this data element and how it is derived.

SAS Name: PSU_VAR

Attribute Codes

2016-Later 10 to 206

Primary Sampling Unit Stratum

Definition: The PSUs are grouped into strata to reflect the first stage of the sample selection. This data element is used by statistical software packages that use complex sample design for calculating variances, such as SUDAAN and SAS V9.

Additional Information:

SAS Name: PSUSTRAT

Attribute Codes

2016-Later

1 to 25

Region of the Country

Definition: This data element identifies the region of the country where the crash occurred.

Additional Information: This data element is derived based on the state in which the Primary Sampling Unit is located where the crash occurred.

See <u>Appendix E: Rules for Derived Data Elements</u> for an explanation of this data element and how it is derived.

SAS Name: REGION

Attribute Codes

2016-Later

- 1 Northeast (PA, NJ, NY, NH, VT, RI, MA, ME, CT)
- 2 Midwest (OH, IN, IL, MI, WI, MN, ND, SD, NE, IA, MO, KS)
- 3 South (MD, DE, DC, WV, VA, KY, TN, NC, SC, GA, FL, AL, MS, LA, AR, OK, TX)
- 4 West (MT, ID, WA, OR, CA, NV, NM, AZ, UT, CO, WY, AK, HI)

Urbanicity

Definition: This data element describes whether the geographical area of the crash is essentially urban or rural. The area is considered urban if it has a population of 250,000 or greater, otherwise it is rural.

Additional Information: See <u>Appendix E: Rules for Derived Data Elements</u> for an explanation of this data element and how it is derived.

SAS Name: URBANICITY

Attribute Codes

2016-Later

1 Urban2 Rural

C34 Stratum

Definition: This data element identifies the number of the category in which the police report was originally listed in the PARSE Program.

Additional Information: See CRSS Sample Design for more information.

SAS Name: STRATUM

Attribute Codes

2016-Later

- 2 CRSS crashes involving at least one injured (A, B, C, or ISU) or Killed (K) person who was not in a motor vehicle (i.e., non-motorist).
 [Not a MV Occupant- Any Injury]
- 3 CRSS crashes not qualifying for Stratum 2 involving at least one injured (A, B, C, or ISU) or Killed (K) occupant of a motorcycle or moped.

 [Motorcycle- Any Injury]
- 4 CRSS crashes not qualifying for Strata 2 or 3 involving at least one occupant of a late model year (LMY) passenger vehicle who was injured with a Suspected Serious Injury (A) or Killed (K).
 - [Late Model Year Passenger Vehicle- Serious Injury]
- 5 CRSS crashes not qualifying for Strata 2, 3, or 4 involving at least one occupant of a non-late model year (NLMY) passenger vehicle who was injured with a Suspected Serious Injury (A) or Killed (K).
 - [Non-Late Model Year Passenger Vehicle- Serious Injury]
- 6 CRSS crashes not qualifying for Strata 2, 3, 4, or 5 involving at least one occupant of a late model year (LMY) passenger vehicle who was injured (B, C, or ISU). [Late Model Year Passenger Vehicle- Minor Injury]
- 7 CRSS crashes not qualifying for Strata 2, 3, 4, 5, or 6 involving at least one medium or heavy truck or bus (includes school bus, transit bus, and motor coach) with GVWR equal to or greater than 10,001 pounds.

 [Medium/Heavy Truck or Bus]
- 8 CRSS crashes not qualifying for Strata 2, 3, 4, 5, 6, or 7 involving at least one occupant of a non-late model year (NLMY) passenger vehicle who was injured (B, C, or ISU).
 - [Non-Late Model Year Passenger Vehicle- Minor Injury]
- 9 CRSS crashes not qualifying for Strata 2, 3, 4, 5, 6, 7, or 8 involving at least one late model year (LMY) passenger vehicle AND no one in the crash was injured (A, B, C, or ISU) or Killed (K).
 - [Late Model Year Passenger Vehicle- No Injuries in Crash]
- 10 CRSS crashes not qualifying for Strata 2, 3, 4, 5, 6, 7, 8, or 9. [Other]

C35 Police Jurisdiction (PJ)

Definition: This data element identifies the number of the police jurisdiction from which the police crash report was originally sampled.

Additional Information:

SAS Name: PJ

Attribute Codes

2016-Later

46-4060 CRSS Police Jurisdiction Number

Case Weight

Definition: This data element is used to produce national estimates from the data. **Additional Information:** See the section <u>National Estimates</u> for more information.

SAS Name: WEIGHT

All of the vehicle level data files contain the preceding accident level data elements as well as VEH_NO:

V3/D3/PC3/P3/NM4 Vehicle Number

Definition: This data element is the consecutive number assigned to each vehicle in the case. This data element appears on each vehicle level data file and is used in conjunction with the CASENUM data element to merge information from vehicle level data files.

Additional Information: All vehicles (motor vehicles in-transport as well as parked/working vehicles) are sequentially ordered starting with 1.

SAS Name: VEH_NO

Attribute Codes

2016-Later

0 Non-Motorist

1-999 Assigned Vehicle Number

All of the person level data files contain the preceding accident level and vehicle level data elements as well as PER_NO:

P4/NM3 Person Number

Definition: This data element is the consecutive number assigned to each person in the case (i.e., each occupant, pedestrian, or non-motorists involved in the crash). This data element appears on each person level data file and is used in conjunction with the CASENUM data element (and sometimes the VEH_NO data element) to merge information from person level data files.

Additional Information: This data element is computer assigned. Each occupant of the vehicle is numbered and each non-occupant is numbered; in the case of a non-occupant the vehicle number is zero. The numbers for occupants are consecutive, for each vehicle, beginning with 1. Numbers are never skipped. Drivers do not have to be coded 1. Non-occupants are identified by vehicle number 0 and are numbered consecutively starting with 1 for each non-motorist. To get drivers see data element PER_TYP, under Person Type.

SAS Name: PER_NO

Attribute Codes

2016-Later

1-999 Assigned Person Number

The CEVENT and VEVENT data files contain the preceding crash level data elements as well as EVENTNUM:

C18 Event Number

Definition: This data element is the consecutive number assigned to each harmful and non-harmful event in a crash, in chronological order.

Additional Information: Qualifying events are those which involve an in-transport motor vehicle or an object set in motion by an in-transport motor vehicle.

SAS Name: EVENTNUM

Attribute Codes

2016-Later

1-999 Event Number

The VEVENT and VSOE data files contain the preceding crash level data elements and VEH_NO as well as VEVENTNUM:

C18 Vehicle Event Number

Definition: This data element is the consecutive number assigned to each harmful and non-harmful event for this vehicle, in chronological order.

Additional Information: The vehicle's event number shows the chronological sequence of the qualifying harmful and non-harmful events involving a particular vehicle. Qualifying events are those which involve an in-transport motor vehicle or an object set in motion by an in-transport motor vehicle.

SAS Name: VEVENTNUM

Attribute Codes 2016-Later

1-999 Vehicle Event Number

The ACCIDENT Data File

The Accident data file includes crash data. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, and WEIGHT, which are described in beginning of the Data Element Definitions and Codes section. The Accident data file also contains the data elements on the following pages.

CASENUM is the unique case identifier for each record.

C3 Number of Persons Not in Motor Vehicles

Definition: This data element is the number of Person Forms (Not a Motor Vehicle Occupant) that are applicable to this case (i.e., non-occupants).

Additional Information: This represents the number of forms created for persons *not* in motor vehicles. It is the number of persons in the crash where "Person Type" is in (4, 5, 6, 7, 8, 10 or 19).

Note: Persons where "Person Type" = 3 (Occupant of a Motor Vehicle Not In-Transport) are *not* included in this data element but are counted in C3A below.

SAS Name: PEDS
Attribute Codes

2016-Later

0-99 Number of Persons Not in Motor Vehicles

C3A Number of Persons Not in Motor Vehicles in Transport (MVIT)

Definition: This data element is a count of the number of non-motorists in the crash. A non-motorist is defined as a pedestrian, a cyclist, an occupant of a motor vehicle not intransport, a person riding a horse, an occupant of an animal drawn conveyance, person associated with non-motorist conveyance (e.g., baby carriage, skate board, wheelchair), or an other non-motorist (e.g., person outside a trafficway, person in a house).

Additional Information: This data element is calculated as the count of all persons in the crash where "Person Type" is in (3, 4, 5, 6, 7, 8, 10 or 19).

SAS Name: PERNOTMVIT

Attribute Codes

2016-Later

0-98 Number of Persons Not in Motor Vehicles in Transport

C4 Number of Total Motor Vehicles

Definition: This data element is the number of contact motor vehicles that the officer reported on the police crash report as a unit involved in the crash.

Additional Information: This number represents all of the vehicles in the crash. This includes the vehicles in-transport which are documented in the Vehicle data file and the vehicles not intransport which are documented in the Parkwork data file. This data element only appears in the Accident data file.

SAS Name: VE_TOTAL

Attribute Codes 2016-Later

1-999 Number of Vehicles in Crash

C4A Number of Motor Vehicles in Transport (MVIT)

Definition: This data element is a count of the number of motor vehicles in-transport involved in the crash. Legally parked vehicles are not included.

Additional Information: This data element is derived as the count of all vehicles in the crash where "Unit Type" = 1. It is the number of records in the Vehicle data file.

This data element also appears in the Vehicle and Person data files, and in the Parkwork data file as PVE FORMS.

SAS Name: VE FORMS

Attribute Codes

2016-Later

1-999 Number of Vehicles

C4B Number of Parked/Working Vehicles

Definition: This data element is a count of the number of parked and working vehicles involved in the crash.

Additional Information: This data element is derived as the count of all vehicles in the crash where "Unit Type" is in (2, 3 or 4). It is the number of records in the Parkwork data file.

Working vehicles include only vehicles involved in trafficway maintenance, construction, or utility activities. Vehicles performing private maintenance, construction, or utility activities are excluded.

SAS Name: PVH INVL

Attribute Codes

2016-Later

0-999 Number of Parked/Working Vehicles in the Crash

C5A Number of Persons in Motor Vehicles in Transport (MVIT)

Definition: This data element is a count of the number of motorists in the crash. A motorist is a driver, passenger or unknown occupant type of a motor vehicle in-transport.

Additional Information: This data element is derived as the count of all persons in the crash where "Person Type" is in (1, 2 or 9).

Note: Persons where "Person Type" = 3 (Occupant of a Motor Vehicle Not In-Transport) are *not* included in this data element.

SAS Name: PERMVIT

Attribute Codes

2016-Later

0-999 Number of Persons in Motor Vehicles In-Transport

C8 Crash Date

C8A Month of Crash

Definition: This data element records the month in which the crash occurred.

Additional Information: This data element also appears in the Vehicle and Person data files and in the Parkwork data file as PMONTH.

SAS Name: MONTH

2016-Later

Attribute Codes

- 1 January
- 2 February
- 3 March
- 4 April
- 5 May
- 6 June
- 7 July
- 8 August
- 9 September
- 10 October
- 11 November
- 12 December

C8C Day of Week

Definition: This data element records the day of the week on which the crash occurred.

Additional Information: This data element is derived from the SAS Weekday function. The SAS Weekday function returns the day of the week from a date.

See <u>Appendix D: Analytical Classification of Select CRSS Data Elements</u> for the standard NCSA classifications for this data element.

SAS Name: DAY_WEEK

Attribute Codes

2016-Later

- 1 Sunday
- 2 Monday
- 3 Tuesday
- 4 Wednesday
- 5 Thursday
- 6 Friday
- 7 Saturday
- 9 Unknown

C8CI Imputed Day of Week

Definition: This imputed data element has the same definition and data element values as Day of Week, excluding value 9 for unknown day of week.

Additional Information: See the CRSS Imputation section of this manual.

SAS Name: WKDY_IM

C8D Year of Crash

Definition: This data element records the year in which the crash occurred.

Additional Information:

SAS Name: YEAR

Attribute Codes

2016-Later

xxxx Year of the Crash

C9 Crash Time

C9A Hour of Crash

Definition: This data element records the hour at which the crash occurred.

Additional Information: Military time is used. Noon is coded as "12." Midnight is coded as HOUR=0 and MINUTE=0. Hour is coded 0 for one minute after midnight to fifty-nine minutes after midnight.

See <u>Appendix D: Analytical Classification of Select CRSS Data Elements</u> for the standard NCSA classifications for this data element.

This data element also appears in the Vehicle and Person data files and in the Parkwork data file as PHOUR.

SAS Name: HOUR

Attribute Codes

2016-Later

0-23 Hour 99 Unknown

C9Al Imputed Hour of Crash

Definition: This imputed data element has the same definition and data element values as Hour of the Crash, excluding value 99 for unknown hour.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

SAS Name: HOUR_IM

C9B Minute of Crash

Definition: This data element records the minutes after the hour at which the crash occurred. **Additional Information:** This data element also appears in the Vehicle and Person data files and in the Parkwork data file as PMINUTE.

SAS Name: MINUTE

Attribute Codes

2016-Later

0-59 Minute 99 Unknown

C9BI Imputed Minute of Crash

Definition: This imputed data element has the same definition and data element values as Minute of the Crash, excluding value 99 for unknown minutes.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

SAS Name: MINUTE IM

C19 First Harmful Event

Definition: This data element describes the first injury or damage producing event of the crash.

Additional Information: "First Harmful Event" applies to the crash. "Most Harmful Event" (M_HARM) applies to the vehicle. "First Harmful Event," "Most Harmful Event," and the "Sequence of Events" data elements have the same harmful event attributes. "Sequence of Events" also has non-harmful event attributes.

This data element is derived from the "Sequence of Events" data element as the first value that is not between codes 60 and 79 (non-harmful events). See <u>Appendix E: Rules for Derived Data Elements</u> for an explanation of this data element and how it is derived.

This data element also appears in the Vehicle and Person data files and in the Parkwork data file as PHARM_EV.

SAS Name: HARM EV

Attribute Codes

| | | 2018- | | | | |
|---------------------------------|------------------------------|---------|---|--|--|--|
| 2016 | 2017 | Later | | | | |
| NON | NON-COLLISION HARMFUL EVENTS | | | | | |
| 1 | 1 | 1 | Rollover/Overturn | | | |
| 2 | 2 | 2 | Fire/Explosion | | | |
| 3 | 3 | 3 | Immersion or Partial Immersion | | | |
| 4 | 4 | 4 | Gas Inhalation | | | |
| 5 | 5 | 5 | Fell/Jumped from Vehicle | | | |
| 6 | 6 | 6 | Injured in Vehicle (Non-Collision) | | | |
| 7 | 7 | 7 | Other Noncollision | | | |
| 16 | 16 | 16 | Thrown or Falling Object | | | |
| 44 | 44 | 44 | Pavement Surface Irregularity (Ruts, Potholes, Grates, etc.) | | | |
| 51 | 51 | 51 | Jackknife (Harmful to This Vehicle) | | | |
| 72 | 72 | | Cargo/Equipment Loss or Shift (Harmful to This Vehicle) | | | |
| | | 72 | Cargo/Equipment Loss, Shift, or Damage (Harmful) | | | |
| COL | LISION | WITH MC | TOR VEHICLE IN TRANSPORT | | | |
| 12 | 12 | 12 | Motor Vehicle In-Transport | | | |
| 54 | 54 | 54 | Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport | | | |
| 55 | 55 | 55 | Motor Vehicle in Motion Outside the Trafficway | | | |
| COLLISION WITH OBJECT NOT FIXED | | | | | | |
| 8 | 8 | 8 | Pedestrian | | | |
| 9 | 9 | 9 | Pedalcyclist | | | |
| 10 | 10 | 10 | Railway Vehicle | | | |
| 11 | 11 | 11 | Live Animal | | | |
| 14 | 14 | 14 | Parked Motor Vehicle | | | |
| 15 | 15 | 15 | Non-Motorist on Personal Conveyance | | | |
| 18 | 18 | 18 | Other Object Not Fixed | | | |
| 45 | 45 | 45 | Working Motor Vehicle | | | |
| 49 | 49 | 49 | Ridden Animal or Animal Drawn Conveyance | | | |
| 73 | 73 | 73 | Object That Had Fallen From Motor Vehicle In-Transport | | | |
| 74 | 74 | 74 | Road Vehicle on Rails | | | |
| | 91 | 91 | Unknown Object Not Fixed | | | |

C19 First Harmful Event (continued)

Attribute Codes

| | | 2018- | | | | |
|----------|-----------------------------|----------|--|--|--|--|
| 2016 | 2017 | Later | | | | |
| COL | COLLISION WITH FIXED OBJECT | | | | | |
| 17 | 17 | 17 | Boulder | | | |
| 19 | 19 | 19 | Building | | | |
| 20 | 20 | 20 | Impact Attenuator/Crash Cushion | | | |
| 21 | 21 | 21 | Bridge Pier or Support | | | |
| 23 | 23 | 23 | Bridge Rail (Includes Parapet) | | | |
| 24 | 24 | 24 | Guardrail Face | | | |
| 25 | 25 | 25 | Concrete Traffic Barrier | | | |
| 26 | 26 | 26 | Other Traffic Barrier | | | |
| 30 | 30 | 30 | Utility Pole/Light Support | | | |
| 31 | 31 | 31 | Post, Pole or Other Support | | | |
| 32 | 32 | 32 | Culvert | | | |
| 33 | 33 | 33 | Curb | | | |
| 34 | 34 | 34 | Ditch | | | |
| 35 | 35 | 35 | Embankment | | | |
| 38 | 38 | 38 | Fence | | | |
| 39 | 39 | 39 | Wall | | | |
| 40 | 40 | 40 | Fire Hydrant | | | |
| 41 | 41 | 41 | Shrubbery | | | |
| 42 | 42 | 42 | Tree (Standing Only) | | | |
| 43 | 43 | 43 | Other Fixed Object | | | |
| 46 | 46 | 46 | Traffic Signal Support | | | |
| 48 | 48 | 48 | Snow Bank | | | |
| 50 | 50 | 50 50 | Bridge Overhead Structure | | | |
| 52 53 | 52 53 | 52 53 | Guardrail End | | | |
| 53 57 | 53 57 | 53 | Mail Box | | | |
| 57 58 | 57 | 57 58 | Cable Barrier Ground | | | |
| 56 59 | 58 59 | 56 59 | | | | |
| | 93 | 93 | Traffic Sign Support | | | |
| | 93 | 93 | Unknown Fixed Object | | | |
| | | 98 | Harmful Event, Details Not Reported (Since 2019) | | | |
| 99 | 99 | | Unknown | | | |
| | | 99 | Reported as Unknown | | | |

C19I Imputed First Harmful Event

Definition: This imputed data element has the same definition as First Harmful Event, excluding values 98 and 99 for not reported and unknown first harmful events.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

SAS Name: EVENT1_IM

C20 Manner of Collision of the First Harmful Event

Definition: This data element describes the orientation of two motor vehicles in-transport when they are involved in the "First Harmful Event" of a collision crash. If the "First Harmful Event" is not a collision between two motor vehicles in-transport, it is classified as such.

Additional Information: Prior to 2019, this data element was called "Manner of Collision."

This data element also appears in the Vehicle and Person data files and in the Parkwork data file as PMAN COLL.

SAS Name: MAN COLL

Attribute Codes

| 2016- 2017 | 2018 | 2019- Later | |
|---------------|------|----------------|---|
| 0 | 0 | | Not Collision with Motor Vehicle in Transport |
| | | 0 | First Harmful Event was Not a Collision with Motor Vehicle in Transport |
| 1 | 1 | 1 | Front-to-Rear |
| 2 | 2 | 2 | Front-to-Front |
| 6 | 6 | 6 | Angle |
| 7 | 7 | 7 | Sideswipe, Same Direction |
| 8 | 8 | 8 | Sideswipe, Opposite Direction |
| 9 | 9 | 9 | Rear-to-Side |
| 10 | 10 | 10 | Rear-to-Rear |
| 11 | 11 | 11 | Other |
| 98 | 98 | 98 | Not Reported |
| 99 | | | Unknown |
| | 99 | 99 | Reported as Unknown |

C201 Imputed Manner of Collision of the First Harmful Event

Definition: This imputed data element has the same definition and data element values as "Manner of Collision of the First Harmful Event," excluding value 99 for unknown manner of collision and value 98 for not reported manner of collision.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

SAS Name: MANCOL IM

C21 Relation to Junction

C21A Relation to Junction- Within Interchange Area

Definition: This data element identifies the crash's location with respect to presence in an interchange area. The coding of this data element is done in two sub-fields (see also C21B) and is based on the location of the "First Harmful Event" of the crash.

Additional Information:

SAS Name: RELJCT1

Attribute Codes

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---------------------|
| 0 | 0 | No |
| 1 | 1 | Yes |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

C21B Relation to Junction- Specific Location

Definition: This data element identifies the crash's location with respect to presence in or proximity to components typically in junction or interchange areas. The coding of this data element is done in two sub-fields (see also C21A) and is based on the location of the "First Harmful Event" of the crash.

Additional Information:

SAS Name: RELJCT2

Attribute Codes

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--|
| 1 | 1 | Non-Junction |
| 2 | 2 | Intersection |
| 3 | 3 | Intersection Related |
| 4 | 4 | Driveway Access |
| 5 | 5 | Entrance/Exit Ramp Related |
| 6 | 6 | Railway Grade Crossing |
| 7 | 7 | Crossover Related |
| 8 | 8 | Driveway Access Related |
| 16 | 16 | Shared-Use Path Crossing |
| 17 | 17 | Acceleration/Deceleration Lane |
| 18 | 18 | Through Roadway |
| 19 | 19 | Other Location Within Interchange Area |
| 20 | 20 | Entrance/Exit Ramp |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

See <u>Appendix F: Analysis of Pedestrian and Bicycle Crashes Around Intersections</u> for guidance on analyzing Pedestrian/Bicyclist crash locations.

C21BI Imputed Relation to Junction- Specific Location

Definition: This imputed data element has the same definition and data element values as Relation to Junction – Specific Location, excluding value 98 for not reported and 99 for unknown.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

SAS Name: RELJCT2_IM

C22 Type of Intersection

Definition: This data element identifies and allows separation of various intersection types.

Additional Information:

SAS Name: TYP_INT

Attribute Codes

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-----------------------|
| 1 | 1 | Not an Intersection |
| 2 | 2 | Four-Way Intersection |
| 3 | 3 | T-Intersection |
| 4 | 4 | Y-Intersection |
| 5 | 5 | Traffic Circle |
| 6 | 6 | Roundabout |
| 7 | 7 | Five-Point, or More |
| 10 | 10 | L-Intersection |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

C23 Relation to Trafficway

Definition: This data element identifies the location of the crash as it relates to its position within or outside the trafficway based on the "First Harmful Event."

Additional Information:

SAS Name: REL_ROAD

Attribute Codes

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--------------------------------|
| 1 | 1 | On Roadway |
| 2 | 2 | On Shoulder |
| 3 | 3 | On Median |
| 4 | 4 | On Roadside |
| 5 | 5 | Outside Trafficway |
| 6 | 6 | Off Roadway – Location Unknown |
| 7 | 7 | In Parking Lane/Zone |
| 8 | 8 | Gore |
| 10 | 10 | Separator |
| 11 | 11 | Continuous Left Turn Lane |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

C24 Work Zone

Definition: This data element identifies a motor vehicle traffic crash in which the first harmful event occurs within the boundaries of a work zone or on an approach to or exit from a work zone, resulting from an activity, behavior, or control related to the movement of the traffic units through the work zone.

Additional Information: This data element identifies a "Work Zone Accident" as defined in ANSI D16.1, 7th Edition. If the crash qualifies as a "Work Zone Accident" then the type of work activity is identified. Use of the codes does not imply that the crash was caused by the construction, maintenance, or work activity.

SAS Name: WRK ZONE

Attribute Codes

2016-Later

- 0 None
- 1 Construction
- 2 Maintenance
- 3 Utility
- 4 Work Zone, Type Unknown

C25 Light Condition

Definition: This data element records the type/level of light that existed at the time of the crash as indicated in the police crash report.

Additional Information:

SAS Name: LGT_COND

Attribute Codes

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-------------------------|
| 1 | 1 | Daylight |
| 2 | 2 | Dark – Not Lighted |
| 3 | 3 | Dark – Lighted |
| 4 | 4 | Dawn |
| 5 | 5 | Dusk |
| 6 | 6 | Dark – Unknown Lighting |
| 7 | 7 | Other |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

C25I Imputed Light Condition

Definition: This imputed data element has the same definition and data element values as Light Condition, excluding value 9 for unknown light condition and value 8 for not reported light condition.

Additional Information: See the CRSS Imputation section of this manual.

SAS Name: LGTCON_IM

C26 Atmospheric Conditions

Definition: This data element records the prevailing atmospheric conditions that existed at the time of the crash as indicated in the police crash report.

Additional Information: This data element identifies up to two values. If more than two atmospheric conditions were reported, the two conditions that most affect visibility were selected. Accident.WEATHER1 and Accident.WEATHER2 are coded data elements, and Accident.WEATHER is derived from these two.

See <u>Appendix E: Rules for Derived Data Elements</u> for an expanded explanation of this data element and how it is derived.

SAS Name: WEATHER, WEATHER1, WEATHER2

Attribute Codes

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--------------------------------------|
| 0 | 0 | No Additional Atmospheric Conditions |
| 1 | 1 | Clear |
| 2 | 2 | Rain |
| 3 | 3 | Sleet or Hail |
| 4 | 4 | Snow |
| 5 | 5 | Fog, Smog, Smoke |
| 6 | 6 | Severe Crosswinds |
| 7 | 7 | Blowing Sand, Soil, Dirt |
| 8 | 8 | Other |
| 10 | 10 | Cloudy |
| 11 | 11 | Blowing Snow |
| 12 | 12 | Freezing Rain or Drizzle |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

C26I Imputed Atmospheric Conditions

Definition: This imputed data element has the same definition and data element values as Atmospheric Conditions, excluding value 99 for unknown atmospheric conditions and value 98 for not reported atmospheric conditions.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

SAS Name: WEATHR IM

C27 School Bus Related

Definition: This data element identifies if a school bus, or motor vehicle functioning as a school bus, is related to the crash.

Additional Information: The number of school bus related crashes may not equal the number of crashes with school buses involved. For example, if a vehicle goes around a stopped school bus and hits a pedestrian, the school bus usually will not be coded, but the crash is school bus related.

This data element also appears in the Person data file.

SAS Name: SCH_BUS

Attribute Codes

2016-Later

0 No

1 Yes

C32 Related Factors- Crash Level

Definition: This data element records factors related to the crash expressed in the case materials.

Additional Information: There are also vehicle-level-related factors in the Vehicle data file, VEH_SC1 and VEH_SC2 and driver-related factors, also in the Vehicle data file, namely DR_SF1, DR_SF2, DR_SF3, and DR_SF4. In addition there are person-related factors P_SF1, P_SF2, and P_SF3 in the Person data file.

The CRSS coder may have used any of the three data elements to code a related factor. One must test all three data elements to insure that the selected related factor is included.

SAS Name: CF1, CF2, CF3

Attribute Codes

| 2016- 2017 | 2018 | 2019- Later | |
|---------------|------|----------------|---|
| 0 | 0 | 0 | None |
| 3 | 3 | 3 | Other Maintenance or Construction-Created Condition |
| 5 | 5 | 5 | Surface Under Water |
| 7 | 7 | 7 | Surface Washed Out (Caved in, Road Slippage) |
| 13 | 13 | 13 | Aggressive Driving/Road Rage by Non-Contact Vehicle Driver |
| 14 | 14 | 14 | Motor Vehicle Struck By Falling Cargo or Something That Came Loose From or Something That Was Set in Motion By a Vehicle |
| 15 | 15 | 15 | Non-Occupant Struck By Falling Cargo, or Something Came Loose From or Something That Was Set In Motion By A Vehicle |
| 16 | 16 | 16 | Non-Occupant Struck Vehicle |
| 17 | 17 | 17 | Vehicle Set In Motion By Non-Driver |
| 19 | 19 | 19 | Recent Previous Crash Scene Nearby |
| 20 | 20 | 20 | Police-Pursuit-Involved |
| 21 | 21 | 21 | Within Designated School Zone |
| 23 | 23 | 23 | Indication of a Stalled/Disabled Vehicle |
| 24 | 24 | 24 | Unstabilized Situation Began and All Harmful Events Occurred Off of the Roadway |
| 25 | 25 | 25 | Toll Booth/Plaza Related |
| 26 | 26 | | Backup Due to Prior Non-Recurring Incident |
| | | 26 | Prior Non-Recurring Incident |
| 27 | 27 | 27 | Backup Due to Prior Crash |
| 28 | 28 | | Backup Due to Regular Congestion |
| | | 28 | Regular Congestion |
| | | 30 | Obstructed Crosswalks |
| | | 31 | Related to a Bus Stop |
| 99 | | | Unknown |
| | 99 | 99 | Reported as Unknown |

C33 Interstate Highway

Definition: This data element identifies whether the crash occurred on an interstate highway. Interstate highway is a Federal Highway Administration classification.

Additional Information:

SAS Name: INT_HWY

Attribute Codes

2016-Later

- 0 No
- 1 Yes
- 9 Unknown

C90 Maximum Injury Severity in Crash

Definition: This data element records the single most severe injury of all persons involved in the crash, and is derived from "Injury Severity" in the Person data file.

Additional Information: The following order of severity is used.

- 4-Fatal
- 3-Suspected Serious Injury
- 2-Suspected Minor Injury
- 1-Possible Injury
- 5-Injured, Unknown Severity
- 0-No Apparent Injury
- 6-Died Prior
- 9- Unknown/Not Reported
- 8-No Person Involved in Crash

See <u>Appendix E: Rules for Derived Data Elements</u> for an expanded explanation of this data element and how it is derived.

SAS Name: MAX_SEV

Attribute Codes

2016-Later

- 0 No Apparent Injury
- 1 Possible Injury
- 2 Suspected Minor Injury
- 3 Suspected Serious Injury
- 4 Fatal
- 5 Injured, Severity Unknown
- 6 Died Prior to Crash
- 8 No Person Involved in Crash
- 9 Unknown/Not Reported

C90I Imputed Maximum Injury Severity in Crash

Definition: This imputed data element has the same definition and data element values as Maximum Injury Severity in Crash, excluding value 9 for unknown maximum injury severity.

Additional Information: See the CRSS Imputation section of this manual.

This data element is derived from "Imputed Injury Severity" in the Person data file.

SAS Name: MAXSEV IM

C91 Number Injured in Crash

Definition: This data element records the number of persons injured in the crash and is derived by counting all persons with "Injury Severity" of (1, 2, 3, 4, or 5) in the crash. This count includes fatally injured occupants.

Additional Information: See <u>Appendix E: Rules for Derived Data Elements</u> for an expanded explanation of this data element and how it is derived.

SAS Name: NUM_INJ

Attribute Codes

2016-Later

- 0 No Person Injured/Property Damage Only Crash
- x Number of Known Injured
- 98 No Person Involved in the Crash
- 99 All Persons in Crash are Unknown If Injured.

C91I Imputed Number Injured in Crash

Definition: This imputed data element has the same definition and data element values as Number Known Injured in Crash, excluding value 99 for unknown number injured, which is imputed, and the attribute code 98, which is converted to code 0.

Additional Information: See the CRSS Imputation section of this manual.

This data element is derived from "Imputed Injury Severity" in the Person data file.

SAS Name: NO_INJ_IM

C92 Alcohol Involved in Crash

Definition: This data element records alcohol use for drivers, pedestrians, cyclists and other types of non-motorists (except occupants of motor vehicles not in-transport) involved in the crash. The data element is derived from "Police-Reported Alcohol Involvement" in the Person data file.

Additional Information: 8 (No Applicable Person) is coded if the crash involved only passengers of in-transport motor vehicles, occupants of motor vehicles not in-transport or unknown occupant types who are in an in-transport motor vehicle where there is no driver present.

See <u>Appendix E: Rules for Derived Data Elements</u> for an expanded explanation of this data element and how it is derived.

SAS Name: ALCOHOL

Attribute Codes

2016-Later

- Alcohol Involved
- 2 No Alcohol Involved
- 8 No Applicable Person
- 9 Unknown

C92I Imputed Alcohol Involved in Crash

Definition: This data element has the same definition and data element values as Alcohol Involved in Crash, excluding value 9 for unknown alcohol involvement, which is imputed, and the value 8, which is converted to attribute code 2.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

This imputed data element is derived from "Imputed Police-Reported Alcohol Involvement" in the Person data file.

SAS Name: ALCHL_IM

Discontinued ACCIDENT Data Elements

Imputed Relation to Junction- Within Interchange Area (discontinued)

Definition: This imputed data element has the same definition and data element values as Relation to Junction – Within Interchange Area excluding value 8 for not reported and 9 for unknown.

Additional Information: See the CRSS Imputation section of this manual.

SAS Name: RELJCT1_IM

The VEHICLE Data File

The Vehicle data file includes in-transport motor vehicle data as well as driver and precrash data. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, and VEH_NO, which are described in the beginning of the Data Element Definitions and Codes section. The Vehicle data file also contains the data elements on the following pages.

CASENUM and VEH_NO are the unique identifiers for each record. CASENUM should be used to merge the Vehicle data file with the Accident data file. CASENUM and VEH_NO should be used to merge the Vehicle data file with other vehicle-level data files and the Person data file.

V4 Number of Occupants

Definition: This data element is a count of the number of occupants in this vehicle.

Additional Information: This data element also appears in the Parkwork data file as

PNUMOCCS.

SAS Name: NUMOCCS

Attribute Codes

2016-Later

0 None

1-98 Number of Occupants

99 Unknown

V5 Unit Type

Definition: This data element identifies the type of unit that applies to this motor vehicle at the time it became an involved vehicle in the crash and was reported as a unit on the police crash report.

Additional Information: This data element also appears in the Parkwork data file as PTYPE. The valid attributes for PTYPE are:

- 2 Motor Vehicle Not in Transport Within the Trafficway
- 3 Motor Vehicle Not in Transport Outside the Trafficway
- 4 Working Motor Vehicle (Highway Construction, Maintenance, Utility Only)

SAS Name: UNITTYPE

Attribute Codes

2016-Later

1 Motor Vehicle in Transport (Inside or Outside the Trafficway)

V6 Hit and Run

Definition: This data element identifies whether this vehicle was a contact vehicle in the crash that did not stop to render aid (this can include drivers who flee the scene on foot). Hit and run is coded when a motor vehicle in-transport, or its driver, departs from the scene; vehicles not intransport are excluded. It does not matter whether the hit-and-run vehicle was striking or struck.

Additional Information: This data element also appears in the Parkwork data file as PHIT RUN.

SAS Name: HIT_RUN

Attribute Codes

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---------------------|
| 0 | 0 | No |
| 1 | 1 | Yes |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

Reported as Unknown

V6I Imputed Hit and Run

Definition: This imputed data element has the same definition and data element values as "Hit and Run," excluding value 9 for unknown hit and run.

Additional Information: See the CRSS Imputation section of this manual.

SAS Name: HITRUN IM

V9 Vehicle Make

Definition: This data element identifies the make (manufacturer) of this vehicle.

Additional Information: This data element also appears in the Person data file and in the

Parkwork data file as PMAKE.

SAS Name: MAKE
Attribute Codes

2016-Later

- 1 American Motors
- 2 Jeep/Kaiser-Jeep/Willys-Jeep
- 3 AM General
- 6 Chrysler
- 7 Dodge
- 8 Imperial
- 9 Plymouth
- 10 Eagle
- 12 Ford
- 13 Lincoln
- 14 Mercury
- 18 Buick/Opel
- 19 Cadillac
- 20 Chevrolet
- 21 Oldsmobile
- 22 Pontiac
- 23 GMC
- 24 Saturn
- 25 Grumman
- 26 Coda
- 29 Other Domestic Manufacturers

Avanti

Checker

DeSoto

Excalibur

Hudson

Packard

Panoz

Saleen

Studebaker

Stutz

Tesla

- 30 Volkswagen
- 31 Alfa Romeo
- 32 Audi
- 33 Austin/Austin Healey
- 34 BMW
- 35 Datsun/Nissan
- 36 Fiat
- 37 Honda

V9 Vehicle Make (continued)

Attribute Codes

2016-Later

- 38 Isuzu
- 39 Jaguar
- 40 Lancia
- 41 Mazda
- 42 Mercedes-Benz
- 43 MG
- 44 Peugeot
- 45 Porsche
- 46 Renault
- 47 Saab
- 48 Subaru
- 49 Toyota
- 50 Triumph
- 51 Volvo
- 52 Mitsubishi
- 53 Suzuki
- 54 Acura
- 55 Hyundai
- 56 Merkur
- 57 Yugo
- 58 Infiniti
- 59 Lexus
- 60 Diahatsu
- 61 Sterling
- 62 Land Rover
- 63 Kia
- 64 Daewoo
- 65 Smart
- 67 Scion
- 69 Other Import

Aston Martin

Bentley

Bertone

Bricklin

Bugatti

Caterham

Citroen

DeLorean

Desta

Ferrari

Fisker

Gazelle

Hillman

Jensen

V9 Vehicle Make (continued)

Attribute Codes

```
2016-Later
```

```
69
     Other Import (continued)
          Koenigsegg
          Lada
          Lamborghini
          Lotus
          Mahindra
          Maserati
          Maybach
          McLaren
          Mini Cooper
          Morgan
          Morris
          Reliant (British)
          Rolls-Royce
          Simca
          Singer
          Spyker
          Sunbeam
          TVR
70
     BSA
71
     Ducati
     Harley-Davidson
72
73
     Kawasaki
74
     Moto-Guzzi
75
     Norton
76
     Yamaha
78
     Other Make Moped
79
     Other Make Motored Cycle
80
     Brockway
     Diamond Reo/Reo
81
82
     Freightliner/White
     FWD
83
84
     International Harvester/Navistar
85
     Kenworth
86
     Mack
87
     Peterbilt
88
     Iveco/Magirus
89
     White/Autocar, White/GMC
90
     Bluebird
91
     Eagle Coach
     Gillig
92
93
     MCI
```

Thomas Built

94

V9 Vehicle Make (continued)

Attribute Codes

```
2016-Later
```

99

97 Not Reported Other Make 98 Auto-Union-DKW Carpenter Collins Bus DINA Divco Hino Meyers Motors Mid Bus Neoplan Orion Oshkosh Scania Sterling Think UD Van Hool Western Star

Unknown Make

V10 Vehicle Model

Definition: This data element identifies the model of this vehicle within a given make. **Additional Information:** This data element also appears in the Parkwork data file as

PMODEL.

SAS Name: MODEL

Attribute Codes

2016-Later

See the current FARS/CRSS Coding and Validation Manual for vehicle model codes.

V11 Body Type

Definition: This data element identifies a classification of this vehicle based on its general body configuration, size, shape, doors, etc.

Additional Information: See <u>Appendix D: Analytical Classification of Select CRSS Data Elements</u> for the standard NCSA classifications for this data element.

This data element also appears in the Person data file and in the Parkwork data file as PBODYTYP.

SAS Name: BODY TYP

```
Attribute Codes
         2017-
 2016
         Later
   AUTOMOBILES
                Convertible (Excludes Sun-Roof, T-Bar)
   1
          1
   2
          2
                2-Door Sedan, Hardtop, Coupe
    3
                3-Door/2-Door Hatchback
          3
                4-Door Sedan, Hardtop
   4
          4
   5
          5
                5-Door/4-Door Hatchback
   6
          6
                Station Wagon (Excluding Van And Truck Based)
   7
                Hatchback, Number Of Doors Unknown
          7
   8
                Sedan/Hardtop, Number of Doors Unknown
          8
   9
          9
                Other or Unknown Automobile Type
   17
         17
                3-Door Coupe
   AUTOMOBILE DERIVATIVES
  10
         10
                Auto Based Pickup (Includes El Camino, Caballero, Ranchero, SSR, G8-ST,
                  Baha, Brat, And Rabbit Pickup)
  11
         11
                Auto Based Panel (Cargo Station Wagon, Auto-Based Ambulance/Hearse)
                Large Limousine (More Than Four Side Doors Or Stretched Chassis)
  12
         12
                Three Wheel Automobile Or Automobile Derivative
  13
         13
   UTILITY VEHICLES
  14
                Compact Utility (ANSI D-16 Utility Vehicle Categories "Small" and "Midsize")
         14
                Large Utility (ANSI D-16 Utility Vehicle Categories "Full Size" and "Large")
  15
         15
                Utility Station Wagon
  16
         16
  19
                Utility Vehicle, Unknown Body Type
         19
   VAN-BASED LIGHT TRUCKS (GVWR ≤ 10,000 LBS)
  20
         20
                Minivan
  21
         21
                Large Van – Includes Van-Based Buses
  22
         22
                Step Van Or Walk-In Van (GVWR less than or equal to 10,000 lbs)
                Other Van Type
  28
         28
                Unknown Van Type
  29
         29
  LIGHT CONVENTIONAL TRUCKS (PICKUP STYLE CAB, GVWR ≤10,000 LBS)
                Compact Pickup (S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-5, Pup,
  30
```

30 -- Compact Pickup (S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-5, Pup, Mazda Pickup, Mitsubishi Truck, Datsun/Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup, D50, Colt P/U, T-10, S-15, T-15, Ram 100, Dakota, Sonoma)

V11 Body Type (continued)

| VII | Dody 1 y | pe (continued) |
|---------|----------|---|
| Attribu | te Codes | |
| | 2017- | |
| 2016 | Later | |
| 31 | | Standard Pickup (C10-C35, Jeep P/U, Comanche, Ram P/U, K10-K35, D100-D350, W100-350, F100-F350, R100-500, R10-R35, V10-35, Silverado, Sierra, T100) |
| 32 | 32 | Pickup With Slide-In Camper (2016-2017 Only) |
| 33 | 33 | Convertible Pickup |
| | 34 | Light Pickup |
| 39 | 39 | Unknown (Pickup Style) Light Conventional Truck |
| OTH | HER LIGH | T TRUCKS (GVWR ≤10,000 LBS) |
| 40 | 40 | Cab Chassis Based (Included Rescue Vehicle, Light Stake, Dump, And Tow Truck) |
| 41 | 41 | Truck Based Panel |
| 45 | 45 | Other Light Conventional Truck Type |
| 48 | 48 | Unknown Light Truck Type |
| 49 | 49 | Unknown Light Vehicle Type (Automobile, Utility, Van, Or Light Truck) |
| BUS | SES (EXC | LUDES VAN BASED BUSES WITH A GVWR ≤ 10,000 LBS) |
| 50 | 50 | School Bus (Designed To Carry Students, Not Cross Country Or Transit) |
| 51 | 51 | Cross Country/Intercity Bus (i.e., Greyhound) |
| 52 | 52 | Transit Bus (City Bus) |
| 55 | 55 | Van-Based Bus (GVWR greater than 10,000 lbs) |
| 58 | 58 | Other Bus Type |
| 59 | 59 | Unknown Bus Type |
| MED | DIUM/HEA | AVY TRUCKS (GVWR > 10,000 LBS) |
| 60 | 60 | Step Van (GVWR greater than 10,000 lbs) |
| 61 | 61 | Single-Unit Straight Truck or Cab-Chassis (GVWR range 10,001 to 19,500 lbs) |
| 62 | 62 | Single-Unit Straight Truck or Cab-Chassis (GVWR range 19,501 to 26,000 lbs) |
| 63 | 63 | Single-Unit Straight Truck or Cab-Chassis (GVWR greater than 26,000 lbs) |
| 64 | 64 | Single Unit Straight Truck or Cab-Chassis (GVWR unknown) |
| 66 | 66 | Truck-Tractor (Cab Only, Or With Any Number Of Trailing Units; Any Weight) |
| 67 | 67 | Medium/Heavy Pickup (GVWR > 10,000 lbs) |
| 71 | 71 | Unknown if Single-Unit or Combination-Unit Medium Truck (GVWR range 10,001 to 26,000 lbs) |
| 72 | 72 | Unknown if Single-Unit or Combination-Unit Heavy Truck (GVWR greater than 26,000 lbs) |
| 78 | 78 | Unknown Medium/Heavy Truck Type |
| 79 | 79 | Unknown Truck Type (Light/Medium/Heavy) |
| МОТ | TOR HOM | 1ES |
| 42 | 42 | Light Truck Based Motor Home (Chassis Mounted) |
| 65 | 65 | Medium/Heavy Truck-Based Motor Home |
| 72 | 72 | Compar or Motor Home Holenous Truck Type |

Camper or Motor Home, Unknown Truck Type

73

73

V11 Body Type (continued)

Attribute Codes

2017-

2016 Later

| MOT | TORED | CYCLES, MOPEDS, ALL-TERRAIN VEHICLES, ALL-TERRAIN CYCLES |
|-----|---------|--|
| 80 | | Motorcycle |
| | 80 | Two Wheel Motorcycle (excluding motor scooters) |
| 81 | | Moped (Motorized Bicycle) |
| | 81 | Moped or Motorized Bicycle |
| 82 | | Three Wheeled Motorcycle Or Moped |
| | 82 | Three-wheel Motorcycle (2 Rear Wheels) |
| 83 | | Off-Road Motorcycle (2-Wheel) |
| | 83 | Off-Road Motorcycle |
| | 84 | Motor Scooter |
| | 85 | Unenclosed Three Wheel Motorcycle / Unenclosed Autocycle (1 Rear Wheel) |
| | 86 | Enclosed Three Wheel Motorcycle / Enclosed Autocycle (1 Rear Wheel) |
| | 87 | Unknown Three Wheel Motorcycle Type |
| 88 | | Other Motored Cycle Type (Minibike, Motor Scooter, Pocket Motorcycles, Pocket Bikes) |
| | 88 | Other Motored Cycle Type (Mini-bikes, Pocket Motorcycles, "Pocket Bikes") |
| 89 | 89 | Unknown Motored Cycle Type |
| 90 | 90 | ATV (All-Terrain Vehicle) / ATC (All-Terrain Cycle) |
| OTH | IER VEH | HICLES |
| 91 | 91 | Snowmobile |
| 92 | 92 | Farm Equipment Other Than Trucks |
| 93 | 93 | Construction Equipment Other Than Trucks (Includes Graders) |

Low Speed Vehicle (LSV)/Neighborhood Electric Vehicle (NEV)

Other Vehicle Type (Includes Go-Cart, Fork-Lift, City Street Sweeper)

V11I Imputed Body Type

94

95 96

97

98

99

Golf Cart

Not Reported

Unknown Body Type

94

95

97

98

99

Definition: The attributes for this imputed data element have changed over the years to mirror the values for "Body Type," excluding values 49, 79, and 99 for unknown light vehicle type, unknown truck type (light/medium/heavy), and unknown body type, respectively, and value 98 for not reported body type.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

Recreational Off-Highway Vehicle (ROV)

SAS Name: BDYTYP IM

V12 Vehicle Model Year

Definition: This data element identifies the manufacturer's model year of this vehicle.

Additional Information: This data element also appears in the Person data file and in the

Parkwork data file as PMODYEAR.

SAS Name: MOD_YEAR

Attribute Codes

2016-Later

xxxx Actual Model Year 9998 Not Reported 9999 Unknown

V12I Imputed Vehicle Model Year

Definition: This imputed data element has the same definition and data element values as Model Year, excluding value 9999 for unknown model year and value 9998 for not reported.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

SAS Name: MDLYR_IM

V13 Vehicle Identification Number (VIN)

Definition: This data element records the vehicle identification number (VIN) of this vehicle assigned by the vehicle manufacturer. The VIN contains information on the vehicle such as: manufacturer, model year, model, body type, restraint type, etc.

Additional Information: The vehicle manufacturers use the VIN to describe certain characteristics of a vehicle and to assign a serial number to the vehicle.

Prior to 2018, if a character of the VIN is missing or undecipherable, the VIN length will be less than 12 characters. Starting in 2018, an asterisk (*) is used for missing or undecipherable VIN characters.

This data element also appears in the Parkwork data file as PVIN.

SAS Name: VIN Attribute Codes

| 2016-2017 | 2018-Later | |
|-------------|-------------|---|
| 00000000000 | 00000000000 | No VIN Required |
| XXXXXXXXXXX | XXXXXXXXXXX | First 12 Characters of the VIN |
| 88888888888 | 8888888888 | Not Reported |
| 99999999999 | | Unknown |
| | 99999999999 | Reported as Unknown |
| | * | VIN Character Missing or Not Decipherable |

V14 Vehicle Trailing

Definition: This data element identifies whether this vehicle had any attached trailing units or was towing another motor vehicle. A trailing unit can be a horse trailer, fifth wheel trailer, camper, boat, truck trailer, towed vehicle or any other trailer.

Additional Information: This data element also appears in the Person data file and in the Parkwork data file as PTRAILER.

SAS Name: TOW_VEH

Attribute Codes

2016-Later

- 0 No Trailing Units
- 1 Yes, One Trailing Unit
- 2 Yes, Two Trailing Units
- 3 Yes, Three or More Trailing Units
- 4 Yes, Number of Trailing Units Unknown
- 5 Vehicle Towing Another Motor Vehicle Fixed Linkage
- 6 Vehicle Towing Another Motor Vehicle Non-fixed Linkage
- 9 Unknown

V15 Trailer Vehicle Identification Number

Definition: This data element records the vehicle identification number (VIN) of any trailing units of a combination vehicle.

Additional Information: Prior to 2018, if a character of the VIN is missing or undecipherable, the VIN length will be less than 12 characters. Starting in 2018, an asterisk (*) is used for missing or undecipherable VIN characters.

These data elements also appear in the Parkwork data file as PTRLR1VIN, PTRLR2VIN, and PTRLR3VIN.

SAS Name: TRLR1VIN, TRLR2VIN, TRLR3VIN

| 2016-2017 | 2018-Later | |
|-------------|-------------|---|
| 00000000000 | 00000000000 | No VIN Required |
| XXXXXXXXXXX | XXXXXXXXXXX | First 12 Characters of the VIN |
| 77777777777 | 77777777777 | No Trailing Units |
| 88888888888 | 8888888888 | Not Reported |
| 99999999999 | | Unknown |
| | 99999999999 | Reported as Unknown |
| | * | VIN Character Missing or Not Decipherable |

V16 Jackknife

Definition: This data element identifies whether this vehicle experienced a jackknife anytime during the unstabilized situation.

Additional Information: Jackknife applies to a condition which occurs to a "semi" truck (i.e., cab and one or more trailers) while in motion. The condition reflects a loss of control of the truck by the driver in which the trailer yaws more than 15 degrees from its normal straight line path behind the cab. If the final resting configuration of the vehicle is in the jackknife position, it does not necessarily mean that the vehicle has jackknifed (such as, a crash occurring while the vehicle is backing up or parking).

SAS Name: J KNIFE

Attribute Codes

2016-Later

- 0 Not an Articulated Vehicle
- 1 No
- 2 Yes, First Event
- 3 Yes, Subsequent Event

V17 Motor Carrier Identification Number (MCID)

Definition: This data element records the issuing authority and motor carrier identification number (if applicable) to this vehicle.

Additional Information: This 11-character data element is the combination of two data elements, the 2-digit "Motor Carrier Issuing Authority" code (MCARR_I1) followed by the 9-character "Identification Number" (MCARR_I2).

The Carrier Identification Number is found only on vehicles of interstate for-hire or private carriers in the transportation business. It is the unique number assigned to the Carrier by the United States Department of Commerce Commission, or the State. The number can be either a US DOT number (on interstate private carriers) or an ICC MC number (interstate for-hire carriers). Collected only for buses and trucks over 4,500 kg GVWR (Body type = 60, 64, 66-79), this data element is applicable to the following vehicles:

- Medium/Heavy Trucks: vehicles with two axles/six tires and/or gross weight greater than 10,000 pounds.
- Buses with 16 or more seats (including the driver)
- Trucks and Vans of any size carrying hazardous cargo.
- Light commercial trucks pulling a trailer with gross combination weight rating (GCWR) greater than 10,000 pounds.

This data element also appears in the Parkwork data file as PMCARR_ID.

SAS Name: MCARR_ID

| 2016-2017 | 2018-Later | |
|------------|------------|---|
| 0000000000 | 0000000000 | Not Applicable |
| XXXXXXXXXX | XXXXXXXXXX | 11-Character Combination of MCARR_I1 followed by MCARR_I2 |
| 7777777777 | 7777777777 | Not Reported |
| 888888888 | 888888888 | None |
| 9999999999 | | Unknown |
| | 9999999999 | Reported as Unknown |

V17A MCID Issuing Authority

Definition: This data element records the issuing authority if applicable to this vehicle.

Additional Information: This data element is only applicable for the following vehicles:

- Medium/Heavy Trucks: vehicles with two axles/six tires and/or gross weight greater than 10,000 pounds.
- Buses with 16 or more seats (including the driver)
- Trucks and Vans of any size carrying hazardous cargo.
- Light commercial trucks pulling a trailer with gross combination weight rating (GCWR) greater than 10,000 pounds.

This data element also appears in the Parkwork data file as PMCARR_I1.

SAS Name: MCARR_I1

| 2016- 2017 | 2018- Later | |
|---------------|----------------|----------------------------|
| 0 | 0 | Not Applicable |
| 1-56 | 1-56 | State Code [See next page] |
| 57 | 57 | US DOT |
| 58 | 58 | MC/MX (ICC) |
| 77 | 77 | Not Reported |
| 88 | 88 | None |
| 95 | 95 | Canada |
| 96 | 96 | Mexico |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

V17A MCID Issuing Authority (continued)

Attribute Codes

2016-Later

- 1 Alabama
- 2 Alaska
- 3 American Samoa
- 4 Arizona
- 5 Arkansas
- 6 California
- 8 Colorado
- 9 Connecticut
- 10 Delaware
- 11 District of Columbia
- 12 Florida
- 13 Georgia
- 14 Guam
- 15 Hawaii
- 16 Idaho
- 17 Illinois
- 18 Indiana
- 19 Iowa
- 20 Kansas
- 21 Kentucky
- 22 Louisiana
- 23 Maine
- 24 Maryland
- 25 Massachusetts
- 26 Michigan
- 27 Minnesota
- 28 Mississippi
- 29 Missouri

- 30 Montana
- 31 Nebraska
- 32 Nevada
- 33 New Hampshire
- 34 New Jersey
- 35 New Mexico
- 36 New York
- 37 North Carolina
- 38 North Dakota
- 39 Ohio
- 40 Oklahoma
- 41 Oregon
- 42 Pennsylvania
- 43 Puerto Rico
- 44 Rhode Island
- 45 South Carolina
- 46 South Dakota
- 47 Tennessee
- 48 Texas
- 49 Utah
- 50 Vermont
- 51 Virginia
- 52 Virgin Islands
- 53 Washington
- 54 West Virginia
- 55 Wisconsin
- 56 Wyoming

V17B MCID Identification Number

Definition: This data element records the motor carrier identification number if applicable to this vehicle.

Additional Information: The Carrier Identification Number is found only on vehicles of interstate for-hire or private carriers in the transportation business. It is the unique number assigned to the Carrier by the United States Department of Commerce Commission, or the State. The number can be either a US DOT number (on interstate private carriers) or an ICC MC number (interstate for-hire carriers). Collected only for buses and trucks over 4,500 kg GVWR (Body type = 60, 64, 66-79), this data element is applicable to the following vehicles:

- Medium/Heavy Trucks: vehicles with two axles/six tires and/or gross weight greater than 10,000 pounds.
- Buses with 16 or more seats (including the driver)
- Trucks and Vans of any size carrying hazardous cargo.
- Light commercial trucks pulling a trailer with gross combination weight rating (GCWR) greater than 10,000 pounds.

This data element also appears in the Parkwork data file as PMCARR_I2.

SAS Name: MCARR_I2

| 2016-2017 | 2018-Later | |
|-----------|------------|-----------------------|
| 000000000 | 000000000 | Not Applicable |
| XXXXXXXX | XXXXXXXX | Actual 9-Digit Number |
| 77777777 | 77777777 | Not Reported |
| 88888888 | 88888888 | None |
| 99999999 | | Unknown |
| | 99999999 | Reported as Unknown |

V18 Gross Vehicle Weight Rating

Definition: This data element identifies the gross vehicle weight rating of this vehicle if applicable.

Additional Information: The Gross Vehicle Weight Rating (GVWR) or Gross Combination Weight Rating (GCWR) is a value specified by the manufacturer for a single-unit truck, truck tractor, or trailer. In the absence of a gross vehicle weight rating, an estimate of the gross weight of a fully loaded unit can be substituted.

This data element is the gross vehicle weight of the Power Unit only. The weight of trailers is not added.

This data element also appears in the Parkwork data file as PGVWR.

SAS Name: GVWR

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-------------------------|
| 0 | 0 | Not Applicable |
| 1 | 1 | 10,000 lbs or Less |
| 2 | 2 | 10,001 lbs - 26,000 lbs |
| 3 | 3 | 26,001 lbs or More |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

V19 Vehicle Configuration

Definition: This data element describes the general configuration of this vehicle if applicable.

Additional Information: Not Applicable is used for automobiles, motorcycles, passenger vans (with less than 9 seats, including driver) and single-unit light trucks or cargo vans (10,000 lbs. or less GVWR), not carrying hazardous cargo.

This data element also appears in the Parkwork data file as PV_CONFIG.

SAS Name: V_CONFIG

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--|
| 0 | 0 | Not Applicable |
| 1 | 1 | Single-Unit Truck (2 axles and GVWR more than 10,000 lbs.) |
| 2 | 2 | Single-Unit Truck (3 or More axles) |
| 4 | 4 | Truck Pulling Trailer(s) |
| 5 | 5 | Truck Tractor (Bobtail, i.e., Tractor Only, No Trailer) |
| 6 | 6 | Truck Tractor/Semi-Trailer |
| 7 | 7 | Truck Tractor/Double |
| 8 | 8 | Truck Tractor/Triple |
| 10 | 10 | Vehicle 10,000 lbs or Less Placarded for Hazardous Materials |
| 19 | 19 | Truck More than 10,000 lbs, Cannot Classify |
| 20 | 20 | Bus/Large Van (Seats for 9-15 Occupants, Including Driver) |
| 21 | 21 | Bus (Seats for More Than 15 Occupants, Including Driver) |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

V20 Cargo Body Type

Definition: This data element describes the primary cargo carrying capability of this vehicle if applicable.

Additional Information: Passenger vehicles and light trucks that display a hazardous cargo placard are coded "No Cargo Body," as are medium/heavy trucks with no cargo carrying capability. "Not Applicable" is coded only for passenger vehicles and light trucks and vans that do not display a hazardous cargo placard.

This data element also appears in the Parkwork data file as PCARGTYP.

SAS Name: CARGO_BT

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--------------------------------|
| 0 | 0 | Not Applicable |
| 1 | 1 | Van/Enclosed Box |
| 2 | 2 | Cargo Tank |
| 3 | 3 | Flatbed |
| 4 | 4 | Dump |
| 5 | 5 | Concrete Mixer |
| 6 | 6 | Auto Transporter |
| 7 | 7 | Garbage/Refuse |
| 8 | 8 | Grain/Chips/Gravel |
| 9 | 9 | Pole-Trailer |
| 10 | 10 | Log |
| 11 | 11 | Intermodal Container Chassis |
| 12 | 12 | Vehicle Towing Another Vehicle |
| 22 | 22 | Bus |
| 96 | 96 | No Cargo Body |
| 97 | 97 | Other |
| 98 | 98 | Unknown Cargo Body Type |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

V21A/HM1 Hazardous Materials Involvement

Definition: This data element identifies whether this vehicle was carrying hazardous

materials.

Additional Information: This data element also appears in the Parkwork data file as

PHAZ INV.

SAS Name: HAZ_INV

Attribute Codes

2016-Later

1 No

2 Yes

V21B/HM2 Hazardous Materials Placard

Definition: This data element identifies the presence of hazardous materials for this vehicle and whether this vehicle displayed a hazardous materials placard.

Additional Information: This data element also appears in the Parkwork data file as

PHAZPLAC.

SAS Name: HAZ_PLAC

Attribute Codes

2016-Later

- 0 Not Applicable
- 1 No
- 2 Yes
- 8 Not Reported

V21C/HM3 Hazardous Material Identification Number

Definition: This data element identifies the 4-digit hazardous material identification number for this vehicle.

Additional Information: In 2018 this data element was changed to alphanumeric to retain all four digits.

This data element also appears in the Parkwork data file as PHAZ_ID.

SAS Name: HAZ ID

Attribute Codes

2016-Later

0 Not Applicable

xxxx Actual 4-Digit Number

8888 Not Reported

V21D/HM4 Hazardous Material Class Number

Definition: This data element identifies the single-digit hazardous material class number for

this vehicle.

Additional Information: This data element also appears in the Parkwork data file as

PHAZ CNO.

SAS Name: HAZ_CNO

Attribute Codes

2016-Later

- 0 Not Applicable
- 1 Explosives
- 2 Gases
- 3 Flammable / Combustible Liquid
- 4 Flammable Solid, Spontaneously Combustible, and Dangerous When Wet
- 5 Oxidizer and Organic Peroxide
- 6 Poison and Poison Inhalation Hazard
- 7 Radioactive
- 8 Corrosive
- 9 Miscellaneous
- 88 Not Reported

V21E/HM5 Release of Hazardous Material from the Cargo Compartment

Definition: This data element identifies whether any hazardous cargo was released from the cargo tank or compartment of this vehicle.

Additional Information: This data element also appears in the Parkwork data file as PHAZ_REL.

SAS Name: HAZ REL

2016-Later

- 0 Not Applicable
- 1 No
- 2 Yes
- 8 Not Reported

V22 Bus Use

Definition: This data element describes the common type of bus service this vehicle was being used as at the time of the crash or the primary use for the bus if not in service at the time of the crash.

Additional Information: This data element also appears in the Parkwork data file as

PBUS USE.

SAS Name: BUS_USE

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-----------------------------------|
| 0 | 0 | Not a Bus |
| 1 | 1 | School |
| 4 | 4 | Intercity |
| 5 | 5 | Charter/Tour |
| 6 | 6 | Transit/Commuter |
| 7 | 7 | Shuttle |
| 8 | 8 | Modified for Personal/Private Use |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

V23 Special Use

Definition: This data element identifies any special use associated with this vehicle at the time of the crash.

Additional Information: All military vehicles are classified as "4" even if they are police, ambulance, or fire trucks.

This data element also appears in the Person data file and in the Parkwork data file as PSP_USE.

SAS Name: SPEC_USE

| 2016- 2018 | 2019- Later | |
|---------------|----------------|---|
| 0 | 0 | No Special Use |
| 1 | 1 | Taxi |
| 2 | 2 | Vehicle Used for School Transport |
| 3 | 3 | Vehicle Used as Other Bus |
| 4 | 4 | Military |
| 5 | 5 | Police |
| 6 | 6 | Ambulance |
| 7 | 7 | Fire Truck |
| 8 | 8 | Non-Transport Emergency Services Vehicle |
| | 10 | Safety Service Patrols – Incident Response |
| | 11 | Other Incident Response |
| | 12 | Towing – Incident Response |
| 13 | | Incident Response |
| | 20 | Vehicle Used for Electronic Ride-Hailing (Transportation Network Company) |
| | 21 | Mail Carrier |
| | 22 | Public Utility |
| | 23 | Rental Truck over 10,000 lbs. |
| | 24 | Truck Operating with Crash Attenuator Equipment |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| 99 | 99 | Reported as Unknown (Since 2018) |

V24 Emergency Motor Vehicle Use

Definition: This data element identifies whether this vehicle was engaged in emergency use. Emergency Motor Vehicle Use indicates operation of any motor vehicle that is legally authorized by a government authority to respond to emergencies with or without the use of emergency warning equipment, such as a police vehicle, fire truck or ambulance while actually engaged in such response.

Additional Information: This data element also appears in the Person data file and in the Parkwork data file as PEM_USE.

SAS Name: EMER USE

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---|
| 0 | 0 | Not Applicable |
| 2 | 2 | Non-Emergency, Non-Transport |
| 3 | 3 | Non-Emergency Transport |
| 4 | 4 | Emergency Operation, Emergency Warning Equipment Not In Use |
| 5 | 5 | Emergency Operation, Emergency Warning Equipment In Use |
| 6 | 6 | Emergency Operation, Emergency Warning Equipment in Use Unknown |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

V25 Travel Speed

Definition: This data element records the speed the vehicle was traveling prior to the occurrence of the crash as reported by the investigating officer.

Additional Information:

SAS Name: TRAV_SP

| 2016- 2017 | 2018- Later | |
|---------------|----------------|------------------------------------|
| 0 | 0 | Stopped Motor Vehicle in Transport |
| 1-151 | 1-151 | Reported Speed Up to 151 mph |
| 997 | 997 | Speed Greater than 151 mph |
| 998 | 998 | Not Reported |
| 999 | | Unknown |
| | 999 | Reported as Unknown |

V27 Rollover

Definition: This data element identifies this vehicle's involvement in a rollover or overturn during the crash. Rollover is defined as any vehicle rotation of 90 degrees or more about any true longitudinal or lateral axis. Rollover can occur at any time during the crash.

Additional Information: This data element also appears in the Person data file.

SAS Name: ROLLOVER

Attribute Codes

2016-Later

- 0 No Rollover
- 1 Rollover, Tripped By Object/Vehicle
- 2 Rollover, Untripped
- 9 Rollover, Unknown Type

V28 Location of Rollover

Definition: This data element identifies the location of the trip point or start of this vehicle's roll.

Additional Information: SAS Name: ROLINLOC

Attribute Codes

2016-Later

- 0 No Rollover
- 1 On Roadway
- 2 On Shoulder
- 3 On Median/Separator
- 4 In Gore
- 5 On Roadside
- 6 Outside of Trafficway
- 7 In Parking Lane/Zone
- 9 Unknown

V29A Area of Impact – Initial Contact Point

Definition: This data element identifies the area on this vehicle that produced the first instance of injury to non-motorists or occupants of this vehicle, or that resulted in the first instance of damage to other property or to this vehicle.

Additional Information: This data element is derived from the crash events for the vehicle. It is the first recorded "Area of Impact (This Vehicle)" value for this vehicle. See <u>Appendix E: Rules</u> for <u>Derived Data Elements</u> for an explanation of this data element and how it is derived.

This data element also appears in the Person data file and in the Parkwork data file as PIMPACT1.

SAS Name: IMPACT1

Attribute Codes

| 2016 | 2017 | 2018 | 2019- Later | |
|------|------|------|----------------|--|
| 0 | 0 | 0 | 0 | Non-Collision |
| 1-12 | 1-12 | 1-12 | 1-12 | Clock points |
| 13 | 13 | 13 | 13 | Top |
| 14 | 14 | 14 | 14 | Undercarriage |
| 18 | 18 | 18 | 18 | Cargo/Vehicle Parts Set-In-Motion |
| 19 | 19 | 19 | | Other Objects Set-In-Motion |
| | | | 19 | Other Objects or Person Set-In-Motion |
| | 20 | 20 | 20 | Object Set in Motion, Unknown if Cargo/Vehicle |
| | | | | Parts or Other |
| 61 | 61 | 61 | 61 | Left |
| 62 | 62 | 62 | 62 | Left-Front Side |
| 63 | 63 | 63 | 63 | Left-Back Side |
| 81 | 81 | 81 | 81 | Right |
| 82 | 82 | 82 | 82 | Right-Front Side |
| 83 | 83 | 83 | 83 | Right-Back Side |
| 98 | 98 | 98 | 98 | Not Reported |
| 99 | 99 | | | Unknown |
| | | 99 | 99 | Reported as Unknown |

V29Al Imputed Area of Impact – Initial Contact Point

Definition: This imputed data element has the same definition and data element values as Initial Contact Point, excluding value 99 for unknown initial contact point and value 98 for not reported initial contact point.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

SAS Name: IMPACT1 IM

V30 Extent of Damage

Definition: This data element records the amount of damage sustained by this vehicle as indicated on the police crash report based on an operational damage scale.

Additional Information: This data element also appears in the Parkwork data file as PVEH_SEV.

SAS Name: DEFORMED

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---------------------|
| 0 | 0 | No Damage |
| 2 | 2 | Minor Damage |
| 4 | 4 | Functional Damage |
| 6 | 6 | Disabling Damage |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

V31 Vehicle Removal

Definition: This data element describes the mode by which this vehicle left the scene of the crash.

Additional Information: This data element also appears in the Parkwork data file as

PTOWED.

SAS Name: TOWED

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-----------------------------------|
| 2 | 2 | Towed Due to Disabling Damage |
| 3 | 3 | Towed Not Due to Disabling Damage |
| 5 | 5 | Not Towed |
| | 7 | Towed, Unknown Reason |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |
| | | |

V33 Most Harmful Event

Definition: This data element describes the event that resulted in the most severe injury or, if no injury, the greatest property damage involving this vehicle.

Additional Information: "First Harmful Event" applies to the crash (HARM_EV). "Most Harmful Event" applies to the vehicle. "First Harmful Event," "Most Harmful Event," and the "Sequence of Events" data elements have the same harmful event attributes. "Sequence of Events" also has non-harmful event attributes.

This data element also appears in the Parkwork data file as PM_HARM.

SAS Name: M HARM

| | | 2018- | |
|------|----------|---------|---|
| 2016 | 2017 | Later | |
| NON | ICOLLIS | ION | |
| 1 | 1 | 1 | Rollover/Overturn |
| 2 | 2 | 2 | Fire/Explosion |
| 3 | 3 | 3 | Immersion or Partial Immersion |
| 4 | 4 | 4 | Gas Inhalation |
| 5 | 5 | 5 | Fell/Jumped from Vehicle |
| 6 | 6 | 6 | Injured in Vehicle (Non-Collision) |
| 7 | 7 | 7 | Other Noncollision |
| 16 | 16 | 16 | Thrown or Falling Object |
| 44 | 44 | 44 | Pavement Surface Irregularity (Ruts, Potholes, Grates, etc.) |
| 51 | 51 | 51 | Jackknife (Harmful to This Vehicle) |
| 72 | 72 | | Cargo/Equipment Loss or Shift (Harmful to This Vehicle) |
| | | 72 | Cargo/Equipment Loss, Shift, or Damage (Harmful) |
| COL | LISION | WITH MC | OTOR VEHICLE IN TRANSPORT |
| 12 | 12 | 12 | Motor Vehicle In-Transport |
| 54 | 54 | 54 | Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport |
| 55 | 55 | 55 | Motor Vehicle in Motion Outside the Trafficway |
| COLI | LISION V | VITH OB | JECT NOT FIXED |
| 8 | 8 | 8 | Pedestrian |
| 9 | 9 | 9 | Pedalcyclist |
| 10 | 10 | 10 | Railway Vehicle |
| 11 | 11 | 11 | Live Animal |
| 14 | 14 | 14 | Parked Motor Vehicle |
| 15 | 15 | 15 | Non-Motorist on Personal Conveyance |
| 18 | 18 | 18 | Other Object Not Fixed |
| 45 | 45 | 45 | Working Motor Vehicle |
| 49 | 49 | 49 | Ridden Animal or Animal Drawn Conveyance |
| 73 | 73 | 73 | Object That Had Fallen From Motor Vehicle In-Transport |
| 74 | 74 | 74 | Road Vehicle on Rails |
| | 91 | 91 | Unknown Object Not Fixed |

V33 Most Harmful Event (continued)

Attribute Codes

| 2016 | 2017 | 2018- Later | |
|----------------------|----------------------|----------------------|--|
| | | | (ED OBJECT |
| | | | |
| 17 | 17 | 17 | Boulder |
| 19 | 19 | 19 | Building |
| 20 | 20 | 20 | Impact Attenuator/Crash Cushion |
| 21 | 21 | 21 | Bridge Pier or Support |
| 23 | 23 | 23 | Bridge Rail (Includes Parapet) |
| 24 25 | 24 25 | 24 25 | Guardrail Face Concrete Traffic Barrier |
| 26 | 26 26 | 25 26 | |
| 30 | | | Other Traffic Barrier |
| 31 | 30 31 | 30 31 | Utility Pole/Light Support Post, Pole or Other Support |
| 32 | 32 | 32 | Culvert |
| 33 | 33 | 33 | Curb |
| 34 | 33 34 | 33 34 | Ditch |
| 3 4 35 | 3 4 35 | 3 4 35 | Embankment |
| 38 | 38 | 38 | Fence |
| 39 | 39 | 39 | Wall |
| 40 | 40 | 40 | Fire Hydrant |
| 41 | 41 | 41 | Shrubbery |
| 42 | 42 | 42 | Tree (Standing Only) |
| 43 | 43 | 43 | Other Fixed Object |
| 46 | 46 | 46 | Traffic Signal Support |
| 48 | 48 | 48 | Snow Bank |
| 50 | 5 0 | 50 | Bridge Overhead Structure |
| 52 | 52 | 52 | Guardrail End |
| 53 | 53 | 53 | Mail Box |
| 57 | 57 | 57 | Cable Barrier |
| 58 | 58 | 58 | Ground |
| 59 | 59 | 59 | Traffic Sign Support |
| | 93 | 93 | Unknown Fixed Object |
| | | | Chianomia into a Coject |
| | | 98 | Harmful Event, Details Not Reported (Since 2019) |
| 99 | 99 | | Unknown |
| | | 99 | Reported as Unknown |

V33I Imputed Most Harmful Event

Definition: This imputed data element has the same data element values as Most Harmful Event, excluding values 98 and 99 for not reported and unknown most harmful events.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

SAS Name: VEVENT_IM

V34 Fire Occurrence

Definition: This data element identifies whether a fire in any way related to the crash occurred in this vehicle.

Additional Information: Prior to 2019, this data element's Locator Code or Data Element ID was V35.

This data element also appears in the Person data file and in the Parkwork data file as PFIRE.

SAS Name: FIRE_EXP

Attribute Codes

- 0 No or Not Reported
- 1 Yes

V35 Motor Vehicle Automated Driving System(s)

V35A Automation System or Systems Present in Vehicle

Definition: This data element indicates the presence of an Automation System or Systems in this vehicle.

Additional Information: An automation system is the hardware and software that are collectively capable of performing part of or all the dynamic driving task on a sustained basis. Automated Driving System (ADS), is used generically to describe any system capable of level 1-5 driving automation.

SAS Name: ADS PRES

Attribute Codes

2019-Later

- 0 No
- 1 Yes
- 98 Not Reported
- 99 Reported as Unknown

V35B Highest Automation System Level Present in Vehicle

Definition: This data element indicates the highest level of automation present in this vehicle.

Additional Information: These systems do not have to be engaged in this vehicle at the time of the crash.

SAS Name: ADS_LEV

Attribute Codes

- 0 Level 0 No Automation
- 1 Level 1 Driver Assistance Present
- 2 Level 2 Partial Automation Present
- 3 Level 3 Conditional Automation Present
- 4 Level 4 High Automation Present
- 5 Level 5 Full Automation Present
- 9 Automation Present, Level Unknown
- 98 Not Reported
- 99 Reported as Unknown

V35 Motor Vehicle Automated Driving System(s) (continued)

V35C Highest Automation System Level Engaged at Time of Crash

Definition: This data element indicates the highest level of automation that was known to have been engaged in this vehicle at the time of the crash.

Additional Information:

SAS Name: ADS_ENG

Attribute Codes

- 0 Level 0 No Automation
- 1 Level 1 Driver Assistance Present
- 2 Level 2 Partial Automation Present
- 3 Level 3 Conditional Automation Present
- 4 Level 4 High Automation Present
- 5 Level 5 Full Automation Present
- 6 Automation System(s) Engaged, Level Unknown
- 9 Automation System(s) Present, Unknown if Any Engaged
- 90 Automation System(s) Present, Not Engaged
- 98 Not Reported
- 99 Reported as Unknown

V36 Related Factors- Vehicle Level

Definition: This data element records factors related to this vehicle expressed in the case materials.

Additional Information: There are also crash-level-related factors in the Accident data file, CF1, CF2, and CF3; driver-related factors in the Vehicle data file, namely DR_SF1, DR_SF2, DR_SF3 and DR_SF4; and person-related factors P_SF1, P_SF2, and P_SF3 in the Person data file.

The CRSS coder may have used either of the two data elements to code a related factor. One must test both data elements to insure that the selected related factor is included.

Prior to 2019, this data element's Locator Code or Data Element ID was V34.

These data elements also appear in the Parkwork data file as PVEH_SC1 and PVEH_SC2.

SAS Name: VEH SC1, VEH SC2

| 2016- 2017 | 2018 | 2019- Later | |
|---------------|------|----------------|--|
| 0 | 0 | 0 | None |
| | | 29 | Default Code Used for Vehicle Numbering |
| 30 | 30 | 30 | Multi-Wheeled Motorcycle Conversion |
| 33 | 33 | 33 | Vehicle Being Pushed by Non-Motorist |
| 35 | 35 | 35 | Reconstructed/Altered Vehicle |
| 39 | 39 | 39 | Highway Construction, Maintenance or Utility Vehicle, In Transport (Inside or Outside Work Zone) |
| 40 | 40 | | Highway Incident Response Vehicle |
| 41 | 41 | 41 | Police Fire or EMS Vehicle Working at the Scene of an Emergency or Performing Other Traffic Control Activities |
| 42 | 42 | 42 | Other Working Vehicle (Not Construction, Maintenance, Utility, Police, Fire, or EMS Vehicle) |
| 44 | 44 | 44 | Adaptive Equipment |
| | 45 | 45 | Slide-in Camper |
| 99 | | | Unknown |
| | 99 | 99 | Reported as Unknown |

V90 Maximum Injury Severity in Vehicle

Definition: This data element records the single most severe injury level reported for any occupant in this vehicle. This data element is derived by comparing "Injury Severity" from the Person data file for each occupant record in this vehicle. The following is the order of severity codes.

- 4-Fatal
- 3-Suspected Serious Injury
- 2-Suspected Minor Injury
- 1-Possible Injury
- 5-Injured, Unknown Severity
- 0-No Apparent Injury
- 6-Died Prior
- 9- Unknown/Not Reported
- 8-No Person in Vehicle

Additional Information: See <u>Appendix E: Rules for Derived Data Elements</u> for an expanded explanation of this data element and how it is derived.

SAS Name: MAX VSEV

Attribute Codes

2016-Later

- 0 No Apparent Injury
- 1 Possible Injury
- 2 Suspected Minor Injury
- 3 Suspected Serious Injury
- 4 Fatal
- 5 Injured, Severity Unknown
- 6 Died Prior to Crash
- 8 No Person in Vehicle
- 9 Unknown/Not Reported

V90I Imputed Maximum Injury Severity in Vehicle

Definition: This imputed data element has the same definition and data element values as Maximum Injury Severity in Vehicle, excluding value 9 for unknown maximum injury severity.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

The data element is derived from "Imputed Injury Severity" in the Person data file.

SAS Name: MXVSEV IM

V91 Number Injured in Vehicle

Definition: This data element records the number of persons injured in the vehicle and is derived by counting all the persons with "Injury Severity" of (1, 2, 3, 4, or 5) in a vehicle. This count includes fatally injured occupants.

Additional Information: See <u>Appendix E: Rules for Derived Data Elements</u> for an expanded explanation of this data element and how it is derived.

SAS Name: NUM INJV

Attribute Codes

2016-Later

- 0 No Person Injured in Vehicle
- 1-97 Actual Number
- 98 No Person in the Vehicle
- 99 All Persons in the Vehicle are Unknown if Injured

V91I Imputed Number Injured in Vehicle

Definition: This imputed data element has the same definition and data element values as "Number Injured in Vehicle," excluding value 99 for unknown number injured, which is imputed, and the attribute code 98, which is converted to code 0.

Additional Information: See the CRSS Imputation section of this manual.

This data element is derived from "Imputed Injury Severity" in the Person data file.

SAS Name: NUMINJ IM

V92 Driver Drinking in Vehicle

Definition: This data element records alcohol use by the driver of the vehicle. The data element is derived from "Police-Reported Alcohol Involvement" in the Person data file.

Additional Information: See <u>Appendix E: Rules for Derived Data Elements</u> for an expanded explanation of this data element and how it is derived.

SAS Name: VEH_ALCH

Attribute Codes

2016-Later

- 1 Alcohol Involved
- 2 No Alcohol Involved
- 8 No Driver Present/Unknown if Driver Present
- 9 Unknown

V92I Imputed Driver Drinking in Vehicle

Definition: This data element has the same definition and data element values as Driver "Drinking in Vehicle," excluding value 9 for unknown alcohol involvement, which is imputed, and value 8, which is converted to attribute code 2.

Additional Information: See the CRSS Imputation section of this manual.

This imputed data element is derived from "Imputed Police-Reported Alcohol Involvement" in the Person data file.

SAS Name: V_ALCH_IM

V100 Make Model Combined

Definition: This derived data element represents the 5-digit combination of two data elements, the 2-digit "Vehicle Make" code (MAKE) followed by the 3-digit "Vehicle Model" code (MODEL).

Additional Information: This data element also appears in the Person data file and in the Parkwork data file as PMAK_MOD.

SAS Name: MAK MOD

Attribute Codes

2016-Later

See the current <u>FARS/CRSS Coding and Validation Manual</u> for vehicle make and model codes.

D4 Driver Presence

Definition: This data element identifies whether a driver was present in this vehicle at the onset of the unstabilized situation.

Additional Information:

SAS Name: DR_PRES

Attribute Codes

- 0 No Driver Present / Not Applicable
- 1 Yes
- 9 Unknown

D6 Driver's Zip Code

Definition: This data element records the zip code of the driver's address as listed on the police crash report.

Additional Information:

SAS Name: DR_ZIP

Attribute Codes

2016-Later

| 00000 | Not Resident of U.S. or Territories |
|-------|-------------------------------------|
| XXXXX | Actual Zip Code |

99997 No Driver Present/Unknown if Driver Present

99999 Unknown

D22 Speeding Related

Definition: This data element records whether the driver's speed was related to the crash as indicated by law enforcement.

Additional Information:

SAS Name: SPEEDREL

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---|
| 0 | 0 | No |
| 2 | 2 | Yes, Racing |
| 3 | 3 | Yes, Exceeded Speed Limit |
| 4 | 4 | Yes, Too Fast for Conditions |
| 5 | 5 | Yes, Specifics Unknown |
| 8 | 8 | No Driver Present/Unknown if Driver Present |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

D24 Related Factors- Driver Level

Definition: This data element records factors related to this driver expressed in the case materials.

Additional Information: There are also crash-level-related factors in the Accident data file, CF1, CF2, and CF3; vehicle-related factors, namely VEH_SC1 and VEH_SC2 in the Vehicle data file; and person-related factors P_SF1, P_SF2, and P_SF3 in the person data file.

The CRSS coder may have used any of the four data elements to code a related factor. One must test all four data elements to insure that the selected related factor is included.

The person-related factors P_SF1, P_SF2, and P_SF3 are all set to 0 for drivers.

SAS Name: DR SF1, DR SF2, DR SF3, DR SF4

| 2016 | 2017 | 2018 | 2019- Later | |
|--------|--------|--------|----------------|---|
| | _ | | | None |
| 0 6 | 0 6 | 0 6 | 0 6 | Careless Driving |
| 8 | 8 | 8 | 8 | Road Rage/Aggressive Driving |
| | | 9 | | Emergency Services Personnel |
| | | 10 | 10 | Looked But Did Not See |
| 16 | 16 | 16 | 16 | Police or Law Enforcement Officer |
| 18 | 18 | 18 | 18 | Traveling on Prohibited Trafficways |
| 20 | 20 | 20 | 20 | Leaving Vehicle Unattended with Engine Running; Leaving Vehicle Unattended in Roadway |
| 21 | 21 | 21 | 21 | Overloading or Improper Loading of Vehicle with Passenger or Cargo |
| 22 | 22 | 22 | 22 | Towing or Pushing Vehicle Improperly |
| 23 | 23 | 23 | 23 | Failing to Dim Lights or to Have Lights on When Required |
| 24 | 24 | 24 | 24 | Operating Without Required Equipment |
| | | | 29 | Intentional Illegal Driving Off the Roadway |
| 32 | 32 | 32 | 32 | Opening Vehicle Closure into Moving Traffic or Vehicle is in Motion or Operating at Erratic or Suddenly Changing Speeds |
| 36 | 36 | 36 | 36 | Operating the Vehicle in an Erratic, Reckless, Careless or Negligent Manner |
| 37 | 37 | 37 | 37 | Police Pursuing this Driver or Police Officer in Pursuit |
| 50 | 50 | 50 | 50 | Driving Wrong Way on One-Way Trafficway |
| 51 | 51 | 51 | 51 | Driving on Wrong Side of Two-Way Trafficway (Intentionally or Unintentionally) |
| 54 | 54 | 54 | 54 | Stopping in Roadway (Vehicle Not Abandoned) |
| | 55 | 55 | 55 | Improper Management of Vehicle Controls |
| | 56 | 56 | 56 | Object Interference with Vehicle Controls |
| | 57 | 57 | 57 | Driving with Tire-Related Problems |
| 58 | 58 | 58 | 58 | Over Correcting |
| 59 | 59 | 59 | 59 | Getting Off/Out of a Vehicle |
| | 60 | 60 | 60 | Alcohol and/or Drug Test Refused |
| 91 | 91 | 91 | 91 | Non-Traffic Violation Charged (Manslaughter, Homicide or Other Assault Offense Committed Without Malice) |

D24 Related Factors- Driver Level (continued)

| 2016 | 2017 | 2018 | 2019- Later | |
|------|------|------|----------------|---|
| | | | 94 | Emergency Medical Service Personnel |
| | | | 95 | Fire Personnel |
| | | | 96 | Tow Operator |
| | | | 97 | Transportation (i.e., Maintenance Workers, Safety Service Patrol Operators, etc.) |
| 99 | 99 | | | Unknown |
| | | 99 | 99 | Reported as Unknown |

PC5 Trafficway Description

Definition: This data element identifies the attribute that best describes the trafficway flow just prior to this vehicle's critical precrash event.

Additional Information:

SAS Name: VTRAFWAY

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---|
| 0 | 0 | Non-Trafficway or Driveway Access |
| 1 | 1 | Two-Way, Not Divided |
| 2 | 2 | Two-Way, Divided, Unprotected Median |
| 3 | 3 | Two-Way, Divided, Positive Median Barrier |
| 4 | 4 | One-Way Trafficway |
| 5 | 5 | Two-Way, Not Divided With a Continuous Left-Turn Lane |
| 6 | 6 | Entrance/Exit Ramp |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

PC6 Total Lanes in Roadway

Definition: This data element identifies the attribute that best describes the number of travel lanes just prior to this vehicle's critical precrash event.

Additional Information: The number of lanes refers to the number of lanes of a continuous cross-section of roadway. For example, a local roadway with one lane going north and one lane going south would be coded as two lanes. However, if a trafficway is a divided highway with two lanes going north, a median, and two lanes going south, then the number of lanes is coded as two. If a trafficway has two lanes going north immediately adjacent to two lanes going south, one continuous cross-section of roadway, then the number of lanes is coded as four. This data element can be used with the Trafficway Description data element VTRAFWAY to determine the trafficway geometry. For example: If (VNUM_LAN=2) AND (VTRAFWAY=1), then one has a two-lane roadway that is not physically divided, which is what most people think of as a two-lane road (i.e., one lane going in each direction).

If the roadway is a divided trafficway, the number of travel lanes counts only lanes in the direction of travel of the first harmful event. If the roadway is an undivided trafficway, the number of travel lanes are all the lanes regardless of their direction of travel.

SAS Name: VNUM_LAN

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-----------------------------------|
| 0 | 0 | Non-Trafficway or Driveway Access |
| 1 | 1 | One Lane |
| 2 | 2 | Two Lanes |
| 3 | 3 | Three Lanes |
| 4 | 4 | Four Lanes |
| 5 | 5 | Five Lanes |
| 6 | 6 | Six Lanes |
| 7 | 7 | Seven or More Lanes |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

PC7 Speed Limit

Definition: This data element records the posted speed limit in miles per hour.

Additional Information: SAS Name: VSPD_LIM

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--|
| 0 | 0 | No Statutory Limit/Non-Trafficway or Driveway Access |
| 5-95 | 5-95 | Speed Limit (In 5 mph Increments) |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

PC8 Roadway Alignment

Definition: This data element identifies the attribute that best represents the roadway alignment prior to this vehicle's critical precrash event.

Additional Information:

SAS Name: VALIGN

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-----------------------------------|
| 0 | 0 | Non-Trafficway or Driveway Access |
| 1 | 1 | Straight |
| 2 | 2 | Curve Right |
| 3 | 3 | Curve Left |
| 4 | 4 | Curve – Unknown Direction |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

PC9 Roadway Grade

Definition: This data element identifies the attribute that best represents the roadway grade prior to this vehicle's critical precrash event.

Additional Information:

SAS Name: VPROFILE

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-----------------------------------|
| 0 | 0 | Non-Trafficway or Driveway Access |
| 1 | 1 | Level |
| 2 | 2 | Grade, Unknown Slope |
| 3 | 3 | Hillcrest |
| 4 | 4 | Sag (Bottom) |
| 5 | 5 | Uphill |
| 6 | 6 | Downhill |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

PC11 Roadway Surface Condition

Definition: This data element identifies the attribute that best represents the roadway surface condition prior to this vehicle's critical precrash event.

Additional Information:

SAS Name: VSURCOND

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-----------------------------------|
| 0 | 0 | Non-Trafficway or Driveway Access |
| 1 | 1 | Dry |
| 2 | 2 | Wet |
| 3 | 3 | Snow |
| 4 | 4 | Ice/Frost |
| 5 | 5 | Sand |
| 6 | 6 | Water (Standing or Moving) |
| 7 | 7 | Oil |
| 8 | 8 | Other |
| 10 | 10 | Slush |
| 11 | 11 | Mud, Dirt, Gravel |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

PC12 Traffic Control Device

Definition: This data element identifies the attribute that best describes the traffic controls in the vehicle's environment just prior to this vehicle's critical precrash event.

Additional Information: If a vehicle is controlled by more than one device, the device coded is based on the following priority:

- 51 Officer, Crossing Guard, Flagman, etc.
- The lowest numbered device shown below
- 0 No traffic control device.

See <u>Appendix D: Analytical Classification of Select CRSS Data Elements</u> for the standard NCSA classifications for this data element.

SAS Name: VTRAFCON

Attribute Codes

| 2016- | 2018- |
|-------|-------|
| 2017 | Later |

0 0 No Controls

TRAFFIC SIGNALS

- 1 Traffic Control Signal (On Colors) Without Pedestrian Signal
- 2 Traffic Control Signal (On Colors) With Pedestrian Signal
- 3 Traffic Control Signal (On Colors) Not Known if Pedestrian Signal
- 4 4 Flashing Traffic Control Signal
- 8 Other Highway Traffic Signal
- 9 9 Unknown Highway Traffic Signal

REGULATORY SIGNS

- 20 20 Stop Sign
- 21 21 Yield Sign
- 23 School Zone Sign/Device
- 28 28 Other Regulatory Sign
- 29 Unknown Regulatory Sign

OTHER SIGNS AND SIGNALS

- 40 40 Warning Sign
- 50 50 Person
- 65 65 Railway Crossing Device
- 98 98 Other

NOT REPORTED AND UNKNOWN

- 97 97 Not Reported 99 -- Unknown
- -- 99 Reported as Unknown

PC13 Traffic Control Device Functioning

Definition: This data element identifies the functionality of the traffic control device recorded for this vehicle in the data element "Traffic Control Device."

Additional Information:

SAS Name: VTCONT_F

| 2016- 2017 | 2018 | 2019- Later | |
|---------------|------|----------------|--|
| 0 | 0 | 0 | No Controls |
| 1 | 1 | 1 | Device Not Functioning |
| 2 | 2 | 2 | Device Functioning – Functioning Improperly |
| 3 | 3 | 3 | Device Functioning Properly |
| | | 4 | Device Not Functioning or Device Functioning Improperly, Specifics Unknown |
| 8 | 8 | 8 | Not Reported |
| 9 | | | Unknown |
| | 9 | 9 | Reported as Unknown |

PC17 Pre-Event Movement (Prior to Recognition of Critical Event)

Definition: This data element identifies the attribute that best describes this vehicle's activity prior to the driver's realization of an impending critical event or just prior to impact if the driver took no action or had no time to attempt any evasive maneuvers.

Additional Information: These data elements were designed to identify: (1) what the vehicle was doing just prior to the critical precrash event, (2) what made the vehicle's situation critical, (3) what was the corrective action made, if any, to this critical situation, and what was the (4) location and (5) stability of the vehicle just prior to impact.

SAS Name: P CRASH1

Attribute Codes

2016-Later

- 0 No Driver Present/Unknown if Driver Present
- 1 Going Straight
- 2 Decelerating in Road
- 3 Accelerating in Road
- 4 Starting in Road
- 5 Stopped in Roadway
- 6 Passing or Overtaking Another Vehicle
- 7 Disabled or Parked in Travel Lane
- 8 Leaving a Parking Position
- 9 Entering a Parking Position
- 10 Turning Right
- 11 Turning Left
- 12 Making a U-turn
- 13 Backing Up (Other Than for Parking Position)
- 14 Negotiating a Curve
- 15 Changing Lanes
- 16 Merging
- 17 Successful Corrective Action to a Previous Critical Event
- 98 Other
- 99 Unknown

PC17I Imputed Pre-Event Movement (Prior to Recognition of Critical Event)

Definition: This imputed data element has the same definition and data element values as Movement Prior to Critical Event, excluding value 99 for unknown movement prior to critical event.

Additional Information: See the CRSS Imputation section of this manual.

SAS Name: PCRASH1 IM

PC19 Critical Event- Precrash

Definition: This data element identifies the attribute that best describes the critical event which made this crash imminent (i.e., something occurred which made the collision possible).

Additional Information: A critical event is coded for each vehicle and identifies the circumstances leading to the vehicle's first impact in the crash.

These data elements were designed to identify: (1) what the vehicle was doing just prior to the critical precrash event, (2) what made the vehicle's situation critical, (3) what was the corrective action made, if any, to this critical situation, and what was the (4) location and (5) stability of the vehicle just prior to impact.

SAS Name: P CRASH2

Attribute Codes

2016- 2019-2018 Later

THIS VEHICLE LOSS OF CONTROL DUE TO:

- 1 1 Blow Out/Flat Tire
- 2 2 Stalled Engine
- 3 Disabling Vehicle Failure (e.g., Wheel Fell Off)
- 4 Non-Disabling Vehicle Problem (e.g., Hood Flew Up)
- 5 -- Poor Road Conditions (*Puddle, Pothole, Ice, etc.*)
- -- 5 Suddenly Encountered Poor Road Conditions (*Puddle, Pothole, Ice, etc.*)
- 6 -- Traveling Too Fast For Conditions
- -- 6 Traveling Too Fast For Conditions or Road Configuration
- 8 8 Other Cause of Control Loss
- 9 9 Unknown Cause of Control Loss

THIS VEHICLE TRAVELING:

- 10 Over The Lane Line on Left Side of Travel Lane
- 11 Over The Lane Line on Right Side of Travel Lane
- 12 12 Off The Edge of The Road on The Left Side
- 13 Off The Edge of The Road on The Right Side
- 14 14 End Departure
- 15 15 Turning Left
- 16 16 Turning Right
- 17 17 Crossing Over (Passing Through) Junction
- 18 This Vehicle Decelerating
- 19 19 Unknown Travel Direction
- 20 20 Backing
- 21 21 Making a U-Turn

OTHER MOTOR VEHICLE IN LANE

- 50 50 Other Vehicle Stopped
- 51 Traveling in Same Direction with Lower Steady Speed
- 52 52 Traveling in Same Direction while Decelerating
- 53 Traveling in Same Direction with Higher Speed
- 54 54 Traveling in Opposite Direction

PC19 Critical Event- Precrash (continued)

| Attribute Codes | | | |
|-----------------|---------------|----------------|--|
| | 2016- 2018 | 2019- Later | |
| | 55 | 55 | In Crossover |
| | 56 | 56 | Backing |
| | 59 | | Unknown Travel Direction of The Other Motor Vehicle in Lane |
| | | 59 | Unknown Travel Direction/Speed of The Other Motor Vehicle in Lane |
| | | | OR VEHICLE ENCROACHING INTO LANE |
| | 60 | 60 | From Adjacent Lane (Same Direction)-Over Left Lane Line |
| | 61 | 61 | From Adjacent Lane (Same Direction)-Over Right Lane Line |
| | 62 | 62 | From Opposite Direction Over Left Lane Line |
| | 63 | 63 | From Opposite Direction Over Right Lane Line |
| | 64 65 | 64 65 | From Parking Lane/Shoulder, Median/Crossover, Roadside From Crossing Street, Turning Into Same Direction |
| | 66 | 66 | From Crossing Street, Across Path |
| | 67 | 67 | From Crossing Street, Turning Into Opposite Direction |
| | 68 | 68 | From Crossing Street, Intended Path Not Known |
| | 70 | 70 | From Driveway, Turning Into Same Direction |
| | 71 | 71 | From Driveway, Across Path |
| | 72 | 72 | From Driveway, Turning Into Opposite Direction |
| | 73 | 73 | From Driveway, Intended Path Not Known |
| | 74 | 74 | From Entrance to Limited Access Highway |
| | 78 | 78 | Encroaching By Other Vehicle – Details Unknown |
| | PEDE. | STRIAN | , PEDACYLIST OR OTHER NON-MOTORIST |
| | 80 | 80 | Pedestrian in Road |
| | 81 | 81 | Pedestrian Approaching Road |
| | 82 | 82 | Pedestrian Unknown Location |
| | 83 | 83 | Pedalcyclist/Other Non-Motorist in Road |
| | 84 | 84 | Pedalcyclist/Other Non-Motorist Approaching Road |
| | 85 | 85 07.00 / | Pedalcyclist or Other Non-Motorist Unknown Location |
| | | CT OR A | |
| | 87 | 87 | Animal in Road |
| | 88 89 | 88 89 | Animal Approaching Road Animal Unknown Location |
| | 90 | 90 | Object in Road |
| | 91 | 91 | Object Approaching Road |
| | 92 | 92 | Object Unknown Location |
| | OTHE | | |
| | 98 | 98 | Other Critical Precrash Event |
| | UNKN | | |
| | 99 | 99 | Unknown |
| | | | |

PC20 Attempted Avoidance Maneuver

Definition: This data element identifies the attribute that best describes the movements/actions taken by this driver, within a critical crash envelope, in response to the "Critical Precrash Event."

Additional Information: This data element identifies the actions taken by the driver in response to the impending danger. Because this data element focuses upon the driver's action just prior to the first harmful event it is coded independently of any maneuvers associated with this vehicle's "Crash Type."

These data elements were designed to identify: (1) what the vehicle was doing just prior to the critical precrash event, (2) what made the vehicle's situation critical, (3) what was the corrective action made, if any, to this critical situation, and what was the (4) location and (5) stability of the vehicle just prior to impact.

SAS Name: P_CRASH3

Attribute Codes

- 0 No Driver Present/Unknown if Driver Present
- 1 No Avoidance Maneuver
- 5 Releasing Brakes
- 6 Steering Left
- 7 Steering Right
- 8 Braking And Steering Left
- 9 Braking And Steering Right
- 10 Accelerated
- 11 Accelerating And Steering Left
- 12 Accelerating And Steering Right
- 15 Braking and Unknown Steering Direction
- 16 Braking
- 98 Other Actions
- 99 Unknown/Not Reported

PC21 Pre-Impact Stability

Definition: This data element identifies the attribute that best describes the stability of this vehicle after the "Critical Precrash Event," but before the impact.

Additional Information: These data elements were designed to identify: (1) what the vehicle was doing just prior to the critical precrash event, (2) what made the vehicle's situation critical, (3) what was the corrective action made, if any, to this critical situation, and what was the (4) location and (5) stability of the vehicle just prior to impact.

SAS Name: PCRASH4

Attribute Codes

- 0 No Driver Present/Unknown if Driver Present
- 1 Tracking
- 2 Skidding Longitudinally Rotation Less Than 30 Degrees
- 3 Skidding Laterally Clockwise Rotation
- 4 Skidding Laterally Counterclockwise Rotation
- 5 Skidding Laterally Rotation Direction Unknown
- 7 Other Vehicle Loss-of-Control
- 9 Precrash Stability Unknown

PC22 Pre-Impact Location

Definition: This data element identifies the attribute that best describes the location of this vehicle after the "Critical Precrash Event," but before the impact.

Additional Information: These data elements were designed to identify: (1) what the vehicle was doing just prior to the critical precrash event, (2) what made the vehicle's situation critical, (3) what was the corrective action made, if any, to this critical situation, and what was the (4) location and (5) stability of the vehicle just prior to impact.

SAS Name: PCRASH5

Attribute Codes

- 0 No Driver Present/Unknown if Driver Present
- 1 Stayed In Original Travel Lane
- 2 Stayed On Roadway But Left Original Travel Lane
- 3 Stayed On Roadway, Not Known If Left Original Travel Lane
- 4 Departed Roadway
- 5 Remained Off Roadway
- 6 Returned To Roadway
- 7 Entered Roadway
- 9 Unknown

PC23 Crash Type

Definition: This data element identifies the attribute that best describes the type of crash this vehicle was involved in based on the "First Harmful Event" and the precrash circumstances. For graphic descriptions of possible values see Appendix A: PC23 Crash Type Diagram.

Additional Information:

SAS Name: ACC_TYPE

Attribute Codes

2016-Later

0 No Impact

CATEGORY I: SINGLE DRIVER

CONFIGURATION A: RIGHT ROADSIDE DEPARTURE

- 1 Drive Off Road
- 2 Control/Traction Loss
- 3 Avoid Collision with Vehicle, Pedestrian, Animal
- 4 Specifics Other
- 5 Specifics Unknown

CONFIGURATION B: LEFT ROADSIDE DEPARTURE

- 6 Drive Off Road
- 7 Control/Traction Loss
- 8 Avoid Collision With Vehicle, Pedestrian, Animal
- 9 Specifics Other
- 10 Specifics Unknown

CONFIGURATION C: FORWARD IMPACT

- 11 Parked Vehicle
- 12 Stationary Object
- 13 Pedestrian/Animal
- 14 End Departure
- 15 Specifics Other
- 16 Specifics Unknown

CATEGORY II: SAME TRAFFICWAY, SAME DIRECTION

CONFIGURATION D: REAR END

- 20 Stopped
- 21 Stopped, Straight
- 22 Stopped, Left
- 23 Stopped, Right
- 24 Slower
- 25 Slower, Going Straight
- 26 Slower, Going Left
- 27 Slower, Going Right
- 28 Decelerating (Slowing)
- 29 Decelerating (Slowing), Going Straight

PC23 Crash Type (continued)

Attribute Codes

2016-Later

- 30 Decelerating (Slowing), Going Left
- 31 Decelerating (Slowing), Going Right
- 32 Specifics Other
- 33 Specifics Unknown

CONFIGURATION E: FORWARD IMPACT

- 34 This Vehicles Frontal Area Impacts Another Vehicle.
- 35 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 36 This Vehicles Frontal Area Impacts Another Vehicle.
- 37 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 38 This Vehicles Frontal Area Impacts Another Vehicle.
- 39 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 40 This Vehicles Frontal Area Impacts Another Vehicle.
- 41 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 42 Specifics Other
- 43 Specifics Unknown

CONFIGURATION F: SIDESWIPE/ANGLE

- 44 Straight Ahead on Left.
- 45 Straight Ahead on Left/Right.
- 46 Changing Lanes to the Right
- 47 Changing Lanes to the Left
- 48 Specifics Other
- 49 Specifics Unknown

CATEGORY III: SAME TRAFFICWAY, OPPOSITE DIRECTION

CONFIGURATION G: HEAD-ON

- 50 Lateral Move (Left/Right)
- 51 Lateral Move (Going Straight)
- 52 Specifics Other
- 53 Specifics Unknown

CONFIGURATION H: FORWARD IMPACT

- 54 This Vehicles Frontal Area Impacts Another Vehicle.
- 55 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 56 This Vehicles Frontal Area Impacts Another Vehicle.
- 57 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 58 This Vehicles Frontal Area Impacts Another Vehicle.
- 59 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 60 This Vehicles Frontal Area Impacts Another Vehicle.
- 61 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 62 Specifics Other
- 63 Specifics Unknown

PC23 Crash Type (continued)

Attribute Codes

2016-Later

CONFIGURATION I: SIDESWIPE/ANGLE

- 64 Lateral Move (Left/Right)
- 65 Lateral Move (Going Straight)
- 66 Specifics Other
- 67 Specifics Unknown

CATEGORY IV: CHANGING TRAFFICWAY, VEHICLE TURNING

CONFIGURATION J: TURN ACROSS PATH

- 68 Initial Opposite Directions (Left/Right)
- 69 Initial Opposite Directions (Going Straight)
- 70 Initial Same Directions (Turning Right)
- 71 Initial Same Directions (Going Straight)
- 72 Initial Same Directions (*Turning Left*)
- 73 Initial Same Directions (Going Straight)
- 74 Specifics Other
- 75 Specifics Unknown

CONFIGURATION K: TURN INTO PATH

- 76 Turn Into Same Direction (*Turning Left*)
- 77 Turn Into Same Direction (Going Straight)
- 78 Turn Into Same Direction (Turning Right)
- 79 Turn Into Same Direction (Going Straight)
- 80 Turn Into Opposite Directions (Turning Right)
- 81 Turn Into Opposite Directions (Going Straight)
- 82 Turn Into Opposite Directions (*Turning Left*)
- 83 Turn Into Opposite Directions (Going Straight)
- 84 Specifics Other
- 85 Specifics Unknown

CATEGORY V: INTERSECTING PATHS (VEHICLE DAMAGE)

CONFIGURATION L: STRAIGHT PATHS

- 86 Striking from the Right
- 87 Struck on the Right
- 88 Striking from the Left
- 89 Struck on the Left
- 90 Specifics Other
- 91 Specifics Unknown

CATEGORY VI: MISCELLANEOUS

CONFIGURATION M: BACKING, ETC.

- 92 Backing Vehicle
- 93 Other Vehicle or Object
- 93 Other Vehicle
- 97 Untripped Rollover
- 98 Other Crash Type
- 99 Unknown Crash Type

The PERSON Data File

The Person data file includes motorist and non-motorist data. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, VEH_NO, and PER_NO, which are described in the beginning of the Data Element Definitions and Codes section. The Person data file also contains the data elements on the following pages.

CASENUM, VEH_NO, and PER_NO are the unique identifiers for each record. CASENUM should be used to merge the Person data file with the Accident data file for a set of all motorists and non-motorists. CASENUM and VEH_NO should be used to merge the Person data file with the Vehicle and Parkwork data files for a set of all motor vehicle occupants. CASENUM and PER_NO should be used to merge the Person data file with non-motorist person-level data files.

In the Person data file, motor vehicle occupants are PER_TYPE = 1, 2, 3, 9. Motor vehicle occupants have assigned vehicle numbers starting with 1. When PER_TYPE = 3, the occupied vehicle will be found in the PARKWORK data file. Non-motor vehicle occupants are PER_TYPE = 4, 5, 6, 7, 8, 10 or 19. VEH_NO = 0 for non-motor vehicle occupants.

P5/NM5 Age

Definition: This data element identifies this person's age at the time of the crash, in years, with respect to their last birthday.

Additional Information:

SAS Name: AGE

Attribute Codes

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---------------------|
| 0 | 0 | Less than One Year |
| 1-120 | 1-120 | Years of Age |
| 998 | 998 | Not Reported |
| 999 | | Unknown |
| | 999 | Reported as Unknown |

P5/NM5I Imputed Age

Definition: This imputed data element has the same definition and data element values as Age, excluding the value 999 for unknown age and value 998 for not reported age.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

SAS Name: AGE_IM

P6/NM6 Sex

Definition: This data element identifies the sex of this person involved in the crash.

Additional Information:

SAS Name: SEX

Attribute Codes

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---------------------|
| 1 | 1 | Male |
| 2 | 2 | Female |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

P6/NM6I Imputed Sex

Definition: This imputed data element has the same definition and data element values as

Sex, excluding value 9 for unknown sex and value 8 for not reported sex.

Additional Information: See the CRSS Imputation section of this manual.

SAS Name: SEX_IM

P7/NM7 Person Type

Definition: This data element describes the role of this person involved in the crash.

Additional Information: See Appendix D: Analytical Classification of Select CRSS Data

Elements for the standard NCSA classifications for this data element.

SAS Name: PER_TYP

Attribute Codes

2016-Later

MOTORISTS

- 1 Driver of a Motor Vehicle in Transport
- 2 Passenger of a Motor Vehicle in Transport
- 9 Unknown Occupant Type in a Motor Vehicle in Transport

NON-MOTORISTS-OCCUPANT

- 3 Occupant of a Motor Vehicle Not in Transport
- 4 Occupant of a Non-Motor Vehicle Transport Device

NON-MOTORISTS-NON-OCCUPANT

- 5 Pedestrian
- 6 Bicyclist
- 7 Other Cyclist
- 8 Persons on Personal Conveyances
- 10 Persons in or on Buildings
- 19 Unknown Type of Non-Motorist

P8/NM8 Injury Severity

Definition: This data element describes the severity of the injury to this person in the crash using the KABCO scale.

Additional Information: See the Accident data file for C90 Maximum Injury Severity in Crash and the Vehicle data file for V90 Maximum Injury Severity in Vehicle, both of which are derived from this data element.

See <u>Appendix D: Analytical Classification of Select CRSS Data Elements</u> for the standard NCSA classifications for this data element.

SAS Name: INJ SEV

Attribute Codes

2016-Later

- 0 No Apparent Injury (O)
- 1 Possible Injury (C)
- 2 Suspected Minor Injury (B)
- 3 Suspected Serious Injury (A)
- 4 Fatal Injury (K)
- 5 Injured, Severity Unknown (U)
- 6 Died Prior to Crash
- 9 Unknown/Not Reported

P8/NM8I Imputed Injury Severity

Definition: This imputed data element has the same definition and data element values as Injury Severity, excluding value 9 for unknown if injured or not reported if injured.

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

SAS Name: INJSEV_IM

P9 Seating Position

Definition: This data element identifies the location of this person in or on the vehicle.

Additional Information: More than one person can be assigned the same seat position,

however this is coded only when a person is sitting on someone's lap.

SAS Name: SEAT_POS

| 2016- 2018 | 2019- Later | |
|---------------|----------------|---|
| 0 | 0 | Not a Motor Vehicle Occupant |
| 11 | 11 | Front Seat – Left Side (Driver's Side) |
| 12 | 12 | Front Seat – Middle |
| 13 | 13 | Front Seat – Right Side |
| 18 | 18 | Front Seat – Other |
| 19 | 19 | Front Seat – Unknown |
| 21 | 21 | Second Seat – Left Side |
| 22 | 22 | Second Seat – Middle |
| 23 | 23 | Second Seat – Right Side |
| 28 | 28 | Second Seat – Other |
| 29 | 29 | Second Seat – Unknown |
| 31 | 31 | Third Seat – Left Side |
| 32 | 32 | Third Seat – Middle |
| 33 | 33 | Third Seat – Right Side |
| 38 | 38 | Third Seat – Other |
| 39 | 39 | Third Seat – Unknown |
| 41 | 41 | Fourth Seat – Left Side |
| 42 | 42 | Fourth Seat – Middle |
| 43 | 43 | Fourth Seat – Right Side |
| 48 | 48 | Fourth Seat – Other |
| 49 | 49 | Fourth Seat – Unknown |
| 50 | 50 | Sleeper Section of Cab (Truck) |
| 51 | 51 | Other Passenger in Enclosed Passenger or Cargo Area |
| 52 | 52 | Other Passenger in Unenclosed Passenger or Cargo Area |
| 53 | 53 | Other Passenger in Passenger or Cargo Area, Unknown Whether or Not Enclosed |
| 54 | 54 | Trailing Unit |
| 55 | 55 | Riding on Exterior of Vehicle |
| | 56 | Appended to a Motor Vehicle for Motion |
| 98 | 98 | Not Reported |
| 99 | 99 | Unknown/Reported as Unknown (Since 2018) |

P9I Imputed Seating Position

Definition: This imputed data element has the same definition and data element values as Seating Position, excluding values 19, 29, 39, 49 and 99 for unknown seating position and values 98 for not reported seating position.

Additional Information: See the CRSS Imputation section of this manual.

SAS Name: SEAT_IM

P10A Restraint System Use

Definition: This data element records the restraint equipment in use by this occupant at the time of the crash.

Additional Information: Prior to 2019, this data element was called "Restraint System/Helmet Use" which included helmet use, and the Locator Code or Data Element ID was P10. Starting in 2019, helmet use is captured as part of the data element "Helmet Use."

See <u>Appendix D: Analytical Classification of Select CRSS Data Elements</u> for the standard NCSA classifications for this data element.

SAS Name: REST USE

| 2016 | 2018 | 2019- Later | |
|------|------|----------------|--|
| | 2010 | Later | Nie CArra Paralais |
| 0 | | | Not Applicable |
| 1 | 1 | 1 | Shoulder Belt Only Used |
| 2 | 2 | 2 | Lap Belt Only Used |
| 3 | 3 | 3 | Lap and Shoulder Belt Used |
| 4 | 4 | 4 | Child Restraint Type Unknown |
| 5 | 5 | | DOT-Compliant Motorcycle Helmet |
| | | 6 | Racing-Style Harness Used |
| 7 | | | None Used |
| 8 | 8 | 8 | Restraint Used – Type Unknown |
| 10 | 10 | 10 | Child Restraint System – Forward Facing |
| 11 | 11 | 11 | Child Restraint System – Rear Facing |
| 12 | 12 | 12 | Booster Seat |
| 16 | 16 | | Helmet, Other than DOT-Compliant Motorcycle Helmet |
| 17 | 17 | | No Helmet |
| 19 | 19 | | Helmet, Unknown if DOT-Compliant |
| | 20 | 20 | None Used / Not Applicable |
| 29 | 29 | | Unknown if Helmet Worn |
| 96 | 96 | 96 | Not a Motor Vehicle Occupant |
| 97 | 97 | 97 | Other |
| 98 | 98 | 98 | Not Reported |
| 99 | 99 | 99 | Unknown/Reported as Unknown (Since 2018) |

P10B Indication of Restraint System Misuse

Definition: This data element identifies any mis-use of the available restraint system used by this person.

Additional Information: Prior to 2019, this data element was called "Indication of Misuse of Restraint System/Helmet" which included helmet misuse, and the Locator Code or Data Element ID was P11. Starting in 2019, helmet misuse is captured as part of the data element "Indication of Helmet Misuse."

SAS Name: REST_MIS

| 2016- 2018 | 2019- Later | |
|---------------|----------------|------------------------------|
| 0 | | No |
| | 0 | No Indication of Misuse |
| 1 | | Yes |
| | 1 | Yes, Indication of Misuse |
| | 7 | None Used/Not Applicable |
| 8 | 8 | Not a Motor Vehicle Occupant |

P11A Helmet Use

Definition: This data element records the helmet use by this occupant at the time of the crash.

Additional Information: This data element is applicable to occupants of body types 80-91, 96, and 97. (See <u>Body Type</u>)

Prior to 2019, this data was collected as part of the data element "Restraint System/Helmet Use", and the Locator Code or Data Element ID was P10.

SAS Name: HELM USE

Attribute Codes

2019-Later

- 5 DOT-Compliant Motorcycle Helmet
- 16 Helmet, Other than DOT-Compliant Motorcycle Helmet
- 17 No Helmet
- 19 Helmet, Unknown if DOT-Compliant
- 20 Not Applicable
- 96 Not a Motor Vehicle Occupant
- 98 Not Reported
- 99 Unknown/Reported as Unknown

P11B Indication of Helmet Misuse

Definition: This data element identifies any mis-use of the helmet used by this person.

Additional Information: This data element is applicable to occupants of body types 80-91, 96, and 97.

Prior to 2019, this data was collected as part of the data element "Indication of Misuse of Restraint System/Helmet", and the Locator Code or Data Element ID was P11.

SAS Name: HELM_MIS

Attribute Codes

2019-Later

- 0 No Indication of Misuse
- 1 Yes, Indication of Misuse
- 7 None Used/Not Applicable
- 8 Not a Motor Vehicle Occupant

P12 Air Bag Deployed

Definition: This data element records air bag availability and deployment for this person as reported in the police crash report.

Additional Information: This data element is designed to collect both air bag availability and deployment for each occupied seat position. Variation in the presentation of the source data on the state crash report forms and the selections coded on the police report may produce unlikely combinations or missing data. For example:

- 1. If the seat position does not have an air bag at the time of manufacture, but the information on the police report indicates an air bag was available or deployed, the information on the police report takes precedence.
- If the seat position has an air bag installed at the time of manufacture and the police report indicates there is no air bag available, then the police report information takes precedence.

SAS Name: AIR_BAG

| 2016 | 2017 | 2018- Later | |
|------|------|----------------|---|
| 0 | | | Not Applicable |
| 1 | 1 | 1 | Deployed – Front |
| 2 | 2 | 2 | Deployed – Side (Door, Seat Back) |
| 3 | 3 | 3 | Deployed – Curtain (Roof) |
| 7 | 7 | 7 | Deployed – Other (Knee, Air Belt, etc.) |
| 8 | 8 | 8 | Deployed – Combination |
| 9 | 9 | 9 | Deployment – Unknown Location |
| 20 | 20 | 20 | Not Deployed |
| 28 | | | Switched Off |
| 97 | 97 | 97 | Not a Motor Vehicle Occupant |
| 98 | 98 | 98 | Not Reported |
| 99 | 99 | | Deployment Unknown |
| | | 99 | Reported as Deployment Unknown |

P13 Ejection

Definition: This data element describes the ejection status and the degree of ejection for this person, excluding motorcycle occupants.

Additional Information:

SAS Name: EJECTION

Attribute Codes

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--------------------------------|
| 0 | 0 | Not Ejected |
| 1 | 1 | Totally Ejected |
| 2 | 2 | Partially Ejected |
| 3 | 3 | Ejected – Unknown Degree |
| 7 | 7 | Not Reported |
| 8 | 8 | Not Applicable |
| 9 | | Unknown |
| | 9 | Reported as Unknown if Ejected |

P13I Imputed Ejection

Definition: This imputed data element had the same definition and data element values as Ejection, excluding 9 (Unknown) and 7 (Not Reported).

Additional Information: See the <u>CRSS Imputation</u> section of this manual.

SAS Name: EJECT_IM

P16/NM16 **Police-Reported Alcohol Involvement**

Definition: This data element records whether alcohol was involved for this person and reflects the judgment of law enforcement.

Additional Information: This data element does not indicate that alcohol was a cause of the crash. If a police crash report indicates that opened or unopened alcohol bottles were found in the vehicle, then this information does not by itself constitute involvement.

Prior to 2019, this data element's Locator Code or Data Element ID was P16/NM15.

SAS Name: DRINKING

Attribute Codes

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---------------------------|
| 0 | 0 | No (Alcohol Not Involved) |
| 1 | 1 | Yes (Alcohol Involved) |
| 8 | 8 | Not Reported |
| 9 | | Unknown (Police Reported) |
| | 9 | Reported as Unknown |
| | | |

P16/NM16I Imputed Police-Reported Alcohol Involvement

Definition: The definition and data element values are the same as Police-Reported Alcohol Involvement, excluding 8 for not reported and 9 for unknown alcohol involvement.

Additional Information: See the CRSS Imputation section of this manual.

SAS Name: PERALCH IM

P18/NM18 Alcohol Test

P18A/NM18A Alcohol Test Status

Definition: This data element identifies whether an alcohol test was given to this person.

Additional Information: Prior to 2019, this data element's Locator Code or Data Element ID

was P18A/NM17A.

SAS Name: ALC_STATUS

Attribute Codes

| 2016 | 2017 | 2018- Later | |
|------|------|----------------|-------------------------------|
| 0 | 0 | 0 | Test Not Given |
| U | U | U | rest not Given |
| 1 | | | Test Refused |
| 2 | 2 | 2 | Test Given |
| 8 | 8 | 8 | Not Reported |
| 9 | 9 | | Unknown if Tested |
| | | 9 | Reported as Unknown if Tested |

P18B/NM18B Alcohol Test Type

Definition: This data element identifies the type of alcohol test that was given to this person.

Additional Information: If a valid blood test is administered along with another type of test then blood test is coded.

Prior to 2019, this data element's Locator Code or Data Element ID was P18B/NM17B.

SAS Name: ATST TYP

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-------------------------------|
| 0 | 0 | Test Not Given |
| 1 | 1 | Blood |
| 2 | 2 | Breath Test (AC) |
| 3 | 3 | Urine |
| 8 | 8 | Other Test Type |
| 10 | 10 | Preliminary Breath Test (PBT) |
| | 11 | Breath Test, Unknown Type |
| 95 | 95 | Not Reported |
| 98 | 98 | Unknown Test Type |
| 99 | | Unknown if Tested |
| | 99 | Reported as Unknown if Tested |

P18C/NM18C Alcohol Test Result

Definition: This data element identifies the alcohol test result for this person.

Additional Information: A BAC of .10 is coded as 100. The decimal is implied. The BAC is expressed in grams per deciliter (g/dL) or a clinical evaluation of the same.

See <u>Appendix D: Analytical Classification of Select CRSS Data Elements</u> for the standard NCSA classifications for this data element.

Prior to 2019, this data element's Locator Code or Data Element ID was P18C/NM17C.

SAS Name: ALC_RES

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---------------------------------------|
| 0-939 | 0-939 | Actual Value |
| 940 | 940 | 0.94 or Greater |
| 995 | 995 | Not Reported |
| 996 | 996 | Test Not Given |
| 997 | 997 | Test Performed, Results Unknown |
| 998 | 998 | Positive Reading With No Actual Value |
| 999 | | Unknown if Tested |
| | 999 | Reported as Unknown if Tested |

P19/NM19 Police Reported Drug Involvement

Definition: This data element records whether drugs were involved for this person and reflects the judgment of law enforcement.

Additional Information: Involvement is not an indication that drugs were in any way cause of the crash, even though it may have been. If the police crash report indicates that drugs were found in the vehicle, then this information does not by itself constitute involvement.

Prior to 2019, this data element's Locator Code or Data Element ID was P19/NM18.

SAS Name: DRUGS

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---------------------------|
| 0 | 0 | No (Drugs Not Involved) |
| 1 | 1 | Yes (Drugs Involved) |
| 8 | 8 | Not Reported |
| 9 | | Unknown (Police Reported) |
| | 9 | Reported as Unknown |

P22/NM22 Transported to First Medical Facility By

Definition: This data element identifies the mode of transportation to a hospital or medical facility provided for this person.

Additional Information: Prior to 2019, this data element's Locator Code or Data Element ID was P22/NM21.

SAS Name: HOSPITAL

| 2016- 2017 | 2018- Later | |
|---------------|----------------|----------------------------|
| 0 | 0 | Not Transported |
| 1 | 1 | EMS Air |
| 2 | 2 | Law Enforcement |
| 3 | 3 | EMS Unknown Mode |
| 4 | 4 | Transported Unknown Source |
| 5 | 5 | EMS Ground |
| 6 | 6 | Other |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

P26/NM26 Related Factors- Person Level

Definition: This data element records factors related to motor vehicle occupants other than drivers and persons not in motor vehicles as expressed in the case materials.

Additional Information: There are also vehicle-level-related factors in the Vehicle data file, VEH_SC1 and VEH_SC2 and driver-related factors, also in the Vehicle data file, namely DR_SF1, DR_SF2, DR_SF3 and DR_SF4. There are also crash-related factors CF1, CF2, and CF3 in the Accident data file.

Any of the three data elements may have been used to code a related factor. One must test all three data elements to insure that the selected related factor is included.

Person-related factors for all drivers are coded 0. Person-related factors for non-drivers can have non-zero values as listed below.

Prior to 2019, this data element's Locator Code or Data Element ID was P26/NM25.

SAS Name: P_SF1, P_SF2, P_SF3

| 2016 | 2017 | 2018 | 2019- Later | |
|------|------|------|----------------|---|
| | | | | Nana/Nat Applicable Driver |
| 0 | 0 | 0 | 0 | None/Not Applicable-Driver |
| 5 | 5 | 5 | 5 | Interfering With Driver* |
| 9 | 9 | 9 | 9 | Construction/Maintenance/Utility Worker/Highway Department, Contractor, Utility Company Personnel, etc. |
| | 10 | 10 | 10 | Alcohol and/or Drug Test Refused |
| 13 | 13 | 13 | 13 | Motorized Wheelchair Rider** |
| 21 | 21 | 21 | 21 | Overloading or Improper Loading of Vehicle with Passengers or Cargo |
| | | 31 | 31 | Default Code Used for Vehicle Numbering** |
| 32 | 32 | 32 | 32 | Opening Vehicle Closure into Moving Traffic or While Vehicle is in Motion* |
| | | | 53 | Non-Motorist Previously Used a Motor Vehicle for Motion** |
| | | | 54 | Non-Motorist Attempting to Use a Motor Vehicle for Motion** |
| | | | 55 | Non-Motorist Attempting to Use or Previously Used a Motor Vehicle for Motion, Details Not Reported** |
| 56 | 56 | 56 | 56 | Non-Driver Flees Scene |
| 86 | 86 | 86 | | Emergency Services Personnel |
| 87 | 87 | 87 | 87 | Police or Law Enforcement Officer |
| 89 | 89 | 89 | 89 | Parked Motor Vehicle With Equipment Extending into the Travel Lane* |
| 90 | 90 | 90 | 90 | Non-Motorist Pushing a Vehicle** |
| 91 | 91 | 91 | 91 | Portable Electronic Devices |
| 92 | 92 | 92 | 92 | Person in Ambulance Treatment Compartment* |
| 93 | 93 | 93 | 93 | Non-Motorist Wearing Motorcycle Helmet** |
| | | | 94 | Emergency Medical Services Personnel |
| | | | 95 | Fire Personnel |
| | | | 96 | Tow Operator |
| | | | 97 | Transportation (i.e., Maintenance Workers, Safety Service Patrol Operators, etc.) |

P26/NM26 Related Factors- Person Level (continued)

| 2016 | 2017 | 2018 | 2019- Later | |
|------|------|------|----------------|---------------------|
| 99 | 99 | | | Unknown |
| | | 99 | 99 | Reported as Unknown |

^{*} Attribute is only applicable to occupants (other than drivers) of motor vehicles.

^{**} Attribute is only applicable to persons not in motor vehicles.

NM4 Vehicle Number of Motor Vehicle Striking Non-Motorist

Definition: This data element identifies the "Vehicle Number" (VEH_NO) of the in-transport vehicle that made contact with this non-motorist.

Additional Information: This data element applies only to non-motorists/non-occupants and reflects the vehicle that made contact with the non-motorist/non-occupant being coded.

The number must match the vehicle number of the striking vehicle. This number is similar to VEH_NO, except that the non-motorist/non-occupant was struck by the vehicle, rather than being within the vehicle.

SAS Name: STR VEH

| 2016- 2017 | 2018- Later | |
|---------------|----------------|------------------------------------|
| 0 | 0 | Occupant of Motor Vehicle |
| 1-998 | 1-998 | Vehicle Number of Striking Vehicle |
| 999 | | Unknown |

NM10 Non-Motorist Location at Time of Crash

Definition: This data element identifies the attribute which best describes the location of this non-motorist with respect to the roadway at the time of the crash.

Additional Information: Non-motorists who are occupants of motor vehicles not in-transport are coded with respect to the location of the vehicle.

SAS Name: LOCATION

Attribute Codes

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---|
| 0 | 0 | Not Applicable-Motor Vehicle Occupant |
| 1 | 1 | At Intersection-In Marked Crosswalk |
| 2 | 2 | At Intersection-Unmarked/Unknown If Marked Crosswalk |
| 3 | 3 | At Intersection-Not in Crosswalk |
| 9 | 9 | At Intersection-Unknown Location |
| 10 | 10 | Not At Intersection-In Marked Crosswalk |
| 11 | 11 | Not At Intersection-On Roadway, Not in Marked Crosswalk Unknown |
| 13 | 13 | Not At Intersection-On Roadway, Crosswalk Availability Unknown |
| 14 | 14 | Parking Lane/Zone |
| 16 | 16 | Bicycle Lane |
| 20 | 20 | Shoulder/Roadside |
| 21 | 21 | Sidewalk |
| 22 | 22 | Median/Crossing Island |
| 23 | 23 | Driveway Access |
| 24 | 24 | Shared-Use Path |
| 25 | 25 | Non-Trafficway Area |
| 28 | 28 | Other |
| 98 | 98 | Not Reported |
| 99 | | Unknown Location |
| | 99 | Reported as Unknown Location |

See <u>Appendix F: Analysis of Pedestrian and Bicycle Crashes Around Intersections</u> for guidance on analyzing Pedestrian/Bicyclist crash locations.

Discontinued PERSON Data Elements

Drug Test Status (discontinued)

Definition: This data element identifies whether a drug test was given to this person.

Additional Information: SAS Name: DSTATUS

Attribute Codes

| 2016 | 2017 | |
|------|------|-------------------|
| 0 | 0 | Test Not Given |
| 1 | | Test Refused |
| 2 | 2 | Test Given |
| 8 | 8 | Not Reported |
| 9 | 9 | Unknown if Tested |

Drug Test Type (discontinued)

Definition: This data element identifies the type of drug test that was given to this person.

Additional Information:

SAS Name: DRUGTST1, DRUGTST2, DRUGTST3

Attribute Codes

2016-2017

- 0 Test Not Given
- 1 Blood
- 2 Urine
- 3 Both Blood and Urine Tests
- 6 Not Reported
- 7 Unknown Test Type
- 8 Other Test Type
- 9 Unknown if Tested

Drug Test Result (discontinued)

Definition: This data element identifies the drug test result for this person.

SAS Name: DRUGRES1, DRUGRES2, DRUGRES3

Attribute Codes

2016-2017

- 0 Test Not Given
- 1 Tested for Drugs, No Drugs Found/Negative
- 95 Not Reported
- 997 Tested for Drugs, Result Unknown
- 998 Tested for Drugs, Drugs Found, Type Unknown/Positive
- 999 Unknown if Tested

The PARKWORK Data File

The Parkwork data file includes Vehicle data elements applicable to Parked and Working Vehicles. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, and VEH_NO, which are described in the beginning of the Data Element Definitions and Codes section. The Parkwork data file also contains the data elements on the following pages.

CASENUM and VEH_NO are the unique identifiers for each record. CASENUM should be used to merge the Parkwork data file with the Accident data file. CASENUM and VEH_NO should be used to merge the Parkwork data file with the Person data file.

C4A Number of Motor Vehicles in Transport (MVIT)

Definition: This data element is a count of the number of vehicles in-transport involved in the crash. Legally parked vehicles are not included.

Additional Information: See this data element in the Accident data file section for more information.

SAS Name: PVE FORMS

Attribute Codes

2016-Later

1-100 Number of Vehicles

C8 Crash Date

C8A Month of Crash

Definition: This data element records the month in which the crash occurred.

Additional Information: See this data element in the Accident data file section for more

information.

SAS Name: PMONTH

Attribute Codes

2016-Later

- 1 January
- 2 February
- 3 March
- 4 April
- 5 May
- 6 June
- 7 July
- 8 August
- 9 September
- 10 October
- 11 November
- 12 December

C9 Crash Time

C9A Hour of Crash

Definition: This data element records the hour at which the crash occurred.

Additional Information: See this data element in the Accident data file section for more

information.

SAS Name: PHOUR

Attribute Codes

2016-Later

0-23 Hour

99 Unknown

C9B Minute of Crash

Definition: This data element records the minutes after the hour at which the crash occurred.

Additional Information: See this data element in the Accident data file section for more

information.

SAS Name: PMINUTE

Attribute Codes

2016-Later

0-59 Minute 99 Unknown

C19 First Harmful Event

Definition: This data element describes the first injury or damage producing event of the crash.

Additional Information: See this data element in the Accident data file section for more information.

SAS Name: PHARM_EV

| 2016 | 2017 | 2018- Later | | | |
|---|----------|----------------|---|--|--|
| NONCOLLISION | | | | | |
| 1 | 1 | 1 | Rollover/Overturn | | |
| 2 | 2 | 2 | Fire/Explosion | | |
| 3 | 3 | 3 | Immersion or Partial Immersion | | |
| 4 | 4 | 4 | Gas Inhalation | | |
| 5 | 5 | 5 | Fell/Jumped from Vehicle | | |
| 6 | 6 | 6 | Injured in Vehicle (Non-Collision) | | |
| 7 | 7 | 7 | Other Noncollision | | |
| 16 | 16 | 16 | Thrown or Falling Object | | |
| 44 | 44 | 44 | Pavement Surface Irregularity (Ruts, Potholes, Grates, etc.) | | |
| 51 | 51 | 51 | Jackknife (Harmful to This Vehicle) | | |
| 72 | 72 | 72 | Cargo/Equipment Loss or Shift (Harmful to This Vehicle) | | |
| | | | Cargo/Equipment Loss, Shift, or Damage (Harmful) | | |
| COLLISION WITH MOTOR VEHICLE IN TRANSPORT | | | | | |
| 12 | 12 | 12 | Motor Vehicle In-Transport | | |
| 54 | 54 | 54 | Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport | | |
| 55 | 55 | 88 | Motor Vehicle in Motion Outside the Trafficway | | |
| COLLISION WITH OBJECT NOT FIXED | | | | | |
| 8 | 8 | 8 | Pedestrian | | |
| 9 | 9 | 9 | Pedalcyclist | | |
| 10 | 10 | 10 | Railway Vehicle | | |
| 11 | 11 | 11 | Live Animal | | |
| 14 | 14 | 14 | Parked Motor Vehicle | | |
| 15 | 15 | 15 | Non-Motorist on Personal Conveyance | | |
| 18 | 18 | 18 | Other Object Not Fixed | | |
| 45 | 45 | 45 | Working Motor Vehicle | | |
| 49 | 49 70 | 49 70 | Ridden Animal or Animal Drawn Conveyance | | |
| 73 | 73 | 73 74 | Object That Had Fallen From Motor Vehicle In-Transport | | |
| 74 | 74 | 74 04 | Road Vehicle on Rails | | |
| | 91 | 91 | Unknown Object Not Fixed | | |

C19 First Harmful Event (continued)

| 2016 | 2017 | 2018- Later | |
|----------------------|----------------------|----------------------|---|
| | | | (ED OBJECT |
| | | | |
| 17 | 17 10 | 17 10 | Boulder |
| 19 20 | 19 20 | 19 20 | Building |
| 21 | 20 21 | 20 21 | Impact Attenuator/Crash Cushion |
| 23 | 23 | 23 | Bridge Pier or Support Bridge Rail (Includes Parapet) |
| 23 24 | 23 24 | 23 24 | Guardrail Face |
| 2 4 25 | 2 4 25 | 2 4 25 | Concrete Traffic Barrier |
| 26 | 26 | 26 | Other Traffic Barrier |
| 30 | 30 | 30 | Utility Pole/Light Support |
| 31 | 31 | 31 | Post, Pole or Other Support |
| 32 | 32 | 32 | Culvert |
| 33 | 33 | 33 | Curb |
| 34 | 34 | 34 | Ditch |
| 35 | 35 | 35 | Embankment |
| 38 | 38 | 38 | Fence |
| 39 | 39 | 39 | Wall |
| 40 | 40 | 40 | Fire Hydrant |
| 41 | 41 | 41 | Shrubbery |
| 42 | 42 | 42 | Tree (Standing Only) |
| 43 | 43 | 43 | Other Fixed Object |
| 46 | 46 | 46 | Traffic Signal Support |
| 48 | 48 | 48 | Snow Bank |
| 50 | 50 | 50 | Bridge Overhead Structure |
| 52 | 52 | 52 | Guardrail End |
| 53 | 53 | 53 | Mail Box |
| 57 | 57 | 57 | Cable Barrier |
| 58 | 58 | 58 | Ground |
| 59 | 59 | 59 | Traffic Sign Support |
| | 93 | 93 | Unknown Fixed Object |
| | | 98 | Harmful Event, Details Not Reported (Since 2019) |
| 99 | 99 | | Unknown |
| | | 99 | Reported as Unknown |

C20 Manner of Collision of the First Harmful Event

Definition: This data element describes the orientation of two motor vehicles in-transport when they are involved in the "First Harmful Event" of a collision crash. If the "First Harmful Event" is not a collision between two motor vehicles in-transport, it is classified as such.

Additional Information: See this data element in the Accident data file section for more information.

SAS Name: PMAN_COLL

| 2016- 2017 | 2018 | 2019- Later | |
|---------------|------|----------------|---|
| 0 | 0 | | Not Collision with Motor Vehicle in Transport |
| | | 0 | First Harmful Event was Not a Collision with Motor Vehicle in Transport |
| 1 | 1 | 1 | Front-to-Rear |
| 2 | 2 | 2 | Front-to-Front |
| 6 | 6 | 6 | Angle |
| 7 | 7 | 7 | Sideswipe, Same Direction |
| 8 | 8 | 8 | Sideswipe, Opposite Direction |
| 9 | 9 | 9 | Rear-to-Side |
| 10 | 10 | 10 | Rear-to-Rear |
| 11 | 11 | 11 | Other |
| 98 | 98 | 98 | Not Reported |
| 99 | | | Unknown |
| | 99 | 99 | Reported as Unknown |

V4 Number of Occupants

Definition: This data element is a count of the number of occupants in this vehicle.

Additional Information: See this data element in the Vehicle data file section for more

information.

SAS Name: PNUMOCCS

Attribute Codes

2016-Later

0 None

1-98 Number of Occupants

99 Unknown

V5 Unit Type

Definition: This data element identifies the type of unit that applies to this motor vehicle at the time it became an involved vehicle in the crash and was reported as a unit on the police crash report.

Additional Information: This data element also appears in the Vehicle data file as UNITTYPE. The only valid attribute for UNITTYPE is 1 (Motor Vehicle in Transport (*Inside or Outside the Trafficway*)).

SAS Name: PTYPE

Attribute Codes

2016-Later

- 2 Motor Vehicle Not in Transport Within the Trafficway
- 3 Motor Vehicle Not in Transport Outside the Trafficway
- 4 Working Motor Vehicle (Highway Construction, Maintenance, Utility Only)

V6 Hit and Run

Definition: This data element identifies whether this vehicle was a contact vehicle in the crash that did not stop to render aid (this can include drivers who flee the scene on foot). Hit and run is coded when a motor vehicle in-transport, or its driver, departs from the scene; vehicles not intransport are excluded. It does not matter whether the hit-and-run vehicle was striking or struck.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PHIT_RUN

| 2016- | 2018- | |
|-------|-------|---------------------|
| 2017 | Later | |
| 0 | 0 | No |
| 1 | 1 | Yes |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

V9 Vehicle Make

Definition: This data element identifies the make (manufacturer) of this vehicle.

Additional Information: See this data element in the Vehicle data file section for more

information.

SAS Name: PMAKE

Attribute Codes

2016-Later

- 1 American Motors
- 2 Jeep/Kaiser-Jeep/Willys-Jeep
- 3 AM General
- 6 Chrysler
- 7 Dodge
- 8 Imperial
- 9 Plymouth
- 10 Eagle
- 12 Ford
- 13 Lincoln
- 14 Mercury
- 18 Buick/Opel
- 19 Cadillac
- 20 Chevrolet
- 21 Oldsmobile
- 22 Pontiac
- 23 GMC
- 24 Saturn
- 25 Grumman
- 26 Coda
- 29 Other Domestic Manufacturers

Avanti

Checker

DeSoto

Excalibur

Hudson

Packard

Panoz

Saleen

Studebaker

Stutz

Tesla

- 30 Volkswagen
- 31 Alfa Romeo
- 32 Audi
- 33 Austin/Austin Healey
- 34 BMW
- 35 Datsun/Nissan
- 36 Fiat
- 37 Honda

V9 Vehicle Make (continued)

Attribute Codes

2016-Later

- 38 Isuzu
- 39 Jaguar
- 40 Lancia
- 41 Mazda
- 42 Mercedes-Benz
- 43 MG
- 44 Peugeot
- 45 Porsche
- 46 Renault
- 47 Saab
- 48 Subaru
- 49 Toyota
- 50 Triumph
- 51 Volvo
- 52 Mitsubishi
- 53 Suzuki
- 54 Acura
- 55 Hyundai
- 56 Merkur
- 57 Yugo
- 58 Infiniti
- 59 Lexus
- 60 Diahatsu
- 61 Sterling
- 62 Land Rover
- 63 Kia
- 64 Daewoo
- 65 Smart
- 67 Scion
- 69 Other Import

Aston Martin

Bentley

Bertone

Bricklin

Bugatti

Caterham

Citroen

DeLorean

Desta

Ferrari

Fisker

Gazelle

Hillman

Jensen

V9 Vehicle Make (continued)

```
2016-Later
```

```
69
     Other Import (continued)
          Koenigsegg
          Lada
          Lamborghini
          Lotus
          Mahindra
          Maserati
          Maybach
          McLaren
          Mini Cooper
          Morgan
          Morris
          Reliant (British)
          Rolls-Royce
          Simca
          Singer
          Spyker
          Sunbeam
          TVR
70
     BSA
71
     Ducati
     Harley-Davidson
72
73
     Kawasaki
74
     Moto-Guzzi
75
     Norton
76
     Yamaha
78
     Other Make Moped
79
     Other Make Motored Cycle
     Brockway
80
     Diamond Reo/Reo
81
82
     Freightliner/White
     FWD
83
84
     International Harvester/Navistar
85
     Kenworth
86
     Mack
87
     Peterbilt
88
     Iveco/Magirus
89
     White/Autocar, White/GMC
90
     Bluebird
91
     Eagle Coach
     Gillig
92
93
     MCI
94
     Thomas Built
```

V9 Vehicle Make (continued)

Attribute Codes

```
2016-Later
```

99

97 Not Reported Other Make 98 Auto-Union-DKW Carpenter Collins Bus DINA Divco Hino Meyers Motors Mid Bus Neoplan Orion Oshkosh Scania Sterling Think UD Van Hool Western Star

Unknown Make

V10 Vehicle Model

Definition: This data element identifies the model of this vehicle within a given make.

Additional Information: See this data element in the Vehicle data file section for more

information.

SAS Name: PMODEL

Attribute Codes

2016-Later

See the current FARS/CRSS Coding and Validation Manual for vehicle model codes.

V11 Body Type

Definition: This data element identifies a classification of this vehicle based on its general body configuration, size, shape, doors, etc.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PBODYTYP

Attribute Codes

2017-

2016 Later

AUTOMOBILES

- 1 1 Convertible (Excludes Sun-Roof, T-Bar)
- 2 2-Door Sedan, Hardtop, Coupe
- 3 3-Door/2-Door Hatchback
- 4 4 4-Door Sedan, Hardtop
- 5 5-Door/4-Door Hatchback
- 6 Station Wagon (Excluding Van And Truck Based)
- 7 Hatchback, Number Of Doors Unknown
- 8 Sedan/Hardtop, Number of Doors Unknown
- 9 Other or Unknown Automobile Type
- 17 17 3-Door Coupe

AUTOMOBILE DERIVATIVES

- 10 10 Auto Based Pickup (Includes El Camino, Caballero, Ranchero, SSR, G8-ST, Baha, Brat, And Rabbit Pickup)
- 11 Auto Based Panel (Cargo Station Wagon, Auto-Based Ambulance/Hearse)
- 12 Large Limousine (More Than Four Side Doors Or Stretched Chassis)
- 13 Three Wheel Automobile Or Automobile Derivative

UTILITY VEHICLES

- 14 14 Compact Utility (ANSI D-16 Utility Vehicle Categories "Small" and "Midsize")
- 15 Large Utility (ANSI D-16 Utility Vehicle Categories "Full Size" and "Large")
- 16 16 Utility Station Wagon
- 19 19 Utility Vehicle, Unknown Body Type

VAN-BASED LIGHT TRUCKS (GVWR ≤ 10,000 LBS)

- 20 20 Minivan
- 21 21 Large Van Includes Van-Based Buses
- 22 Step Van Or Walk-In Van (GVWR ≤ 10,000 lbs)
- 28 28 Other Van Type
- 29 Unknown Van Type

LIGHT CONVENTIONAL TRUCKS (PICKUP STYLE CAB, GVWR ≤10,000 LBS)

- 30 -- Compact Pickup (S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-5, Pup, Mazda Pickup, Mitsubishi Truck, Datsun/Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup, D50, Colt P/U, T-10, S-15, T-15, Ram 100, Dakota, Sonoma)
- 31 -- Standard Pickup (C10-C35, Jeep P/U, Comanche, Ram P/U, K10-K35, D100-D350, W100-350, F100-F350, R100-500, R10-R35, V10-35, Silverado, Sierra, T100)

V11 Body Type (continued)

| 2046 | 2017- | |
|----------|----------|---|
| 2016 | Later | D. I. W. O. I. I. O. (0040.0047.0.4.) |
| 32 | 32 | Pickup With Slide-In Camper (2016-2017 Only) |
| 33 | 33 | Convertible Pickup |
| 39 | 34 39 | Light Pickup Light Conventional Truck |
| | | Unknown (Pickup Style) Light Conventional Truck |
| | | T TRUCKS (GVWR ≤10,000 LBS) |
| 40 | 40 | Cab Chassis Based (Included Rescue Vehicle, Light Stake, Dump, And Tow Truck) |
| 41 | 41 | Truck Based Panel |
| 45 | 45 | Other Light Conventional Truck Type |
| 48 | 48 | Unknown Light Truck Type |
| 49 | 49 | Unknown Light Vehicle Type (Automobile, Utility, Van, Or Light Truck) |
| | • | LUDES VAN BASED BUSES WITH A GVWR ≤ 10,000 LBS.) |
| 50 | 50 | School Bus (Designed To Carry Students, Not Cross Country Or Transit) |
| 51 | 51 | Cross Country/Intercity Bus (i.e., Greyhound) |
| 52 | 52 | Transit Bus (City Bus) |
| 55 | 55 | Van-Based Bus (GVWR > 10,000 lbs) |
| 58 50 | 58 50 | Other Bus Type |
| 59 | 59 | Unknown Bus Type |
| | | NVY TRUCKS (GVWR > 10,000 LBS) |
| 60 | 60 | Step Van (GVWR > 10,000 lbs) |
| 61 | 61 | Single-Unit Straight Truck or Cab-Chassis (GVWR range 10,001 to 19,500 lbs) |
| 62 | 62 | Single-Unit Straight Truck or Cab-Chassis (GVWR range 19,501 to 26,000 lbs) |
| 63 | 63 | Single-Unit Straight Truck or Cab-Chassis (GVWR > 26,000 lbs) |
| 64 | 64 | Single Unit Straight Truck or Cab-Chassis (GVWR unknown) |
| 66 | 66 | Truck-Tractor (Cab Only, Or With Any Number Of Trailing Units; Any Weight) |
| 67 | 67 | Medium/Heavy Pickup (GVWR > 10,000 lbs) |
| 71 | 71 | Unknown if Single-Unit or Combination-Unit Medium Truck (GVWR range 10,001 to 26,000 lbs) |
| 72 | 72 | Unknown if Single-Unit or Combination-Unit Heavy Truck (GVWR > 26,000 lbs) |
| 78 | 78 | Unknown Medium/Heavy Truck Type |
| 79 | 79 | Unknown Truck Type (Light/Medium/Heavy) |
| MOT | OR HOM | MES . |
| 42 | 42 | Light Truck Based Motor Home (Chassis Mounted) |
| 65 | 65 | Medium/Heavy Truck-Based Motor Home |
| 73 | 73 | Camper or Motor Home, Unknown Truck Type |
| | | |

V11 Body Type (continued)

| | 2017- | |
|------|----------|---|
| 2016 | Later | |
| МОТ | ORED C | YCLES, MOPEDS, ALL-TERRAIN VEHICLES, ALL-TERRAIN CYCLES |
| 80 | | Motorcycle |
| | 80 | Two Wheel Motorcycle (excluding motor scooters) |
| 81 | | Moped (Motorized Bicycle) |
| | 81 | Moped or Motorized Bicycle |
| 82 | | Three Wheeled Motorcycle Or Moped |
| | 82 | Three-wheel Motorcycle (2 Rear Wheels) |
| 83 | | Off-Road Motorcycle (2-Wheel) |
| | 83 | Off-Road Motorcycle |
| | 84 | Motor Scooter |
| | 85 | Unenclosed Three Wheel Motorcycle / Unenclosed Autocycle (1 Rear Wheel) |
| | 86 | Enclosed Three Wheel Motorcycle / Enclosed Autocycle (1 Rear Wheel) |
| | 87 | Unknown Three Wheel Motorcycle Type |
| 88 | | Other Motored Cycle Type (Minibike, Motor Scooter, Pocket Motorcycles, Pocket Bikes) |
| | 88 | Other Motored Cycle Type (Mini-bikes, Pocket Motorcycles, "Pocket Bikes") |
| 89 | 89 | Unknown Motored Cycle Type |
| 90 | 90 | ATV (All-Terrain Vehicle) / ATC (All-Terrain Cycle) |
| OTH | IER VEHI | CLES |
| 91 | 91 | Snowmobile |
| 92 | 92 | Farm Equipment Other Than Trucks |
| 93 | 93 | Construction Equipment Other Than Trucks (Includes Graders) |
| 94 | 94 | Low Speed Vehicle (LSV)/Neighborhood Electric Vehicle (NEV) |
| 95 | 95 | Golf Cart |
| | 96 | Recreational Off-Highway Vehicle (ROV) |
| 97 | 97 | Other Vehicle Type (Includes Go-Cart, Fork-Lift, City Street Sweeper) |
| 98 | 98 | Not Reported |
| 99 | 99 | Unknown Body Type |

V12 Vehicle Model Year

Definition: This data element identifies the manufacturer's model year of this vehicle.

Additional Information: See this data element in the Vehicle data file section for more

information.

SAS Name: PMODYEAR

Attribute Codes

2016-Later

xxxx Actual Model Year 9998 Not Reported 9999 Unknown

V13 Vehicle Identification Number (VIN)

Definition: This data element records the vehicle identification number (VIN) of this vehicle assigned by the vehicle manufacturer. The VIN contains information on the vehicle such as: manufacturer, model year, model, body type, restraint type, etc.

Additional Information: See this data element in the Vehicle data file section for more

information.

SAS Name: PVIN
Attribute Codes

| 2016-2017 | 2018-Later | |
|-------------|-------------|---|
| 00000000000 | 00000000000 | No VIN Required |
| XXXXXXXXXXX | XXXXXXXXXXX | First 12 Characters of the VIN |
| 88888888888 | 8888888888 | Not Reported |
| 99999999999 | | Unknown |
| | 99999999999 | Reported as Unknown |
| | * | VIN Character Missing or Not Decipherable |

V14 Vehicle Trailing

Definition: This data element identifies whether this vehicle had any attached trailing units or was towing another motor vehicle. A trailing unit can be a horse trailer, fifth wheel trailer, camper, boat, truck trailer, towed vehicle or any other trailer.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PTRAILER

Attribute Codes

2016-Later

- 0 No Trailing Units
- 1 Yes, One Trailing Unit
- 2 Yes, Two Trailing Units
- 3 Yes, Three or More Trailing Units
- 4 Yes, Number of Trailing Units Unknown
- 5 Vehicle Towing Another Motor Vehicle Fixed Linkage
- 6 Vehicle Towing Another Motor Vehicle Non-fixed Linkage
- 9 Unknown

V15 Trailer Vehicle Identification Number

Definition: This data element records the vehicle identification number (VIN) of any trailing units of a combination vehicle.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PTRLR1VIN, PTRLR2VIN, PTRLR3VIN

| 2016-2017 | 2018-Later | |
|-------------|-------------|---|
| 00000000000 | 00000000000 | No VIN Required |
| XXXXXXXXXXX | XXXXXXXXXXX | First 12 Characters of the VIN |
| 77777777777 | 77777777777 | No Trailing Units |
| 8888888888 | 8888888888 | Not Reported |
| 99999999999 | | Unknown |
| | 99999999999 | Reported as Unknown |
| | * | VIN Character Missing or Not Decipherable |

V17 Motor Carrier Identification Number (MCID)

Definition: This data element records the issuing authority and motor carrier identification number if applicable to this vehicle.

Additional Information: This 11-character data element is the combination of two data elements, the 2-digit Motor Carrier Issuing Authority code (MCARR_I1) followed by the 9-character Identification Number (MCARR_I2).

See this data element in the Vehicle data file section for more information.

SAS Name: PMCARR_ID

| 2016-2017 | 2018-Later | |
|---------------------------|---------------------------|--|
| 00000000000 xxxxxxxxxx | 00000000000 xxxxxxxxxx | Not Applicable 11-Character Combination of MCARR_I1 followed by MCARR_I2 |
| 7777777777 | 7777777777 | Not Reported |
| 8888888888 | 8888888888 | None |
| 9999999999 | | Unknown |
| | 9999999999 | Reported as Unknown |

V17A MCID Issuing Authority

Definition: This data element records the issuing authority if applicable to this vehicle. **Additional Information:** See this data element in the Vehicle data file section for more

information.

SAS Name: PMCARR_I1

| 2016- 2017 | 2018- Later | |
|---------------|----------------|----------------------------|
| 0 | 0 | Not Applicable |
| 1-56 | 1-56 | State Code [See next page] |
| 57 | 57 | US DOT |
| 58 | 58 | MC/MX (ICC) |
| 77 | 77 | Not Reported |
| 88 | 88 | None |
| 95 | 95 | Canada |
| 96 | 96 | Mexico |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

V17A MCID Issuing Authority (continued)

Attribute Codes

2016-Later

- 1 Alabama
- 2 Alaska
- 3 American Samoa
- 4 Arizona
- 5 Arkansas
- 6 California
- 8 Colorado
- 9 Connecticut
- 10 Delaware
- 11 District of Columbia
- 12 Florida
- 13 Georgia
- 14 Guam
- 15 Hawaii
- 16 Idaho
- 17 Illinois
- 18 Indiana
- 19 Iowa
- 20 Kansas
- 21 Kentucky
- 22 Louisiana
- 23 Maine
- 24 Maryland
- 25 Massachusetts
- 26 Michigan
- 27 Minnesota
- 28 Mississippi
- 29 Missouri

- 30 Montana
- 31 Nebraska
- 32 Nevada
- 33 New Hampshire
- 34 New Jersey
- 35 New Mexico
- 36 New York
- 37 North Carolina
- 38 North Dakota
- 39 Ohio
- 40 Oklahoma
- 41 Oregon
- 42 Pennsylvania
- 43 Puerto Rico
- 44 Rhode Island
- 45 South Carolina
- 46 South Dakota
- 47 Tennessee
- 48 Texas
- 49 Utah
- 50 Vermont
- 51 Virginia
- 52 Virgin Islands
- 53 Washington
- 54 West Virginia
- 55 Wisconsin
- 56 Wyoming

V17B MCID Identification Number

Definition: This data element records the motor carrier identification number if applicable to this vehicle.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PMCARR_I2

| 2016-2017 | 2018-Later | |
|-----------|------------|-----------------------|
| 00000000 | 00000000 | Not Applicable |
| XXXXXXXX | XXXXXXXX | Actual 9-Digit Number |
| 77777777 | 77777777 | Not Reported |
| 88888888 | 88888888 | None |
| 99999999 | | Unknown |
| | 99999999 | Reported as Unknown |

V18 Gross Vehicle Weight Rating

Definition: This data element identifies the gross vehicle weight rating of this vehicle if applicable.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PGVWR

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-------------------------|
| 0 | 0 | Not Applicable |
| 1 | 1 | 10,000 lbs or Less |
| 2 | 2 | 10,001 lbs - 26,000 lbs |
| 3 | 3 | 26,001 lbs or More |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

V19 Vehicle Configuration

Definition: This data element describes the general configuration of this vehicle if applicable.

Additional Information: See this data element in the Vehicle data file section for more

information.

SAS Name: PV_CONFIG

Attribute Codes

2016-Later

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--|
| 0 | 0 | Not Applicable |
| 1 | 1 | Single-Unit Truck (2 axles and GVWR more than 10,000 lbs.) |
| 2 | 2 | Single-Unit Truck (3 or More axles) |
| 4 | 4 | Truck Pulling Trailer(s) |
| 5 | 5 | Truck Tractor (Bobtail, i.e., Tractor Only, No Trailer) |
| 6 | 6 | Truck Tractor/Semi-Trailer |
| 7 | 7 | Truck Tractor/Double |
| 8 | 8 | Truck Tractor/Triple |
| 10 | 10 | Vehicle 10,000 lbs or Less Placarded for Hazardous Materials |
| 19 | 19 | Truck More than 10,000 lbs, Cannot Classify |
| 20 | 20 | Bus/Large Van (Seats for 9-15 Occupants, Including Driver) |
| 21 | 21 | Bus (Seats for More Than 15 Occupants, Including Driver) |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

V20 Cargo Body Type

Definition: This data element identifies the primary cargo carrying capability of this vehicle if applicable.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PCARGTYP

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--------------------------------|
| 0 | 0 | Not Applicable |
| 1 | 1 | Van/Enclosed Box |
| 2 | 2 | Cargo Tank |
| 3 | 3 | Flatbed |
| 4 | 4 | Dump |
| 5 | 5 | Concrete Mixer |
| 6 | 6 | Auto Transporter |
| 7 | 7 | Garbage/Refuse |
| 8 | 8 | Grain/Chips/Gravel |
| 9 | 9 | Pole-Trailer |
| 10 | 10 | Log |
| 11 | 11 | Intermodal Container Chassis |
| 12 | 12 | Vehicle Towing Another Vehicle |
| 22 | 22 | Bus |
| 96 | 96 | No Cargo Body |
| 97 | 97 | Other |
| 98 | 98 | Unknown Cargo Body Type |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

V21A/HM1 Hazardous Materials Involvement

Definition: This data element identifies whether this vehicle was carrying hazardous materials.

Additional Information: See this data element in the Vehicle data file section for more

information.

SAS Name: PHAZ_INV

Attribute Codes

2016-Later

1 No

2 Yes

V21B/HM2 Hazardous Materials Placard

Definition: This data element identifies the presence of hazardous materials for this vehicle and whether this vehicle displayed a hazardous materials placard.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PHAZPLAC

Attribute Codes

2016-Later

- 0 Not Applicable
- 1 No
- 2 Yes
- 8 Not Reported

V21C/HM3 Hazardous Material Identification Number

Definition: This data element identifies the 4-digit hazardous material identification number for this vehicle.

Additional Information: In 2018 this data element was changed to alphanumeric to retain all four digits.

See this data element in the Vehicle data file section for more information.

SAS Name: PHAZ ID

Attribute Codes

2016-Later

0 Not Applicable

xxxx Actual 4-Digit Number

8888 Not Reported

V21D/HM4 Hazardous Material Class Number

Definition: This data element identifies the single-digit hazardous material class number for

this vehicle.

Additional Information: See this data element in the Vehicle data file section for more

information.

SAS Name: PHAZ_CNO

Attribute Codes

2016-Later

- 0 Not Applicable
- 1 Explosives
- 2 Gases
- 3 Flammable / Combustible Liquid
- 4 Flammable Solid, Spontaneously Combustible, and Dangerous When Wet
- 5 Oxidizer and Organic Peroxide
- 6 Poison and Poison Inhalation Hazard
- 7 Radioactive
- 8 Corrosive
- 9 Miscellaneous
- 88 Not Reported

V21E/HM5 Release of Hazardous Material from the Cargo Compartment

Definition: This data element identifies whether any hazardous cargo was released from the cargo tank or compartment of this vehicle.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PHAZ REL

Attribute Codes

2016-Later

- 0 Not Applicable
- 1 No
- 2 Yes
- 8 Not Reported

V22 Bus Use

Definition: This data element describes the common type of bus service this vehicle was being used as at the time of the crash or the primary use for the bus if not in service at the time of the crash.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PBUS_USE

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-----------------------------------|
| 0 | 0 | Not a Bus |
| 1 | 1 | School |
| 4 | 4 | Intercity |
| 5 | 5 | Charter/Tour |
| 6 | 6 | Transit/Commuter |
| 7 | 7 | Shuttle |
| 8 | 8 | Modified for Personal/Private Use |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

V23 Special Use

Definition: This data element identifies any special use associated with this vehicle at the time of the crash.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PSP_USE

| 2016- 2018 | 2019- Later | |
|---------------|----------------|---|
| 0 | 0 | No Special Use |
| 1 | 1 | Taxi |
| 2 | 2 | Vehicle Used for School Transport |
| 3 | 3 | Vehicle Used as Other Bus |
| 4 | 4 | Military |
| 5 | 5 | Police |
| 6 | 6 | Ambulance |
| 7 | 7 | Fire Truck |
| 8 | 8 | Non-Transport Emergency Services Vehicle |
| | 10 | Safety Service Patrols – Incident Response |
| | 11 | Other Incident Response |
| | 12 | Towing – Incident Response |
| 13 | | Incident Response |
| | 20 | Vehicle Used for Electronic Ride-Hailing (Transportation Network Company) |
| | 21 | Mail Carrier |
| | 22 | Public Utility |
| | 23 | Rental Truck over 10,000 lbs. |
| | 24 | Truck Operating with Crash Attenuator Equipment |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| 99 | 99 | Reported as Unknown (Since 2018) |

V24 Emergency Motor Vehicle Use

Definition: This data element identifies whether this vehicle was engaged in emergency use. Emergency Use indicates operation of any motor vehicle that is legally authorized by a government authority to respond to emergencies with or without the use of emergency warning equipment, such as a police vehicle, fire truck or ambulance while actually engaged in such response.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PEM USE

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---|
| 0 | 0 | Not Applicable |
| 2 | 2 | Non-Emergency, Non-Transport |
| 3 | 3 | Non-Emergency Transport |
| 4 | 4 | Emergency Operation, Emergency Warning Equipment Not In Use |
| 5 | 5 | Emergency Operation, Emergency Warning Equipment In Use |
| 6 | 6 | Emergency Operation, Emergency Warning Equipment in Use Unknown |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

V29A Area of Impact – Initial Contact Point

Definition: This data element identifies the area on this vehicle that produced the first instance of injury to non-motorists or occupants of this vehicle, or that resulted in the first instance of damage to other property or to this vehicle.

Additional Information: See this data element in the Vehicle data file section for more

information.

SAS Name: PIMPACT1

| 2016 | 2017 | 2018 | 2019- Later | |
|------|------|------|----------------|--|
| 0 | 0 | 0 | 0 | Non-Collision |
| 1-12 | 1-12 | 1-12 | 1-12 | Clock points |
| 13 | 13 | 13 | 13 | Top |
| 14 | 14 | 14 | 14 | Undercarriage |
| 18 | 18 | 18 | 18 | Cargo/Vehicle Parts Set-In-Motion |
| 19 | 19 | 19 | | Other Objects Set-In-Motion |
| | | | 19 | Other Objects or Person Set-In-Motion |
| | 20 | 20 | 20 | Object Set in Motion, Unknown if Cargo/Vehicle |
| | | | | Parts or Other |
| 61 | 61 | 61 | 61 | Left |
| 62 | 62 | 62 | 62 | Left-Front Side |
| 63 | 63 | 63 | 63 | Left-Back Side |
| 81 | 81 | 81 | 81 | Right |
| 82 | 82 | 82 | 82 | Right-Front Side |
| 83 | 83 | 83 | 83 | Right-Back Side |
| 98 | 98 | 98 | 98 | Not Reported |
| 99 | 99 | | | Unknown |
| | | 99 | 99 | Reported as Unknown |

V30 Extent of Damage

Definition: This data element records the amount of damage sustained by this vehicle as indicated on the police crash report based on an operational damage scale.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PVEH_SEV

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---------------------|
| 0 | 0 | No Damage |
| 2 | 2 | Minor Damage |
| 4 | 4 | Functional Damage |
| 6 | 6 | Disabling Damage |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

V31 Vehicle Removal

Definition: This data element describes the mode by which this vehicle left the scene of the crash.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PTOWED

| 2016- 2017 | 2018- Later | |
|---------------|----------------|-----------------------------------|
| 2 | 2 | Towed Due to Disabling Damage |
| 3 | 3 | Towed Not Due to Disabling Damage |
| 5 | 5 | Not Towed |
| | 7 | Towed, Unknown Reason |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |
| | | |

V33 Most Harmful Event

Definition: This data element describes the event that resulted in the most severe injury or, if no injury, the greatest property damage involving this vehicle.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PM HARM

| 2016 | 2017 | 2018- Later | | | | |
|---------------------------------|--------|----------------|---|--|--|--|
| NONCOLLISION | | | | | | |
| 1 | 1 | 1 | Rollover/Overturn | | | |
| 2 | 2 | 2 | Fire/Explosion | | | |
| 3 | 3 | 3 | Immersion or Partial Immersion | | | |
| 4 | 4 | 4 | Gas Inhalation | | | |
| 5 | 5 | 5 | Fell/Jumped from Vehicle | | | |
| 6 | 6 | 6 | Injured in Vehicle (Non-Collision) | | | |
| 7 | 7 | 7 | Other Noncollision | | | |
| 16 | 16 | 16 | Thrown or Falling Object | | | |
| 44 | 44 | 44 | Pavement Surface Irregularity (Ruts, Potholes, Grates, etc.) | | | |
| 51 | 51 | 51 | Jackknife (Harmful to This Vehicle) | | | |
| 72 | 72 | | Cargo/Equipment Loss or Shift (Harmful to This Vehicle) | | | |
| | | 72 | Cargo/Equipment Loss, Shift, or Damage (Harmful) | | | |
| COL | LISION | WITH MC | OTOR VEHICLE IN TRANSPORT | | | |
| 12 | 12 | 12 | Motor Vehicle In-Transport | | | |
| 54 | 54 | 54 | Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport | | | |
| 55 | 55 | 55 | Motor Vehicle in Motion Outside the Trafficway | | | |
| COLLISION WITH OBJECT NOT FIXED | | | | | | |
| 8 | 8 | 8 | Pedestrian | | | |
| 9 | 9 | 9 | Pedalcyclist | | | |
| 10 | 10 | 10 | Railway Vehicle | | | |
| 11 | 11 | 11 | Live Animal | | | |
| 14 | 14 | 14 | Parked Motor Vehicle | | | |
| 15 | 15 | 15 | Non-Motorist on Personal Conveyance | | | |
| 18 | 18 | 18 | Other Object Not Fixed | | | |
| 45 | 45 | 45 | Working Motor Vehicle | | | |
| 49 | 49 | 49 | Ridden Animal or Animal Drawn Conveyance | | | |
| 73 | 73 | 73 | Object That Had Fallen From Motor Vehicle In-Transport | | | |
| 74 | 74 | 74 | Road Vehicle on Rails | | | |
| | 91 | 91 | Unknown Object Not Fixed | | | |

V33 Most Harmful Event(continued)

| 2016 | 2017 | 2018- Later | |
|------|--------|----------------|--|
| COL | LISION | WITH FIX | ED OBJECT |
| 17 | 17 | 17 | Boulder |
| 19 | 19 | 19 | Building |
| 20 | 20 | 20 | Impact Attenuator/Crash Cushion |
| 21 | 21 | 21 | Bridge Pier or Support |
| 23 | 23 | 23 | Bridge Rail (Includes Parapet) |
| 24 | 24 | 24 | Guardrail Face |
| 25 | 25 | 25 | Concrete Traffic Barrier |
| 26 | 26 | 26 | Other Traffic Barrier |
| 30 | 30 | 30 | Utility Pole/Light Support |
| 31 | 31 | 31 | Post, Pole or Other Support |
| 32 | 32 | 32 | Culvert |
| 33 | 33 | 33 | Curb |
| 34 | 34 | 34 | Ditch |
| 35 | 35 | 35 | Embankment |
| 38 | 38 | 38 | Fence |
| 39 | 39 | 39 | Wall |
| 40 | 40 | 40 | Fire Hydrant |
| 41 | 41 | 41 | Shrubbery |
| 42 | 42 | 42 | Tree (Standing Only) |
| 43 | 43 | 43 | Other Fixed Object |
| 46 | 46 | 46 | Traffic Signal Support |
| 48 | 48 | 48 | Snow Bank |
| 50 | 50 | 50 | Bridge Overhead Structure |
| 52 | 52 | 52 | Guardrail End |
| 53 | 53 | 53 | Mail Box |
| 57 | 57 | 57 | Cable Barrier |
| 58 | 58 | 58 | Ground |
| 59 | 59 | 59 | Traffic Sign Support |
| | 93 | 93 | Unknown Fixed Object |
| | | 98 | Harmful Event, Details Not Reported (Since 2019) |
| 99 | 99 | | Unknown |
| | | 99 | Reported as Unknown |

V34 Fire Occurrence

Definition: This data element identifies whether a fire in any way related to the crash occurred in this vehicle.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PFIRE

Attribute Codes

2016-Later

0 No or Not Reported

1 Yes

V36 Related Factors- Vehicle Level

Definition: This data element records factors related to this vehicle expressed in the case materials.

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PVEH_SC1, PVEH_SC2

| 2016- 2017 | 2018 | 2019- Later | |
|---------------|------|----------------|--|
| 0 | 0 | 0 | None |
| | | 29 | Default Code Used for Vehicle Numbering |
| 30 | 30 | 30 | Multi-Wheeled Motorcycle Conversion |
| 33 | 33 | 33 | Vehicle Being Pushed by Non-Motorist |
| 35 | 35 | 35 | Reconstructed/Altered Vehicle |
| 39 | 39 | 39 | Highway Construction, Maintenance or Utility Vehicle, In Transport (Inside or Outside Work Zone) |
| 40 | 40 | | Highway Incident Response Vehicle |
| 41 | 41 | 41 | Police Fire or EMS Vehicle Working at the Scene of an Emergency or Performing Other Traffic Control Activities |
| 42 | 42 | 42 | Other Working Vehicle (Not Construction, Maintenance, Utility, Police, Fire, or EMS Vehicle) |
| 44 | 44 | 44 | Adaptive Equipment |
| | 45 | 45 | Slide-in Camper |
| 99 | | | Unknown |
| | 99 | 99 | Reported as Unknown |

V100 Make Model Combined

Definition: This derived data element represents the 5-digit combination of two data elements, the 2-digit "Vehicle Make" code (MAKE) followed by the 3-digit "Vehicle Model" code (MODEL).

Additional Information: See this data element in the Vehicle data file section for more information.

SAS Name: PMAK MOD

Attribute Codes

2016-Later

See the current <u>FARS/CRSS Coding and Validation Manual</u> for vehicle make and model codes.

The PBTYPE Data File

The Pbtype data file includes data on pedestrians, bicyclists, and people on personal conveyances. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, VEH_NO and PER_NO, which are described in the beginning of the Data Element Definitions and Codes section. The Pbtype data file also contains the data elements on the following pages.

CASENUM, VEH_NO and PER_NO are the unique identifiers. CASENUM should be used to merge the Pbtype data file with the Accident data file.

P5/NM5 Age

Definition: This data element identifies the person's age, in years, with respect to the person's last birthday.

Additional Information:

SAS Name: PBAGE

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--------------------------------|
| 0 | 0 | Less than One Year |
| 1-120 | 1-120 | Age of the Individual in Years |
| 998 | 998 | Not Reported |
| 999 | | Unknown |
| | 999 | Reported as Unknown |

P6/NM6 Sex

Definition: This data element identifies the sex of the person involved in the crash

Additional Information:

SAS Name: PBSEX

| 2018- Later | |
|----------------|---------------------|
| 1 | Male |
| 2 | Female |
| 8 | Not Reported |
| | Unknown |
| 9 | Reported as Unknown |
| | Later 1 2 |

P7/NM7 Person Type

Definition: This data element describes the role of this person involved in the crash.

Additional Information: SAS Name: PBPTYPE

Attribute Codes

2016-Later

- 5 Pedestrian6 Bicyclist
- 7 Other Cyclist
- 8 Person on Personal Conveyances

NM9-PB27 Marked Crosswalk Present

Definition: This data element indicates if a marked crosswalk was present at the crash site. **Additional Information:** This data element is applicable to both pedestrians and bicyclists.

SAS Name: PBCWALK

Attribute Codes

2016-Later

- 0 None Noted
- 1 Yes
- 9 Unknown

NM9-PB28 Sidewalk Present

Definition: This data element indicates if a sidewalk was present at the crash site.

Additional Information: This data element is applicable to both pedestrians and bicyclists.

SAS Name: PBSWALK

Attribute Codes

2016-Later

0 None Noted

1 Yes

9 Unknown

NM9-PB29 School Zone

Definition: This data element indicates if the crash occurred in a school zone.

Additional Information: This data element is applicable to both pedestrians and bicyclists.

SAS Name: PBSZONE

Attribute Codes

2016-Later

0 None Noted

1 Yes

9 Unknown

NM9-PB30 Crash Type – Pedestrian

Definition: This data element summarizes the circumstances of the crash for this pedestrian.

Additional Information: This data element is applicable to pedestrians only.

SAS Name: PEDCTYPE

| 2016 | 2017- Later | |
|------------|----------------|--|
| 0 | 0 | Not a Pedestrian |
| 120 | 120 | Dispute-Related |
| 130 | 130 | Pedestrian on Vehicle |
| 140 | 140 | Vehicle-Vehicle/Object |
| 150 | 150 | Motor Vehicle Loss of Control |
| 160 | 160 | Pedestrian Loss of Control |
| 190 | 190 | Other Unusual Circumstances |
| 211 | 211 | Backing Vehicle – Non-Trafficway – Driveway |
| 212 | 212 | Backing Vehicle – Driveway Access |
| 213 | 213 | Backing Vehicle – Trafficway |
| 214 | 214 | Backing Vehicle – Non-Trafficway – Parking Lot |
| 219 | 219 | Backing Vehicle – Other/Unknown |
| 220 | 220 | Driverless Vehicle |
| 230 | 230 | Disabled Vehicle-Related |
| 240 | 240 | Emergency Vehicle-Related |
| 250 | 250 | Play Vehicle-Related |
| 311 | 311 | Working in Roadway |
| 312 | 312 | Playing in Roadway |
| 313 | 313 | Lying in Roadway |
| 320 | 320 | Entering/Exiting Parked or Stopped Vehicle |
| 330 | 330 | Mailbox-Related |
| 341 | | Transit Bus-Related |
| | 341 | Transit Bus Stop-Related |
| 342 | 342 | School Bus Stop-Related |
| 360 | 360 | Ice Cream/Vendor Truck-Related |
| 410 | 410 | Walking/Running Along Roadway With Traffic – From Behind |
| 420 | 420 | Walking/Running Along Roadway With Traffic – From Front |
| 430 | 430 | Walking/Running Along Roadway Against Traffic – From Behind |
| 440 450 | 440 | Walking/Running Along Roadway Against Traffic – From Front |
| 459 461 | 459 461 | Walking/Running Along Roadway – Direction/Position Unknown |
| 461 465 | 461 465 | Motorist Entering Driveway |
| 469 | 465 469 | Motorist Exiting Driveway Driveway Access – Other/Unknown |
| 510 | 510 | Waiting to Cross – Vehicle Turning |
| 520 | 520 | Waiting to Cross – Vehicle Not Turning Waiting to Cross – Vehicle Not Turning |
| 590 | 520 590 | Waiting to Cross – Vehicle Action Unknown |
| 610 | 610 | Standing in Roadway |
| 620 | 620 | Walking in Roadway |
| 680 | 680 | Not At Intersection – Other/Unknown |
| 690 | 690 | At Intersection – Other/Unknown |

NM9-PB30 Crash Type – Pedestrian (continued)

Attribute Codes

| 2016 | 2017- Later | |
|------|----------------|--|
| 710 | 710 | Multiple Threat |
| 730 | 730 | Trapped |
| 741 | 741 | Dash |
| 742 | 742 | Dart-Out |
| 760 | 760 | Pedestrian Failed to Yield |
| 770 | 770 | Motorist Failed to Yield |
| 781 | 781 | Motorist Left Turn – Parallel Paths |
| 782 | 782 | Motorist Left Turn – Perpendicular Paths |
| 791 | 791 | Motorist Right Turn – Parallel Paths |
| 792 | 792 | Motorist Right Turn on Red – Parallel Paths |
| 794 | 794 | Motorist Right Turn on Red – Perpendicular Paths |
| 795 | 795 | Motorist Right Turn – Perpendicular Paths |
| 799 | 799 | Motorist Turn/Merge – Other/Unknown |
| 830 | 830 | Non-Trafficway – Parking Lot |
| 890 | 890 | Non-Trafficway – Other/Unknown |
| 900 | 900 | Other – Unknown Location |
| 910 | 910 | Crossing an Expressway |

NM9-PB30B Crash Type – Bicycle

Definition: This data element summarizes the circumstances of the crash for this bicyclist.

Additional Information: This data element is applicable to bicyclists only.

SAS Name: BIKECTYPE

Attribute Codes

- 0 Not a Cyclist
- 111 Motorist Turning Error Left Turn
- 112 Motorist Turning Error Right Turn
- 113 Motorist Turning Error Other
- 114 Bicyclist Turning Error Left Turn
- 115 Bicyclist Turning Error Right Turn
- 116 Bicyclist Turning Error Other
- 121 Bicyclist Lost Control Mechanical Problems
- 122 Bicyclist Lost Control Oversteering, Improper Braking, Speed
- 123 Bicyclist Lost Control Alcohol/Drug Impairment
- 124 Bicyclist Lost Control Surface Conditions
- 129 Bicyclist Lost Control Other/Unknown
- 131 Motorist Lost Control Mechanical Problems
- 132 Motorist Lost Control Oversteering, Improper Braking, Speed
- 133 Motorist Lost Control Alcohol/Drug Impairment
- 134 Motorist Lost Control Surface Conditions
- 139 Motorist Lost Control Other/Unknown
- 141 Motorist Drive-Out Sign-Controlled Intersection
- 142 Bicyclist Ride-Out Sign-Controlled Intersection
- 143 Motorist Drive-Through Sign-Controlled Intersection
- 144 Bicyclist Ride-Through Sign-Controlled Intersection
- 147 Multiple Threat Sign-Controlled Intersection
- 148 Sign-Controlled Intersection Other/Unknown
- 151 Motorist Drive-Out Right Turn on Red
- 152 Motorist Drive-Out Signalized Intersection
- 153 Bicyclist Ride-Out Signalized Intersection
- 154 Motorist Drive-Through Signalized Intersection
- 155 Bicyclist Ride-Through Signalized Intersection
- 155 Bicyclist Ride-Thiough Signalized Intersecti
- 156 Bicyclist Failed to Clear Trapped
- 157 Bicyclist Failed to Clear Multiple Threat
- 158 Signalized Intersection Other/Unknown
- 159 Bicyclist Failed to Clear Unknown
- 160 Crossing Paths Uncontrolled Intersection
- 180 Crossing Paths Intersection Other/Unknown
- 211 Motorist Left Turn Same Direction
- 212 Motorist Left Turn Opposite Direction
- 213 Motorist Right Turn Same Direction
- 214 Motorist Right Turn Opposite Direction
- 215 Motorist Drive-In/Out Parking

NM9-PB30B Crash Type – Bicycle (continued)

Attribute Codes

- 216 Bus/Delivery Vehicle Pullover
- 217 Motorist Right Turn on Red Same Direction
- 218 Motorist Right Turn on Red Opposite Direction
- 219 Motorist Turn/Merge Other/Unknown
- 221 Bicyclist Left Turn Same Direction
- 222 Bicyclist Left Turn Opposite Direction
- 223 Bicyclist Right Turn Same Direction
- 224 Bicyclist Right Turn Opposite Direction
- 225 Bicyclist Ride-out Parallel Path
- 231 Motorist Overtaking Undetected Bicyclist
- 232 Motorist Overtaking Misjudged Space
- 235 Motorist Overtaking Bicyclist Swerved
- 239 Motorist Overtaking Other/Unknown
- 241 Bicyclist Overtaking Passing on Right
- 242 Bicyclist Overtaking Passing on Left
- 243 Bicyclist Overtaking Parked Vehicle
- 244 Bicyclist Overtaking Extended Door
- 249 Bicyclist Overtaking Other/Unknown
- 250 Wrong-Way/Wrong-Side Bicyclist
- 255 Wrong-Way/Wrong-Side Motorist
- 259 Wrong-Way/Wrong-Side Unknown
- 280 Parallel Paths Other/Unknown
- 311 Bicyclist Ride-Out Residential Driveway
- 312 Bicyclist Ride-Out Commercial Driveway
- 313 Bicyclist Ride-Out Driveway, Unknown Type
- 318 Bicyclist Ride-Out Other Midblock
- 319 Bicyclist Ride-Out Unknown
- 321 Motorist Drive-Out Residential Driveway
- 322 Motorist Drive-Out Commercial Driveway
- 323 Motorist Drive-Out Driveway, Unknown Type
- 328 Motorist Drive-Out Other Midblock
- 329 Motorist Drive-Out Midblock Unknown
- 357 Multiple Threat Midblock
- 380 Crossing Paths Midblock Other/Unknown
- 610 Backing Vehicle
- 700 Play Vehicle-Related
- 800 Unusual Circumstances
- 910 Non-Trafficway
- 970 Unknown Approach Paths
- 980 Unknown Location

NM9-PB31 Crash Location – Pedestrian

Definition: This data element identifies where the pedestrian crash occurred with respect to an intersection.

Additional Information: This data element is applicable to pedestrians only.

SAS Name: PEDLOC

Attribute Codes

2016-Later

- 1 At Intersection
- 2 Intersection-Related
- 3 Not At Intersection
- 4 Non-Trafficway Location
- 7 Not a Pedestrian
- 9 Unknown/Insufficient Information

NM9-PB31B Crash Location – Bicycle

Definition: This data element identifies where the bicyclist crash occurred with respect to an

intersection.

Additional Information: This data element is applicable to bicyclists only.

SAS Name: BIKELOC

Attribute Codes

2016-Later

- 1 At Intersection
- 2 Intersection-Related
- 3 Not At Intersection
- 4 Non-Trafficway Location
- 7 Not a Cyclist
- 9 Unknown/Insufficient Information

NM9-PB32 Pedestrian Position

Definition: This data element identifies the position/location of the pedestrian with respect to the trafficway when contacted.

Additional Information: This data element is applicable to pedestrians only.

SAS Name: PEDPOS

Attribute Codes

2016-Later

- 1 Intersection Area
- 2 Crosswalk Area
- 3 Travel Lane
- 4 Paved Shoulder/Bicycle Lane/Parking Lane
- 5 Sidewalk/Shared-Use Path/Driveway Access
- 6 Unpaved Right-of-Way
- 7 Non-Trafficway Driveway
- 8 Non-Trafficway Parking Lot/Other
- 9 Other/Unknown
- 77 Not a Pedestrian

NM9-PB32B Bicyclist Position

Definition: This data element identifies the position/location of the bicyclist with respect to the trafficway when contacted.

Additional Information: This data element is applicable to bicyclists only.

SAS Name: BIKEPOS

Attribute Codes

2016-Later

- 1 Travel Lane
- 2 Bicycle Lane/Paved Shoulder/Parking Lane
- 3 Sidewalk/Crosswalk/Driveway Access
- 4 Shared-Use Path
- 5 Non-Trafficway Driveway
- 6 Non-Trafficway Parking Lot/Other
- 7 Not a Cyclist
- 8 Other
- 9 Unknown

NM9-PB33 Pedestrian Initial Direction of Travel

Definition: This data element identifies the initial direction of travel of the pedestrian prior to being contacted in the crash.

Additional Information: This data element is applicable to pedestrians only.

SAS Name: PEDDIR

Attribute Codes

| 2016 | 2017- Later | |
|------|----------------|---|
| 1 | 1 | Northbound |
| 2 | 2 | Eastbound |
| 3 | 3 | Southbound |
| 4 | 4 | Westbound |
| 7 | 7 | Not a Pedestrian |
| 8 | 8 | Not Applicable |
| 9 | | Unknown Initial Direction of Travel |
| | 9 | Not Derived / Unknown Initial Direction of Travel |

NM9-PB33B Bicyclist Initial Direction of Travel

Definition: This data element identifies the initial travel direction of the bicyclist with respect to the flow of traffic prior to being contacted in the crash.

Additional Information: This data element is applicable to bicyclists only.

SAS Name: BIKEDIR

Attribute Codes

- 1 With Traffic
- 2 Facing Traffic
- 3 Not Applicable
- 7 Not a Cyclist
- 9 Unknown

NM9-PB34 Motorist Initial Direction of Travel

Definition: This data element identifies the initial direction of travel of the motorist prior to being involved in a pedestrian crash.

Additional Information: This data element is applicable to pedestrians only.

SAS Name: MOTDIR

Attribute Codes

- 1 Northbound
- 2 Eastbound
- 3 Southbound
- 4 Westbound
- 7 Not a Pedestrian
- 8 Not Applicable
- 9 Unknown Initial Direction of Travel

NM9-PB35 Motorist Maneuver

Definition: This data element identifies if the motorist was engaged in a turning maneuver at an intersection prior to being involved in a pedestrian crash. The data element indicates the maneuver being made by the motorist at the time of a pedestrian collision.

Additional Information: This data element is applicable to pedestrians only.

SAS Name: MOTMAN

Attribute Codes

- 1 Left Turn
- 2 Right Turn
- 3 Straight Through
- 7 Not a Pedestrian
- 8 Not Applicable
- 9 Unknown Motorist Maneuver

NM9-PB36 Intersection Leg

Definition: The data element identifies the leg of the intersection where the pedestrian crash

occurred.

Additional Information: This data element is applicable to pedestrians only.

SAS Name: PEDLEG

Attribute Codes

- 1 Nearside
- 2 Farside
- 7 Not a Pedestrian
- 8 Not Applicable
- 9 Unknown/None of the Above

NM9-PB37 Pedestrian Scenario

Definition: This data element identifies the location and travel directions of the motorist and pedestrian for those crashes that occur at intersections. This data element summarizes the movements of the pedestrian and motorist in an intersection area.

Additional Information: This data element is applicable to pedestrians only.

SAS Name: PEDSNR

Attribute Codes

2017-

2016 Later

MOTORIST TRAVELING STRAIGHT THROUGH – CRASH OCCURRED ON NEAR (APPROACH) SIDE OF INTERSECTION

- 1a 1a Pedestrian Within Crosswalk Area, Traveled From Motorist's Left.
- 1b 1b Pedestrian Within Crosswalk Area, Traveled From Motorist's Right.
- 1c 1c Pedestrian Within Crosswalk Area, Approach Direction Unknown.
- -- 1d Pedestrian Within Crosswalk Area, Other
- 2a Pedestrian Outside Crosswalk Area, Traveled From Motorist's Left.
- 2b Pedestrian Outside Crosswalk Area, Traveled From Motorist's Right.
- 2c 2c Pedestrian Outside Crosswalk Area, Approach Direction Unknown.
- -- 2d Pedestrian Outside Crosswalk Area, Other

MOTORIST TRAVELING STRAIGHT THROUGH – CRASH OCCURRED ON FAR SIDE OF INTERSECTION

- 3a Pedestrian Within Crosswalk Area, Traveled From Motorist's Left.
- 3b 3b Pedestrian Within Crosswalk Area, Traveled From Motorist's Right.
- 3c 3c Pedestrian Within Crosswalk Area, Approach Direction Unknown.
- -- 3d Pedestrian Within Crosswalk Area, Other
- 4a 4a Pedestrian Outside Crosswalk Area, Traveled From Motorist's Left.
- 4b 4b Pedestrian Outside Crosswalk Area, Traveled From Motorist's Right.
- 4c 4c Pedestrian Outside Crosswalk Area, Approach Direction Unknown.
- -- 4d Pedestrian Outside Crosswalk Area. Other

MOTORIST TURNING RIGHT – CRASH OCCURRED ON NEAR (APPROACH) SIDE OF INTERSECTION

- 5a Fedestrian Within Crosswalk Area, Traveled From Motorist's Left.
- 5b Fedestrian Within Crosswalk Area, Traveled From Motorist's Right.
- 5c 5c Pedestrian Within Crosswalk Area, Approach Direction Unknown.
- -- 5d Pedestrian Within Crosswalk Area. Other
- 6a Pedestrian Outside Crosswalk Area, Traveled From Motorist's Left.
- 6b 6b Pedestrian Outside Crosswalk Area, Traveled From Motorist's Right.
- 6c 6c Pedestrian Outside Crosswalk Area, Approach Direction Unknown.
- -- 6d Pedestrian Outside Crosswalk Area, Other

NM9-PB37 Pedestrian Scenario (continued)

Attribute Codes

2017-

2016 Later

MOTORIST TURNING RIGHT - CRASH OCCURRED ON FAR SIDE OF INTERSECTION

- 7a Pedestrian Within Crosswalk Area, Approach Direction Same as Motorist's.
- 7b Pedestrian Within Crosswalk Area, Approach Direction Opposite Motorist's.
- 7c 7c Pedestrian Within Crosswalk Area, Approach Direction Unknown.
- -- 7d Pedestrian Within Crosswalk Area, Other
- 8a 8a Pedestrian Outside Crosswalk Area, Approach Direction Same as Motorist's.
- 8b 8b Pedestrian Outside Crosswalk Area, Approach Direction Opposite Motorist's.
- 8c 8c Pedestrian Outside Crosswalk Area, Approach Direction Unknown.
- -- 8d Pedestrian Outside Crosswalk Area, Other

MOTORIST TURNING LEFT – CRASH OCCURRED ON NEAR (APPROACH) SIDE OF INTERSECTION

| 9a | 9a | Pedestrian Within Crosswalk Area, Traveled From Motorist's Left. | |
|----|----|--|--|
|----|----|--|--|

- 9b 9b Pedestrian Within Crosswalk Area, Traveled From Motorist's Right.
- 9c 9c Pedestrian Within Crosswalk Area, Approach Direction Unknown.
- -- 9d Pedestrian Within Crosswalk Area, Other
- 10a 10a Pedestrian Outside Crosswalk Area, Traveled From Motorist's Left.
- 10b 10b Pedestrian Outside Crosswalk Area, Traveled From Motorist's Right.
- 10c 10c Pedestrian Outside Crosswalk Area, Approach Direction Unknown.
- -- 10d Pedestrian Outside Crosswalk Area, Other

MOTORIST TURNING LEFT - CRASH OCCURRED ON FAR SIDE OF INTERSECTION

- 11a Pedestrian Within Crosswalk Area, Approach Direction Same as Motorist's.
- 11b Pedestrian Within Crosswalk Area, Approach Direction Opposite Motorist's.
- 11c 11c Pedestrian Within Crosswalk Area, Approach Direction Unknown.
- -- 11d Pedestrian Within Crosswalk Area, Other
- 12a 12a Pedestrian Outside Crosswalk Area, Approach Direction Same as Motorist's.
- 12b 12b Pedestrian Outside Crosswalk Area, Approach Direction Opposite Motorist's.
- 12c 12c Pedestrian Outside Crosswalk Area, Approach Direction Unknown.
- -- 12d Pedestrian Outside Crosswalk Area, Other
- 7 Not a Pedestrian
- 8 Not Applicable
- -- 99 Unknown/Insufficient Information

NM9-PB38 Crash Group – Pedestrian

Definition: This data element provides general groupings of the more specific individual

Pedestrian Crash Types.

Additional Information: This data element is applicable to pedestrians only.

SAS Name: PEDCGP

Attribute Codes

| 2016 | 2017- Later | |
|------|----------------|---|
| | _ | Not a Dadastrian |
| 0 | 0 | Not a Pedestrian |
| 100 | 100 | Unusual Circumstances |
| 200 | 200 | Backing Vehicle |
| 310 | 310 | Working or Playing in Roadway |
| 340 | | Bus-Related |
| | 340 | Bus Stop-Related |
| 350 | 350 | Unique Midblock |
| 400 | 400 | Walking/Running Along Roadway |
| 460 | 460 | Driveway Access/ Driveway Access Related |
| 500 | 500 | Waiting to Cross |
| 600 | 600 | Pedestrian in Roadway – Circumstances Unknown |
| 720 | 720 | Multiple Threat/Trapped |
| 740 | 740 | Dash/Dart-Out |
| 750 | 750 | Crossing Roadway – Vehicle Not Turning |
| 790 | 790 | Crossing Roadway – Vehicle Turning |
| 800 | 800 | Non-Trafficway |
| 910 | 910 | Crossing Expressway |
| 990 | 990 | Other/Unknown – Insufficient Details |

NM9-PB38B Crash Group – Bicycle

Definition: This data element provides general groupings of the more specific individual Bicyclist Crash Types.

Additional Information: This data element is applicable to bicyclists only.

SAS Name: BIKECGP

Attribute Codes

- 0 Not a Cyclist
- 110 Loss of Control/Turning Error
- 140 Motorist Failed to Yield Sign-Controlled Intersection
- 145 Bicyclist Failed to Yield Sign-Controlled Intersection
- 150 Motorist Failed to Yield Signalized Intersection
- 158 Bicyclist Failed to Yield Signalized Intersection
- 190 Crossing Paths Other Circumstances
- 210 Motorist Left Turn/Merge
- 215 Motorist Right Turn/Merge
- 219 Parking/Bus-Related
- 220 Bicyclist Left Turn/Merge
- 225 Bicyclist Right Turn/Merge
- 230 Motorist Overtaking Bicyclist
- 240 Bicyclist Overtaking Motorist
- 258 Wrong-Way/Wrong-Side
- 290 Parallel Paths Other Circumstances
- 310 Bicyclist Failed to Yield Midblock
- 320 Motorist Failed to Yield Midblock
- 600 Backing Vehicle
- 850 Other/Unusual Circumstances
- 910 Non-Trafficway
- 990 Other/Unknown Insufficient Details

The CEVENT Data File

The Cevent data file includes harmful and non-harmful events in the crash. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, and EVENTNUM, which are described in the beginning of the Data Element Definitions and Codes section. The Cevent data file also contains the data elements on the following pages.

CASENUM and EVENTNUM are the unique identifiers for each record. CASENUM should be used to merge the Cevent data file with the Accident data file.

C18A Vehicle Number (This Vehicle)

Definition: This data element identifies the "Vehicle Number" (VEH_NO) of this in-transport motor vehicle described in this event.

Additional Information: This is the vehicle described in "Sequence of Events" for this event.

SAS Name: VNUMBER1

Attribute Codes

2016-Later

1-999 Vehicle Number

C18B Area of Impact (This Vehicle)

Definition: This data element identifies the impact point, if any, on this in-transport motor vehicle that produced property damage or personal injury in this event.

Additional Information: This is the impact area of the vehicle recorded in "Vehicle Number (This Vehicle)" and described in "Sequence of Events."

SAS Name: AOI1
Attribute Codes

| | | | 2019- | |
|------|------|------|-------|--|
| 2016 | 2017 | 2018 | Later | |
| 0 | 0 | 0 | 0 | Non-Collision |
| 1-12 | 1-12 | 1-12 | 1-12 | Clock points |
| 13 | 13 | 13 | 13 | Top |
| 14 | 14 | 14 | 14 | Undercarriage |
| 18 | 18 | 18 | 18 | Cargo/Vehicle Parts Set-In-Motion |
| 19 | 19 | 19 | | Other Objects Set-In-Motion |
| | | | 19 | Other Objects or Person Set-In-Motion |
| | 20 | 20 | 20 | Object Set in Motion, Unknown if Cargo/Vehicle |
| | | | | Parts or Other |
| 55 | 55 | 55 | 55 | Non-Harmful Event |
| 61 | 61 | 61 | 61 | Left |
| 62 | 62 | 62 | 62 | Left-Front Side |
| 63 | 63 | 63 | 63 | Left-Back Side |
| 81 | 81 | 81 | 81 | Right |
| 82 | 82 | 82 | 82 | Right-Front Side |
| 83 | 83 | 83 | 83 | Right-Back Side |
| 98 | 98 | 98 | 98 | Not Reported |
| 99 | 99 | | | Unknown |
| | | 99 | 99 | Reported as Unknown |

V32 Sequence of Events

Definition: This data element describes this event. A motor vehicle traffic crash is a series of events resulting from an unstabilized situation. This series of harmful and non-harmful events is recorded in chronological order based on the police crash report narrative and diagram.

Additional Information: "First Harmful Event, Most Harmful Event," and the "Sequence of Events" data elements have the same harmful event attributes. "Sequence of Events" also has non-harmful event attributes.

SAS Name: SOE
Attribute Codes

| | | 2018- | |
|------|---------|----------|---|
| 2016 | 2017 | Later | |
| NON | I-HARMI | FUL EVE | NTS |
| 60 | 60 | 60 | Cargo/Equipment Loss or Shift (non-harmful) |
| 61 | 61 | 61 | Equipment Failure (blown tire, brake failure, etc.) |
| 62 | 62 | 62 | Separation of Units |
| 63 | 63 | 63 | Ran Off Roadway-Right |
| 64 | 64 | 64 | Ran Off Roadway-Left |
| 65 | 65 | 65 | Cross Median |
| 66 | 66 | 66 | Downhill Runaway |
| 67 | 67 | 67 | Vehicle Went Airborne |
| 68 | 68 | 68 | Cross Centerline |
| 69 | 69 | 69 | Re-entering Roadway |
| 70 | 70 | 70 | Non-harmful, Swaying Trailer/Jackknife |
| 71 | 71 | 71 | End Departure |
| 79 | 79 | 79 | Ran off Roadway - Direction Unknown |
| NON | -COLLIS | SION HAI | RMFUL EVENTS |
| 1 | 1 | 1 | Rollover/Overturn |
| 2 | 2 | 2 | Fire/Explosion |
| 3 | 3 | 3 | Immersion or Partial Immersion |
| 4 | 4 | 4 | Gas Inhalation |
| 5 | 5 | 5 | Fell/Jumped from Vehicle |
| 6 | 6 | 6 | Injured in Vehicle (Non-Collision) |
| 7 | 7 | 7 | Other Noncollision |
| 16 | 16 | 16 | Thrown or Falling Object |
| 44 | 44 | 44 | Pavement Surface Irregularity (Ruts, Potholes, Grates, etc.) |
| 51 | 51 | 51 | Jackknife (Harmful to This Vehicle) |
| 72 | 72 | | Cargo/Equipment Loss or Shift (Harmful to This Vehicle) |
| | | 72 | Cargo/Equipment Loss, Shift, or Damage (Harmful) |
| COL | LISION | WITH MC | OTOR VEHICLE IN TRANSPORT |
| 12 | 12 | 12 | Motor Vehicle In-Transport |
| 54 | 54 | 54 | Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport |
| 55 | 55 | 55 | Motor Vehicle in Motion Outside the Trafficway |
| COL | LISION | WITH OB | SJECT NOT FIXED |
| 8 | 8 | 8 | Pedestrian |
| 9 | 9 | 9 | Pedalcyclist |

V32 Sequence of Events (continued)

Attribute Codes

| 2016 | 2017 | 2018- Later | |
|----------|----------|----------------|--|
| 10 | 10 | 10 | Railway Vehicle |
| 11 | 11 | 11 | Live Animal |
| 14 | 14 | 14 | Parked Motor Vehicle |
| 15 | 15 | 15 | Non-Motorist on Personal Conveyance |
| 18 | 18 | 18 | Other Object Not Fixed |
| 45 | 45 | 45 | Working Motor Vehicle |
| 49 | 49 | 49 | Ridden Animal or Animal Drawn Conveyance |
| 73 | 73 | 73 | Object That Had Fallen From Motor Vehicle In-Transport |
| 74 | 74 | 74 | Road Vehicle on Rails |
| | 91 | 91 | Unknown Object Not Fixed |
| COL | LISION | WITH FIX | (ED OBJECT |
| 17 | 17 | 17 | Boulder |
| 19 | 19 | 19 | Building |
| 20 | 20 | 20 | Impact Attenuator/Crash Cushion |
| 21 | 21 | 21 | Bridge Pier or Support |
| 23 | 23 | 23 | Bridge Rail (Includes Parapet) |
| 24 | 24 | 24 | Guardrail Face |
| 25 | 25 | 25 | Concrete Traffic Barrier |
| 26 | 26 | 26 | Other Traffic Barrier |
| 30 | 30 | 30 | Utility Pole/Light Support |
| 31 | 31 | 31 | Post, Pole or Other Support |
| 32 | 32 | 32 | Culvert |
| 33 | 33 | 33 | Curb |
| 34 | 34 | 34 | Ditch |
| 35 | 35 | 35 | Embankment |
| 38 | 38 | 38 | Fence |
| 39 | 39 | 39 | Wall |
| 40 | 40 | 40 | Fire Hydrant |
| 41 | 41 | 41 | Shrubbery |
| 42 | 42 | 42 | Tree (Standing Only) |
| 43 | 43 | 43 | Other Fixed Object |
| 46 | 46 | 46 | Traffic Signal Support |
| 48 | 48 | 48 | Snow Bank |
| 50 | 50 | 50 | Bridge Overhead Structure |
| 52 52 | 52 53 | 52 53 | Guardrail End |
| 53 | 53 57 | 53 57 | Mail Box |
| 57 58 | 57 58 | 57 | Cable Barrier Ground |
| | | 58 | |
| 59 | 59 93 | 59 93 | Traffic Sign Support |
| | 33 | 33 | Unknown Fixed Object |
| | | 98 | Harmful Event, Details Not Reported (Since 2019) |
| 99 | 99 | | Unknown |
| | | 99 | Reported as Unknown |

C18C Vehicle Number (Other Vehicle)

Definition: This data element identifies the "Vehicle Number" (VEH_NO) of the other motor vehicle, if any, in this event.

Additional Information: This is the vehicle contacted by the motor vehicle in-transport recorded in "Vehicle Number (This Vehicle)." Another vehicle must have been involved in this event for this data element to be a valid vehicle number (i.e., "Sequence of Events" for this event must be 12, 14, 45, 54, or 55).

SAS Name: VNUMBER2

Attribute Codes

| 1-999 | Vehicle Number |
|-------|---------------------|
| 5555 | Non-Harmful Event |
| 9999 | Not a Motor Vehicle |

C18D Area of Impact (Other Vehicle)

Definition: This data element identifies the impact point on the other motor vehicle, if any, in this event.

Additional Information: This is the impact area of the vehicle recorded in "Vehicle Number (Other Vehicle)." Another vehicle must have been involved in this event for this data element to be a valid impact location (i.e., "Sequence of Events" for this event must be 12, 14, 45, 54, or 55).

SAS Name: AOI2
Attribute Codes

| | | | 2019- | |
|------|------|------|-------|---|
| 2016 | 2017 | 2018 | Later | |
| 0 | 0 | 0 | 0 | Non-Collision |
| 1-12 | 1-12 | 1-12 | 1-12 | Clock points |
| 13 | 13 | 13 | 13 | Тор |
| 14 | 14 | 14 | 14 | Undercarriage |
| 18 | 18 | 18 | 18 | Cargo/Vehicle Parts Set-In-Motion |
| 19 | 19 | 19 | | Other Objects Set-In-Motion |
| | | | 19 | Other Objects or Person Set-In-Motion |
| | 20 | 20 | 20 | Object Set in Motion, Unknown if Cargo/Vehicle Parts or Other |
| 55 | 55 | 55 | 55 | Non-Harmful Event |
| 61 | 61 | 61 | 61 | Left |
| 62 | 62 | 62 | 62 | Left-Front Side |
| 63 | 63 | 63 | 63 | Left-Back Side |
| 77 | 77 | 77 | 77 | Not a Motor Vehicle |
| 81 | 81 | 81 | 81 | Right |
| 82 | 82 | 82 | 82 | Right-Front Side |
| 83 | 83 | 83 | 83 | Right-Back Side |
| 98 | 98 | 98 | 98 | Not Reported |
| 99 | 99 | | | Unknown |
| | | 99 | 99 | Reported as Unknown |

The VEVENT Data File

The Vevent data file includes harmful and non-harmful events for each in-transport motor vehicle. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, VEH_NO, EVENTNUM, and VEVENTNUM, which are described in the beginning of the Data Element Definitions and Codes section. The Vevent data file also contains the data elements on the following pages.

CASENUM, VEH_NO, and VEVENTNUM are the unique identifiers for each record. CASENUM and VEH_NO should be used to merge the Vevent data file with the Vehicle data file.

C18A Vehicle Number (This Vehicle)

Definition: This data element identifies the "Vehicle Number" (VEH_NO) of the in-transport motor vehicle described in this event.

Additional Information: This is the vehicle described in "Sequence of Events" for this event.

If Vehicle #1 (V1) impacts Vehicle #2 (V2), then we have at least 2 Vevent records.

Example:

| <u>VEH NO</u> | EVENTNUM | VNUMBER1 | SOE | VNUMBER2 |
|---------------|-----------------|----------|-----|-----------------|
| 1 | 1 | 1 | 12 | 2 |
| 2 | 1 | 1 | 12 | 2 |

The explanation of these 2 records is as follows:

V1 was involved in event 1 where V1 impacts V2 V2 was involved in event 1 where V1 impacts V2

SAS Name: VNUMBER1

Attribute Codes

2016-Later

1-999 Vehicle Number

C18B Area of Impact (This Vehicle)

Definition: This data element identifies the impact point, if any, on this in-transport motor vehicle that produced property damage or personal injury in this event.

Additional Information: This is the impact area of the vehicle recorded in "Vehicle Number (This Vehicle)" and described in "Sequence of Events."

SAS Name: AOI1
Attribute Codes

| 2016 | 2017 | 2018 | 2019- Later | |
|------|------|------|----------------|--|
| 0 | 0 | 0 | 0 | Non-Collision |
| 1-12 | 1-12 | 1-12 | 1-12 | Clock points |
| 13 | 13 | 13 | 13 | Top |
| 14 | 14 | 14 | 14 | Undercarriage |
| 18 | 18 | 18 | 18 | Cargo/Vehicle Parts Set-In-Motion |
| 19 | 19 | 19 | | Other Objects Set-In-Motion |
| | | | 19 | Other Objects or Person Set-In-Motion |
| | 20 | 20 | 20 | Object Set in Motion, Unknown if Cargo/Vehicle |
| | | | | Parts or Other |
| 55 | 55 | 55 | 55 | Non-Harmful Event |
| 61 | 61 | 61 | 61 | Left |
| 62 | 62 | 62 | 62 | Left-Front Side |
| 63 | 63 | 63 | 63 | Left-Back Side |
| 81 | 81 | 81 | 81 | Right |
| 82 | 82 | 82 | 82 | Right-Front Side |
| 83 | 83 | 83 | 83 | Right-Back Side |
| 98 | 98 | 98 | 98 | Not Reported |
| 99 | 99 | | | Unknown |
| | | 99 | 99 | Reported as Unknown |

V32 Sequence of Events

Definition: This data element describes this event. A motor vehicle traffic crash is a series of events resulting from an unstabilized situation. This series of harmful and non-harmful events is recorded in chronological order based on the police crash report narrative and diagram.

Additional Information: "First Harmful Event, Most Harmful Event," and the "Sequence of Events" data elements have the same harmful event attributes. "Sequence of Events" also has non-harmful event attributes.

SAS Name: SOE Attribute Codes

| 2046 | 2047 | 2018- | |
|------|---------|----------|---|
| 2016 | 2017 | Later | N-0 |
| | | -UL EVE | |
| 60 | 60 | 60 | Cargo/Equipment Loss or Shift (non-harmful) |
| 61 | 61 | 61 | Equipment Failure (blown tire, brake failure, etc.) |
| 62 | 62 | 62 | Separation of Units |
| 63 | 63 | 63 | Ran Off Roadway-Right |
| 64 | 64 | 64 | Ran Off Roadway-Left |
| 65 | 65 | 65 | Cross Median |
| 66 | 66 | 66 | Downhill Runaway |
| 67 | 67 | 67 | Vehicle Went Airborne |
| 68 | 68 | 68 | Cross Centerline |
| 69 | 69 | 69 | Re-entering Roadway |
| 70 | 70 | 70 | Non-harmful, Swaying Trailer/Jackknife |
| 71 | 71 | 71 | End Departure |
| 79 | 79 | 79 | Ran off Roadway - Direction Unknown |
| NON | -COLLIS | SION HAI | RMFUL EVENTS |
| 1 | 1 | 1 | Rollover/Overturn |
| 2 | 2 | 2 | Fire/Explosion |
| 3 | 3 | 3 | Immersion or Partial Immersion |
| 4 | 4 | 4 | Gas Inhalation |
| 5 | 5 | 5 | Fell/Jumped from Vehicle |
| 6 | 6 | 6 | Injured in Vehicle (Non-Collision) |
| 7 | 7 | 7 | Other Noncollision |
| 16 | 16 | 16 | Thrown or Falling Object |
| 44 | 44 | 44 | Pavement Surface Irregularity (Ruts, Potholes, Grates, etc.) |
| 51 | 51 | 51 | Jackknife (Harmful to This Vehicle) |
| 72 | 72 | | Cargo/Equipment Loss or Shift (Harmful to This Vehicle) |
| | | 72 | Cargo/Equipment Loss, Shift, or Damage (Harmful) |
| COL | LISION | WITH MC | OTOR VEHICLE IN TRANSPORT |
| 12 | 12 | 12 | Motor Vehicle In-Transport |
| 54 | 54 | 54 | Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport |
| 55 | 55 | 55 | Motor Vehicle in Motion Outside the Trafficway |
| COL | LISION | WITH OB | SJECT NOT FIXED |
| 8 | 8 | 8 | Pedestrian |
| 9 | 9 | 9 | Pedalcyclist |

V32 Sequence of Events (continued)

Attribute Codes

| 2016 | 2017 | 2018- Later | |
|----------------|----------|----------------|--|
| 10 | 10 | 10 | Railway Vehicle |
| 11 | 11 | 11 | Live Animal |
| 14 | 14 | 14 | Parked Motor Vehicle |
| 15 | 15 | 15 | Non-Motorist on Personal Conveyance |
| 18 | 18 | 18 | Other Object Not Fixed |
| 45 | 45 | 45 | Working Motor Vehicle |
| 49 | 49 | 49 | Ridden Animal or Animal Drawn Conveyance |
| 73 | 73 | 73 | Object That Had Fallen From Motor Vehicle In-Transport |
| 74 | 74 | 74 | Road Vehicle on Rails |
| | 91 | 91 | Unknown Object Not Fixed |
| COL | LISION | WITH FIX | (ED OBJECT |
| 17 | 17 | 17 | Boulder |
| 19 | 19 | 19 | Building |
| 20 | 20 | 20 | Impact Attenuator/Crash Cushion |
| 21 | 21 | 21 | Bridge Pier or Support |
| 23 | 23 | 23 | Bridge Rail (Includes Parapet) |
| 24 | 24 | 24 | Guardrail Face |
| 25 | 25 | 25 | Concrete Traffic Barrier |
| 26 | 26 | 26 | Other Traffic Barrier |
| 30 | 30 | 30 | Utility Pole/Light Support |
| 31 | 31 | 31 | Post, Pole or Other Support |
| 32 | 32 | 32 | Culvert |
| 33 | 33 | 33 | Curb |
| 34 | 34 | 34 | Ditch |
| 35 | 35 | 35 | Embankment |
| 38 | 38 | 38 | Fence |
| 39 | 39 | 39 | Wall |
| 40 | 40 | 40 | Fire Hydrant |
| 41 42 | 41 | 41 42 | Shrubbery Tree (Standing Only) |
| 42 43 | 42 43 | 42 43 | Tree (Standing Only) Other Fixed Object |
| 43 46 | 43 46 | 43 46 | Traffic Signal Support |
| 48 | 48 | 48 | Snow Bank |
| 5 0 | 50 | 4 0 | Bridge Overhead Structure |
| 52 | 52 | 52 | Guardrail End |
| 53 | 53 | 53 | Mail Box |
| 57 | 57 | 57 | Cable Barrier |
| 58 | 58 | 58 | Ground |
| 59 | 59 | 59 | Traffic Sign Support |
| | 93 | 93 | Unknown Fixed Object |
| | | 98 | Harmful Event, Details Not Reported (Since 2019) |
| 99 | 99 | | Unknown |
| | | 99 | Reported as Unknown |

C18C Vehicle Number (Other Vehicle)

Definition: This data element identifies the "Vehicle Number" (VEH_NO) of the other motor vehicle, if any, in this event.

Additional Information: This is the vehicle contacted by the motor vehicle in-transport recorded in "Vehicle Number (This Vehicle)." Another vehicle must have been involved in this event for this data element to be a valid vehicle number (i.e., "Sequence of Events" for this event must be 12, 14, 45, 54, or 55).

SAS Name: VNUMBER2

Attribute Codes

2016-Later

1-999 Vehicle Number5555 Non-Harmful Event9999 Not a Motor Vehicle

C18D Area of Impact (Other Vehicle)

Definition: This data element identifies the impact point on the other motor vehicle, if any, in this event.

Additional Information: This is the impact area of the vehicle recorded in "Vehicle Number (Other Vehicle)." Another vehicle must have been involved in this event for this data element to be a valid impact location (i.e., "Sequence of Events" for this event must be 12, 14, 45, 54, or 55).

SAS Name: AOI2
Attribute Codes

| | | | 2019- | |
|------|------|------|-------|--|
| 2016 | 2017 | 2018 | Later | |
| 0 | 0 | 0 | 0 | Non-Collision |
| 1-12 | 1-12 | 1-12 | 1-12 | Clock points |
| 13 | 13 | 13 | 13 | Тор |
| 14 | 14 | 14 | 14 | Undercarriage |
| 18 | 18 | 18 | 18 | Cargo/Vehicle Parts Set-In-Motion |
| 19 | 19 | 19 | | Other Objects Set-In-Motion |
| | | | 19 | Other Objects or Person Set-In-Motion |
| | 20 | 20 | 20 | Object Set in Motion, Unknown if Cargo/Vehicle |
| | | | | Parts or Other |
| 55 | 55 | 55 | 55 | Non-Harmful Event |
| 61 | 61 | 61 | 61 | Left |
| 62 | 62 | 62 | 62 | Left-Front Side |
| 63 | 63 | 63 | 63 | Left-Back Side |
| 77 | 77 | 77 | 77 | Not a Motor Vehicle |
| 81 | 81 | 81 | 81 | Right |
| 82 | 82 | 82 | 82 | Right-Front Side |
| 83 | 83 | 83 | 83 | Right-Back Side |
| 98 | 98 | 98 | 98 | Not Reported |
| 99 | 99 | | | Unknown |
| | | 99 | 99 | Reported as Unknown |

The VSOE Data File

The Vsoe data file includes harmful and non-harmful events for each in-transport motor vehicle. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, VEH_NO, and VEVENTNUM, which are described in the beginning of the Data Element Definitions and Codes section. The Vsoe data file also contains the data elements on the following pages.

CASENUM, VEH_NO, and VEVENTNUM are the unique identifiers for each record. CASENUM and VEH_NO should be used to merge the Vsoe data file with the Vehicle data file.

C18B Area of Impact Associated with the Event

Definition: This data element identifies the impact point, if any, on this in-transport motor vehicle that produced property damage or personal injury in this event.

Additional Information: This is the impact area of the vehicle recorded in "Vehicle Number (This Vehicle)" and described in "Sequence of Events."

SAS Name: AOI
Attribute Codes

| | | 2018- | |
|------|------|-------|---|
| 2016 | 2017 | Later | |
| 0 | 0 | 0 | Non-Collision |
| 1-12 | 1-12 | 1-12 | Clock points |
| 13 | 13 | 13 | Top |
| 14 | 14 | 14 | Undercarriage |
| 18 | 18 | 18 | Cargo/Vehicle Parts Set-In-Motion |
| 19 | 19 | 19 | Other Objects Set-In-Motion |
| | 20 | 20 | Object Set in Motion, Unknown if Cargo/Vehicle Parts or Other |
| 55 | 55 | 55 | Non-Harmful Event |
| 61 | 61 | 61 | Left |
| 62 | 62 | 62 | Left-Front Side |
| 63 | 63 | 63 | Left-Back Side |
| 81 | 81 | 81 | Right |
| 82 | 82 | 82 | Right-Front Side |
| 83 | 83 | 83 | Right-Back Side |
| 98 | 98 | 98 | Not Reported |
| 99 | 99 | | Unknown |
| | | 99 | Reported as Unknown |

V32 Sequence of Events

Definition: The events in sequence related to this motor vehicle, regardless of injury and/or property damage. Events for the vehicle are recorded in the order in which they occur, timewise, from the police crash report narrative and diagram.

Additional Information: "First Harmful Event," "Most Harmful Event," and the "Sequence of Events" data elements have the same harmful event attributes. "Sequence of Events" also has non-harmful event attributes.

SAS Name: SOE Attribute Codes

| ······································ | . 00000 | | |
|---|---------|----------|---|
| | | 2018- | |
| 2016 | 2017 | Later | |
| NON | -HARMI | FUL EVEI | NTS |
| 60 | 60 | 60 | Cargo/Equipment Loss or Shift (non-harmful) |
| 61 | 61 | 61 | Equipment Failure (blown tire, brake failure, etc.) |
| 62 | 62 | 62 | Separation of Units |
| 63 | 63 | 63 | Ran Off Roadway-Right |
| 64 | 64 | 64 | Ran Off Roadway-Left |
| 65 | 65 | 65 | Cross Median |
| 66 | 66 | 66 | Downhill Runaway |
| 67 | 67 | 67 | Vehicle Went Airborne |
| 68 | 68 | 68 | Cross Centerline |
| 69 | 69 | 69 | Re-entering Roadway |
| 70 | 70 | 70 | Non-harmful, Swaying Trailer/Jackknife |
| 71 | 71 | 71 | End Departure |
| 79 | 79 | 79 | Ran off Roadway - Direction Unknown |
| NON | -COLLIS | SION HAP | RMFUL EVENTS |
| 1 | 1 | 1 | Rollover/Overturn |
| 2 | 2 | 2 | Fire/Explosion |
| 3 | 3 | 3 | Immersion or Partial Immersion |
| 4 | 4 | 4 | Gas Inhalation |
| 5 | 5 | 5 | Fell/Jumped from Vehicle |
| 6 | 6 | 6 | Injured in Vehicle (Non-Collision) |
| 7 | 7 | 7 | Other Noncollision |
| 16 | 16 | 16 | Thrown or Falling Object |
| 44 | 44 | 44 | Pavement Surface Irregularity (Ruts, Potholes, Grates, etc.) |
| 51 | 51 | 51 | Jackknife (Harmful to This Vehicle) |
| 72 | 72 | | Cargo/Equipment Loss or Shift (Harmful to This Vehicle) |
| | | 72 | Cargo/Equipment Loss, Shift, or Damage (Harmful) |
| COLLISION WITH MOTOR VEHICLE IN TRANSPORT | | | |
| 12 | 12 | 12 | Motor Vehicle In-Transport |
| 54 | 54 | 54 | Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport |
| 55 | 55 | 55 | Motor Vehicle in Motion Outside the Trafficway |
| COL | LISION | WITH OB | JECT NOT FIXED |
| 8 | 8 | 8 | Pedestrian |
| 9 | 9 | 9 | Pedalcyclist |
| - | - | - | • |

V32 Sequence of Events (continued)

Attribute Codes

| 2016 | 2017 | 2018- Later | |
|----------------|----------|----------------|--|
| 10 | 10 | 10 | Railway Vehicle |
| 11 | 11 | 11 | Live Animal |
| 14 | 14 | 14 | Parked Motor Vehicle |
| 15 | 15 | 15 | Non-Motorist on Personal Conveyance |
| 18 | 18 | 18 | Other Object Not Fixed |
| 45 | 45 | 45 | Working Motor Vehicle |
| 49 | 49 | 49 | Ridden Animal or Animal Drawn Conveyance |
| 73 | 73 | 73 | Object That Had Fallen From Motor Vehicle In-Transport |
| 74 | 74 | 74 | Road Vehicle on Rails |
| | 91 | 91 | Unknown Object Not Fixed |
| COL | LISION | WITH FIX | (ED OBJECT |
| 17 | 17 | 17 | Boulder |
| 19 | 19 | 19 | Building |
| 20 | 20 | 20 | Impact Attenuator/Crash Cushion |
| 21 | 21 | 21 | Bridge Pier or Support |
| 23 | 23 | 23 | Bridge Rail (Includes Parapet) |
| 24 | 24 | 24 | Guardrail Face |
| 25 | 25 | 25 | Concrete Traffic Barrier |
| 26 | 26 | 26 | Other Traffic Barrier |
| 30 | 30 | 30 | Utility Pole/Light Support |
| 31 | 31 | 31 | Post, Pole or Other Support |
| 32 | 32 | 32 | Culvert |
| 33 | 33 | 33 | Curb |
| 34 | 34 | 34 | Ditch |
| 35 | 35 | 35 | Embankment |
| 38 | 38 | 38 | Fence Wall |
| 39 40 | 39 40 | 39 40 | |
| 41 | 41 | 41 | Fire Hydrant Shrubbery |
| 42 | 42 | 42 | Tree (Standing Only) |
| 43 | 43 | 43 | Other Fixed Object |
| 4 6 | 46 | 4 6 | Traffic Signal Support |
| 48 | 48 | 48 | Snow Bank |
| 50 | 50 | 50 | Bridge Overhead Structure |
| 52 | 52 | 52 | Guardrail End |
| 53 | 53 | 53 | Mail Box |
| 57 | 57 | 57 | Cable Barrier |
| 58 | 58 | 58 | Ground |
| 59 | 59 | 59 | Traffic Sign Support |
| | 93 | 93 | Unknown Fixed Object |
| | | 98 | Harmful Event, Details Not Reported (Since 2019) |
| 99 | 99 | | Unknown |
| | | 99 | Reported as Unknown |

The DAMAGE Data File

The Damage data file identifies each area of damage as a separate record. That is, there can be more than one damage record for each vehicle. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, and VEH_NO, which are described in the beginning of the Data Element Definitions and Codes section. The Damage data file also contains the data elements on the following pages.

CASENUM and VEH_NO are the unique identifiers for each record. CASENUM and VEH_NO should be used to merge the Damage data file with vehicles from the Vehicle data file.

V29B Area of Impact – Damaged Areas

Definition: This data element identifies all the areas on this vehicle that were damaged in the crash as reflected in the case materials.

Additional Information:

SAS Name: MDAREAS

Attribute Codes

| 1-12 | Clock points |
|------|----------------------|
| 13 | Тор |
| 14 | Undercarriage |
| 15 | No Damage |
| 99 | Damage Areas Unknown |

The DISTRACT Data File

The Distract data file identifies each driver distraction as a separate record. That is, there can be more than one distraction record for each driver. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, and VEH_NO, which are described in the beginning of the Data Element Definitions and Codes section. The data file also contains MDRDSTRD which is described below.

CASENUM, VEH_NO, and MDRDSTRD are the unique identifiers for each record. CASENUM and VEH_NO should be used to merge the Distract data file with drivers from the Vehicle data file.

PC16 Driver Distracted By

Definition: This data element identifies the attribute(s) which best describe this driver's attention to driving prior to the driver's realization of an impending critical event or just prior to impact if realization of an impending critical event does not occur. This element reports on the presence of any distractions which may or may not have contributed to the crash.

Additional Information: Distraction from the primary task of driving occurs when drivers divert their attention from the driving task to some other activity. Also, driving while daydreaming or lost in thought is identified as distracted driving by NHTSA. Physical conditions/impairments (fatigue, alcohol, medical condition, etc.) or psychological states (anger, emotional, depressed, etc.) are not identified as distractions by NHTSA.

SAS Name: MDRDSTRD

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--|
| _ | | Not Districted |
| 0 | 0 | Not Distracted |
| 1 | | Looked But Did Not See |
| 3 | 3 | By Other Occupants |
| 4 | 4 | By a Moving Object In Vehicle |
| 5 | 5 | While Talking Or Listening To Mobile Phone |
| 6 | 6 | While Manipulating Mobile Phone |
| 7 | 7 | While Adjusting Audio Or Climate Controls |
| 9 | 9 | While Using Other Component/Controls Integral To Vehicle |
| 10 | 10 | While Using Or Reaching For Device/Object Brought into Vehicle |
| 12 | 12 | Distracted By Outside Person, Object Or Event |
| 13 | 13 | Eating Or Drinking |
| 14 | 14 | Smoking Related |
| 15 | 15 | Other Mobile Phone Related |
| 16 | 16 | No Driver Present/Unknown if Driver Present |
| 17 | 17 | Distraction/Inattention |
| 18 | 18 | Distraction/Careless |
| 19 | 19 | Careless/Inattentive |
| 92 | 92 | Distraction (Distracted), Details Unknown |
| 93 | 93 | Inattention (Inattentive), Details Unknown |
| 96 | 96 | Not Reported |
| 97 | 97 | Lost In Thought/Day Dreaming |
| 98 | 98 | Other Distraction |
| 99 | | Unknown If Distracted |
| | 99 | Reported as Unknown if Distracted |

The DRIMPAIR Data File

The Drimpair data file identifies each driver impairment as a separate record. That is, there can be more than one impairment record for each driver. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, and VEH_NO, which are described in the beginning of the Data Element Definitions and Codes section. The data file also contains DRIMPAIR which is described below.

CASENUM, VEH_NO, and DRIMPAIR are the unique identifiers for each record. CASENUM and VEH_NO should be used to merge the Drimpair data file with drivers from the Vehicle data file.

D23 Condition (Impairment) at Time of Crash- Driver

Definition: This data element identifies physical impairments to this driver that may have contributed to the crash as identified by law enforcement.

Additional Information:

SAS Name: MIMPAIR

| 2016 | 2017 | 2018- Later | |
|------|------|----------------|---|
| 0 | 0 | 0 | None/Apparently Normal |
| 1 | 1 | 1 | III, Blackout |
| 2 | 2 | 2 | Asleep or Fatigued |
| 3 | 3 | 3 | Walking with a Cane or Crutches, etc. |
| 4 | | | Paraplegic or Restricted to Wheelchair |
| | 4 | 4 | Paraplegic or in a Wheelchair |
| 5 | 5 | 5 | Impaired Due to Previous Injury |
| 6 | 6 | 6 | Deaf |
| 7 | 7 | 7 | Blind |
| 8 | 8 | 8 | Emotional (Depressed, Angry, Disturbed, etc.) |
| 9 | 9 | 9 | Under the Influence of Alcohol, Drugs or Medication |
| 10 | 10 | 10 | Physical Impairment – No Details |
| 95 | 95 | 95 | No Driver Present/Unknown if Driver Present |
| 96 | 96 | 96 | Other Physical Impairment |
| 98 | 98 | 98 | Not Reported |
| 99 | 99 | | Unknown if Impaired |
| | | 99 | Reported as Unknown if Impaired |

The FACTOR Data File

The Factor data file identifies each vehicle factor as a separate record. That is, there can be more than one factor record for each vehicle. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, and VEH_NO, which are described in the beginning of the Data Element Definitions and Codes section. The data file also contains MFACTOR which is described below.

CASENUM, VEH_NO, and MFACTOR are the unique identifiers for each record. CASENUM and VEH_NO should be used to merge the Factor data file with vehicles from the Vehicle data file.

PC4 Contributing Circumstances, Motor Vehicle

Definition: This data element describes this vehicle's possible pre-existing defects or maintenance conditions that may have contributed to the crash.

Additional Information:

SAS Name: MFACTOR

| 2016- 2017 | 2018- Later | |
|---------------|----------------|---|
| 0 | 0 | None |
| 1 | 1 | Tires |
| 2 | 2 | Brake System |
| 3 | 3 | Steering System-Tie Rod, Kingpin, Ball Joint, etc. |
| 4 | 4 | Suspension-Springs, Shock Absorbers, McPherson Struts, Control Arms, etc. |
| 5 | 5 | Power Train-Universal Joint, Drive Shaft, Transmission, etc. |
| 6 | 6 | Exhaust System |
| 7 | 7 | Headlights |
| 8 | 8 | Signal Lights |
| 9 | 9 | Other Lights |
| 10 | 10 | Wipers |
| 11 | 11 | Wheels |
| 12 | 12 | Mirrors |
| 13 | 13 | Windows/Windshield |
| 14 | 14 | Body, Doors |
| 15 | 15 | Truck Coupling/Trailer Hitch/Safety Chains |
| 16 | 16 | Safety Systems |
| 17 | 17 | Vehicle Contributing Factors-No Details |
| 97 | 97 | Other |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

The MANEUVER Data File

The Maneuver data file identifies each avoidance attempt as a separate record. That is, there can be more than one maneuver record for each driver. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, and VEH_NO, which are described in the beginning of the Data Element Definitions and Codes section. The data file also contains MDRMANAV which is described below.

CASENUM, VEH_NO, and MDRMANAV are the unique identifiers for each record. CASENUM and VEH_NO should be used to merge the Maneuver data file with vehicles from the Vehicle data file.

PC15 Driver Maneuvered to Avoid

Definition: This data element identifies the thing(s) this driver attempted to avoid while the vehicle was on the road portion of the trafficway, just prior to the first harmful event for this vehicle.

Additional Information:

SAS Name: MDRMANAV

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--|
| 0 | 0 | Driver Did Not Maneuver To Avoid |
| 1 | 1 | Object |
| 2 | 2 | Poor Road Conditions (Puddle, Ice, Pot Hole, etc.) |
| 3 | 3 | Live Animal |
| 4 | 4 | Motor Vehicle |
| 5 | 5 | Pedestrian, Pedalcyclist, or Other Non-Motorist |
| 92 | 92 | Phantom/Non-Contact Motor Vehicle |
| 95 | 95 | No Driver Present/Unknown if Driver Present |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

The VIOLATN Data File

The Violatn data file identifies each violation as a separate record. That is, there can be more than one violation record for each driver. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, and VEH_NO, which are described in the beginning of the Data Element Definitions and Codes section. The data file also contains MVIOLATN which is described below.

CASENUM, VEH_NO, and MVIOLATN are the unique identifiers for each record. CASENUM and VEH_NO should be used to merge the Violatn data file with drivers from the Vehicle data file.

D21 Violations Charged

Definition: This data element identifies all violations charged to this driver.

Additional Information: SAS Name: MVIOLATN

Attribute Codes

2016-Later

0 None

RECKLESS/CARELESS/HIT-AND-RUN TYPE OFFENSES

- 1 Manslaughter or Homicide
- 2 Willful Reckless Driving; Driving to Endanger; Negligent Driving
- 3 Unsafe Reckless (Not Willful, Wanton Reckless) Driving
- 4 Inattentive, Careless, Improper Driving
- 5 Fleeing or Eluding Police
- 6 Fail to Obey Police, Fireman, Authorized Person Directing Traffic
- 7 Hit-And-Run, Fail to Stop After Crash
- 8 Fail to Give Aid, Information, Wait For Police After Crash
- 9 Serious Violation Resulting In Death
- 10 Use of Telecommunications Device

IMPAIRMENT OFFENSES

- 11 Driving While Intoxicated (Alcohol Or Drugs) Or BAC Above Limit (Any Detectable BAC for CDLs)
- 12 Driving While Impaired
- 13 Driving Under Influence of Substance Not Intended To Intoxicate
- 14 Drinking While Operating
- 15 Illegal Possession of Alcohol or Drugs
- 16 Driving With Detectable Alcohol
- 18 Refusal to Submit to Chemical Test
- 19 Alcohol, Drug or Impairment Violations Generally

SPEED-RELATED OFFENSES

- 21 Racing
- 22 Speeding (Above The Speed Limit)
- 23 Speed Greater than Reasonable & Prudent (Not Necessarily Over The Limit)
- 24 Exceeding Special Limit
- 25 Energy Speed (Exceeding 55 mph, Non-Pointable)
- 26 Driving Too Slowly
- 29 Speed Related Violations, Generally

D21 Violations Charged (continued)

Attribute Codes

2016-Later

RULES OF THE ROAD - TRAFFIC SIGN & SIGNALS

- 31 Fail to Stop For Red Signal
- 32 Fail to Stop For Flashing Red
- 33 Violation of Turn On Red (Fail to Stop & Yield, Yield to Pedestrians Before Turning)
- 34 Fail to Obey Flashing Signal (Yellow Or Red)
- 35 Fail to Obey Signal, Generally
- 36 Violate RR Grade Crossing Device/Regulations
- 37 Fail to Obey Stop Sign
- 38 Fail to Obey Yield Sign
- 39 Fail to Obey Traffic Control Device

RULES OF THE ROAD - TURNING, YIELDING, SIGNALING

- Turn in Violation of Traffic Control (Disobey Signs, Turn Arrow Or Pavement Markings; This Is Not A Right-On-Red Violation)
- 42 Improper Method & Position of Turn (Too Wide, Wrong Lane)
- 43 Fail to Signal For Turn or Stop
- 45 Fail to Yield to Emergency Vehicle
- 46 Fail to Yield, Generally
- 48 Enter Intersection when Space Insufficient
- 49 Turn, Yield, Signaling Violations, Generally

RULES OF THE ROAD - WRONG SIDE, PASSING & FOLLOWING

- 51 Driving Wrong Way on One-Way Road
- 52 Driving On Left, Wrong Side of Road, Generally
- 53 Improper, Unsafe Passing
- 54 Pass on Right (Drive Off Pavement To Pass)
- 55 Pass Stopped School Bus
- 56 Fail to Give Way When Overtaken
- 58 Following Too Closely
- 59 Wrong Side, Passing, Following Violations, Generally

RULES OF THE ROAD - LANE USAGE

- 61 Unsafe or Prohibited Lane Change
- 62 Improper Use of Lane (Enter of 3-Lane Road, HOV Designated Lane)
- 63 Certain Traffic to Use Right Lane (*Trucks*, *Slow-Moving*, *etc.*)
- 66 Motorcycle Lane Violations (More than Two per Lane, Riding Between Lanes, etc.)
- 67 Motorcyclist Attached to Another Vehicle
- 69 Lane Violations, Generally

NON-MOVING – LICENSE AND REGISTRATION VIOLATIONS

- 71 Driving While License Withdrawn (Including Violation of Provisions of Work Permit)
- 71 Driving While License Withdrawn
- 72 Other Driver License Violations
- 73 Commercial Driver Violations (Log Book, Hours, Permits Carried)
- 74 Vehicle Registration Violations
- 75 Fail to Carry Insurance Card
- 76 Driving Uninsured Vehicle
- 79 Non-Moving Violations, Generally

D21 Violations Charged (continued)

Attribute Codes

2016-Later

EQUIPMENT

- 81 Lamp Violations
- 82 Brake Violations
- 83 Failure to Require Restraint Use (By Self or Passengers)
- 84 Motorcycle Equipment Violations (Helmet, Special Equipment)
- 85 Violation of Hazardous Cargo Regulations
- 86 Size, Weight, Load Violations
- 89 Equipment Violations, Generally

LICENSE, REGISTRATION & OTHER VIOLATIONS

- 91 Parking
- 92 Theft, Unauthorized Use of Motor Vehicle
- 93 Driving Where Prohibited (Sidewalk, Limited Access, Off Truck Route)
- 95 No Driver Present / Unknown if Driver Present
- 97 Not Reported
- 98 Other Moving Violation (Coasting, Backing, Opening Door)
- 99 Unknown Violation(s)

The VISION Data File

The Vision data file identifies each visual obstruction as a separate record. That is, there can be more than one vision record for each driver. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, and VEH_NO, which are described in the beginning of the Data Element Definitions and Codes section. The data file also contains MVISOBSC which is described below.

CASENUM, VEH_NO, and MVISOBSC are the unique identifiers for each record. CASENUM and VEH_NO should be used to merge the Vision data file with drivers from the Vehicle data file.

PC14 Driver's Vision Obscured By

Definition: This data element records impediments to this driver's visual field that were noted in the police crash report.

Additional Information:

SAS Name: MVISOBSC

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--|
| 0 | 0 | No Obstruction Noted |
| 1 | 1 | Rain, Snow, Fog, Smoke, Sand, Dust |
| 2 | 2 | Reflected Glare, Bright Sunlight, Headlights |
| 3 | 3 | Curve, Hill, or Other Roadway Design Features |
| 4 | 4 | Building, Billboard, or Other Structure |
| 5 | 5 | Trees, Crops, Vegetation |
| 6 | 6 | In-Transport Motor Vehicle (Including Load) |
| 7 | 7 | Not-in-Transport Motor Vehicle (Parked, Working) |
| 8 | 8 | Splash or Spray of Passing Vehicle |
| 9 | 9 | Inadequate Defrost or Defog System |
| 10 | 10 | Inadequate Vehicle Lighting System |
| 11 | 11 | Obstructing Interior to the Vehicle |
| 12 | 12 | External Mirrors |
| 13 | 13 | Broken or Improperly Cleaned Windshield |
| 14 | 14 | Obstructing Angles on Vehicle |
| 95 | 95 | No Driver Present/Unknown if Driver Present |
| 97 | 97 | Vision Obscured – No Details |
| 98 | 98 | Other Visual Obstruction |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

The NMCRASH Data File

The Nmcrash data file identifies each non-motorist action or circumstance that may have contributed to the crash as a separate record. That is, there can be more than one contributing circumstance record for each non-motorist. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, VEH_NO, and PER_NO, which are described in the beginning of the Data Element Definitions and Codes section. The data file also contains MTM_CRSH which is described below.

CASENUM, PER_NO, and MTM_CRSH are the unique identifiers for each record. CASENUM, VEH_NO, and PER_NO should be used to merge the Nmcrash data file with non-motorists from the Person data file. VEH_NO equals 0 for all records in this data file.

NM12 Non-Motorist Contributing Circumstances

Definition: This data element describes the action(s) and/or circumstances of this non-motorist that law enforcement indicated may have contributed to the crash.

Additional Information: It selects all that apply. This data element is based on the judgment of the law enforcement officer investigating the crash.

SAS Name: MTM CRSH

| 2016- 2017 | 2018 | 2019- Later | |
|---------------|------|----------------|---|
| 0 | 0 | 0 | None Noted |
| 1 | 1 | | Dart-Out |
| | | 1 | Dart-Out – Visual Obstruction Noted |
| 2 | 2 | 2 | Failure to Yield Right-Of-Way |
| 3 | 3 | 3 | Failure to Obey Traffic Signs, Signals or Officer |
| 4 | 4 | 4 | In Roadway Improperly (Standing, Lying, Working, Playing) |
| 5 | 5 | 5 | Entering/Exiting Parked or Stopped Vehicle |
| 6 | 6 | 6 | Inattentive (Talking, Eating, etc.) |
| 7 | 7 | 7 | Improper Turn/Merge |
| 8 | 8 | 8 | Improper Passing |
| 9 | 9 | 9 | Wrong-Way Riding or Walking |
| 10 | 10 | 10 | Riding on Wrong Side of Road |
| 11 | 11 | | Dash |
| | | 11 | Dash – Run, No Visual Obstruction Noted |
| 12 | 12 | 12 | Improper Crossing of Roadway or Intersection (Jaywalking) |
| 13 | 13 | 13 | Failing to Have Lights on When Required |
| 14 | 14 | 14 | Operating Without Required Equipment |
| 15 | 15 | 15 | Improper or Erratic Lane Changing |
| 16 | 16 | 16 | Failure to Keep in Proper Lane or Running Off Road |
| 17 | 17 | 17 | Making Improper Entry to or Exit from Trafficway |
| 18 | 18 | 18 | Operating in Other Erratic, Reckless, Careless or Negligent Manner |
| 19 | 19 | 19 | Not Visible (Dark Clothing, No Lighting, etc.) |
| 20 | 20 | 20 | Passing with Insufficient Distance or Inadequate Visibility or Failing to Yield to Overtaking Vehicle |
| 21 | 21 | 21 | Other |
| 99 | | | Unknown |
| | 99 | 99 | Reported as Unknown |

The NMDISTRACT Data File

The Nmdistract data file identifies each non-motorist distraction as a separate record. That is, there can be more than one distraction record for each non-motorist. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, VEH_NO, and PER_NO, which are described in the beginning of the Data Element Definitions and Codes section. The data file also contains MNMDSTRD which is described below.

CASENUM, VEH_NO, PER_NO, and MNMDSTRD are the unique identifiers for each record. . CASENUM and VEH_NO should be used to merge the Nmdistract data file with non-motorists from the Vehicle data file.

NM13 Non-Motorist Distracted By

Definition: This data element identifies the attribute(s) which best describe this non-motorist's attention prior to the non-motorist's involvement in this crash. This element reports on the presence of any distractions which may or may not have contributed to the crash.

Additional Information: Distraction, for a non-motorist, occurs when a non-motorist's attention is diverted from the task of navigating in public to some other activity. Also, daydreaming or lost in thought are identified as distractions by NHTSA. Physical conditions/ impairments (fatigue, alcohol, medical condition, etc.) or psychological states (anger, emotional, depressed, etc.) are not identified as distractions by NHTSA.

SAS Name: MNMDSTRD

Attribute Codes

2019-Later

- 00 Not Distracted
- 02 By Other Non-Motorist(s)
- 03 By a Driver or Occupant of a Motor Vehicle
- 12 Distracted by Animal, Other Object, Event, or Activity
- 05 While Talking or Listening to Mobile Phone
- 06 While Manipulating Mobile Phone
- 15 Other Mobile Phone Related
- 07 Adjusting or Listening to Portable Audio Device (Other than on a Mobile Phone)
- 08 Adjusting, Talking to, or Manipulating Other Portable Electronic Device
- 13 Eating or Drinking
- 14 Smoking Related
- 17 Distraction/Inattention
- 18 Distraction/Careless
- 19 Careless/Inattentive
- 92 Distraction (Distracted), Details Unknown
- 93 Inattention (Inattentive), Details Unknown
- 97 Lost in Thought/Day Dreaming
- 98 Other Distraction
- 96 Not Reported
- 99 Reported as Unknown if Distracted

The NMIMPAIR Data File

The Nmimpair data file identifies each non-motorist impairment as a separate record. That is, there can be more than one impairment record for each non-motorist. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, VEH_NO, and PER_NO, which are described in the beginning of the Data Element Definitions and Codes section. The data file also contains NMIMPAIR which is described below.

CASENUM, PER_NO, and NMIMPAIR are the unique identifiers for each record. CASENUM, VEH_NO, and PER_NO should be used to merge the Nmimpair data file with non-motorists from the Person data file. VEH_NO equals 0 for all records in this data file.

NM15 Condition (Impairment) at Time of Crash- Non-Motorist

Definition: This data element identifies physical impairments to this non-motorist that may have contributed to the crash as identified by law enforcement.

Additional Information: Prior to 2019, this data element's Locator Code or Data Element ID was NM14.

SAS Name: NMIMPAIR

| 2016 | 2017 | 2018- Later | |
|------|------|----------------|---|
| _ | _ | _ | |
| 0 | 0 | 0 | None/Apparently Normal |
| 1 | 1 | 1 | III, Blackout |
| 2 | 2 | 2 | Asleep or Fatigued |
| 3 | 3 | 3 | Walking with a Cane or Crutches, etc. |
| 4 | | | Paraplegic or Restricted to Wheelchair |
| | 4 | 4 | Paraplegic or in a Wheelchair |
| 5 | 5 | 5 | Impaired Due to Previous Injury |
| 6 | 6 | 6 | Deaf |
| 7 | 7 | 7 | Blind |
| 8 | 8 | 8 | Emotional (Depressed, Angry, Disturbed, etc.) |
| 9 | 9 | 9 | Under the Influence of Alcohol, Drugs or Medication |
| 10 | 10 | 10 | Physical Impairment – No Details |
| 96 | 96 | 96 | Other Physical Impairment |
| 98 | 98 | 98 | Not Reported |
| 99 | 99 | | Unknown if Impaired |
| | | 99 | Reported as Unknown if Impaired |

The NMPRIOR Data File

The Nmprior data file identifies each non-motorist action at the time of their involvement in the crash as a separate record. That is, there can be more than one action record for each non-motorist. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSUSTRAT, PSU_VAR, REGION, URBANICITY, WEIGHT, VEH_NO, and PER_NO, which are described in the beginning of the Data Element Definitions and Codes section. The data file also contains MPR_ACT which is described below.

CASENUM, PER_NO, and MPR_ACT are the unique identifiers for each record. CASENUM, VEH_NO, and PER_NO should be used to merge the Nmprior data file with non-motorists from the Person data file. VEH_NO equals 0 for all records in this data file.

NM11 Non-Motorist Action/Circumstances

Definition: This data element describes the action(s) of the non-motorist immediately prior to their involvement in the crash.

Additional Information: It is also an indication of whether the non-motorist was walking/cycling to/from school in addition to the action of the non-motorist immediately prior to their involvement in the crash.

SAS Name: MPR_ACT

| 2016- 2017 | 2018- Later | |
|---------------|----------------|--|
| 1 | 1 | Going to or from School (K-12) |
| 2 | 2 | Waiting to Cross Roadway |
| 3 | 3 | Crossing Roadway |
| 4 | 4 | Jogging/Running |
| 5 | 5 | Movement Along Roadway with Traffic (In or Adjacent to Travel Lane) |
| 6 | 6 | Movement Along Roadway Against Traffic (In or Adjacent to Travel Lane) |
| 8 | 8 | In Roadway-Other (Working, Playing, etc.) |
| 9 | | Adjacent to Roadway (e.g., Shoulder, Median) |
| | 9 | Stationary and Adjacent to Roadway (e.g., Shoulder, Median, Sidewalk) |
| 10 | 10 | Working in Trafficway (Incident Response) |
| 11 | 11 | Entering/Exiting a Parked or Stopped Vehicle |
| 12 | 12 | Disabled Vehicle Related (Working on, Pushing, Leaving/Approaching) |
| 14 | 14 | Other |
| 16 | 16 | Movement Along Roadway – Direction Unknown |
| 98 | 98 | Not Reported |
| 99 | | Unknown |
| | 99 | Reported as Unknown |

The SAFETYEQ Data File

The Safetyeq data file includes non-motorist safety equipment. It contains the data elements CASENUM, PSU, PJ, STRATUM, PSU_VAR, REGION, URBANICITY, WEIGHT, VEH_NO, and PER_NO, which are described in the beginning of the Data Element Definitions and Codes section. The data file also contains the data elements on the following pages.

CASENUM and PER_NO are the unique identifiers for each record. CASENUM, VEH_NO, and PER_NO should be used to merge the Safetyeq data file with non-motorists from the Person data file. VEH_NO equals 0 for all records in this data file.

Prior to 2017, the Safetyeq data file identified each item of safety equipment as a separate record. That is, there could be more than one safety equipment record for each non-motorist. The data element that captured each item of safety equipment was MSAFEQMT. This element has been moved to the Discontinued Safetyeq Data Elements.

NM14 Non-Motorist Safety Equipment Use

NM14A Non-Motorist Helmet Use

Definition: This data element indicates if the non-motorist was wearing a safety helmet.

Additional Information: This includes all helmets (e.g., bicycle helmet, motorcycle helmet, racing helmets, etc.).

Prior to 2019, this data element's Locator Code or Data Element ID was NM13A.

SAS Name: NMHELMET

Attribute Codes

| 2 | 2017 | 2018- Later | |
|---|------|----------------|---------------------|
| | 1 | 1 | No |
| | 2 | 2 | Yes |
| | 8 | 8 | Not Reported |
| | 9 | | Unknown |
| | | 9 | Reported as Unknown |

NM14B Non-Motorist Use of Protective Pads

Definition: This data element indicates if the non-motorist was wearing padded, shaped attachments to protect specific areas of the body (elbows, knees, shins, etc.) from injury.

Additional Information: Prior to 2019, this data element's Locator Code or Data Element ID was NM13B.

SAS Name: NMPROPAD

| | 2018- | |
|------|-------|---------------------|
| 2017 | Later | |
| 1 | 1 | No |
| 2 | 2 | Yes |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

NM14C Non-Motorist Use of Other Protective Safety Equipment

Definition: This data element indicates if the non-motorist was using protective safety equipment other than a helmet or pads (e.g., eye wear/face shields, gloves, wrist guards, etc.).

Additional Information: Prior to 2019, this data element's Locator Code or Data Element ID was NM13C.

SAS Name: NMOTHPRO

Attribute Codes

| | 2018- | |
|------|-------|---------------------|
| 2017 | Later | |
| 1 | 1 | No |
| 2 | 2 | Yes |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

NM14D Non-Motorist Use of Reflective Clothing/Carried Item

Definition: This data element indicates if the non-motorist was wearing or carrying some type of reflective item (e.g., jacket, backpack, vest, etc.).

Additional Information: Prior to 2019, this data element's Locator Code or Data Element ID was NM13D.

SAS Name: NMREFCLO

| 2017 | 2018- Later | |
|------|----------------|---------------------|
| 1 | 1 | No |
| 2 | 2 | Yes |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

NM14E Non-Motorist Use of Lighting

Definition: This data element indicates if the non-motorist was using a light on his/her person or on a pedalcycle or personal conveyance for safety purposes, to include flashlights.

Additional Information: Prior to 2019, this data element's Locator Code or Data Element ID was NM13E.

SAS Name: NMLIGHT

Attribute Codes

| | 2018- | |
|------|-------|---------------------|
| 2017 | Later | |
| 1 | 1 | No |
| 2 | 2 | Yes |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

NM14F Non-Motorist Use of Other Preventive Safety Equipment

Definition: This data element indicates if the non-motorist was using preventive safety equipment other than a reflective clothing/carried item or light (e.g., bicycle reflectors and flags, reflectors and triangles on a buggy, hi-glo orange clothing, rollerblade stoppers, etc.).

Additional Information: Prior to 2019, this data element's Locator Code or Data Element ID was NM13F.

SAS Name: NMOTHPRE

| | 2018- | |
|------|-------|---------------------|
| 2017 | Later | |
| 1 | 1 | No |
| 2 | 2 | Yes |
| 8 | 8 | Not Reported |
| 9 | | Unknown |
| | 9 | Reported as Unknown |

Discontinued SAFETYEQ Data Elements

Non-Motorist Safety Equipment Use (discontinued)

Definition: This data element indicates the safety equipment that was used by this non-motorist involved in the crash.

Additional Information: There can be one or more safety equipment responses for each non-motorist.

SAS Name: MSAFEQMT

Attribute Codes

2016

- 1 None Used
- 2 Helmet
- 3 Reflective Clothing (Jacket, Backpack, etc.)
- 4 Protective Pads (Elbows, Knees, Shins, etc.)
- 5 Lighting
- 7 Other Safety Equipment
- 8 Not Reported
- 9 Unknown if Used

Appendices

Appendix A: PC23 Crash Type Diagram

Appendix B: Rules for Derived Data Elements

Appendix C: Analytical Data Classification of Select CRSS Data Elements

Appendix D: Auxiliary Data Files

Appendix E: Summary Statistics

Appendix F: Standard Errors

Appendix G: Special Notes for Analysts

Cate-Config-CRASH TYPES (includes intent) uration gory 03 (01 02 04 05 Right Roadside AVOID COLLISION **SPECIFICS** DRIVE CONTROL **SPECIFICS** Departure OFF ROAD TRACTION LOSS WITH VEH., PED., ANIM. OTHER UNKNOWN Driver В 09 10 Left 07 06 Roadside **SPECIFICS SPECIFICS** CONTROL AVOID COLLISION DRIVE Departure TRACTION LOSS WITH VEH., PED., ANIM **OTHER** UNKNOWN OFF ROAD 12 14 15 16 Forward **SPECIFICS SPECIFICS** Impact PEDESTRIAN/ END PARKED VEH STA OBJECT UNKNOWN OTHER DEPARTURE ANIMAL D 26 (EACH - 32) (EACH - 33) Rear 25 End **SPECIFICS SPECIFICS** STOPPED SLOWER DECEL Same Trafficway Same Direction **OTHER** UNKNOWN 21, 22, 23 25, 26, 27 29, 30, 31 \mathbf{E} 34 36 38 40 (EACH - 42) (EACH - 43) Forward 35 37 39 **SPECIFICS SPECIFICS** Impact CONTROL CONTROL/ AVOID COLLISION AVOID COLLISION OTHER UNKNOWN TRACTION LOSS TRACTION LOSS WITH VEH. WITH OBJECT (EACH - 48) (EACH - 49) Angle, 44 45 SPECIFICS SPECIFICS Sideswipe UNKNOWN OTHER $\overline{\mathbf{G}}$ 51 (EACH - 52) (EACH - 53) Head-On SPECIFICS OTHER SPECIFICS UNKNOWN Trafficway Opposite Direction Н 56 (EACH - 62) (EACH - 63) Forward 55 57 59 61 Impact SPECIFICS SPECIFICS CONTROL/ CONTROL/ AVOID COLLISION AVOID COLLISION Same **OTHER** UNKNOWN TRACTION LOSS WITH VEH. TRACTION LOSS WITH OBJECT (EACH - 66) (EACH - 67) Angle, Lateral Moves Sideswipe SPECIFICS OTHER SPECIFICS UNKNOWN (EACH - 75) (EACH - 74) Change Trafficway Vehicle Turning Turn **SPECIFICS SPECIFICS** Across Initial **OTHER** UNKNOWN Path Initial Same Directions Opposite Directions K (EACH - 85) (EACH - 84) Turn Into 82 **SPECIFICS SPECIFICS** Path 76 78 83 80 **OTHER** UNKNOWN Turn Into Same Direction Turn Into Opposite Direction -87 Struck Intersect Straight (EACH - 90) (EACH - 91) on the Right 89 Struck 88 Paths 86 Striking from the Left **SPECIFICS SPECIFICS** on the left Striking from the Right OTHER UNKNOWN 92 M 93 98 Other Accident Type Misc. Other Veh. Backing, 99 Unknown Accident Type or Object Etc. 00 No Impact Backing Veh.

Appendix A: PC23 Crash Type Diagram

Appendix B: Rules for Derived Data Elements

Several derived data elements are included in the data files. A derived data element is any element that is not coded (i.e., data directly entered into the system) but translated from existing data. Derived data elements include:

- translations from coded data elements (e.g., "Driver Drinking in Vehicle")
- translations from collected information (e.g., "Urbanicity"),
- records counted from vehicle and person levels as crash level counters (e.g., "Number of Parked/Working Vehicles"),
- data extracted across several records (e.g., "First Harmful Event"), and
- element combinations (e.g., "Motor Carrier Issuing Authority and ID Number").

The derived data elements are provided to facilitate analyses and as a common platform for presenting findings. These elements and the translations used to derive them are described in this Appendix.

Crash Level Counts

Number of Motor Vehicles in Transport (MVIT)

Accident. VE_FORMS

(also provided as Vehicle.VE_FORMS, Parkwork.PVE_FORMS, Person.VE_FORMS)

Logic of Derivation

All Vehicle records linked to the crash are used. This data element is derived as the count of all vehicles in the crash where "Unit Type" = 1. It is the number of records in the Vehicle data file.

Number of Parked/Working Vehicles

Accident. PVH INVL

Logic of Derivation

All Vehicle records linked to the crash are used. This data element is derived as the count of all vehicles in the crash where "Unit Type" is in (2, 3 or 4). It is the number of records in the Parkwork data file.

Number of Persons in Motor Vehicles in Transport (MVIT)

Accident. PERMVIT

Logic of Derivation

All Person records linked to the crash are used. This data element is derived as the count of all persons in the crash where "Person Type" is in (1, 2 or 9).

Number of Persons Not in Motor Vehicles in Transport (MVIT)

Accident. PERNOTMVIT

Logic of Derivation

All Person records linked to the crash are used. This data element is derived as the count of all persons in the crash where "Person Type" is in (3, 4, 5, 6, 7, 8, 10 or 19).

Crash and Vehicle Level Derived Data Elements

Maximum Injury Severity in Crash

Accident.MAX_SEV

| Attribute Labels | 2016- Later |
|----------------------------------|----------------|
| No Apparent Injury | 0 |
| Possible Injury | 1 |
| Suspected Minor Injury | 2 |
| Suspected Serious Injury | 3 |
| Fatal | 4 |
| Injured, Severity Unknown | 5 |
| Died Prior to Crash | 6 |
| No person involved in the Crash | 8 |
| Unknown if Injured/ Not Reported | 9 |

Logic of Derivation

All Person records linked to the crash are used. If there are no records, then the value 8 is assigned. If there is a single record, then the SAS code for Person.INJ_SEV is used. If there are multiple records, all SAS codes for Person.INJ_SEV are obtained and prioritized. Follow the priority ranking of each attribute as follows: 4, 3, 2, 1, 5, 0, 6, 9.

Maximum Injury Severity in Vehicle

Vehicle.MAX_VSEV

| Attribute Labels | 2016- Later |
|----------------------------------|----------------|
| No Apparent Injury | 0 |
| Possible Injury | 1 |
| Suspected Minor Injury | 2 |
| Suspected Serious Injury | 3 |
| Fatal | 4 |
| Injured, Severity Unknown | 5 |
| Died Prior to Crash | 6 |
| No person in Vehicle | 8 |
| Unknown if Injured/ Not Reported | 9 |

Logic of Derivation

All Person records linked to the vehicle are used. If there are no records, then the value 8 is assigned. If there is a single record, then the SAS code for Person.INJ_SEV is used. If there are multiple records, all SAS codes for Person.INJ_SEV are obtained and prioritized. Follow the priority ranking of each attribute as follows: 4, 3, 2, 1, 5, 0, 6, 9.

Number Injured in Crash

Accident.NUM_INJ

| Attribute Labels | 2016- Later |
|--|----------------|
| No Person Injured/Property Damage Only Crash | 0 |
| Number of Known Injured | Х |
| No Person involved in the Crash | 98 |
| All Persons in Crash are Unknown If Injured | 99 |

Logic of Derivation

All Person records linked to the crash are used. If there are no records, then the value 98 is assigned. If the SAS code for Person.INJ_SEV is 9 for all persons in the crash, then the value is 99. If not, the value assigned is the number (count) of Person records where the SAS code for Person.INJ_SEV is between 1 and 5.

Number Injured in Vehicle

Vehicle.NUM_INJV

| Attribute Labels | 2016- Later |
|---|----------------|
| No Person Injured in Vehicle | 0 |
| Number of Known Injured | 1-97 |
| No Person involved in the Vehicle | 98 |
| All Persons in Vehicle are Unknown If Injured | 99 |

Logic of Derivation

All Person records linked to the vehicle are used. If there are no records, then the value 98 is assigned. If the SAS code for Person.INJ_SEV is 9 for all persons in the vehicle, then the value is 99. If not, the value assigned is the number (count) of Person records where the SAS code for Person.INJ_SEV is between 1 and 5.

Alcohol Involved in Crash

Accident.ALCOHOL

| Attribute Labels | 2016- Later |
|----------------------|----------------|
| Alcohol Involved | 1 |
| No Alcohol involved | 2 |
| No applicable person | 8 |
| Unknown | 9 |

Alcohol Involved in Crash is derived based on Police-Reported Alcohol Involvement from the Person data file as follows:

Police Reported Alcohol Involvement

| Attribute Labels | 2016- Later |
|---------------------------|----------------|
| No (Alcohol Not Involved) | 0 |
| Yes (Alcohol Involved) | 1 |
| Not Reported | 8 |
| Reported as Unknown | 9 |

Logic of Derivation

Alcohol Involved in Crash is calculated based on drivers and non-motorists [except occupants of motor vehicles not in-transport] in the crash and are referred to here as "involved active participants". This translates to Person Type NOT in 2, 3, or 9.

The following order of alcohol involvement is used. The SAS value for the case was determined by:

- 1 (Alcohol Involved)
 - If "Police Reported Alcohol Involvement" is 'Yes' for any of the involved active participants in the crash,
 - Then Alcohol Involved in Crash should be 1 (Alcohol Involved).
- 2 (No Alcohol Involved)
 - If "Police Reported Alcohol Involvement" is 'No' for ALL of the involved active participants in the crash,
 - Then Alcohol Involvement in Crash should be 2 (No Alcohol Involved).
- 9 (Unknown)
 - If NOT #1 (Alcohol Involved) and "Police Reported Alcohol Involvement" is 'Unknown' or 'Not Reported' for ANY of the involved active participants, Then Alcohol Involvement in Crash should be 9 (Unknown).
- 8 (No Applicable Person)
 - Default value if no active participants coded for this case.

Examples:

Case 1: V1 Driver- alcohol is no, V2 Driver- alcohol is unknown, one non-motorist- alcohol

is no, V3 with the situation that three unknown occupants with none coded the role of driver- alcohol for occ1 is yes, alcohol for occ2 is no, occ3 for alcohol is

unknown.

Alcohol Involved in Crash is 9 (Unknown).

Case 2: V1 driver, alcohol is unknown, one non-motorist, alcohol is no,

Alcohol Involved in Crash is 9 (Unknown).

Case 3: V1 driver, alcohol is no, one non-motorist, alcohol is unknown,

Alcohol Involved in Crash is 9 (Unknown).

Note: For a single vehicle crash, if an in-transport vehicle is listed as having a driver present, but no occupant is coded with the role of driver, then Alcohol Involved in Crash equals 9 (Unknown) unless all occupants are coded 'no (alcohol not involved)' or all the occupants are coded 'yes (alcohol involved).' In the case where all occupants are coded 'No (Alcohol Not Involved)' then Alcohol Involved in Crash is 2 (No Alcohol Involved). In the case where all occupants are coded 'Yes (Alcohol Involved)' then Alcohol Involved in Crash is 1 (Alcohol Involved). In the case where not all occupants are coded 'Yes' or 'No', then Alcohol Involved in Crash equals 9 (Unknown).

For a multi-vehicle crash or a crash having non-motorists, the highest priority alcohol value in each vehicle in the case and each applicable non-motorist is taken.

Driver Drinking in Vehicle

Vehicle.VEH ALCH

| Attribute Labels | 2016- Later |
|---|----------------|
| Alcohol Involved | 1 |
| No Alcohol involved | 2 |
| No Driver Present/Unknown if Driver Present | 8 |
| Unknown | 9 |

Logic of Derivation

- If "Driver Presence" equals 0 (No Driver Present/Not Applicable) or 9 (Unknown), Then "Driver Drinking in Vehicle" is set to 8 (No Driver Present/Unknown if Driver Present).
- If "Driver Presence" equals 1 (Yes) and there is a person in the vehicle where "Person Type" equals 1 (Driver of a Motor Vehicle In Transport),
 Then "Police-Reported Alcohol Involvement" for the driver is used for the derivation of "Driver Drinking in Vehicle" as follows:

| | Police-Reported Alcohol Involvement | | | Driv | er Drinking in Vehicle |
|---|-------------------------------------|---------------------------|---------------|------|------------------------|
| • | 0 | No (Alcohol Not Involved) | \rightarrow | 2 | No Alcohol Involved |
| • | 1 | Yes (Alcohol Involved) | \rightarrow | 1 | Alcohol Involved |
| • | 8 | Not Reported | \rightarrow | 9 | Unknown |
| • | 9 | Unknown (Police-Reported) | \rightarrow | 9 | Unknown |

- If "Driver Presence" equals 1 (Yes) and there is *not* a person in the vehicle where "Person Type" equals 1 (Driver of a Motor Vehicle In-Transport), Then
 - If "Police Reported Alcohol Involvement" is the same for the occupants of the vehicle where "Person Type" equals 9 (Unknown Occupant Type in a Motor Vehicle In Transport),
 - Then "Driver Drinking in Vehicle" is derived from "Police Reported Alcohol Involvement" as shown above,
 - Else "Driver Drinking in Vehicle" is set to 9 (Unknown).

Example:

V1 Driver- alcohol is no, V2 Driver- alcohol is unknown, one non-motorist- alcohol is no, V3 (driver present) with the situation that three unknown occupants with none coded the role of driver- alcohol for occ1 is yes, alcohol for occ2 is no, occ3 for alcohol is unknown.

Driver Drinking in Vehicle for V1 is 2 (No Alcohol Involved), for V2 is 9 (Unknown), for V3 is 9 (Unknown).

Note: If an in-transport vehicle is listed as having a driver present, but no occupant is coded with the role of driver, then Driver Drinking in Vehicle equals 9 (Unknown) unless all the unknown occupant types (PER_TYP=9) are coded 'no (alcohol not involved)' or all the unknown occupant types are coded 'yes (alcohol involved).' In the case where all the unknown occupant types are coded 'No (Alcohol Not Involved)' then Driver Drinking in Vehicle is 2 (No Alcohol Involved). In the case where all the unknown occupant types are coded 'Yes (Alcohol Involved)' then Driver Drinking in Vehicle is 1 (Alcohol Involved). For example, if there is a vehicle where there is a driver present and there are two unknown occupant types, both coded 'Yes (Alcohol Involved)' but neither is coded as the driver; then Driver Drinking in Vehicle equals 1 (Alcohol Involved). Another example: if there is a vehicle where there is a driver present and there are two unknown occupant types (neither coded as the driver--that is, the police report indicates it is unknown who was actually driving), and one is coded 'Yes (Alcohol Involved)' and the other is coded 'No (Alcohol Not Involved)'; then Driver Drinking in Vehicle equals 9 (Unknown).

Atmospheric Conditions

Accident.WEATHER

| Attribute Labels | 2016- Later |
|--------------------------------------|----------------|
| No Additional Atmospheric Conditions | 0 |
| Clear | 1 |
| Rain | 2 |
| Sleet or Hail | 3 |
| Snow | 4 |
| Fog, Smog, Smoke | 5 |
| Severe Crosswinds | 6 |
| Blowing Sand, Soil, Dirt | 7 |
| Other | 8 |
| Cloudy | 10 |
| Blowing Snow | 11 |
| Freezing Rain or Drizzle | 12 |
| Not Reported | 98 |
| Unknown / Reported as Unknown | 99 |

Logic of Derivation

This data element is derived from the coded data elements, Accident.WEATHER1 and Accident.WEATHER2. To derive WEATHER from these two data elements, the priority ranking of each attribute is as follows:

- Snow
- Blowing Snow
- Sleet or Hail
- Freezing Rain or Drizzle
- Rain
- Fog, Smog, Smoke
- Severe Crosswinds
- Blowing Sand, Soil, Dirt
- Other
- Cloudy

- Clear
- Not Reported
- Unknown
- No Additional Atmospheric Conditions

Region of the Country

Accident.REGION

Logic of Derivation

This element is derived from the data element "Primary Sampling Unit (PSU)" where the crash occurred. The country is divided into four regions with each of the 50 states and the District of Columbia falling into one of the regions. Region of the Country, therefore, is based on the state in which the Primary Sampling Unit is located.

Urbanicity

Accident.URBANICITY

Logic of Derivation

This element is derived from the data element "Primary Sampling Unit (PSU)" where the crash occurred. A PSU is considered Urban if the county (or counties) in the PSU has a population of 250,000 or greater, otherwise it is Rural.

Primary Sampling Unit for Variance Estimation

Accident.PSU_VAR

Logic of Derivation

This element is derived from the data elements "Primary Sampling Unit (PSU)" and "Police Jurisdiction" where the crash occurred.

First Harmful Event

Accident.HARM_EV (also provided as Vehicle.HARM_EV, Parkwork.PHARM_EV, Person.HARM_EV)

Logic of Derivation

This data element is derived from the set of all crash events. Each event in a crash is recorded in chronological order. The data element that records the event is "Sequence of Events" and includes both harmful and non-harmful events. First Harmful Event, therefore, is the first "Sequence of Events" value that is not between codes 60 and 79 (non-harmful events).

Initial Contact Point

Vehicle. IMPACT1, Parkwork.PIMPACT1 (also provided as Person.IMPACT1)

Logic of Derivation

This data element is derived from the set of all crash events for a vehicle. Each event in a crash is recorded in chronological order. The data element that records each impact for a vehicle is "Area of Impact (This Vehicle)" or "Area of Impact (Other Vehicle)". The area of impact is only coded for harmful events, that is "Sequence of Events" values that are not between codes 60 and 79. Initial Contact Point, therefore, is the vehicle's first recorded Area of Impact value for a harmful event. Note that the vehicle may be "This Vehicle" or the "Other Vehicle" in the crash event.

Make Model Combined

Vehicle. MAK_MOD, Parkwork. PMAK_MOD (also provided as Person. MAK_MOD)

Logic of Derivation

This 5-digit data element is the combination of two data elements, the 2-digit "Vehicle Make" code followed by the 3-digit "Vehicle Model" code.

Motor Carrier Identification Number

Vehicle. MCARR_ID, Parkwork. PMCARR_ID

Logic of Derivation

This 11-character data element is the combination of two data elements, the 2-digit "Motor Carrier Issuing Authority" code followed by the 9-character "Identification Number".

Appendix C: Analytical Classification of Select CRSS Data Elements

Several data elements in the CRSS are classified or collapsed according to analytical needs. In various NCSA's published reports and analysis, select CRSS data elements have been given a standard classification. This section shows how CRSS data elements are classified, assisting users in understanding and duplicating statistics presented in NCSA's published reports.

For analytical purposes, fatal crashes and fatalities are extracted from the Fatality Analysis Reporting System (FARS), not CRSS. FARS contains data on a census of fatal traffic crashes within the 50 states, the District of Columbia, and Puerto Rico. To be included in FARS, a crash must involve a motor vehicle traveling on a trafficway customarily open to the public and result in the death of a person (occupant of a vehicle or non-motorist) within 30 days of the crash. Since FARS contains records on all fatal crashes, it's a more accurate representation of fatal crashes and fatalities than the sample contained in CRSS.

It is important to note that these are NCSA's classifications and are subject to modification.

The following tables show the specific coding schemes of select CRSS data elements that are used in NCSA's publications and analysis:

Time of Day / Day of Week

| Classification | Data Year and Code 2016-Later | |
|--|---|--|
| Time of Day | HOUR (Military) | |
| Daytime (6:00 a.m. – 5:59 p.m.) | 6-17 | |
| Nighttime (6:00 p.m. – 5:59 a.m.) | 0-5, 18-23 | |
| Unknown | 99 | |
| Day of Week | WKDY_I w/ HOUR_I | |
| Weekday 6 a.m. Monday thru 5:59 p.m. Friday | (WKDY_I =2 and 6<=HOUR_I<=23) or (WKDY_I in (3,4,5)) or (WKDY_I =6 and (0<= HOUR_I <=17) | |
| Weekend 6 p.m. Friday thru 5:59 a.m. Monday | (WKDY_I =6 and 18<= HOUR_I <=23) or (WKDY_I in (1,7)) or (WKDY_I =2 and (0<= HOUR_I <=5)) | |
| Unknown | NA | |

Vehicle Body Type

| Classification | Data Year and Code |
|---------------------------------------|--|
| Glassification | 2016-Later |
| Passenger Cars | 01-11, 17 |
| Light Trucks & Vans | 14-16, 19-22, 28-41, 45-49 |
| Large Trucks | 60-63, 64, 66, 67, 68, 71, 72, 78 |
| Motorcycles ¹ | 80-89 |
| Buses | 50-59 |
| Other/Unknown Vehicles | 12, 13, 42, 65, 73, 90-97, 98 |
| Passenger Vehicles | 01-11, 14-22, 28-41, 45-49 |
| Utility Vehicles (a.k.a. On/Off Road) | 14-16, 19 |
| Pickups ² 30-39 | |
| Vans | 20, 21, 22, 28, 29 |
| Medium Trucks | 60-62, 64, 67, 68, 71 |
| Heavy Trucks | 63, 66, 72, 78 |
| Combination Trucks | (60-63, 64, 67, 68, 71, 72, 78 and TOW_VEH in (1-4)) or 66 |
| Single Unit Trucks | 60-63, 64, 67, 68, 71, 72, 78, 79 and TOW_VEH in (0, 5, 6, 9) |
| Unknown (not in Imputed Body Type) | 98, 99 |

⁽¹⁾ In 2017, new attributes were added to the motorcycle range: motor scooter (84); unenclosed three wheel motorcycle / unenclosed autocycle (1 rear wheel) (85); enclosed three wheel motorcycle / enclosed autocycle (1 rear wheel) (86); unknown three wheel motorcycle type (87).

⁽²⁾ In 2017, attributes compact pickup (30) and standard pickup (31) were deleted and replaced with attribute light pickup (34). In 2018, attribute pickup with slide in camper (32) was deleted.

Injury Severity

| CRSS Description | Data Year and Code 2016-Later | Classification | |
|------------------------------|----------------------------------|----------------|--|
| No Apparent Injury (O) | 0 | Not being d | |
| Died Prior | 6 | Not Injured | |
| Possible Injury (C) | 1 | | |
| Suspected Minor Injury (B) | 2 | laiura d | |
| Suspected Serious Injury (A) | 3 | Injured | |
| Unknown Injury Severity (U) | 5 | | |
| Fatal (K)* | 4 | Killed | |

^{*} Fatality counts from the FARS are used in NCSA's publications and analysis.

Person Type

| CRSS | Data Year and Code | Classification |
|--|--------------------|---------------------------|
| Description | 2016-Later | Giasomoation |
| Occupants | | |
| Driver of a motor vehicle in-transport | 01 | Driver |
| Passenger of a motor vehicle in-transport | 02 | Passenger |
| Unknown occupant type of a motor vehicle intransport (1) | 09 | Passenger |
| Non-occupants | | |
| Occupant of a motor vehicle not in-transport (2) | 03 | Other non-occupant |
| Occupant of a non-motor vehicle transport device (3) | 04 | Other non-occupant |
| Pedestrian | 05 | Pedestrian |
| Bicyclist | 06 | Pedalcyclist |
| Other Cyclist | 07 | Pedalcyclist |
| Persons on personal conveyances | 08 | Other non-occupant |
| Persons in/on buildings | 10 | Other non-occupant |
| Unknown type of non-occupant | 19 | Unknown non-occupant type |

⁽¹⁾ Customarily, "Unknown Occupant" is placed in the "Passenger" category, unless they need to be distinguished from "Passengers".

^{(2) &}quot;Occupant of motor vehicle not in-transport" refers to occupants of parked motor vehicles (any motor vehicle stopped off the roadway). This includes occupants of motor vehicles in motion outside the trafficway boundaries.

^{(3) &}quot;Occupant of non-motor vehicle transport device" refers to persons riding in an animal-drawn conveyance, on an animal, or injured occupants of railway trains, etc.

Restraint System Use

The restraint use classification should be used for all vehicle occupants, except for motorcyclists. However, most restraint use analysis focuses on child safety seat use or belt use for <u>passenger vehicle</u> occupants. Be sure to include the appropriate vehicle body type occupied in your selection criteria - see the section on <u>Vehicle Body Type Classification</u>.

| CRSS | Da | O1 17 11 | | |
|--|------|-----------|------------|----------------|
| Description | 2016 | 2017-2018 | 2019-Later | Classification |
| Not Applicable | 0 | | | |
| None Used – Motor Vehicle Occupant | 7 | | | |
| None Used/Not Applicable | | 20 | 20 | |
| No Helmet | 17 | 17 | | Not Used |
| DOT-Compliant Motorcycle Helmet | 5 | 5 | | |
| Helmet, Other than DOT-Compliant Motorcycle Helmet | 16 | 16 | | |
| Helmet, Unknown if DOT-Compliant | 19 | 19 | | |
| Shoulder and Lap Belt Used | 3 | 3 | 3 | |
| Shoulder Belt Only | 1 | 1 | 1 | |
| Lap Belt Only | 2 | 2 | 2 | |
| Child Restraint System – Forward Facing | 10 | 10 | 10 | |
| Child Restraint System – Rear Facing | 11 | 11 | 11 | Used |
| Booster Seat | 12 | 12 | 12 | |
| Child Restraint – Type Unknown | 4 | 4 | 4 | |
| Other Restraint/ Safety Equipment Used | 97 | 97 | 97 | |
| Restraint Used – Type Unknown | 8 | 8 | 8 | |
| Not Reported | 98 | 98 | 98 | |
| Unknown If Helmet Worn | 29 | 29 | | Unknown |
| Unknown If Used / Reported as Unknown If Used | 99 | 99 | 99 | |

Helmet Use

The helmet use classification should be used for motorcyclists only. Be sure to include the appropriate vehicle body type occupied in your selection criteria - see the section on <u>Vehicle</u> <u>Body Type Classification</u>.

| CRSS | Da | Data Year and Code | | | |
|--|-------------------------------|-------------------------------|-------------------------------|-----------------|--|
| Description | 2016 | 2017-2018 | 2019-Later | Classification | |
| Not Applicable | 0 | | | | |
| None Used – Motor Vehicle Occupant | 7 | | | | |
| None Used/Not Applicable | | 20 | 20 | | |
| Shoulder And Lap Belt Used | 3 | 3 | | | |
| Shoulder Belt Only | 1 | 1 | | | |
| Lap Belt Only | 2 | 2 | | | |
| Child Restraint System – Forward Facing | 10 | 10 | | Not Helmeted | |
| Child Restraint System – Rear Facing | 11 | 11 | | | |
| Booster Seat | 12 | 12 | | | |
| Child Restraint – Type Unknown | 4 | 4 | | | |
| No Helmet | 17 | 17 | 17 | | |
| Helmet Used Improperly | (5, 16, 19) and REST_MIS=1 | (5, 16, 19) and REST_MIS=1 | (5, 16, 19) and HELM_MIS=1 | | |
| Restraint Used – Other or Type Unknown | (8, 97) and REST_MIS=1 | (8, 97) and REST_MIS=1 | | | |
| DOT-Compliant Motorcycle Helmet | 5 and REST_MIS=0 | 5 and REST_MIS=0 | 5 and HELM_MIS=0 | | |
| Other/Unknown Helmet | (16, 19) and REST_MIS=0 | (16, 19) and REST_MIS=0 | (16, 19) and HELM_MIS=0 | l la les ata el | |
| Other Restraint/ Safety Equipment Used | 97 and REST_MIS=0 | 97 and REST_MIS=0 | | Helmeted | |
| Restraint Used – Type Unknown | 8 and REST_MIS=0 | 8 and REST_MIS=0 | | | |
| Not Reported | 98 | 98 | 98 | | |
| Unknown If Helmet Worn | 29 | 29 | | Unknown | |
| Unknown If Used / Reported as Unknown If Used | 99 | 99 | 99 | | |

Alcohol Test Result

| CRSS Description | Data Year and Code 2016-Later | Classification | |
|---|----------------------------------|---------------------------------|------------------------------|
| .00 - Actual Value | 0-9 | No Alcohol | |
| .0193 – Actual Value | 10-939 | | Tested with Known Results |
| .94 or Greater | 940 | Positive BAC | |
| Positive Reading with No Actual Value | 998 | | |
| None Given | 996 | Not Tested | |
| AC Test Performed, Results Unknown | 997 | Tested, with Unknown Results | |
| Unknown if Tested / Not Reported | - | | Unknown BAC |
| Unknown if Tested / Reported as Unknown if Tested | 999 | Unknown if Tested | |
| Not Reported | 995 | | |

Appendix D: Auxiliary Data Files

A set of auxiliary files contain elements derived from the CRSS datasets to make it easier to extract certain data classifications and topical areas, such as commonly used age groups, speeding involved crashes, and distraction involved crashes. There is an Accident (acc_aux), Vehicle (veh_aux), and Person (per_aux) level auxiliary file for each year of data. A listing of data elements in each file follows:

Accident File (acc_aux)

| Variable | Description |
|------------|---|
| A_CRAINJ | Crash Injury Type |
| A_CT | Crash Type |
| A_D15_19 | Crashes Involving a Young Driver (Aged 15-19) |
| A_D15_20 | Crashes Involving a Young Driver (Aged 15-20) |
| A_D16_19 | Crashes Involving a Young Driver (Aged 16-19) |
| A_D16_20 | Crashes Involving a Young Driver (Aged 16-20) |
| A_D16_24 | Crashes Involving a Young Driver (Aged 16-24) |
| A_D21_24 | Crashes Involving a Young Driver (Aged 21-24) |
| A_D65PLS | Crashes Involving an Older Driver (Aged 65+) |
| A_DIST | Involving a Distracted Driver |
| A_DOW | Day of Week |
| A_DROWSY | Involving a Drowsy Driver |
| A_HR | Involving a Hit and Run |
| A_INTER | Interstate |
| A_INTSEC | Intersection |
| A_JUNC | Junction |
| A_LT | Involving a Large Truck |
| A_MANCOL | Manner of Collision |
| A_MC | Involving a Motorcycle |
| A_PED | Involving a Pedestrian |
| A_PEDAL | Involving a Pedalcyclist |
| A_POLPUR | Involving a Police Pursuit |
| A_POSBAC | Involving a Driver with a Positive BAC Test Result |
| A_RD | Involving a Roadway Departure (FHWA definition) |
| A_REGION | NHTSA Region |
| A_RELRD | Relationship to the Trafficway |
| A_ROADFC | Roadway Function Class |
| A_ROLL | Involving a Rollover |
| A_RU | Land Use (Rural/Urban) |
| A_SPCRA | Involving Speeding |
| A_TOD | Time of Day |
| BIA | Tribal lands based on geographic location and spatial data |
| SPJ_INDIAN | Special Jurisdiction Indian Reservation |
| INDIAN_RES | Indian Reservation based on special jurisdiction and geographic location data |

Vehicle File (veh_aux)

| Variable | Description |
|----------|---------------------------|
| A_BODY | Vehicle Type |
| A_CDL_S | CDL Status |
| A_DRDIS | Distracted Driver |
| A_DRDRO | Drowsy Driver |
| A_IMP1 | Initial Impact Point |
| A_IMP2 | Principal Impact Point |
| A_LIC_C | License Compliance |
| A_LIC_S | License Status |
| A_MC_L_S | Motorcycle License Status |
| A_SBUS | School Bus |
| A_SPVEH | Speeding Vehicle |
| A_VROLL | Rollover |

Person File (per_aux)

| Variable | Description | | | | | |
|------------|--|--|--|--|--|--|
| A_AGE1 | Age Group 1 | | | | | |
| A_AGE2 | Age Group 2 | | | | | |
| A_AGE3 | Age Group 3 | | | | | |
| A_AGE4 | Age Group 4 | | | | | |
| A_AGE5 | Age Group 5 | | | | | |
| A_AGE6 | Age Group 6 | | | | | |
| A_AGE7 | Age Group 7 | | | | | |
| A_AGE8 | Age Group 8 | | | | | |
| A_AGE9 | Age Group 9 | | | | | |
| A_HELMUSE* | Helmet Use (use for motorcyclists only) | | | | | |
| A_ALCTES | Alcohol Testing | | | | | |
| A_EJECT | Ejection | | | | | |
| A_HISP | Hispanic Origin | | | | | |
| A_HRACE | Race and Hispanic Origin – Using OMB Guideline | | | | | |
| A_LOC | Non-Motorist Location | | | | | |
| A_PERINJ | Injury Type | | | | | |
| A_PTYPE | Person Type | | | | | |
| A_RCAT | Race – Using OMB Guidelines | | | | | |
| A_RESTUSE* | Restraint Use (use for all vehicle occupants except motorcyclists) | | | | | |

*Note A_HELMUSE focuses on motorcycle helmet use and should be used when doing helmet use analysis for motorcyclists. When using these variables, be sure to include the appropriate body types in your selection criteria as well (see Vehicle Body Type Classification). For the specific type of restraint system used – child seat, lap belt, shoulder belt, DOT-compliant motorcycle helmet, etc. – refer to the Restraint System Use (REST_USE) and Helmet Use (HELM_USE) in the Person data file.

Appendix E: Summary Statistics

The following two tables provide a summary of descriptive statistics from the CRSS data files. Table 1: Unweighted Sample represents the actual number of records and Table 2: Weighted Sample represents the national estimates. These statistics provide the analyst a benchmark to compare against numbers obtained from the analytical data files.

Table 1: Unweighted Sample

| Year | Crashes | Vehicles (In-Transport) | People | Drivers | Occupants | Pedestrians | Pedalcyclists |
|------|---------|----------------------------|---------|---------|-----------|-------------|---------------|
| 2016 | 46,511 | 82,149 | 117,759 | 82,000 | 113,405 | 2,257 | 1,576 |
| 2017 | 54,969 | 97,625 | 138,913 | 97,388 | 133,408 | 2,881 | 1,946 |
| 2018 | 48,443 | 86,105 | 120,230 | 85,916 | 115,774 | 2,444 | 1,436 |
| 2019 | 54,409 | 96,717 | 135,410 | 96,488 | 129,980 | 2,949 | 1,802 |

Table 2: Weighted Sample

| Year | Crashes | Vehicles (In-Transport) | People | Drivers | Occupants | Pedestrians | Pedalcyclists |
|------|-----------|----------------------------|------------|------------|------------|-------------|---------------|
| 2016 | 6,821,129 | 12,094,306 | 16,617,091 | 12,074,087 | 16,386,624 | 95,492 | 69,929 |
| 2017 | 6,452,285 | 11,547,079 | 15,758,853 | 11,521,902 | 15,557,000 | 78,671 | 55,067 |
| 2018 | 6,734,416 | 12,049,038 | 16,208,490 | 12,024,889 | 15,997,232 | 81,573 | 51,286 |
| 2019 | 6,755,841 | 12,144,348 | 16,279,944 | 12,118,123 | 16,069,748 | 83,296 | 54,219 |

Drivers: PERSON TYPE = 1 Pedestrians: PERSON TYPE = 5
Occupants: PERSON TYPE IN (1,2,9) Pedalcyclists: PERSON TYPE IN (6,7)

Appendix F: Standard Errors

The estimates generated using CRSS data are subject to sampling errors because they are based on a probability sample of crashes instead of all crashes. The sampling error is a measure of the variability of an estimator from its mean under repeated sample selections. The magnitude of sampling error depends on the study variable, the estimator used, and the CRSS sample design.

For various reasons, it is necessary to use design features such as stratification, clustering, and unequal selection probabilities to select the CRSS probability sample. As a result, the CRSS sample is not a simple random sample. Failing to consider these design features in estimation can cause bias to both CRSS point estimates and the associated standard error estimates.

Estimation methods and computer software have been developed to make estimates from complex survey data like CRSS. Specialized procedures for complex survey data analysis, such as SAS PROC SURVEY procedures and SUDAAN procedures, should be used for CRSS data analysis along with proper design statements. A SAS PROC SURVEY procedure and a SUDAAN procedure are provided below as examples of CRSS estimation. See the NHTSA Technical Report Crash Report Sampling System: Design Overview, Analytic Guidance, and FAQs for some basic concepts of complex survey data analysis and more examples.

SAS and SUDAAN Examples for Single Year CRSS Estimation

```
/*SAS Example*/
PROC SURVEYFREQ DATA=IMPUTED.ACCIDENT VARMETHOD=JK;
    STRATA PSUSTRAT;
    CLUSTER PSU_VAR;
    TABLES MAXSEV_IM;
    WEIGHT WEIGHT;
    RUN;

/*SUDAAN Example*/
PROC CROSSTAB DATA=IMPUTED.ACCIDENT DESIGN=JACKKNIFE NOTSORTED;
    NEST PSUSTRAT PSU_VAR;
    WEIGHT WEIGHT;
    TABLES MAXSEV_IM;
    CLASS MAXSEV_IM;
    CLASS MAXSEV_IM;
    PRINT NSUM="SAMSIZE" WSUM="POPSIZE" SEWGT;
    RUN;
```

While the illustrations above are the preferred way to generate standard errors of estimates, NHTSA has also published the Generalized variance function (GVF) method in the past in the GES Analytic User's Manual.

The GVF provides a framework to generate ballpark standard error estimates for a large quantity of estimates in a simpler way. In this approach, it is assumed that in CRSS, the standard error (SE) of a point estimate x can be approximated by a function of x:

$$SE \approx e^{a+b*ln^2(x)}$$

To estimate the a and b in the approximation equation, first a group of point estimates (x's) and their associated standard error estimates (SE's) are made from the CRSS sample using specialized software such as SAS PROC SURVEY procedures or SUDAAN procedures. These point estimates and associated standard error estimates are then used to find the best a and b for the approximation. Once the best a and b are estimated, they are plugged back into the above approximation equation to make a ballpark standard estimate for any point estimate x.

NHTSA will issue updates to the GVF upon completion of the analysis required to generated the function parameters discussed above.

Appendix G: Special Notes for Analysts

2018 Increase in National Estimate of Property Damage Only (PDO) Crashes Due to Change in Police Reporting Procedures

Motor vehicle crashes that include fatalities, injuries, or property damage in excess of a predetermined dollar amount are considered reportable crashes. Previously, at five CRSS sampled data collection sites, police officers could report the property damage costs to vehicles involved in a crash as "Unknown". Due to updates to the state's reporting criteria for these data collection sites, "unknown" property damage cost was removed as an option. This change converted many PDO crashes with unknown property damage costs which were previously non-reportable crashes into reportable crashes in 2018. This in turn caused the increase of the national PDO crash estimate.

Analysis of Pedestrian and Bicycle Crashes Around Intersections

When using the Accident, Person, and Pbtype data files to study pedestrian and cyclist crashes, care must be taken when describing their locations in and around intersections.

The Accident data file contains the data element, "Relation to Junction-Specific Location." This element identifies the location of the "First Harmful Event" of the crash and not necessarily the location of any pedestrian or bicyclist involved. In addition, this element's attributes have specific definitions for *Intersection* (in the intersection) and *Intersection-Related*.

The Person data file contains the data element, "Non-Motorist Location at Time of Crash." This element employs the defined concepts of *At Intersection* and *Not at Intersection*, but does not include the concept of *Intersection-Related*.

Finally, the Pbtype data file contains the data elements, "Crash Location – Pedestrian," "Crash Location – Bicycle," "Pedestrian Position," and "Bicyclist Position." These elements employ the defined concepts of *At Intersection*, *Not at Intersection*, and *Intersection Related* (defined somewhat differently from the Accident file concept).

The following graphics may be helpful aids in conjunction with the FARS/CRSS Coding and Validation Manual and the Pedestrian-Bicyclist Crash Typing Manual:

Intersection Cheat Sheet



C21b RELATION TO JUNCTION



02 (Intersection)



- 02 (Intersection) is used when the first harmful event occurs in an area which:
- (1) contains a crossing or connection of two or more roadways not classified as a driveway access, and
- (2) is embraced within the prolongation of the lateral curb lines or, if none, the lateral boundary lines of the roadways.

03 (Intersection-Related)



- 03 (Intersection-Related) means that the first harmful event:
- (1) occurs on an approach to or exit from an intersection and
- (2) results from an activity, behavior or control related to the movement of traffic units through the intersection.

NM10 NON-MOTORIST LOCATION AT TIME OF CRASH



AT INTERSECTION



- "At intersection" means: The person is on a roadway (travel lane) either
- (1) in the intersection,
- (2) in an area between a crosswalk and the perimeter of the intersection, or
- (3) in a crosswalk (whether marked or unmarked) adjacent to an intersection. If there are no crosswalks, "at intersection" means only the intersection, which is the area embraced within the prolongation of the lateral curb lines or, if none, the lateral boundary lines of the roadways.

NOT AT INTERSECTION



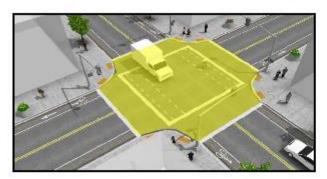
The person is on a roadway, but not "At Intersection".



PB31/PB31b Pedestrian/Bicycle Crash Location 🗼

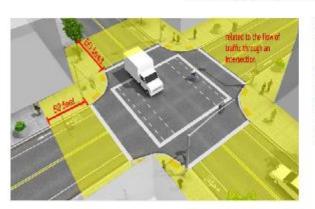


AT INTERSECTION



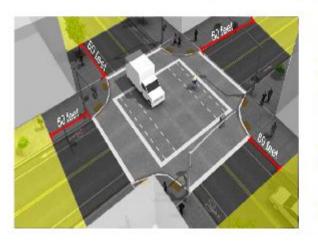
- 1 (At Intersection) is used when a person is on a roadway (travel lane) either
- (1) in the intersection,
- (2) in an area between a crosswalk and the perimeter of the intersection, or
- (3) in a crosswalk (whether marked or unmarked) adjacent to an intersection.

INTERSECTION RELATED



2 (Intersection-Related) is used when a person is within the trafficway 50 feet out from the perimeter of an "At intersection" area including the entire cross section of the trafficway (e.g., medians, turn lanes, bike lanes, parking lanes, shoulders, sidewalks, etc.) OR the crash is related to the flow of traffic through an intersection (e.g., the result of queuing traffic).

NOT AT INTERSECTION



3 (Not At Intersection) is used when a person is within the trafficway more than 50 feet out from the perimeter of an "At Intersection" area AND the crash is not identified as related to the movement of the traffic units through an intersection.

This includes the entire cross section of the trafficway (e.g., medians, turn lanes, bike lanes, parking lanes, shoulders, sidewalks, etc.).

This attribute is the default when the case materials give no indication that the crash is within 50 feet of an intersection.

Analysis of Relation to Junction Data Elements

For 2019 CRSS, the data element *Relation to Junction-Within Interchange Area* (RELJCT1) was removed from the imputation process and its imputed data element (RELJCT1_IM) is not in the 2019 CRSS datasets.

Analysts should be aware the relationship between *Relation to Junction-Within Interchange*Area and *Imputed Relation to Junction-Specific Location* (RELJCT2_IM) may not hold for certain data attributes. For example, if *Relation to Junction-Specific Location* is "Non-Junction" then *Relation to Junction-Within Interchange Area* should be "No". However, when *Relation to Junction-Specific Location* is imputed to "Non-Junction", *Relation to Junction-Within an Interchange Area* could be "Unknown" or "Reported as Unknown" because it was not imputed.

For more information on the relationship between the two data elements, see the FARS/CRSS Coding and Validation manual vailable at: NCSA Publications - Manuals & Documentation.

DOT HS 813 022 February 2021 (Revised)



