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# National Automotive Sampling System (NASS) General Estimates System (GES)

# Analytical Users Manual 1988-2010

# NASS GES Analytical User's Manual
# 1988 – 2010

**U. S. Department of Transportation**
National Highway Traffic Safety Administration
National Center for Statistics and Analysis
Washington, D.C. 20590

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# 2010 FARS/NASS GES Standardization

The purpose of this document is to inform users of NHTSA's Fatality Analysis Reporting System (FARS) and National Automotive Sampling System General Estimates System (NASS GES) data about some of the more significant changes to the 2010 data as a result of the standardization of the data elements between the two systems. In addition to the changes outlined below, a listing of all specific data element changes can be found in the following table:

2010 Variables with Changes in Definitions, Attributes or SAS Codes

The FARS/NASS GES Standardization began in 2006, with the second phase being implemented in the 2010 data collection year. The definition and element attribute changes introduced in 2010 are the most substantive and most numerous changes in one year in the reconciliation of the FARS and NASS GES data systems. In the 2011 data collection year – the third and final planned phase of the FARS/NASS GES Standardization – nearly all remaining data element attribute and file structure differences will be addressed. As a single, unified data entry system, FARS/NASS GES will be compatible with the Model Minimum Uniform Crash Criteria (MMUCC), the guideline used by nearly all States to develop and revise their crash forms and databases. Once complete, the FARS/NASS GES Standardization will simplify crash data coding and analysis as well as reduce costs and errors.

Probably the most notable changes were the introduction of precrash information in FARS (already collected in NASS GES) and a change to case structure or how the groups of related data elements are organized. For example, in 2009 a FARS case consisted of Crash, Vehicle, Driver and Person coding forms. In 2010, the Person level form was split into Motor Vehicle Occupant and Non-Motor Vehicle Occupant forms, and the Precrash form was added (new to FARS, though not to NASS GES).

These structure changes also include changes to how the data are now stored and made available. For example, for FARS, there are now 16 data tables rather than 4. This results from the changes in the number of coding forms and from changes in specific data elements. Several data elements that used to allow only a specified number of responses now have a "select-all-that-apply" format. There is a separate data table for each of these data elements.

At the Crash level, a Crash Events Table was added to FARS (and modified in NASS GES). In NASS GES, Non-Harmful Events were added to the Crash Events Table.

The precrash information represents not only a new coding form, but more importantly, largely a new concept for FARS, attempting to collect data about the conditions, events and driver actions that preceded and may have contributed to the crash. Precrash data is intended to improve crash avoidance research and has been included in NASS GES since 1992.

The new FARS Precrash form information consists of 23 data elements, 9 of which were previously coded at the Crash level, 3 each at the Vehicle and Driver levels, and 8 new elements. Nine trafficway descriptor data elements were moved from the crash level to the new precrash level. These elements provide details about the characteristics of the trafficway selected for each vehicle.

A Pedestrian/Bicycle crash typing software application was added to the Non-Motor Vehicle Occupant form for both systems to help identify the precrash actions for parties involved in certain non-motorist-related crashes.

Type of Intersection was added to both systems. Bus Use and Vehicle Configuration were two Vehicle level elements that are new to NASS GES in 2010 and modified for FARS (element attributes were consolidated and redefined). Condition at Time of Crash was added at the Driver and the Non-Motor Vehicle Occupant levels for both systems. For motor vehicle occupants, there is now an Indication of Misuse of Restraint System or Helmet Use in both systems.

Some of the information that had been collected under FARS Related Factors was redistributed to new data elements. For example, some Person Related Factors have been removed and are now captured in two new Non-Motor Vehicle Occupant elements; Non-Motorist Action/Circumstances Prior to Crash and Non-Motorist Action/Circumstances at Time of Crash. Some Vehicle Related Factors are now captured under the new Precrash elements, Contributing Circumstances, Motor Vehicle and Driver Distracted By. The Driver Level element, Violations Charged, is now a "Select-all-That-Apply" element.

Multiple data elements that are part of the Model Minimum Uniform Crash Criteria (MMUCC) had the attribute "Not Reported" added in 2010 to account for information missing from the case source materials.

To ensure that data quality was not compromised as a result of the standardization, NHTSA refined and enhanced its quality control processes. These enhancements enable the identification of coding discrepancies and development of training tailored to eliminate or reduce these discrepancies.

The final phase of the FARS/NASS GES standardization will occur during the 2011 data collection year, at which point FARS and NASS GES, while remaining separate data systems, will share a single data entry system and uniform set of data elements.

# New in 2010 NASS GES

There were many changes to the 2010 NASS GES, most of which are the result of NHTSA's efforts to standardize variables in the NASS GES and the Fatality Analysis Reporting System (FARS). Additions, deletions, and changes are listed below.

More detailed information on each variable can be found in the NASS GES Coding and Editing Manuals, which NHTSA publishes for each year of data collection. While the 2010 changes are addressed in this Analytical User's Manual, data users should compare the 2009 and 2010 Coding and Editing Manuals for a more thorough understanding. Manuals for 1995 to the present can be found at:

http://www-nrd.nhtsa.dot.gov/cats/listpublications.aspx?Id=k&ShowBy=DocType.

**General changes to 2010 NASS GES are:**

- Non-harmful events are added to the Cevent (formerly the Event) data set.
- A new data set (Vevent) is added which lists the harmful and non-harmful events for each in-transport motor vehicle.
- Pedestrian/bicyclist typing is updated to use the coding procedures in the document "Pedestrian and Bicycle Crash Analysis Tool Version 2.0" (March 2006). The pedestrian/bicyclist typing information is collected for all pedestrians, bicyclists and people on personal conveyances and is in a data set which is new in 2010, Pbtype. In 2009 and before, the pedestrian/bicyclist information is available for the first qualifying person in the crash and is in the Accident data set.
- The data sets Nmprior and Nmcrash are added in 2010; they replace the Nmaction data set and contain information about what people (who are not occupants of motor vehicles) are doing prior to the crash (Nmprior) and any improper actions or contributing circumstances noted on the PAR (Nmcrash).
- The Trafcon data set is retired in 2010. In prior years (2002-2009) the Trafcon data set could contain multiple traffic controls for each in-transport motor vehicle. In 2010, one traffic control is coded per in-transport motor vehicle eliminating the need for the Trafcon data set. The traffic control coded in 2010 is the one which best describes the traffic controls in the vehicle's environment just prior to its critical precrash event.

## 2010 Variables with Changes in Definitions, Attributes or SAS Codes

**Accident:**

| | |
|---|---|
| A06 | First Harmful Event EVENT1 |
| A07 | Manner of Collision MAN_COL |
| A09 | Relation to Junction REL_JCT1/REL_JCT2 |
| A10 | Relation to Trafficway REL_ROAD |
| A11/V_A11 | Trafficway Description VTRAFWAY (V41 in 2010) |
| A12/V_A12 | Total Lanes of Roadway VNUM_LAN |
| A13/V_A13 | Roadway Alignment VALIGN |
| A14/V_A14 | Roadway Grade VPROFILE |
| A15/V_A15 | Roadway Surface Conditions VSURCOND |
| A16/V_A16 | Traffic Control Device VTRAFCON |
| A18/V_A18 | Speed Limit VSPD_LIM |
| A19 | Light Condition LGHT_CON |
| A20 | Atmospheric Conditions WEATHER/WEATHER1/WEATHER2 |
| A21 | School Bus Related SCH_BUS |
| A25 | Work Zone WRK_ZONE |

**Cevent/Vevent** (only **Event** in 2009 and prior, modified in 2010)**:**

| | |
|---|---|
| E03/V24 | Areas of Impact (This Vehicle)/ Areas of Impact – Initial GAD/IMPACT1 |
| E03/V38 | Areas of Impact (This Vehicle)/ Areas of Impact – Most Damaged GAD/IMPACT2 |
| E04 | Non-Collision Category or Object Contacted (Sequence of Events) OBJCONT |
| E05/V24 | Areas of Impact (Other Vehicle) OBJGAD/IMPACT1 |
| E06/VE06 | Action E_ACTION |

**Vehicle:**

| | |
|---|---|
| V02 | Hit and Run HIT_RUN |
| V03 | Vehicle Make MAKE |
| V04 | Vehicle Model MODEL |
| V05 | Body Type BODY_TYP |
| V06 | Vehicle Model Year MODEL_YR |
| V07 | Vehicle Identification Number VIN |
| V08 | Special Use SPEC_USE |
| V09 | Emergency Use EMER_USE |
| V10B | Number of Occupants NUMOCCS |
| V18 | Extent of Damage DEFORMED |
| V19 | Vehicle Removal TOWED |
| V20 | Most Harmful Event V_EVENT |
| V31 | Vehicle Motor Carrier Identification Number MCARR_ID |
| V33 | Cargo Body Type CARGO_BT |
| V41 | Trafficway Description VTRAFWAY (it was V_A11 in 2009) |

**Parked:**

| | |
|---|---|
| PV05 | Parked/Working Body Type PBODYTYP |
| PV06 | Parked/Working Vehicle Model Year PMODELYR |
| PV07 | Parked/Working Vehicle Identification Number PVIN |
| PV08 | Parked/Working Special Use PSP_USE |
| PV10 | Parked/Working Number of Occupants Coded POCCINVL |

PV10B Parked/Working Number of Occupants PNUMOCCS
PV18 Parked/Working Extent of Damage PVEH_SEV
PV19 Parked/Working Vehicle Removal PTOWED
PV31 Parked/Working Vehicle Motor Carriers Identification Number PCARIDNO
PV33 Parked/Working Cargo Body Type PCARGTYP
PV34 Parked/Working Hazardous Materials Placard PHAZPLAC
PV37 Parked/Working Vehicle Location PREL_RWY
PV38 Parked/Working Vehicle Areas of Impact – Most Damaged PIMPACT2

**Person:**

P03 Person Type PER_TYP
P04 Seating Position SEAT_POS
P06 Ejection EJECTION
P07 Age AGE
P08 Sex SEX
P09 Injury Severity INJ_SEV
P10 Transported to Medical Facility By HOSPITAL
P11A Alcohol Test Status ALCHTEST
P11B Alcohol Test Type ALTSTYPE
P11C Alcohol Test Result ALTRSULT
P13 Non-Motorist Location at Time of Crash LOCATN
P15 Restraint System/Helmet Use REST_SYS
P17A Drug Test Status DRUGTEST
P17B Drug Test Type DRTSTYPE
P17C Drug Test Result DRTRSULT
P21 Air Bag Deployed AIR_BAG

**Safetyeq:**

M_P20 Non-Motorist Safety Equipment Use MSAFEQMT

**New Variables:**

**Accident:**

A28 Type of Intersection TYP_INT

**Vehicle:**

V_A17 Device Functioning VTCONT_F
V39 Bus Use BUS_USE
V40 Vehicle Configuration V_CONFIG

**Person:**

P24 Any Indication of Mis-use of Restraint System/Helmet Use REST_MIS
P25 Non-Motorist Action/Circumstances Prior to Time of Crash MPR_ACT
P26 Non-Motorist Action/Circumstances at Time of Crash MTM_CRSH

**Parked:**

PV38 Parked/Working Vehicle Areas of Impact – Most Damaged PIMPACT2
PV40 Parked/Working Vehicle Configuration PV_CONFIG

**Pbtype (new in 2010):**

| | |
|---|---|
| PB27 | Marked Crosswalk PBCWALK |
| PB28 | Sidewalk Present PBSWALK |
| PB29 | School Zone PBSZONE |
| PB30 | Crash Type (Pedestrian) PEDCTYPE |
| PB30B | Crash Type (Bicyclist) BIKECTYPE |
| PB31 | Crash Type Location (Pedestrian) PEDLOC |
| PB31B | Crash Type Location (Bicyclist) BIKELOC |
| PB32 | Pedestrian Position PEDPOS |
| PB32B | Bicyclist Position BIKEPOS |
| PB33 | Pedestrian Initial Direction of Travel PEDDIR |
| PB33B | Bicyclist Direction BIKEDIR |
| PB34 | Motorist Direction MOTDIR |
| PB35 | Motorist Maneuver MOTMAN |
| PB36 | Intersection Leg PEDLEG |
| PB37 | Pedestrian Scenario PEDSNR |
| PB38 | Crash Group (Pedestrian) PEDCGP |
| PB38B | Crash Group (Bicyclist) BIKECGP |

**The following are new SAS tables in 2010:**

- Vevent
- Nmprior
- Nmcrash

**Deleted Variables:**

**Accident:**

| | |
|---|---|
| A11 | Trafficway Description TRAF_WAY |
| A12 | Total Lanes of Roadway NO_LANES |
| A13 | Roadway Alignment ALIGNMNT |
| A14 | Roadway Grade PROFILE |
| A15 | Roadway Surface Conditions SUR_COND |
| A16 | Traffic Control Device TRAF_CON |
| A18 | Speed Limit SP_LIMIT |
| A24 | Pedestrian/Cyclist Crash Type PED_ACC |

**Vehicle:**

| | |
|---|---|
| V22 | Vehicle Role VEH_ROLE |
| V25 | Damaged Areas DAM_AREA |
| D02 | Violations Charged VIOLATN |
| D04 | Driver's Vision Obscured By VIS_OBSC |
| D06 | Driver Maneuvered to Avoid DR_MANAV |
| D07 | Driver Distracted By DR_DSTRD |

**Person:**

| | |
|---|---|
| P18 | Condition (Impairment) at the Time of Crash IMPAIRMT |
| P19 | Non-Motorist Action ACTION |
| P20 | Non-Motorist Safety Equipment Use SAF_EQMT |

**Nmaction (this table replaced by Nmprior and Nmcrash):**

M_P19 Non-Motorist Action MACTION

**Trafcon (this table is not available in 2010):**

M_A16 Traffic Control Device MTRAFCON

**Other Changes in the 2010 Coding and Editing Manual:**

The following variables have changes to the remarks and/or attribute definitions in 2010.

**Cevent/Vevent** (only **Event** in 2009 and prior, modified in 2010)**:**

E06/VE06 Action E_ACTION

**Vehicle:**

V21 Movement Prior to Critical Event P_CRASH1

**Person:**

P03 Person Type PER_TYP
P13 Non-Motorist Location at Time of Crash LOCATN
P15 Restraint System/Helmet Use REST_SYS

**Parked:**

PV05 Parked/Working Body Type PBODYTYP
PV06 Parked/Working Vehicle Model Year PMODELYR
PV07 Parked/Working Vehicle Identification Number PVIN
PV08 Parked/Working Special Use PSP_USE
PV10 Parked/Working Number of Occupants Coded POCCINVL
PV10B Parked/Working Number of Occupants PNUMOCCS
PV18 Parked/Working Extent of Damage PVEH_SEV
PV19 Parked/Working Vehicle Removal PTOWED
PV31 Parked/Working Vehicle Motor Carriers Identification Number PCARIDNO
PV33 Parked/Working Cargo Body Type PCARGTYP
PV34 Parked/Working Hazardous Materials Placard PHAZPLAC
PV37 Parked/Working Vehicle Location PREL_RWY
PV38 Parked/Working Vehicle Areas of Impact – Most Damaged PIMPACT2
PV40 Parked/Working Vehicle Configuration PV_CONFIG

**Biketraf:**

MB_A16 Traffic Control Device-Cyclist BTRAFCON

## Summary of the SAS Naming Changes in 2010

| Locator Code | 2009 SAS Name | New 2010 SAS Name | Variable Name |
|---|---|---|---|
| A05 | N/A | LAND_USE | Land Use |
| A09A | REL_JCT | RELJCT1 | Relation To Junction -Within Interchange Area? |
| A09B | REL_JCT | RELJCT2 | Relation To Junction -Junction |
| A11 | TRAF_WAY | Deleted this drived variable | Trafficway Description |
| A12 | NO_LANES | Deleted this drived variable | Total Lanes in Roadway |
| A13 | ALIGNMNT | Deleted this drived variable | Roadway Alignment |
| A14 | PROFILE | Deleted this drived variable | Roadway Grade |
| A15 | SUR_COND | Deleted this drived variable | Roadway Surface Condition |
| A16 | TRAF_CON | Deleted this drived variable | Traffic Control Device |
| A17 | N/A | N/A | Traffic Control Device Functioning |
| A18 | SP_LIMIT | Deleted this drived variable | Speed Limit |
| A24 | PED_ACC | Deleted (check new table, PBTYPE) | Ped/Cycle Accident Type |
| A27 | N/A | TYP_INT | Type of Intersection |
| V12 | FACTOR | deleted in Vehicle table | Vehicle Contributing Factors (MFACTOR) stored in Factor table |
| V22 | VEH_ROLE | Deleted in Vehicle table | Vehicle Role |
| V24 | IMPACT | IMPACT1 | Areas of Impact - Initial Damage Area |
| V31 | CARINDUM | MCARR_ID | Carrier's Identification Number |
| V39 | N/A | BUS_USE | Bus Use |
| V40 | N/A | V_CONFIG | Vehicle Configuration |
| D02 | VIOLATN | deleted in Vehicle table | Violations Charged (MVIOLATN) stored in Violatn table |
| D04 | VIS_OBSC | deleted in Vehicle table | Violations Charged (MVISOBSC) stored in Vision table |
| D06 | DRMAN_AV | deleted in Vehicle table | Driver Maneuvered to Avoid (MDRMANAV) stored in Maneuver table |
| D07 | DR_DSTRD | deleted in Vehicle table | Driver Distracted By (MDRSTRD) stored in Distract table |
| P18 | IMPAIRMT | deleted in Person table | Condition at Time of Crash (MIMPAIR) stored in Impair table |
| P19 | ACTION | deleted in Person table | Non-Motorist Action (changed in 2010) |

| Locator Code | 2009 SAS Name | New 2010 SAS Name | Variable Name |
|---|---|---|---|
| P20 | SAF_EQMT | deleted in Person table | Non-Motorist Safety Equipment Use (MSAFEQMT) stored in Safetyeq table |
| P24 | N/A | REST_MIS | Indication of Restraints/Helmet Mis-Use |
| P25 | N/A | MPR_ACT | Non-Motorist Actions/Circumstances At Time of Crash (MPR_ACT) stored in Nmcrash table |
| P26 | N/A | MTM_CRSH | Non-Motorist Actions/Circumstances Prior to Crash (MTM_CRSH) stored in Nmprior table |

The variables in RED are new to 2010 NASS GES.
The variables in BLUE are changed in 2010 NASS GES.

# Introduction

One of the primary objectives of the National Highway Traffic Safety Administration (NHTSA) is to reduce the staggering human toll and property damage that motor vehicle traffic crashes impose 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 National Automotive Sampling System (NASS) General Estimates System (GES) which began operation in 1988. Providing data about all types of crashes involving all types of vehicles, the NASS GES is used to identify highway safety problem areas, provide a basis for regulatory and consumer information initiatives, and form the basis for cost and benefit analyses of highway safety initiatives.

The NASS GES obtains its data from a nationally representative probability sample selected from the estimated 6 million police-reported crashes which occur annually. These crashes include those that result in a fatality or injury and those involving major property damage. 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 NASS GES 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 variables that are contained in the NASS GES and other useful information that will enable the users to become familiar the data system. NASS GES Coding and Editing Manuals provide more detailed definitions for each variable and attribute for a given year. Years 1995 to current are available at:

http://www-nrd.nhtsa.dot.gov/cats/listpublications.aspx?Id=k&ShowBy=DocType.

# NASS GES Operations

The National Automotive Sampling System (NASS) -General Estimates System (GES) data are obtained from a nationally representative probability sample selected from all police-reported crashes. The system began operation in 1988. To be eligible for the NASS GES sample, a police accident report (PAR) must be completed for the crash, and the crash must involve at least one motor vehicle traveling on a trafficway and must result in property damage, injury, or death.

The NASS GES is directed by the National Center for Statistics and Analysis, which is a component of Vehicle Safety (NVS) in NHTSA. The data are obtained by NASS GES data collectors in 60 geographic sites across the United States. These data collectors make weekly, biweekly, or monthly visits to approximately 400 police agencies within the 60 sites, where they randomly sample about 57,000 PARs per year. During the visit the data collectors compile a list all of qualifying crashes reported since their last visit and then select a sample of these crashes. The collectors send copies of the Police Crash Reports (PARs) for the selected crashes to the NASS quality control centers for coding. No other data are collected beyond the selected PARs—no driver license, vehicle registration, or medical information is obtained.

Trained personnel interpret and code data directly from the PARs onto an electronic data file. To protect individual privacy, no personal information such as names, addresses, specific crash location, etc., is coded.

During data coding, the data are checked for validity and consistency. After the data file is created, quality checks are performed on the data. When these are completed, the electronic data are made available to the public. The NASS GES 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 private citizens. Annual NASS GES data files are available for 1988 through 2010.

## NASS GES Sample Design

The PARs from which the NASS GES data are coded are a probability sample of police-reported crashes that occurred in the United States. Since each crash that occurred in the survey year had a chance of being selected, the design makes it possible to compute not only national estimates but also probable errors associated with the estimates.

The selection of the sample of PARs for the NASS GES is accomplished in three stages. The first stage is a sample of geographic areas, called Primary Sampling Units (PSUs), from across the United States. A PSU is a central city, a county surrounding a central city, an entire county, or a group of contiguous counties. The NASS GES divides the U.S. into 1,195 of these PSUs. The PSUs are then grouped into categories according to the following geographic regions and types of PSUs:

- Geographic Region: Northeast, Midwest, South, and West
- Type: Large Central City, Large Suburban Area, and All others.

The second stage of the design is a sample of police jurisdictions within each PSU. In most PSUs the number of police jurisdictions is more than can reasonably be visited by a data collector, so in most PSUs the police jurisdictions are sampled based upon probability proportional to the number of crashes investigated in the police jurisdiction. That is, as the number of crashes investigated increases, the probability of selecting that jurisdiction increases. An average of seven police jurisdictions have been selected within each PSU.

The third and final stage is the selection of crashes within the sampled police jurisdictions. The first step in this process is for the NASS GES data collector to compile a list of every crash that was reported in the police jurisdiction since their last visit. In some very large police jurisdictions the number of crashes is too large for each to be listed. In these jurisdictions the data collector selects a subsample of PARs, with those listed depending on the PAR number. These "listed" crashes are then grouped into 6 strata depending on the type of vehicle(s) involved, the severity of the injuries, and the tow status of the vehicle(s) involved. Within each of these 6 groups a systematic sample of crashes is selected, based on different sampling ratios.

**From 2002 to the present, crashes have been grouped into six strata:**

- Group 1L: NASS crashes where an occupant of a towed passenger vehicle is killed. This category also includes crashes where an occupant of a towed passenger vehicle received an incapacitating injury and is transported for treatment. If the crash involves two or more passenger vehicles, at least two passenger vehicles must be towed and at least one of the occupants of a towed passenger vehicle must receive an incapacitating injury and be transported for treatment. No medium or heavy trucks may be involved.
- Group 1M: NASS crashes not qualifying for Group 1L, but at least one occupant of a towed passenger vehicle is injured and transported for treatment. No medium or heavy trucks may be involved.
- Group 1N: NASS crashes not qualifying for Group 1L or Group 1M, but a passenger vehicle is towed. No medium or heavy trucks may be involved.
- Group 2: NASS crashes not qualifying for Group 1, involving at least one medium or heavy truck in which a vehicle was towed due to damage or at least one involved person had a police-reported injury of K, A, B, or C;

- Group 3: NASS crashes not qualifying for Group 1 or 2 in which none of the vehicles involved in the crash was a medium or heavy truck and at least one person involved in the crash had a police-reported injury of K, A, or B; and,
- Group 4: NASS crashes not qualifying for Group 1, 2, or 3, No one in the crash can receive a K, A, or B injury.

**From 1990 to 2001 there were four strata:**

- Group 1: NASS crashes involving at least one passenger vehicle, i.e., a passenger car, sport utility vehicle, pickup truck or van) towed due to damage from the crash scene and no medium or heavy trucks are involved.
- Group 2: NASS crashes not qualifying for Group 1 involving at least one medium or heavy truck in which a vehicle was towed due to damage or at least one involved person had a police-reported injury of K, A, B, or C.
- Group 3: NASS crashes not qualifying for Group 1 or 2 in which none of the vehicles involved in the crash was a medium or heavy truck and at least one person involved in the crash had a police-reported injury of K, A, or B.
- Group 4: NASS crashes not qualifying for Group 1, 2 or 3. No one in the crash can receive a K, A, or B injury.

**In 1988 and 1989 there were three strata:**

- Group 1: NASS crashes involving at least one passenger vehicle, i.e., a passenger car, sport utility vehicle, pickup truck or van) towed due to damage from the crash scene.
- Group 2: NASS crashes not qualifying for Group 1 in which at least one person involved in the crash had a police reported injury K, A or B. No passenger vehicles involved in the crash were towed due to damage.
- Group 3: NASS not qualifying for Group 1 or 2. No one in the crash can receive a K, A or B injury.

**In 2010, approximately 46,391 PARs were sampled and coded.**

A thorough discussion of the sample design can be found in the ***National Accident Sampling System General Estimates System Technical Note***, DOT HS 807 796. The document is available at:

http://www-nrd.nhtsa.dot.gov/Pubs/807796.PDF.

## National Estimates

Since the NASS GES data are obtained from a probability sample of police-reported traffic crashes, national estimates can be made from these data. In order to calculate estimates of national crash characteristics, data from each PAR on the file must be weighted. The national weight has been added to the file for each PAR and is called "WEIGHT". Technically, this weight is the product of the inverse of the probabilities of selection at each of the three stages in the sampling process.

In 1995, the methodology for calculating the national weight in the NASS GES was evaluated. Based on 1992 state data obtained through state agencies for each of the 1,195 Primary Sampling Units (PSUs), it was determined that the number of fatal and injury crashes increased throughout the 12 geographical and urbanization areas, and that the changes were large enough to warrant some modification in procedures. PSUs in the NASS GES had not been reselected since the 1986 redesign because of the cost and time required to do so. To account for shifts in the distribution of crashes, the procedures used to stratify and select the PSUs in 1979 and 1986 were followed, without actually resampling the PSUs. Rather, the weights of the current PSUs were adjusted to reflect changes. The revised weights were phased into the 1993, 1994 and 1995 NASS GES files. Therefore, estimates from the NASS GES for 1993-95 were revised.

Because some of the changes were so dramatic, NHTSA decided to make adjustments to the PSU weights every three years. For more information on reweighting of the PSUs in the NASS GES, refer to the research note, ***Reweighting of the Primary Sampling Units in the National Automotive Sampling System***, published September 1997. This document is available at:

http://www-nrd.nhtsa.dot.gov/Pubs/97.845.pdf.

The second round for making adjustments to the PSU weights was implemented in 1998. Some of the same procedures used in the first round also were used in the second round. Using 1995 state data obtained through state agencies, the number of fatal and injury crashes throughout the 12 regional and urbanization areas were evaluated. Overall, there was a decrease in the number of crashes. The PSU weights were revised to reflect the shift and the revised weights were phased into the 1996 and 1997 NASS GES files. Therefore, estimates from the NASS GES for 1996-98 were revised.

A weight variable is provided in the NASS GES data files that produces the national estimates (see NASS GES Variables and Definitions).

The national estimates produced from NASS GES data may differ from the true values because they are based on a probability sample of crashes and not a census of all crashes. The size of these differences may vary depending on which sample of crashes was selected. The standard error of an estimate is a measure of the precision or reliability with which an estimate from this particular NASS GES sample approximates the results of a census.

It is impractical to compute a standard error for each national estimate crash characteristic. Instead, generalized standard errors for estimates of totals, and the method used to produce them, are provided in *Appendix D: Statistical Methods*.

For more information on NASS GES estimation and the reliability of these estimates, refer to the ***National Accident Sampling System General Estimates System Technical Note***, DOT HS 807 796, available at :

http://www-nrd.nhtsa.dot.gov/cats/listpublications.aspx?Id=k&ShowBy=DocType.

# NASS GES SAS Data Sets

NASS GES data are made available to the public in Statistical Analysis System (SAS) data sets. Over the years changes have been made to the type of data collected and the way the data are presented in the SAS data sets. Some variables have been dropped and new ones added, coding of individual variables has changed, and new SAS data sets have been created. Coding changes and the years for which individual data items are available are shown in the "Variables and Definitions" section of this document. The NASS GES Coding and Editing Manual contains a detailed description of each SAS variable including coding instructions and attribute definitions. The Coding Manual is published for each year of data collection. Years 1995 to current are available at:

http://www-nrd.nhtsa.dot.gov/cats/listpublications.aspx?Id=k&ShowBy=DocType

In this manual the word vehicle means in transport motor vehicle unless otherwise noted.

The SAS data sets and years of availability are:

- ***Accident*** - *(1988-current)*: This data set contains information about crash characteristics and environmental conditions at the time of the crash. There is one record per crash.
- ***Vehicle*** - *(1988-current)*: This data set contains information describing the in-transport motor vehicles and drivers of in-transport motor vehicles who are involved in the crash: There is one record per in-transport motor vehicle.
- ***Person*** - *(1988-current)*: This data set 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 and pedalcyclists). It provides information such as age, sex, and vehicle occupant restraint use and injury severity. There is one record per person.
- ***Cevent*** - *(Modified in 2010, it was called Event from 1988 to 2009)*: The modification in 2010 includes non-harmful events. Information for all of the qualifying events (both harmful and non-harmful) which occurred in the crash are included in this data set. There is one record per event. For each in-transport motor vehicle, the event number of its most harmful event is stored in the Vehicle data set. This data set details the chronological sequence of events resulting from an unstabilized situation that constitutes a motor vehicle traffic crash.
- ***Vevent*** - *(New in 2010)*: This data set contains the sequence of events for each in-transport motor vehicle involved in the crash. Included are the event numbers, non-harmful events (e.g., ran off road-right, crossed center line), objects struck and areas of impact. There is one record for each harmful and non-harmful event in which the vehicle is involved.
- ***Factor*** - *(2002-current)*: This data set contains information about vehicle circumstances which may have contributed to the crash. There is at least one record per in-transport motor vehicle. Each factor is coded on a separate record.
- ***Violatn*** - *(2002-current)*: This data set contains information about violations which were charged to drivers. There is at least one record per in-transport motor vehicle. Each violation is coded on a separate record.

- ***Vision*** - *(2002-current)*: This data set contains information about circumstances which may have obscured the driver's vision. There is at least one record per in-transport motor vehicle. Each obstruction is coded on a separate record.
- ***Maneuver*** - *(2002-current)*: This data set contains information about actions taken by the driver to avoid something or someone in the road. There is at least one record per in-transport motor vehicle. Each maneuver is coded on a separate record.
- ***Distract*** - *(2002-current)*: This data set contains information about driver distractions. There is at least one record per in-transport motor vehicle. Each distraction is coded on a separate record.
- ***Impair*** - *(2002-current)*: This data set contains information about physical impairments. From 2002 through 2009 this information is published for drivers and non-motorists (includes people in parked/working vehicles). Starting in 2010 this information is published for drivers and people who are not occupants of motor vehicles (does not include people in parked/working vehicles). There is one record per impairment and there is at least one record for each driver and non-motorist (2002-2009) or each driver and person who is not an occupant of a motor vehicle (2010).
- ***Nmaction*** - *(2002-2009)*: This data set contains information on actions of non-motorists that may have contributed to the crash. There is one record per action, and there is at least one record for each non-motorist.
- ***Nmcrash*** - *(New in 2010)*: This data set contains information about any improper actions of people who are not occupants of motor vehicles (e.g., pedestrians and bicyclists) or contributing circumstances noted on the PAR. 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.
- ***Nmprior*** - *(New in 2010)*: This data set contains information about what people who are not occupants of motor vehicles (e.g., pedestrians and bicyclists) are doing prior to 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*** - *(2002-current):* This data set contains information about safety equipment used by people who are not occupants of motor vehicles. There is one record per equipment item, and there is at least one record for each person who is not an occupant of a motor vehicle.
- ***Trafcon*** – *(2002-2009)*: This data set contains information about traffic control devices for each in-transport motor vehicle in a crash. There is one record per traffic control device, and at least one record for every in-transport motor vehicle.
- ***Biketraf*** – *(2002-current)*: This data set contains information about traffic control devices for each cyclist. There is one record per traffic control device, and at least one record for every cyclist.
- ***Parked*** – *(2005-current)*: This data set contains information about parked and working vehicles which were involved in GES crashes. A parked vehicle is a motor vehicle which is stopped off the roadway, i.e., parked off the roadway. The definition of working vehicles has changed over the study years. From 2005 to 2008 working vehicles were defined as transport devices being used as equipment which would be classified under ANSI D16.1-1996 as motor vehicles, if not being used as equipment. In 2009 the definition changed to include only vehicles involved in trafficway maintenance, construction, or utility activities. Also, vehicles performing private maintenance, construction, or utility activities were excluded. Data users are strongly advised to

consult the annual GES Coding and Editing Manuals for a detailed discussion. There is one record per parked/working vehicle.

- ***Parkevnt*** – *(2005-current)*: This data set contains information about events in which parked/working vehicles are involved. The structure of this data set is similar to the Event data set (2005-2009) and the Cevent data set (2010), with one record per event involving a parked/working vehicle. However, there are several differences between Event/Cevent and Parkevnt. In Event/Cevent, struck parked/working vehicles are not individually identified. Instead, parked vehicles are coded as "parked vehicle or other motor vehicle not in transport" (2005-2009) or "parked vehicle" (2010) and working motor vehicles are coded as non-fixed objects (2005-2008) or "parked vehicle or other motor vehicle not in transport" (2009) or as "working motor vehicle" (2010). In Parkevnt each parked/working vehicle is identified by parked vehicle number, event number, and case number. Merging Event/Cevent and Parkevnt data sets by CASENUM and EVENTNUM produces a list of events in which parked/working vehicles were involved and identifies the specific vehicles involved (both in-transport and parked/working).
- ***Pbtype*** – *(2010-current)*: This data set contains information about circumstances related to pedestrians and bicyclists involved in the crash. There is one record for each pedestrian, bicyclist or person on a personal conveyance.

## NASS GES Imputation

The NASS GES data are obtained either directly from an item on the PAR or by interpreting the information provided in the PAR through reviewing the crash diagram, the Officer's written summary of the crash, or combinations of variables on the PAR. Because of this interpretation, and because the police officer may not have entered some item of information or provided complete information, data can be missing. Different statistical procedures have been used on NASS GES data to complete values for unknown data: univariate imputation and hot-deck imputation from 1988 to 2009, and sequential regression imputation as instituted in 2010. A thorough discussion of the 2009 and earlier imputation procedures can be found in Imputation in the NASS General Estimates System, DOT HS 807 985 available at:

http://www-nrd.nhtsa.dot.gov/Pubs/807985.PDF

The proportion of unknowns for a given variable varies from year to year. In some years the proportion is so low that it seems redundant to provide an imputed variable, however imputed variables are not removed for those years to avoid rounds of removing and then reinstating variables in the SAS data sets.

The univariate imputation procedure was developed in SAS to randomly assign values to the unknowns in the same proportion as the known values for that one variable. Since these imputed values are randomly assigned the analyst should use them only for univariate frequency distributions. The following is an example of univariate imputation using the variable *EJECTION*. The original distribution might be:

| | |
|---|---|
| **No** | **60** |
| **Yes** | **40** |
| **Unknown** | **5** |
| **Total** | **105** |

The SAS univariate imputation program would assign values to the five unknown values in the following proportions:

| | |
|---|---|
| **No** | **60/100** |
| **Yes** | **40/100** |

The new variable, *EJECT_I* would have these values:

| | |
|---|---|
| **No** | **63** |
| **Yes** | **42** |
| **Total** | **105** |

Hot-deck imputation differs from univariate imputation in that the unknown values for a variable are replaced based on information from correlated variables. For example, the hot-deck imputation program for *SEX* used the following correlated variables: *AGE, HOUR, DAY OF WEEK, VIOLATIONS CHARGED, PERSON TYPE, SEATING POSITION, DRUG & ALCOHOL INVOLVEMENT, and NUMBER OF OCCUPANTS & VEHICLES INVOLVED*. When *SEX* was unknown for a person record, the hot-deck program searches for another record that has a set of variables similar to the unknown sex record. When that record is found, the *SEX* value is used for the unknown *SEX* record.

From 1988 to 2009, hot-deck and univariate imputed variables can be identified by the _H or _I suffix in their SAS names. Hot-deck imputed *Body Type* is labeled *BDYTYP_H* and univariate imputed *EJECTION* is labeled *EJECT_I*. The imputed variables do not replace the originals; all original variables still exist on the data sets.

Imputation by sequential regression was instituted in 2010 using a software package called IVEware, developed at the University of Michigan. In this method, covariates are selected automatically using stepwise regression. Since it can be done in an automated fashion, this method replaced both univariate and hot-deck imputation in 2010. The only exception was body type, which was imputed in a univariate method. The specific variables imputed are consistent with those imputed in 1998-2009, except for five derived variables at the crash level that are no longer derived in 2010 (see table).

Starting in 2010, all imputed variables except body type use the sequential regression method and are identified by the _IM suffix. As before, the imputed variables do not replace the originals; all original variables still exist on the data sets.

The following table gives the summary of the SAS name changes from 2009 and prior to 2010:

| SAS Table | 2009 SAS Name | 2010 SAS Name | Label | 2009 Imputed Names | 2010 Imputed Names |
|---|---|---|---|---|---|
| ACCIDENT | ALCOHOL | ALCOHOL | Alcohol Involved | ALCHL_I | ALCHL_IM |
| ACCIDENT | ALIGNMNT | Deleted | Roadway Alignment | ALIGN_I | Discontinued |
| ACCIDENT | DAY_WEEK | DAY_WEEK | Day Of The Week | WKDY_I | WKDY_IM |
| ACCIDENT | EVENT1 | EVENT1 | First Harmful Event | EVENT1_I | EVENT1_IM |
| ACCIDENT | HOUR | HOUR | Hour | HOUR_I | HOUR_IM |
| ACCIDENT | LGT_COND | LGT_COND | Light Condition | LGTCON_I | LGTCON_IM |
| ACCIDENT | MAN_COL | MAN_COL | Manner Of Collision | MANCOL_I | MANCOL_IM |
| ACCIDENT | MAX_SEV | MAX_SEV | Maximum Injury Severity | MAXSEV_I | MAXSEV_IM |
| ACCIDENT | MINUTE | MINUTE | Minute | MINUTE_I | MINUTE_IM |
| ACCIDENT | NUM_INJ | NUM_INJ | Number Of Injured | NO_INJ_I | NO_INJ_IM |
| ACCIDENT | PROFILE | Deleted | Roadway Grade | PROFIL_I | Discontinued |
| ACCIDENT | REL_JCT | changed in 2010 | Relation To Junction | RELJCT_I | changed in 2010 |
| | | RELJCT1 | Relation To Junction - Within Interchange Area | | RELJCT1_IM |
| | | RELJCT2 | Relation To Junction - Junction | | RELJCT2_IM |
| ACCIDENT | SP_LIMIT | Deleted | Speed Limit | SPDLIM_H | Discontinued |
| ACCIDENT | SUR_COND | Deleted | Roadway Surface Condition | SURCON_I | Discontinued |

| SAS Table | 2009 SAS Name | 2010 SAS Name | Label | 2009 Imputed Names | 2010 Imputed Names |
|---|---|---|---|---|---|
| ACCIDENT | TRAF_CON | Deleted | Traffic Control Devices | TRFCON_I | Discontinued |
| ACCIDENT | WEATHER | WEATHER | Atmospheric Condition | WEATHR_I | WEATHR_IM |
| VEHICLE | BODY_TYP | BODY_TYP | Body Type | BDYTYP_H | BDYTYP_IM |
| VEHICLE | HIT_RUN | HIT_RUN | Hit And Run | HITRUN_I | HITRUN_IM |
| VEHICLE | IMPACT | IMPACT1 | Area Of Impact - Initial | IMPACT_H | IMPACT1_IM |
| VEHICLE | MAX_VSEV | MAX_VSEV | Max Injury Severity | MXVSEV_I | MXVSEV_IM |
| VEHICLE | MODEL_YR | MODEL_YR | Model Year | MDLYR_I | MDLYR_IM |
| VEHICLE | NUM_INJV | NUM_INJV | Number Injured In Vehicle | NUMINJ_I | NUMINJ_IM |
| VEHICLE | P_CRASH1 | P_CRASH1 | Movement Prior To Critical Event | MANEUV_I | PCRASH1_IM |
| VEHICLE | VEH_ROLE | deleted in 2010 | Vehicle Role | VROLE_I | deleted in 2010 |
| VEHICLE | VIOLATN | only in its own table | Driver Violations | VLTN_I | deleted in 2010 |
| VEHICLE | VEH_ALCH | VEH_ALCH | Driver Drinking In Vehicle | V_ALCH_I | V_ALCH_IM |
| VEHICLE | V_EVENT | V_EVENT | Most Harmful Event | V_EVNT_H | VEVENT_IM |
| PERSON | AGE | AGE | Age | AGE_H | AGE_IM |
| PERSON | EJECTION | EJECTION | Ejection | EJECT_I | EJECT_IM |
| PERSON | INJ_SEV | INJ_SEV | Injury Severity | INJSEV_H | INJSEV_IM |
| PERSON | PER_ALCH | PER_ALCH | Police-Reported Alcohol Involvement | PERALC_H | PERALCH_IM |
| PERSON | SEAT_POS | SEAT_POS | Seating Position | SEAT_H | SEAT_IM |
| PERSON | SEX | SEX | Sex | SEX_H | SEX_IM |

# NASS GES Variable List

The following lists all SAS variables with their SAS data set locations.

## VARIABLE LIST

| | | | |
|---|---|---|---|
| | Case Number | CASENUM | 32 |
| | Primary Sampling Unit (PSU) | PSU | 33 |
| | Region of the Country | REGION | 34 |
| A22 | Police Jurisdiction (PJ) | PJ | 35 |
| A23 | Case Stratum | STRATUM | 36 |
| | Case Weight | WEIGHT | 38 |
| V01/P01 | Vehicle Number | VEHNO | 39 |
| P02 | Person Number | PERNO | 40 |
| E01/VE01 | Crash Event Sequence Number | EVENTNUM | 41 |

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| | | | |
|---|---|---|---|
| | Primary Sampling Unit Stratum | PSUSTRAT | 43 |
| A01A | Month of the Crash | MONTH | 44 |
| A01B | Year of the Crash | YEAR | 44 |
| A01C | Day of Week | DAY_WEEK | 45 |
| A01CI | Imputed Day of Week | WKDY_IM | 45 |
| A02A | Hour of the Crash | HOUR | 46 |
| A02AI | Imputed Hour of the Crash | HOUR_IM | 46 |
| A02B | Minute of the Crash | MINUTE | 46 |
| A02BI | Imputed Minute of the Crash | MINUTE_IM | 46 |
| A03 | Number of Vehicles Involved | VEH_INVL | 47 |
| A03A | Number of Vehicles Coded (discontinued) | VEH_COD | 47 |
| A03B | Number of Persons Involved (discontinued) | PER_INVL | 47 |
| A03C | Number of Persons Coded (discontinued) | PER_COD | 48 |
| A03D | Number of Parked/Working Vehicles Involved | PVH_INVL | 48 |
| A04 | Number of Forms Submitted for Persons Not in Motor Vehicles | NON_INVL | 49 |
| A04A | Number of Non-Motorists Coded (discontinued) | NON_COD | 49 |
| A05 | Land Use | LAND_USE | 50 |
| A05A | Percentage Rural (discontinued) | RUR_URB | 50 |
| A06 | First Harmful Event | EVENT1 | 51 |
| A06I | Imputed First Harmful Event | EVENT1_IM | 53 |
| A07 | Manner of Collision | MAN_COL | 54 |

| | | | |
|---|---|---|---|
| PB31 | Crash Type Location – Pedestrian | PEDLOC | 289 |
| PB31B | Crash Type Location – Bicyclist | BIKELOC | 290 |
| PB32 | Pedestrian Position | PEDPOS | 291 |
| PB32B | Bicyclist Position | BIKEPOS | 292 |
| PB33 | Pedestrian Initial Direction | PEDDIR | 293 |
| PB33B | Bicyclist Direction | BIKEDIR | 294 |
| PB34 | Motorist Initial Direction | MOTDIR | 295 |
| PB35 | Motorist Maneuver | MOTMAN | 296 |
| PB36 | Intersection Leg | PEDLEG | 297 |
| PB37 | Pedestrian Scenario | PEDSNR | 298 |
| PB38 | Pedestrian – Crash Group | PEDCGP | 300 |
| PB38B | Bicycle – Crash Group | BIKECGP | 301 |

# Variable Definitions and Codes

The "Variable Definitions and Codes" section of this report provides detailed information on the variables, including SAS formats. If the SAS variable has an associated format, the format name appears in brackets following the SAS variable name. Format names are given for the last three years. Format names for earlier years can be obtained from a SAS PROC CONTENTS for the year(s) of interest.

All variables are numeric except the following:

- VIN (V07) Character all GES years
- Parked/Working Vehicle VIN (PV07) Character all years
- Driver Zip Code (D08) Character since 2002, numeric all prior years
- Motor Carrier ID (V31) Character since 2002, numeric all prior years
- Parked/Working Vehicle Motor Carrier ID (PV31) Character all years

There are 6 variables that are on each of the SAS data sets. They are:

## Case Number

**Definition:** This variable is a unique number assigned to each crash. It appears on each of the data sets and is used to merge the data sets.

**Additional Information:**

**SAS Name: CASENUM**

**Attribute Codes**

***1988-Later***

xx NASS GES Case Number

## Primary Sampling Unit (PSU)

**Definition:** A PSU is either a large central city, a county surrounding a city, or a group of counties. There are 60 possible values ranging from 1 to 97. This variable is on all NASS GES SAS data sets.

**Additional Information:**

**SAS Name: PSU**

**Attribute Codes**

***1988-Later***

1-97 Primary Sampling Unit Number

## Region of the Country

**Definition:** Indicates the region of the country where the crash occurred. It is based on the primary sampling unit. This variable is on all NASS GES SAS data sets.

**Additional Information:**

**SAS Name: REGION**

**Attribute Codes**

***1988-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)

## A22 Police Jurisdiction (PJ)

**Definition:** The number of the police jurisdiction from which the PAR was originally sampled. This variable is on all NASS GES SAS data sets.

**Additional Information:**

**SAS Name: PJ**

**Attribute Codes**

***1988-Later***

1-120 Police Jurisdiction Number

## A23 Case Stratum

**Definition:** The number of the category in which the PAR was originally listed in NASS GES PAR Program or Stratification Record. This variable is on all NASS GES SAS data sets.

**Additional Information:** See *NASS GES Sample Design* for more information.

**SAS Name: STRATUM**

**Attribute Codes**

***1988-1989***

1 Group 1: NASS crashes involving at least one passenger vehicle, i.e., a passenger car, sport utility vehicle, pickup truck or van) towed due to damage from the crash scene.
2 Group 2: NASS crashes not qualifying for Group 1 in which at least one person involved in the crash had a police reported injury K, A or B. No passenger vehicles involved in the crash were towed due to damage.
3 Group 3: NASS not qualifying for Group 1 or 2. No one in the crash can receive a K, A or B injury.

***1990-2001***

1 Group 1: NASS crashes involving at least one passenger vehicle, i.e., a passenger car, sport utility vehicle, pickup truck or van) towed due to damage from the crash scene and no medium or heavy trucks are involved.
2 Group 2: NASS crashes not qualifying for Group 1 involving at least one medium or heavy truck in which a vehicle was towed due to damage or at least one involved person had a police-reported injury of K, A, B, or C.
3 Group 3: NASS crashes not qualifying for Group 1 or 2 in which none of the vehicles involved in the crash was a medium or heavy truck and at least one person involved in the crash had a police-reported injury of K, A, or B.
4 Group 4: NASS crashes not qualifying for Group 1, 2 or 3 . No one in the crash can receive a K, A, or B injury.

***2002-Later***

1 Group 1L: NASS crashes where an occupant of a towed passenger vehicle is killed. This category also includes crashes where an occupant of a towed passenger vehicle received an incapacitating injury and is transported for treatment. If the crash involves two or more passenger vehicles, at least two passenger vehicles must be towed and at least one of the occupants of a towed passenger vehicle must receive an incapacitating injury and be transported for treatment. No medium or heavy trucks may be involved
2 Group 2: NASS crashes not qualifying for Group 1 involving at least one medium or heavy truck in which a vehicle was towed due to damage or at least one involved person had a police-reported injury of K, A, B, or C.
3 Group 3: NASS crashes not qualifying for Group 1 or 2 in which none of the vehicles involved in the crash was a medium or heavy truck and at least one person involved in the crash had a police-reported injury of K, A, or B.
4 Group 4: NASS crashes not qualifying for Group 1, 2 or 3 . No one in the crash can receive a K, A, or B injury.

## A23 Case Stratum *(continued)*

5 Group 1M: NASS crashes not qualifying for Group 1L, but at least one occupant of a towed passenger vehicle is injured and transported for treatment. No medium or heavy trucks may be involved.

6 Group 1N: NASS crashes not qualifying for Group 1L or Group 1M, but a passenger vehicle is towed and no medium or heavy trucks are involved.

## Case Weight

**Definition:** This is the variable used to produce national estimates from the data. This variable is on all NASS GES SAS data sets.

**Additional Information:** See the section *National Estimates* for more information.

**SAS Name: WEIGHT**

The above variables as well as VEHNO are found on all vehicle-level data sets:

## V01/P01 Vehicle Number

**Definition:** This element identifies the number assigned to each vehicle in the case. This variable appears on each vehicle level data set and is used in conjunction with the CASENUM variable to merge information from vehicle level data sets.

**Additional Information:**

**SAS Name:** **VEHNO**

**Attribute Codes**

***1988-Later***

| | |
|---|---|
| 0 | Non-Motorist |
| 1-100 | Assigned Vehicle Number |

The above variables as well as PERNO are found on all person-level data sets:

## P02 Person Number

**Definition:** Assigned to each occupant, pedestrian, or non-motorists involved in the crash. The assumed driver of a hit-and-run vehicle is coded 1.

**Additional Information:** This variable is computer assigned.

**SAS Name:** **PERNO**

**Attribute Codes**

***1988-Later***

1-999 Assigned Person Number

The Accident-level variables above and EVENTNUM are found on the CEVENT and VEVENT data sets:

## E01/VE01 Crash Event Sequence Number

**Definition:** Number assigned to each harmful event in a crash, in chronological order.

**Additional Information:**

**SAS Name:** **EVENTNUM**

**Attribute Codes**

***2000-Later***

1-100 Event Number

## The ACCIDENT Data Set

The Accident data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, AND PJ, which are discussed in the "NASS GES Variable List" section. CASENUM is the case identifier. It also contains:

## Primary Sampling Unit Stratum

**Definition:** The PSUs are grouped into 14 strata to reflect the first stage of the sample selection. This variable is used statistical software packages that use complex sample design for calculating variances, such as SUDAAN and SAS V9. See *Appendix D: Statistical Methods* for more information.

**SAS Name: PSUSTRAT**

**Attribute Codes**

***1988-Later***

1 to 14

## A01 Crash Date

### A01A Month of the Crash

**Definition:** The month in which the crash occurred.

**Additional Information:**

**SAS Name:** **MONTH**

**Attribute Codes**

***1988-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

### A01B Year of the Crash

**Definition:** The last two digits of the year in which the crash occurred.

**Additional Information:** In 1999 year of the crash was changed to a four digit code.

**SAS Name:** **YEAR**

**Attribute Codes**

| ***1988-1998*** | ***1999-Later*** |
|---|---|
| 2 Digit Year | 4 Digit Year |

## A01C Day of Week

**Definition:** The day of the week in which the crash occurred.

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

**SAS Name:** **WEEKDAY** ***1988-2008***
**DAY_WEEK** ***2009-Present***

**Attribute Codes**

***1988-Later***

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

## A01CI Imputed Day of Week

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

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **WKDY_I** ***1988-2009***
**WKDY_IM** ***2010-Later***

## A02 Crash Time

### A02A Hour of the Crash

**Definition:** The hour in which the crash occurred. Military time is used. Noon is coded as "12."

**Additional Information:** From 1988-2008 midnight was coded as HOUR=24 and MINUTE=0. Starting in 2009 midnight is coded as HOUR=0 and MINUTE=0. For all years, hour is coded 0 for one minute after midnight to fifty-nine minutes after midnight.

**SAS Name:** **HOUR**

**Attribute Codes**

| ***1988-2008*** | | ***2009-Later*** | |
|---|---|---|---|
| 0-24 | Hour | 0-23 | Hour |
| 99 | Unknown | 99 | Unknown |

### A02AI Imputed Hour of the Crash

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

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **HOUR_I** ***1988-2009***
**HOUR_IM** ***2010-Later***

### A02B Minute of the Crash

**Definition:** The minute in which the crash occurred.

**Additional Information:**

**SAS Name:** **MINUTE**

**Attribute Codes**

***1988-Later***

| | |
|---|---|
| 0-59 | Minute |
| 99 | Unknown |

### A02BI Imputed Minute of the Crash

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

**Additional Information:** See *Understanding the NASS GES Imputation Process* section.

**SAS Name:** **MINUTE_I** ***1988-2009***
**MINUTE_IM** ***2010-Later***

## A03 Number of Vehicles Involved

**Definition:** The number of vehicles involved in the crash.

**Additional Information:**

**SAS Name:** **VEH_INVL**

**Attribute Codes**

***1988-Later***

1-100 Number of Vehicles

## A03A Number of Vehicles Coded (discontinued)

**Definition:** This variable was derived by counting the number of vehicles listed in the Vehicle data set for a crash.

**Additional Information:** This variable was discontinued in 1990.

**SAS Name:** **VEH_COD**

**Attribute Codes**

***1988-1989***

x Number of Vehicles

## A03B Number of Persons Involved (discontinued)

**Definition:** The number of persons involved in the crash.

**Additional Information:** The value 0 is coded when there are no persons involved in the crash. For example, if a parked vehicle slips into gear, rolls down a driveway and hits a vehicle parked on the street, the number of persons involved is 0. This variable was discontinued in 1990.

**SAS Name:** **PER_INVL**

**Attribute Codes**

***1988-1989***

0-98 Number of Persons
99 Unknown

## A03C Number of Persons Coded (discontinued)

**Definition:** This variable is derived from the number of records in the Person data set for the crash.

**Additional Information:** A value 0 is coded when there are no persons coded in the crash. This number may be less than number of persons involved because some states report only the number of injured occupants, but no further information. This variable was discontinued in 1990.

**SAS Name: PER_COD**

**Attribute Codes**

***1988-1989***

x Number of Persons

## A03D Number of Parked/Working Vehicles Involved

**Definition:** This variable is derived from the number of records in the Parked Vehicle data set for the crash.

**Additional Information:** The Parked data set contains records for Parked and Working Vehicles.

From 2005 to 2008 working vehicles were defined as transport devices being used as equipment which would be classified under ANSI D16.1-1996 as motor vehicles, if not being used as equipment. In 2009 the definition changed to include only vehicles involved in trafficway maintenance, construction, or utility activities. Also, vehicles performing private maintenance, construction, or utility activities were excluded.

**SAS Name: PVH_INVL**

**Attribute Codes**

***2005-Later***

0-30 Number of Parked/Working Vehicles in the Crash

## A04 Number of Forms Submitted for Persons Not in Motor Vehicles

**Definition:** The number of non-motorists involved in the crash. A non-motorist is defined as a pedestrian, a cyclist, an occupant of a motor vehicle not in transport, 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:**

**SAS Name:** **NON_INVL**

**Attribute Codes**

| *1988-1998* | *1999-Later* | |
|---|---|---|
| 0-25 | 0-98 | Number of Non-Motorists |

## A04A Number of Non-Motorists Coded (discontinued)

**Definition:** This variable is derived by counting the number of records for non-motorists in the Person data set for the crash.

**Additional Information:** A value 0 is coded when there were no non-motorists coded in the crash. This variable was discontinued in 1990.

**SAS Name:** **NON_COD**

**Attribute Codes**

| *1988-1989* | |
|---|---|
| x | Number of Non-Motorists |

## A05 Land Use

**Definition:** The population of the area associated with the police jurisdiction from which the accident report is selected.

**Additional Information:** The variable was temporarily discontinued in 2009.

**SAS Name:** **LAND_USE**

**Attribute Codes**

***1988-Later***

1 Within Area of Population 25,000-50,000
2 Within Area of Population 50,000-100,000
3 Within Area of Population 100,000+
8 Other Area
9 Unknown

## A05A Percentage Rural (discontinued)

**Definition:**

**Additional Information:** This variable was discontinued in 1997.

**SAS Name:** **RUR_URB**

**Attribute Codes**

***1988-1996***

0 Rural
1 10 % of Area is Rural
2 20 % of Area is Rural
3 30 % of Area is Rural
4 40 % of Area is Rural
5 50 % of Area is Rural
6 60 % of Area is Rural
7 70 % of Area is Rural
8 80 % of Area is Rural
9 90 % of Area is Rural
10 100 % of Area is Rural

## A06 First Harmful Event

**Definition:** Indicates the first property damaging or injury producing event in the crash.

**Additional Information:**

**SAS Name: EVENT1**

**Attribute Codes**

| *1988-1991* | *1992-1998* | *1999-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|---|
| *NONCOLLISION* | | | | | |
| 1 | 1 | 1 | 1 | 1 | Rollover/Overturn |
| 2 | 2 | 2 | 2 | 2 | Fire/Explosion |
| 3 | 3 | 3 | 3 | 3 | Immersion |
| 4 | -- | 4 | 4 | 4 | Gas Inhalation |
| 5 | 5 | 5 | 5 | -- | Jackknife |
| -- | -- | -- | -- | 5 | Jackknife *(Harmful to This Vehicle)* |
| 6 | 6 | 6 | 6 | -- | Noncollision Injury *(Injured In Vehicle Or Fell From Vehicle)* |
| -- | 50 | 7 | 7 | 7 | Pavement Surface Irregularity *(Ruts, Potholes, Grates, etc.)* |
| 8 | 8 | 8 | 8 | 8 | Other Noncollision |
| 9 | 9 | 9 | 9 | -- | Noncollision-No Details |
| 10 | 10 | 10 | 10 | 10 | Thrown or Falling Object |
| -- | -- | -- | -- | 11 | Injured in Vehicle *(Non-Collision)* |
| -- | -- | -- | -- | 12 | Cargo/Equipment Loss or Shift *(Harmful to This Vehicle)* |
| -- | -- | -- | -- | 13 | Fell/Jumped from Vehicle |
| *COLLISION WITH OBJECT NOT FIXED* | | | | | |
| 21 | 21 | 21 | 21 | 21 | Pedestrian |
| 22 | 22 | 22 | 22 | -- | Cycle or Cyclist *(Pedalcyclist or Pedalcycle)* |
| -- | -- | -- | -- | 22 | Pedalcyclist |
| 23 | 23 | 23 | 23 | -- | Railway Train |
| -- | -- | -- | -- | 23 | Railway Vehicle |
| 24 | 24 | 24 | 24 | -- | Animal |
| -- | -- | -- | -- | 24 | Live Animal |
| -- | -- | -- | -- | 49 | Ridden Animal or Animal Drawn Conveyance |
| 25 | 25 | 25 | 25 | -- | Motor Vehicle in Transport |
| 26 | 26 | 26 | 26 | -- | Parked Motor Vehicle *(or Other M.V. Not in Transport)* |
| 27 | 27 | 27 | 27 | -- | Other Type Non-Motorist |
| -- | -- | -- | -- | 27 | Non-Motorist on Personal Conveyance |
| -- | -- | -- | 47 | -- | Vehicle Occupant |
| 28 | 28 | 28 | 28 | 28 | Other Object Not Fixed |
| 29 | 29 | 29 | 29 | -- | Object Not Fixed-No Details |
| -- | -- | -- | -- | 29 | Parked Motor Vehicle |
| -- | -- | -- | -- | 30 | Working Motor Vehicle |

## A06 First Harmful Event *(continued)*

### Attribute Codes

| *1988-1991* | *1992-1998* | *1999-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|---|
| *COLLISION WITH FIXED OBJECT* | | | | | |
| 31 | 31 | 31 | 31 | 31 | Ground |
| 32 | 32 | 32 | 32 | 32 | Building |
| 33 | 33 | 33 | 33 | 33 | Impact Attenuator/Crash Cushion |
| 34 | 34 | 34 | 34 | -- | Bridge Structure *(Bridge Pier/Abutment/Parapet End/Rail)* |
| 35 | 35 | 35 | 35 | -- | Guardrail |
| 36 | 36 | 36 | 36 | -- | Concrete Traffic Barrier or Other Longitudinal Barrier Type |
| -- | -- | -- | -- | 36 | Concrete Traffic Barrier |
| 37 | 37 | 37 | 37 | -- | Post, Pole or Support *(Sign Post, Utility Post)* |
| 38 | 38 | 38 | 38 | -- | Culvert or Ditch |
| 39 | 39 | 39 | 39 | 39 | Curb |
| 40 | 40 | 40 | 40 | 40 | Embankment |
| 41 | 41 | 41 | 41 | 41 | Fence |
| 42 | 42 | 42 | 42 | 42 | Wall |
| 43 | 43 | 43 | 43 | 43 | Fire Hydrant |
| 44 | 44 | 44 | 44 | 44 | Shrubbery |
| 45 | 45 | 45 | 45 | -- | Tree |
| -- | -- | -- | -- | 45 | Tree *(Standing Only)* |
| 46 | 46 | 46 | 46 | 46 | Boulder |
| 48 | 59 | 58 | 58 | 58 | Other Fixed Object |
| 49 | 59 | 59 | 59 | -- | Fixed Object, No Details |
| -- | -- | -- | -- | 71 | Bridge Overhead Structure |
| -- | -- | -- | -- | 72 | Bridge Pier or Support |
| -- | -- | -- | -- | 73 | Bridge Rail *(Includes Parapet)* |
| -- | -- | -- | -- | 74 | Guardrail Face |
| -- | -- | -- | -- | 75 | Guardrail End |
| -- | -- | -- | -- | 76 | Cable Barrier |
| -- | -- | -- | -- | 77 | Other Traffic Barrier |
| -- | -- | -- | -- | 78 | Traffic Sign Support |
| -- | -- | -- | -- | 79 | Traffic Signal Support |
| -- | -- | -- | -- | 80 | Utility Pole/Light Support |
| -- | -- | -- | -- | 81 | Other Post, Other Pole or Other Supports |
| -- | -- | -- | -- | 82 | Culvert |
| -- | -- | -- | -- | 83 | Ditch |
| -- | -- | -- | -- | 84 | Snow Bank |
| -- | -- | -- | -- | 85 | Mail Box |

## A06 First Harmful Event *(continued)*

**Attribute Codes**

| *1988-1991* | *1992-1998* | *1999-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|---|
| *COLLISION WITH MOTOR VEHICLE IN TRANSPORT* | | | | | |
| -- | -- | -- | -- | 90 | Motor Vehicle In-Transport |
| -- | -- | -- | -- | 91 | Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport |
| -- | -- | -- | -- | 92 | Motor Vehicle in Motion Outside the Trafficway |
| *NOT REPORTED AND UNKNOWN* | | | | | |
| 97 | -- | -- | -- | -- | Other – No Details *(*1988-1989 only)* |
| -- | -- | -- | -- | 97 | Not Reported |
| 99 | 99 | 99 | 99 | 99 | Unknown |

## A06I Imputed First Harmful Event

**Definition:** This imputed variable has the same definition as First Harmful Event, excluding value 99 for unknown first harmful event and value 97 for not reported first harmful event.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **EVENT1_I** ***1988-2009***
**EVENT1_IM** ***2010-Later***

## A07 Manner of Collision

**Definition:** Indicates the orientation of the vehicles in a collision. If a non-collision, it is classified as such.

**Additional Information:**

**SAS Name:** **MAN_COL**

**Attribute Codes**

| *1988-1998* | *1999-2009* | *2010-Later* | |
|---|---|---|---|
| 0 | 0 | 0 | Not Collision with Motor Vehicle in Transport |
| 1 | 1 | -- | Rear-End |
| -- | -- | 1 | Front-to-Rear |
| 2 | 2 | -- | Head-On |
| -- | -- | 2 | Front-to-Front |
| 3 | 3 | 3 | Rear-to-Rear |
| 4 | 4 | 4 | Angle |
| 5 | 5 | 5 | Sideswipe, Same Direction |
| 6 | 6 | 6 | Sideswipe, Opposite Direction |
| -- | -- | 7 | Rear-to-Side |
| 8 | -- | 8 | Other |
| 9 | 9 | 9 | Unknown |
| -- | -- | 97 | Not Reported |

## A07I Imputed Manner of Collision

**Definition:** This imputed variable has the same definition and element values as *Manner of Collision*, excluding value 9 for unknown manner of collision and value 97 for not reported manner of collision.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **MANCOL_I** ***1988-2009***
**MANCOL_IM** ***2010-Later***

## A08 Interstate Highway

**Definition:** Indicates whether or not the crash occurred on an interstate highway. Interstate highway is a Federal Highway Administration classification.

**SAS Name: INT_HWY**

**Attribute Codes**

***1988-Later***

0 No
1 Yes
9 Unknown

## A09 Relation to Junction

### A09A Relation to Junction- Within Interchange Area

**Definition:** This element identifies the crash's location with respect to presence in an interchange area and 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 A09B) and based on the location of the first harmful event of the crash.

**Additional Information:**

**SAS Name: RELJCT1**

**Attribute Codes**

***2010-Later***

0 No
1 Yes
8 Not Reported
9 Unknown

### A09B Relation to Junction- Specific Location

**Definition:** This element identifies the crash's location with respect to presence in an interchange area and 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 C20A) and based on the location of the first harmful event of the crash.

**Additional Information:** In 1992, this variable was modified into two categories: *Non-Interchange Area* and *Interchange Area*.

**SAS Name: REL_JCT** ***1988-2009***
**RELJCT2** ***2010-Later***

**Attribute Codes**

***1988-1991***

0 Non-Junction
1 Intersection
2 Intersection Related
3 Interchange Area
4 Driveway, Alley Access, Etc.
5 Entrance/Exit Ramp
6 Rail Grade Crossing
8 Other
9 Unknown

## A09B Relation to Junction- Specific Location *(continued)*

| *1992-1994* | *1995-1998* | *1999-2009* | |
|---|---|---|---|
| *NON-INTERCHANGE AREA* | | | |
| 0 | 0 | 0 | Non-Junction |
| 1 | 1 | 1 | Intersection |
| 2 | 2 | 2 | Intersection Related |
| 3 | 3 | 3 | Driveway, Alley Access, Etc. |
| 4 | 4 | 4 | Entrance/Exit Ramp |
| 5 | 5 | 5 | Rail Grade Crossing |
| | 6 | 6 | On A Bridge |
| | | 7 | Crossover Related |
| 8 | 8 | 8 | Other, Non-interchange |
| 9 | 9 | 9 | Unknown, Non-interchange |
| *INTERCHANGE AREA* | | | |
| 10 | 10 | 10 | Non-Junction |
| 11 | 11 | 11 | Intersection |
| 12 | 12 | 12 | Intersection Related |
| 13 | 13 | 13 | Driveway, Alley Access, Etc. |
| 14 | 14 | 14 | Entrance/Exit Ramp |
| | 16 | 16 | On A Bridge |
| | | 17 | Crossover Related |
| 18 | 18 | 18 | Other Location in Interchange |
| 19 | 19 | 19 | Unknown, Interchange Area |
| 99 | 99 | 99 | Unknown if Interchange |

***2010-Later***

| | |
|---|---|
| 1 | Non-Junction |
| 2 | Intersection |
| 3 | Intersection-Related |
| 4 | Driveway Access |
| 5 | Entrance/Exit Ramp Related |
| 6 | Railway Grade Crossing |
| 7 | Crossover-Related |
| 8 | Driveway Access Related |
| 16 | Shared-Use Path or Trail |
| 17 | Acceleration/Deceleration Lane |
| 18 | Through Roadway |
| 19 | Other location within interchange area |
| 98 | Not Reported |
| 99 | Unknown |

## A09I Imputed Relation to Junction

**Definition:** This imputed variable has the same definition and element values as *Relation to Junction*, excluding value 9, 19, 99 for unknown relation to junction and value 98 for not reported relation to junction.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

| | | |
|---|---|---|
| **SAS Name:** | **RELJCT_I** | ***1988-2009*** |
| | **RELJCT1_IM, RELJCT2_IM** | ***2010-Later*** |

## A10 Relation to Trafficway

**Definition:** Indicates the location of the first harmful event.

**Additional Information:** Prior to 2009, this variable was called Relation to Roadway.

**SAS Name:** **REL_RWY** ***1988-2008***
**REL_ROAD** ***2009-Later***

**Attribute Codes**

| *1988-1998* | *1999-2001* | *2002-Later* | |
|---|---|---|---|
| 1 | 1 | 1 | On Roadway |
| 2 | -- | -- | On Shoulder or Parking Lane |
| -- | 2 | 2 | On Shoulder |
| 3 | -- | -- | Off Roadway/Shoulder/Parking Lane |
| 4 | 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 | -- | -- | Other |
| -- | 8 | 8 | Gore |
| -- | -- | 9 | Continuous Left Turn Lane |
| -- | 10 | 10 | Separator |
| -- | -- | 97 | Not Reported |
| 9 | 99 | 99 | Unknown |

## A11 Trafficway Flow

**Definition:** Indicates whether or not the roadway was divided.

**Additional Information:** If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VTRAFWAY is in the Vehicle data set.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002. From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name: TRAF_WAY**

**Attribute Codes**

| ***1988-2002*** | ***2003-2009*** | |
|---|---|---|
| 0 | -- | Not Physically Divided *(Center 2-way Left Turn Lane)* |
| 1 | 1 | Not Physically Divided *(Two Way Trafficway)* |
| 2 | 2 | Divided Highway *(Median Strip, Barrier)* |
| 3 | 3 | One Way Trafficway |
| 9 | 9 | Unknown |

## A12 Number of Travel Lanes

**Definition:** Indicates the number of lanes of travel. 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.

**Additional Information:** If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VNUM_LAN is in the Vehicle data set.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002. From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name:** **NUM_LAN** ***1988-2008***
**NO_LANES** ***2009***

**Attribute Codes**

***1988-2009***

1 One Lane
2 Two Lanes
3 Three Lanes
4 Four Lanes
5 Five Lanes
6 Six Lanes
7 Seven or More Lanes
9 Unknown

## A13 Roadway Alignment

**Definition:** Horizontal alignment of roadway in the immediate vicinity of the first harmful event.

**Additional Information:** If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VALIGN is in the Vehicle data set.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002. From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name:** **ALIGN** ***1988-2008***
**ALIGNMNT** ***2009***

**Attribute Codes**

***1988-2009***

1 Straight
2 Curve
9 Unknown

## A13I Imputed Roadway Alignment

**Definition:** This imputed variable has the same definition and element values as *Roadway Alignment*, excluding value 9 for unknown roadway alignment and value 8 for not reported roadway alignment.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **ALIGN_I**

## A14 Roadway Profile

**Definition:** Vertical alignment of roadway.

**Additional Information:** If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VPROFILE is in the Vehicle data set.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002. From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name:** **PROFILE**

**Attribute Codes**

| ***1988-2001*** | ***2002-2009*** | |
|---|---|---|
| 1 | 1 | Level |
| 2 | 2 | Grade *(Uphill, Downhill, Unknown Slope)* |
| 3 | 3 | Hillcrest |
| 8 | -- | Other |
| -- | 8 | Sag |
| 9 | 9 | Unknown |

## A14I Imputed Roadway Profile

**Definition:** This imputed variable has the same as definition and element values as *Roadway Profile*, excluding value 9 for unknown roadway profile and value 8 for not reported roadway profile.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **PROFIL_I**

## A15 Roadway Surface Condition

**Definition:** Condition of road surface at the time of the crash.

**Additional Information:** If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VSURCOND is in the Vehicle data set.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002. From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name:** **SUR_COND**

**Attribute Codes**

***1988-2009***

1 Dry
2 Wet
3 Snow or Slush
4 Ice
5 Sand, Dirt, Oil
8 Other
9 Unknown

## A15I Imputed Roadway Surface Condition

**Definition:** This imputed variable has the same definition and element values as *Roadway Surface Condition*, excluding value 99 for unknown roadway surface condition and value 98 for not reported roadway surface condition.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **SURCON_I**

## A16 Traffic Control Device

**Definition:** Indicates whether or not a traffic control device was present for the crash and the type of traffic control device.

**Additional Information:** If the crash involves vehicles and cyclists subject to different traffic control devices, the device coded is based on the following priority:

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

From 2002-2009, this information is also available on the Vehicle data set (Vehicle.VTRAFCON), the Biketraf data set (BTRAFCON) and the Trafcon data set (MTRAFCON).

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002. From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name:** **TRAF_CON**

**Attribute Codes**

| ***1988-1989*** | ***1990-2009*** | |
|---|---|---|
| 0 | 0 | No Controls |
| **NOT AT RAILROAD GRADE CROSSINGTRAFFIC SIGNALS:** | | |
| *TRAFFIC SIGNALS:* | | |
| -- | 1 | Traffic Control Signal *(On Colors)* |
| 1 | -- | Traffic Control Signal *(On Colors)* w/o Pedes. Signal |
| 2 | -- | Traffic Control Signal *(On Colors)* w/ Pedes. Signal |
| 3 | -- | Traffic Control Signal *(On Colors)* Pedes. Signal Not Known |
| 4 | 4 | Flashing Traffic Control Signal or Flashing Beacon |
| 8 | 8 | Other Traffic Signal |
| 9 | 9 | Unknown Traffic Signal |
| *REGULATORY, SCHOOL ZONE OR WARNING SIGNS:* | | |
| 11 | 21 | Stop Sign |
| 12 | 22 | Yield Sign |
| 13 | 23 | School Zone Related Sign |
| 14 | -- | Warning Sign |

## A16 Traffic Control Device *(continued)*

**Attribute Codes**

| *1988-1989* | *1990-2009* | |
|---|---|---|
| 18 | 28 | Other Sign |
| 19 | 29 | Unknown Sign |
| -- | 40 | Advisory Speed Sign |
| -- | 41 | Warning Sign For Road Conditions *(Hill, Steep Grade, Etc.)* |
| -- | 42 | Warning Sign For Road Construction |
| -- | 43 | Warning Sign For Environment/Traffic *(Fog Ahead, Wind, Crash Ahead, Etc.)* |
| -- | 49 | Unknown Type Warning |
| *MISCELLANEOUS NOT AT RAILROAD CROSSING:* | | |
| 21 | 51 | Officer, Crossing Guard, Flagman, etc |
| **AT RAILROAD GRADE CROSSING:** | | |
| 31 | 61 | Active Devices *(e.g. Gates, Flashing Lights, Traffic Signal)* |
| 32 | 62 | Passive Devices *(Stop Sign, Cross Bucks)* |
| **OTHER:** | | |
| 97 | 97 | Traffic Control Present-No Details |
| 98 | 98 | Other Traffic Control *(Whether Or Not At RR Grade Crossing)* |
| 99 | 99 | Unknown |

## A16I Imputed Traffic Control Device

**Definition:** This imputed variable has the same definition and element values as *Traffic Control Device*, excluding value 99 for unknown traffic control device and value 97 for not reported traffic control device.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **TRFCON_I**

## A17 Traffic Control Device Functioning

**Definition:** This data element is a derived variable based on traffic control device from the crash data set. Traffic control device functioning attributes for vehicle(s)/"Bikes" with the same traffic control device as the crash data set are prioritized (1, 2, 3, 8, 9, 0) and the traffic control device functioning attribute with the highest priority selected.

**Additional Information:** The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002. From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name: DEV_FUNC** ***1988-1989***

**Attribute Codes**

***1988-1989***

0 No Controls
1 Device Not Functioning
2 Device Functioning
9 Unknown

## A18 Speed Limit

**Definition:** Posted speed limit in miles per hour.

**Additional Information:** If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the highest speed limit is coded.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VSPD_LIM is in the Vehicle data set.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002. From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name:** **SPD_LIM** ***1988-2008***
**SP_LIMIT** ***2009***

**Attribute Codes**

***1988-2009***

| | |
|---|---|
| 0 | No Statutory Limit *(Parking Lot, Alley, etc.)* |
| 5-75 | Actual Speed Limit |
| 99 | Unknown |

## A18I Imputed Speed Limit

**Definition:** This imputed variable has the element values as *Speed Limit*, excluding value 99 for unknown speed limit and value 97 for not reported speed limit.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **SPDLIM_H**

## A19 Light Condition

**Definition:** General light conditions at the time of the crash, including light from external roadway illumination fixtures.

**Additional Information:**

**SAS Name:** **LGHT_CON** ***1988-2008***
**LGT_COND** ***2009-Later***

**Attribute Codes**

| *1988-1998* | *1999-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|
| 1 | 1 | 1 | 1 | Daylight |
| 2 | 2 | -- | -- | Dark |
| -- | -- | 2 | 2 | Dark - Not Lighted |
| 3 | 3 | 3 | 3 | Dark - Lighted |
| 4 | 4 | 4 | 4 | Dawn |
| 5 | 5 | 5 | 5 | Dusk |
| 6 | -- | -- | -- | Dawn or Dusk |
| -- | -- | 6 | 6 | Dark – Unknown Lighting |
| -- | -- | 7 | 7 | Other |
| -- | -- | -- | 8 | Not Reported |
| 9 | 9 | 9 | 9 | Unknown |

## A19I Imputed Light Condition

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

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **LGTCON_I** ***1988-2009***
**LGTCON_IM** ***2010-Later***

## A20 Atmospheric Conditions

**Definition:** General atmospheric conditions at the time of crash.

**Additional Information:** This data element selects up to two values. If there are more than two atmospheric conditions, select the two conditions that most affect visibility. Accident.WEATHER1 and Accident.WEATHER2 are two coded variables, and Accident.WEATHER is derived from these two.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name:** **WEATHER** ***1988-2009***
**WEATHER , WEATHER1 , WEATHER2** ***2010-Later***

**Attribute Codes**

***1988-2009***

1 No Adverse Conditions
2 Rain
3 Sleet
4 Snow
5 Fog
6 Rain and Fog
7 Sleet and Fog
8 Other *(Smog, Smoke, Blowing Sand/Dust/Snow, Crosswind, Hail)*
9 Unknown

***2010-Later***

0 No Additional Atmospheric Conditions
1 Clear
2 Rain
3 Sleet, Hail *(Freezing Rain or Drizzle)*
4 Snow
5 Fog, Smog, Smoke
6 Severe Crosswinds
7 Blowing Sand, Soil, Dirt
8 Other
10 Cloudy
11 Blowing Snow
98 Not Reported
99 Unknown

## A20I Imputed Atmospheric Conditions

**Definition:** This imputed variable has the same definition and element values as *Atmospheric Conditions*, excluding value 9 for unknown atmospheric conditions and value 98 for not reported atmospheric conditions.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **WEATHR_I** ***1988-2009***
**WEATHR_IM** ***2010-Later***

## A21 School Bus-Related

**Definition:** Indicates if 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.

**SAS Name:** **SCHL_BUS** ***1988-2008***
**SCH_BUS** ***2009-Later***

**Attribute Codes**

| ***1988-2009*** | ***2010-Later*** | |
|---|---|---|
| 0 | 0 | No |
| 1 | 1 | Yes |
| -- | 7 | Not Reported |

## A24 Pedestrian/Cyclist Crash Type (discontinued)

**Definition:** This element describes the crash situation involving the pedestrian/bicyclist.

**Additional Information:** SAS codes 1 through 99 pertain to cyclist crashes and 110 through 920 pertain to pedestrian crashes. In 1989 4-digit codes were added pertaining to wheelchair crashes. Wheelchair codes are similar to those for pedestrians, with a 1 added as the first digit. For example a pedestrian involved with a commercial bus is coded 110 and a wheelchair occupant involved with a commercial bus is coded 1110.

If more than one qualifying non-motorist is involved, the variable is coded with respect to the first one involved. Within the selected non-motorist type (pedestrian or cyclist) coding is prioritized in the order listed below, if more than one crash type applies.

This variable was discontinued in the ACCIDENT data set and moved to the PBTYPE data set in 2010.

**SAS Name: PED_ACC**

**Attribute Codes**

***1988-2009*** (Exceptions indicated by " * ")

0 No pedestrian/cyclist involved
9999 First qualifying non-motorist is an unknown person type

*CYCLIST:*

40 Play Vehicle (Big Wheel, Other Tricycle, or Bicyclist With Training Wheels)
11 Motorist Backing
29 Parking Lot, Other Open Area Or Location Such As Gas Station
97 Unknown Whether Parallel Or Crossing Approach Path

*PARALLEL PATH 1: MOTORIST TURNS OR MERGES INTO THE PATH OF THE CYCLIST*

35 Drive out - on Street Parking
22 Motorist Left Turn in Front of Cyclist
23 Motorist Left Turn Facing Cyclist
24 Motorist Right Turn in Front of Cyclist
61 Motorist Changes Lanes into Cyclist *(* Added in 2009)*

*PARALLEL PATH 2 CYCLIST TURNS OR MERGES INTO THE PATH OF THE MOTORIST*

3 Ride-out from Sidewalk
18 Cyclist Left Turn, in Front of Traffic
19 Cyclist Left Turn, Facing Traffic
21 Cyclist Right Turn, from Wrong Side of Street
62 Cyclist Changes Lanes into Motorist *(* Added in 2009)*

*PARALLEL PATH 3 OPERATOR IS ON THE WRONG SIDE OF THE STREET*

30 Head-on, Counteractive Evasive Actions
28 Wrong Way Motorist
26 Wrong Way Cyclist

## A24 Pedestrian/Cyclist Crash Type *(continued)*

*PARALLEL PATH 4 MOTORIST IS OVERTAKING THE CYCLIST*

13 Motorist Overtakes Undetected Cyclist
15 Motorist Overtaking, Counteractive Evasive Actions
16 Motorist Overtaking, Misjudges Passing Space
17 Motorist Overtaking Cyclist, Path Obstructed
39 Motorist Overtaking

*PARALLEL PATH 5 CYCLIST IS OVERTAKING A MOTOR VEHICLE*

27 Cyclist Overtaking

*PARALLEL PATH 6 OPERATOR LOSES CONTROL AND INADVERTENTLY SWERVES INTO THE PATH OF THE OTHER VEHICLE*

14 Motorist Lost Control
20 Cyclist Lost Control
98 Parallel Path, Unknown Type

*CROSSING PATH 1 CYCLIST DOES NOT CLEAR INTERSECTION BEFORE LIGHT TURNS GREEN FOR CROSS TRAFFIC*

6 Trapped
7 Multiple Threat

*CROSSING PATH 2 MOTORIST FAILS TO YIELD TO THE CYCLIST*

8 Drive Out, Driveway/Alley
12 Drive Through
9 Drive Out, Stop Sign
10 Right on Red
48 Drive Out, Intersection

*CROSSING PATH 3 CYCLIST FAILS TO YIELD TO THE MOTORIST, MIDBLOCK*

1 Ride Out, Residential Driveway
2 Ride Out, Commercial Driveway
4 Ride Out, Midblock
60 Ride Out – Unknown Driveway Type *(* Added in 2009)*

*CROSSING PATH 4 CYCLIST FAILS TO YIELD TO THE MOTORIST AT AN INTERSECTION*

5 Ride Out, Stop Sign
49 Ride Out, Intersection
50 Ride Through *(* added in 2009)*

*CROSSING PATH 5 MOTORIST IS TURNING*

33 Motorist Cuts Corner
34 Motorist Swings Wide

*CROSSING PATH 6 CYCLIST IS TURNING*

31 Cyclist Cuts Corner
32 Cyclist Swings Wide

## A24 Pedestrian/Cyclist Crash Type *(continued)*

*CROSSING PATH 7 CRASH OCCURS AT AN INTERSECTION*

55 Controlled Intersection, Other
25 Uncontrolled Intersection, Other
90 Unknown if Controlled or Uncontrolled *(* Added in 2009)*
99 Crossing Path, Unknown Type

| *PEDESTRIAN* | *WHEEL CHAIR* | |
|---|---|---|
| 110 | 1110 | Commercial Bus |
| 120 | 1120 | School Bus |
| 130 | 1130 | Ice Cream Vendor |
| 140 | 1140 | Mailbox Related |
| 150 | 1150 | Entering/Exiting |
| 210 | 1210 | Driverless Vehicle |
| 220 | 1220 | Backing Vehicle |
| 230 | 1230 | Hot Pursuit |
| 310 | 1310 | To/from Disabled Vehicle |
| 320 | 1320 | Disabled Vehicle Related |
| 330 | 1330 | Emergency Vehicle Related |
| 410 | 1410 | Working on Roadway |
| 420 | 1420 | Play Vehicle-Related |
| 430 | 1430 | Playing in Roadway |
| 510 | 1510 | Hitchhiking |
| 520 | 1520 | Expressway Crossing |
| 531 | 1531 | Walking/Running along Roadway with Traffic |
| 532 | 1532 | Walking/Running along Roadway against Traffic |
| 539 | 1539 | Walking/Running along Roadway Can't Specify |
| 610 | 1610 | Waiting to Cross At or Near Curb |
| 620 | 1620 | Pedestrian / Wheel Chair Not in Roadway |
| 710 | 1710 | Multiple Threat, Intersection |
| 720 | 1720 | Vehicle Turn/Merge - at Intersection |
| 730 | 1730 | Intersection Dash |
| 740 | 1740 | Trapped |
| 750 | 1750 | Pedestrian Walked /Wheel Chair Rolled into Vehicle, Intersection |
| 760 | 1760 | Intersection, Driver Violation |
| 790 | 1790 | Intersection-other |
| 810 | 1810 | Multiple Threat, Mid-block |
| 821 | 1821 | Mid-block Dart-out, First half |
| 822 | 1822 | Mid-block Dart-out, Second half |
| 829 | 1829 | Mid-block Dart-out, Can't specify |
| 830 | 1830 | Mid-block dash |
| 840 | 1840 | Pedestrian Walked / Wheel Chair Rolled into Vehicle, Mid-block |
| 890 | 1890 | Mid-block-other |
| 910 | 1910 | Other-weird |
| 920 | 1920 | Inadequate information |

## A25 Work Zone

**Definition:** 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:** From 1995 to 2003 this variable indicated whether the first harmful event occurred in a construction area or work zone. From 2004 to 2008 it was expanded to identify first harmful events that were related to, but did not necessarily occur in, a construction or work zone. Starting in 2009 it describes a "work zone crash".

**SAS Name: WRK_ZONE**

**Attribute Codes**

***1995-2003***

0 No
1 Yes, First Harmful Event In a Construction or Work Zone

***2004-2008***

3 No
4 Yes, First Harmful Event in Work or Construction Zone
5 Yes, First Harmful Event Related to, But Not In, Work or Construction Zone
6 Yes, First Harmful Event is In or is Related to a Work or Construction Zone, But it is Not Known Which
9 Unknown

| ***2009*** | ***2010-Later*** | |
|---|---|---|
| 0 | 0 | None |
| 1 | 1 | Construction |
| 2 | 2 | Maintenance |
| 3 | 3 | Utility |
| 4 | 4 | Work Zone, Type Unknown |
| -- | 7 | Not Reported |

## A26 National Highway System (NHS) Roadway Type (discontinued)

**Definition:** This variable was added to indicate whether this roadway is designated as part of the National Highway System and the urban or rural character of the area through which the roadway travels.

**Additional Information:** This variable was added to the accident data set in 1995 and removed in 1999.

**SAS Name: NHS_RWTP**

**Attribute Codes**

***1995-1998***

00 Not NHS Roadway

*URBAN*

1 Eisenhower Interstate *(EIS)*
2 Congressional High Priority Route
3 STRAHNET Route
4 STRAHNET Major Connector
5 Other NHS Route
9 Unknown Urban Route

*RURAL*

11 Eisenhower Interstate *(EIS)*
12 Congressional High Priority Route
13 STRAHNET Route
14 STRAHNET Major Connector
15 Other NHS Route
19 Unknown Urban Route

*URBAN OR RURAL*

21 Eisenhower Interstate *(EIS)*
22 Congressional High Priority Route
23 STRAHNET Route
24 STRAHNET Major Connector
25 Other NHS Route
98 Unknown if Urban or Rural
99 Unknown if NHS Route

## A27 EMS On Scene (discontinued)

**Definition:** Indicates whether an EMS vehicle was present at the scene of the crash.

**Additional Information:** This variable was discontinued in 2009.

**SAS Name:** **EMS**

**Attribute Codes**

***2005-2008***

0 No
1 Yes
6 Not on PAR
7 Not Coded
9 Unknown

## A28 Type of Intersection

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

**Additional Information:**

**SAS Name:** **TYP_INT**

**Attribute Codes**

***2010-Later***

0 Not an Intersection
1 Four-Way Intersection
2 T-Intersection
3 Y-Intersection
4 Traffic Circle
5 Roundabout
6 Five-Point, or More
7 Not Reported
9 Unknown

## A90 Maximum Injury Severity in Crash

**Definition:** Indicates the most severe injury of all persons involved in the crash, and is derived from the injury severity variable in the Person data set.

**Additional Information:** The following order of severity has been used since 2001.

- 4-Fatal
- 3- Incapacitating
- 2-Non- incapacitating
- 1-Possible Injury
- 5-Injured, Unknown Severity
- 0-No Injury
- 6-Died Prior
- 9-Unknown if Injured
- 8-No Person Involved in the Crash

From 1999 to 2000 the priority was different: Unknown if Injured had priority over No Injury.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name: MAX_SEV**

**Attribute Codes**

| ***1988-2009*** | ***2010-Later*** | |
|---|---|---|
| 0 | 0 | No Injury |
| 1 | 1 | Possible Injury |
| 2 | 2 | Non-incapacitating |
| 3 | 3 | Incapacitating |
| 4 | 4 | Fatal |
| 5 | 5 | Injured, Unknown Injury Severity |
| 6 | 6 | Died Prior |
| 8 | 8 | No Person Involved in the Crash |
| 9 | -- | Unknown if Injured |
| -- | 9 | Unknown if Injured/Not Reported |

## A90I Imputed Maximum Injury Severity in Crash

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

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

This variable is derived from P09I, the imputed injury severity variable in the Person data set.

**SAS Name:** **MAXSEV_I** ***1988-2009***
**MAXSEV_IM** ***2010-Later***

## A91 Number Known Injured in Crash

**Definition:** Derived by counting all the persons with an injury severity of (1, 2, 3, 4, 5, or 9) in a crash.

**Additional Information:** See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name:** **NUM_INJ**

**Attribute Codes**

***1988-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. |

## A91I Imputed Number Known Injured in Crash

**Definition:** This imputed variable has the same definition and element values as *Number Known Injured in Crash*, excluding values 98 and 99 for no person involved and unknown number injured, respectively.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

This variable is derived from P09I, the imputed injury severity variable in the Person data set.

**SAS Name:** **NO_INJ_I** ***1988-2009***
**NO_INJ_IM** ***2010-Later***

## A92 Alcohol Involved in Crash

**Definition:** This is a derived variable based on police-reported alcohol involvement from the Person data set. This variable indicates alcohol use for drivers, pedestrians, cyclists and other type of non-motorists (except occupants of motor vehicles not in transport) involved in the crash.

**Additional Information:** See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name: ALCOHOL**

**Attribute Codes *1988-Later***

1 Alcohol Involved
2 No Alcohol Involved
8 No Applicable Person Involved in the Crash *(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)*
9 Unknown

## A92I Imputed Alcohol Involved in Crash

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

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

This imputed variable is derived from P11I, the imputed police reported alcohol involvement in the Person data set.

**SAS Name: ALCHL_I** ***1988-2009***
**ALCHL_IM** ***2010-Later***

## The VEHICLE Data Set

The Vehicle data set includes Vehicle as well as Driver and Precrash data. It contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO are the case identifiers. It also contains:

## V02 Hit and Run

**Definition:** Hit and run is coded when a motor vehicle in-transport, or its driver, departs from the scene; vehicles not in transport are excluded. It does not matter whether the hit-and-run vehicle was striking or struck.

**Additional Information:**

**SAS Name: HIT_RUN**

**Attribute Codes**

| ***1988-2009*** | ***2010-Later*** | |
|---|---|---|
| 0 | 0 | No |
| 1 | 1 | Yes |
| -- | 7 | Not Reported |
| 9 | 9 | Unknown |

## V02I Imputed Hit and Run

**Definition:** This imputed variable has the same definition and element values as *Hit and Run*, excluding value 9 for unknown hit and run and value 8 for not reported hit and run.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **HITRUN_I** ***1988-2009***
**HITRUN_IM** ***2010-Later***

## V03 Vehicle Make

**Definition:** A numerical code indicating the make of each motor vehicle in transport.

**Additional Information:** See *Appendix A: Vehicle Make/Model Designation* for more detailed information.

**SAS Name:** **MAKE**

**Attribute Codes**

***1988-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
29 Other Domestic Manufacturers
30 Volkswagen
31 Alfa Romeo
32 Audi
33 Austin/Austin Healey
34 BMW
35 Datsun/Nissan
36 Fiat
37 Honda
38 Isuzu
39 Jaguar
40 Lancia
41 Mazda
42 Mercedes-Benz
43 MG
44 Peugeot
45 Porsche
46 Renault
47 Saab
48 Subaru

## V03 Vehicle Make *(continued)*

### Attribute Codes

***1988-Later***

| | |
|---|---|
| 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 | Mini *(2002-2007 Only)* |
| 65 | Smart *(2008-Later)* |
| 69 | Other Import |
| 70 | BSA |
| 71 | Ducati |
| 72 | Harley-Davidson |
| 73 | Kawasaki |
| 74 | Moto-Guzzi |
| 75 | Norton |
| 76 | Yamaha |
| 78 | Other Make Moped |
| 79 | Other Make Motored Cycle |
| 80 | Brockway |
| 81 | Diamond Rio/Rio |
| 82 | Freightliner/White |
| 82/98 | White/Autocar, White/GMC |
| 83 | FWD |
| 84 | International Harvester/Navistar |
| 85 | Kenworth |
| 86 | Mack |
| 87 | Peterbilt |
| 88 | Iveco/Magirus |
| 90 | Bluebird |
| 91 | Eagle Coach |
| 92 | Gillig |
| 93 | MCI |
| 94 | Thomas Built |
| 97 | Not Reported |
| 98 | Other Make |
| 99 | Unknown Make |

## V04 Vehicle Model

**Definition:** A numerical code indicating the model of each motor vehicle in transport.

**Additional Information:** See *Appendix A: Vehicle Make/Model Designation* for more detailed information.

**SAS Name: MODEL**

**Attribute Codes**

***1988-Later***

See *Appendix A: Vehicle Make/Model Designation* for make and model codes.

## V05 Body Type

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

**Additional Information:** Changes to this variable were made in:

- 1990: Attribute codes 11 and 12 were modified, attribute codes 13 Limousine and 22 Step Van or Walk-in Van were added, and attribute codes 33, 34, and 47 were deleted.
- 1992: Attribute codes 11, 12, 13, 14, 20, 21, 30, 31, 60, and 65 were modified.
- Attribute codes 15, 16, 17, 19, 23, 33, 45, and 64 were added. Some of the existing attribute coding changed.
- 1993: Attribute codes 24 and 25 were added. Prior to 1993 GVWR was measured in kilograms; in 1993 it changed to pounds.
- 1999: Attribute 17 was added.
- 2010: Attribute 98 (Not Reported) was added.

**SAS Name: BODY_TYP**

**Attribute Codes**

***1988-1989***

*AUTOMOBILES*

1 Convertible *(Excludes Sun-Roof, T-Bar)*
2 2-Door Sedan, Hardtop, Coupe
3 3-Door/2-Door Hatchback
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 Other Automobile Type
9 Unknown Automobile Type

*AUTOMOBILE DERIVATIVES*

10 Auto Based Pickup *(Included El Camino, Caballero, Ranchero, And Brat)*
11 Auto Based Panel *(Cargo Station Wagon, Auto-Based Ambulance/Hearse)*
12 Large Limousine *(More Than Four Side Doors Or Stretched Chassis)*

*UTILITY VEHICLES*

14 Utility-*(Includes Jeep CJ-2-CJ7, Renegade, Landrover, Bronco, Landcruiser, Thing, Blazer, Bronco II, Jimmy, Ramcharger, Cherokee, Trailduster, Scout)*

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

20 Minivan *(Astro, Caravan, Plymouth Vista, Aerostar, Safari, Voyager, Dodge Vista, Toyota Cargo Van, Toyota Van, Vanagon, Vw Bus, Kombi)*
21 Standard Van *(Sportvan, Chevy Van, Club Wagon, Ford Econoline, Ram Van, Mini Ram Van, Chateau, Ram Wagon, Vandura, Rally Voyager, Beauville, Sportsman)*
28 Other Van Type
29 Unknown Van Type

## V05 Body Type *(continued)*

### Attribute Codes

***1988-1989***

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

30 Compact Pickup *(< 4,500 Lbs GVWR, S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-5, Pup, Mazda Pickup, Mitsubishi Truck, Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup)*
31 Standard Pickup *(4,500 To 10,000 Lbs GVWR, C10-C30, K10-K30, T10, D100-D300, W150, F100-F350, Comanche, J10, J20)*
32 Pickup With Slide-In Camper
33 Truck Based Station Wagon *(4-Door; Includes Suburban, Travelall, Wagoneer)*
34 Light Truck Based Suburban Limousine
39 Unknown *(Pickup Style)* Light Conventional Truck

*OTHER LIGHT TRUCKS (<10,000 LBS GVWR)*

40 Cab Chassis Based *(Included Rescue Vehicle, Light Stake, Dump, And Tow Truck)*
41 Truck Based Panel
42 Light Truck Based Motor Home *(Chassis Mounted)*
47 Other Light Conventional Truck Type *(Not A Pickup)*
48 Unknown Other Light Truck Type *(Utility, Van, Pickup, Or Other Light Truck)*
49 Unknown Light Vehicle Type *(Automobile, Van, Or Light Truck)*

*BUSES (EXCLUDES VAN BASED)*

50 School Bus Type *(Designed To Carry Students, Not Cross Country Or Transit)*
58 Other Bus *(e.g., Transit, Intercity, Bus Based Motor Home)*
59 Unknown Bus Type

*MEDIUM/HEAVY TRUCKS (>10,000 LBS GVWR)*

60 Single Unit Straight Truck
63 Medium/Heavy Truck Based Motor Home
65 Truck-Tractor *(Cab Only, Or With Any Number Of Trailing Units; Any WEIGHT)*
68 Unknown Medium/Heavy Truck Type
69 Unknown Truck Type *(Light/Medium/Heavy)*

*MOTORED CYCLES (DOES NOT INCLUDE ALL TERRAIN VEHICLES/CYCLES)*

70 Motorcycle
71 Moped *(Motorized Bicycle)*
72 Three Wheeled Motorcycle Or Moped
78 Other Motored Cycle Type *(Minibike, Motor Scooter)*
79 Unknown Motored Cycle Type

*OTHER VEHICLES*

80 ATV *(All-Terrain Vehicle Including Dune/Swamp Buggy)* And ATC *(All Terrain Cycle)*
81 Snowmobile
82 Farm Equipment Other Than Trucks
83 Construction Equipment Other Than Trucks *(Includes Graders)*
88 Other Type Vehicle *(Includes Go-Cart, Fork Lift, City Street Sweeper)*
89 Unknown Other Vehicle
99 Unknown Body Type

## V05 Body Type *(continued)*

### Attribute Codes

***1990-1991***

*AUTOMOBILES*

1 Convertible *(Excludes Sun-Roof, T-Bar)*
2 2-Door Sedan, Hardtop, Coupe
3 3-Door/2-Door Hatchback
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 Other Automobile Type
9 Unknown Automobile Type

*AUTOMOBILE DERIVATIVES*

10 Auto Based Pickup *(Included El Camino, Caballero, Ranchero, And Brat)*
11 Ambulance
12 Hearse
13 Limousine

*UTILITY VEHICLES*

14 Utility-*(Includes Jeep CJ-2-CJ7, Renegade, Landrover, Bronco, Landcruiser, Thing, Blazer, Bronco II, Jimmy, Ramcharger, Cherokee, Trailduster, Scout)*

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

20 Minivan *(Astro, Caravan, Plymouth Vista, Aerostar, Safari, Voyager, Dodge Vista, Toyota Cargo Van, Toyota Van, Vanagon, Vw Bus, Kombi)*
21 Large Van *(Sportvan, Chevy Van, Club Wagon, Ford Econoline, Ram Van, Chateau, Ram Wagon, Vandura, Rally Voyager, Beauville, Sportsman)*
22 Step Van Or Walk-In Van *(< 10,000 Lbs GVWR)*
28 Other Van Type
29 Unknown Van Type

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

30 Compact Pickup *(S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-5, Pup, Mazda Pickup, Mitsubishi Truck, Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup)*
31 Standard Pickup *(C10-C30, K10-K30, T10, D100-D300, W150, F100-F350, Comanche, J10, J20)*
32 Pickup With Slide-In Camper
39 Unknown *(Pickup Style)* Light Conventional Truck

*OTHER LIGHT TRUCKS (< 10,000 LBS GVWR)*

40 Cab Chassis Based *(Included Rescue Vehicle, Light Stake, Dump, And Tow Truck)*
41 Truck Based Panel
42 Light Truck Based Motor Home *(Chassis Mounted)*
48 Unknown Other Light Truck Type *(Utility, Van, Pickup, Or Other Light Truck)*
49 Unknown Light Vehicle Type *(Automobile, Van, Or Light Truck)*

## V05 Body Type *(continued)*

### Attribute Codes

***1990-1991***

*BUSES (EXCLUDES VAN BASED)*

50 School Bus Type *(Designed To Carry Students, Not Cross Country Or Transit)*
58 Other Bus *(e.g., Transit, Intercity, Bus Based Motor Home)*
59 Unknown Bus Type

*MEDIUM/HEAVY TRUCKS (>10,000 LBS GVWR)*

60 Single Unit Straight Truck
63 Medium/Heavy Truck Based Motor Home
65 Truck-Tractor *(Cab Only, Or With Any Number Of Trailing Units; Any WEIGHT)*
68 Unknown Medium/Heavy Truck Type
69 Unknown Truck Type *(Light/Medium/Heavy)*

*MOTORED CYCLES (DOES NOT INCLUDE ALL TERRAIN VEHICLES/CYCLES)*

70 Motorcycle
71 Moped *(Motorized Bicycle)*
72 Three Wheeled Motorcycle Or Moped
78 Other Motored Cycle Type *(Minibike, Motor Scooter)*
79 Unknown Motored Cycle Type

*OTHER VEHICLES*

80 ATV *(All-Terrain Vehicle Including Dune/Swamp Buggy)* And ATC *(All Terrain Cycle)*
81 Snowmobile
82 Farm Equipment Other Than Trucks
83 Construction Equipment Other Than Trucks *(Includes Graders)*
88 Other Type Vehicle *(Includes Go-Cart, Fork Lift, City Street Sweeper)*
89 Unknown Other Vehicle
99 Unknown Body Type

***1992-2009*** ***2010-Later*** (Exceptions indicated by " * ")

*AUTOMOBILES*

| | | |
|---|---|---|
| 1 | 1 | Convertible *(Excludes Sun-Roof, T-Bar)* |
| 2 | 2 | 2-Door Sedan, Hardtop, Coupe |
| 3 | 3 | 3-Door/2-Door Hatchback |
| 4 | 4 | 4-Door Sedan, Hardtop |
| 5 | 5 | 5-Door/4-Door Hatchback |
| 6 | 6 | Station Wagon *(Excluding Van And Truck Based)* |
| 7 | 7 | Hatchback, Number Of Doors Unknown |
| 17 | 17 | 3-Door Coupe *(*Added In 1999)* |
| 8 | -- | Other Automobile Type |
| -- | 8 | Sedan/Hardtop, Number of Doors Unknown |
| 9 | -- | Unknown Automobile Type |
| -- | 9 | Other or Unknown Automobile Type |

## V05 Body Type *(continued)*

### Attribute Codes

| ***1992-2009*** | ***2010-Later*** (Exceptions indicated by " * ") | |
|---|---|---|
| *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)* |
| 12 | 12 | Large Limousine *(More Than Four Side Doors Or Stretched Chassis)* |
| 13 | 13 | Three Wheel Automobile Or Automobile Derivative |
| *UTILITY VEHICLES* | | |
| 14 | 14 | Compact Utility *(ANSI D-16 Utility Vehicle Categories "Small" and "Midsize")* |
| 15 | 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 (< 4,536 KG GVWR)* | | |
| 20 | 20 | Minivan |
| 21 | 21 | Large Van – Includes Van-Based Buses |
| 22 | 22 | Step Van Or Walk-In Van *(≤ 4,536 Kg GVWR)* |
| 23 | -- | Van-Based Motor-Home |
| 24 | -- | Van-Based School Bus *(*Added In 1993)* |
| 25 | -- | Van-Based Other Bus *(*Added In 1993)* |
| 28 | 28 | Other Van Type |
| 29 | 29 | Unknown Van Type |
| *LIGHT CONVENTIONAL TRUCKS (PICKUP STYLE CAB, ≤4,536 KG GVWR)* | | |
| 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)* |
| 31 | 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 |
| 33 | 33 | Convertible Pickup |
| 39 | 39 | Unknown *(Pickup Style)* Light Conventional Truck |
| *OTHER LIGHT TRUCKS (≤4,536 KG GVWR)* | | |
| 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 | -- | Unknown Other Light Truck Type *(Utility, Van, Pickup, Or Other Light Truck)* |
| -- | 48 | Unknown Light Truck Type *(Not A Pickup)* |
| 49 | 49 | Unknown Light Vehicle Type *(Automobile, Utility, Van, Or Light Truck)* |

## V05 Body Type *(continued)*

### Attribute Codes

| ***1992-2009*** | ***2010-Later*** (Exceptions indicated by " * ") | |
|---|---|---|
| *BUSES (EXCLUDES VAN BASED)* | | |
| 50 | 50 | School Bus *(Designed To Carry Students, Not Cross Country Or Transit)* |
| -- | 51 | Cross Country/Intercity Bus *(Motor Coach)* |
| -- | 52 | Transit Bus *(City Bus)* |
| 58 | 58 | Other Bus Type *(e.g., Transit, Intercity, Bus Based Motor Home)* |
| 59 | 59 | Unknown Bus Type |
| *MEDIUM/HEAVY TRUCKS (>4,536 KG GVWR)* | | |
| 60 | 60 | Step Van |
| -- | 61 | Single-Unit Straight Truck *(10,000 lbs<GVWR< or =19,500 lbs)* |
| -- | 62 | Single-Unit Straight Truck *(19,500 lbs<GVWR< or =26,000 lbs)* |
| -- | 63 | Single-Unit Straight Truck *(GVWR>26,000 lbs)* |
| 64 | -- | Single Unit Straight Truck |
| 66 | 66 | Truck-Tractor *(Cab Only, Or With Any Number Of Trailing Units; Any Weight)* |
| -- | 67 | Medium/Heavy Pickup *(GVWR > 10,000 lbs, Since 2001)* |
| -- | 68 | Single-Unit Straight Truck *(GVWR unknown)* |
| -- | 71 | Unknown if Single-Unit or Combination-Unit Medium Truck *(10,000 lbs < GVWR < 26,000 lbs)* |
| -- | 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)* |
| *MOTOR HOMES* | | |
| 42 | 42 | Light Truck Based Motor Home *(Chassis Mounted)* |
| 65 | 65 | Medium/Heavy Truck-Based Motor Home |
| -- | 73 | Camper or Motor Home, Unknown Truck Type |
| *MOTORED CYCLES, MOPEDS, ALL-TERRAIN VEHICLES* | | |
| 80 | 80 | Motorcycle |
| 81 | 81 | Moped *(Motorized Bicycle)* |
| 82 | 82 | Three Wheeled Motorcycle Or Moped |
| -- | 83 | Off-Road Motorcycle *(2-Wheel)* |
| 88 | 88 | Other Motored Cycle Type *(Minibike, Motor Scooter, Pocket Motorcycles, Pocket Bikes)* |
| 89 | 89 | Unknown Motored Cycle Type |
| 90 | 90 | ATV *(All-Terrain Vehicle; Includes 3 or 4 Wheels)* |

## V05 Body Type *(continued)*

**Attribute Codes**

| ***1992-2009*** | ***2010-Later*** (Exceptions indicated by " * ") | |
|---|---|---|
| *OTHER VEHICLES* | | |
| 91 | 91 | Snowmobile |
| 92 | 92 | Farm Equipment Other Than Trucks |
| 93 | 93 | Construction Equipment Other Than Trucks *(Includes Graders)* |
| 97 | 97 | Other Vehicle Type *(Includes Go-Cart, Fork-Lift, City Street Sweeper, Dune/Swamp Buggy, Golf Cart)* |
| -- | 98 | Not Reported |
| 99 | 99 | Unknown Body Type |

## V05I Imputed Body Type

**Definition:** This attributes for this imputed variable 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 *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **BDYTYP_H** ***1988-2009***
**BDYTYP_IM** ***2010-Later***

## V06 Model Year

**Definition:** The model year of the vehicle.

**Additional Information:** From 1988 to 1998, model years earlier than 1941 were coded "1940." Starting in 1999 the actual model year was coded for all vehicles.

**SAS Name: MODEL_YR**

**Attribute Codes**

| ***1988-1998*** | ***1999-2009*** | ***2010-Later*** | |
|---|---|---|---|
| 1940 | -- | -- | Model Year 1940 and Earlier |
| 1941-xxxx | xxxx | xxxx | Actual Model Year |
| -- | -- | 7777 | Not Reported |
| 9999 | 9999 | 9999 | Unknown |

## V06I Imputed Model Year

**Definition:** This imputed variable has the same definition and element values as Model Year, excluding value 9999 for unknown model year and value 7777 for not reported.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **MDLYR_I** ***1988-2009***
**MDLYR_IM** ***2010-Later***

## V07 Vehicle Identification Number

**Definition:** The vehicle identification number 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:** If a character of the VIN is missing or undecipherable, that character is blank. From 1988-2008 the first 11 characters of the VIN are used; from 2009 onward the first 12 are used.

**SAS Name: VIN**

**Attribute Codes**

***1988-2008*** *(character data type, length 11)*
***2009-Later*** *(character data type, length 12)*

| ***1988-2008*** | ***2009*** | ***2010-Later*** | |
|---|---|---|---|
| 00000000000 | 000000000000 | 000000000000 | No VIN |
| xxxxxxxxxxx | xxxxxxxxxxxxx | xxxxxxxxxxxxx | Actual VIN |
| -- | -- | 888888888888 | Not Reported |
| 99999999999 | 999999999999 | 999999999999 | Unknown VIN |

## V08 Special Use

**Definition**: Indicates whether the vehicle has a special use. Special use means "in use" and not necessarily emergency use.

**Additional Information:** All military vehicles are classified as "4" even if they are police, ambulance, or fire trucks. The Remarks and Attribute descriptions changed considerably in the 2009 Coding and Editing Manual. The analyst should compare the 2008 and 2009 NASS GES Coding and Editing Manuals for more detailed information.

**SAS Name: SPEC_USE**

**Attribute Codes**

| *1988-1991* | *1992-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | No Special Use |
| 1 | 1 | 1 | 1 | Taxi |
| 2 | 2 | 2 | 2 | Vehicle Used as School Bus |
| 3 | 3 | 3 | 3 | Vehicle Used as Other Bus |
| 4 | 4 | 4 | 4 | Military |
| 5 | 5 | 5 | 5 | Police |
| 6 | 6 | 6 | 6 | Ambulance |
| 7 | -- | 7 | 7 | Fire Truck |
| -- | 7 | -- | -- | Fire Truck and Car |
| 8 | -- | -- | -- | Other |
| -- | -- | 8 | 8 | Emergency Services Vehicle |
| -- | 10 | -- | -- | Hearse |
| -- | 11 | -- | -- | Farm Equipment |
| -- | 12 | -- | -- | Construction Equipment |
| -- | -- | -- | 77 | Not Reported |
| 9 | 99 | 9 | 99 | Unknown |

## V09 Emergency Use

**Definition:** Indicates whether certain types of Special Use vehicles are on an emergency run.

**Additional Information:** From 1988-2008 this includes military, police, ambulance, and fire vehicles. In 2009 it also includes emergency services vehicles. Value "0" is coded if an applicable vehicle was not on an emergency run or it was not one of the applicable vehicles.

**SAS Name:** **EMCY_USE** ***1988-2008***
**EMER_USE** ***2009-Later***

**Attribute Codes**

| *1988-2009* | *2010-Later* | |
|---|---|---|
| 0 | -- | No Emergency Use or Not an Applicable Vehicle |
| -- | 0 | No |
| 1 | 1 | Yes |
| -- | 7 | Not Reported |
| 9 | 9 | Unknown |

## V10 Number of Occupants Coded

**Definition:** The number of occupants coded for this vehicle.

**Additional Information:** This variable has been in the Vehicle data set for all NASS GES years. The SAS name has stayed the same but the definition has changed. From 1988 to 1989 V10 (OCC_INVL) represented the number of occupants in the vehicle and V10A (OCC_COD) represented the number of occupants in the vehicle that were coded. The number coded and the number involved are not always the same because, for example, some PARs have information only for injured occupants. In 1990 V10A (OCC_COD) was dropped and V10 (OCC_INVL) changed to represent the number of occupants coded. The definition of V10 has stayed the same since 1990. In 2000 V10B (NUMOCCS), representing the total number of occupants, was added to the Vehicle data set.

**SAS Name: OCC_INVL**

**Attribute Codes**

| ***1988-1989*** | ***1990-1999*** | ***2000-Later*** | |
|---|---|---|---|
| 0 | 0 | 0 | None |
| 1-95 | 1-29 | 1-95 | Number of Occupants Involved |
| -- | 30 | -- | 30 or More |
| 96 | -- | -- | 96 or More |
| 97 | -- | -- | Unknown-Only Injured Reported |
| -- | -- | -- | Not Reported |
| 99 | -- | -- | Unknown |

## Number of Occupants Coded (discontinued)

**Definition:** Derived by counting the number of occupants including drivers that were coded for this vehicle.

**Additional Information:** This variable was dropped from the Vehicle data set in 1990.

**SAS Name: OCC_COD**

**Attribute Codes**

***1988-1989***

| | |
|---|---|
| 0-30 | Number of Occupants Coded |
| 99 | Unknown |

## V10B Number of Occupants

**Definition:** Indicates the number of persons including drivers that were occupants of this vehicle.

**Additional Information:**

**SAS Name:** **NUMOCCS**

**Attribute Codes**

| ***2000-2008*** | ***2009*** | ***2010-Later*** | |
|---|---|---|---|
| 0 | 0 | 0 | None |
| 1-998 | 1-95 | 1-95 | Number of Occupants Involved |
| -- | 96 | 96 | Ninety-six or More |
| -- | -- | 97 | Not Reported |
| 999 | 99 | 99 | Unknown |

## V11 Travel Speed

**Definition:** Travel speed in miles per hour.

**Additional Information:**

**SAS Name:** **SPEED** ***1988-2008***
**TRAV_SP** ***2009-Later***

**Attribute Codes**

***1988-1999***

| | |
|---|---|
| 0 | Stopped Vehicle |
| 1-96 | Travel Speed *(MPH)* |
| 97 | 97 MPH or Greater |
| 99 | Unknown |

***2000-2008***

| | |
|---|---|
| 0 | Stopped Vehicle |
| 1-998 | Travel Speed *(MPH)* |
| 999 | Unknown |

***2009-Later***

| | |
|---|---|
| 0 | Stopped Motor Vehicle In-Transport |
| 1-151 | Reported Speed Up to 151 MPH |
| 997 | Greater than 151 MPH |
| 998 | Not Reported |
| 999 | Unknown |

## V12 Contributing Circumstances, Motor Vehicle

**Definition:** This element describes the possible pre-existing motor vehicle defects or maintenance conditions that may have contributed to the crash.

**Additional Information:** From 1988 to 1994 the data element was called Vehicle Defects and the SAS name was DEFECT; in 1995 the name was changed to Vehicle Contributing Factors to include of all factors that may have contributed to this vehicle's involvement in the crash. The SAS name changed to FACTOR.

Starting in 2002 multiple contributing factors for a vehicle are available in the Factor data set (SAS variable MFACTOR).

From 2002 to 2009, the Vehicle.FACTOR is rolled up from the Factor data set. If there are no records, then the value 00 is assigned. If there is a single record, then the SAS code for that record is assigned. If there are multiple records, then the minimum SAS code of all the records is assigned.

Starting in 2010, Vehicle.FACTOR is discontinued and is only available in the Factor data set. The variable name changed to be Contributing Circumstances, Motor Vehicle.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived in 2009 and before.

**SAS Name:** **DEFECT** ***1988-1994***
**FACTOR** ***1995-2009***

**Attribute Codes**

| *1988-1994* | *1995-2009* | |
|---|---|---|
| 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 | Driver Seating and Control |
| 14 | 14 | Body, Doors |
| 15 | 15 | Trailer Hitch |
| 50 | 50 | Hit-and-Run Vehicle |

## V12 Contributing Circumstances, Motor Vehicle

### Attribute Codes

| *1988-1994* | *1995-2009* | |
|---|---|---|
| 97 | -- | Vehicle Defects-No Details |
| -- | 97 | Vehicle Contributing Factors-No Details |
| 98 | -- | Other Vehicle Defects |
| -- | 98 | Other Vehicle Contributing Factors |
| 99 | -- | Unknown if Vehicle Has Defects |
| -- | 99 | Unknown if Vehicle Has Contributing Factors |

## V13 Vehicle Trailing

**Definition:** Indicates if vehicle was pulling a trailer unit. A trailer unit can be a horse trailer, fifth wheel trailer, camper, boat, truck trailer, towed vehicle or any other trailer.

**Additional Information:** Prior to 2009 if each linkage was non-fixed then Vehicle Trailer=no.

**SAS Name:** **TRAILER** ***1988-2008***
**TOW_VEH** ***2009-Later***

**Attribute Codes**

| *1988-1998* | *1999-2008* | *2009-Later* | |
|---|---|---|---|
| 0 | 1 | 0 | No Trailing Units |
| 1 | 2 | 1 | Yes, One Trailing Unit |
| 2 | 3 | 2 | Yes, Two Trailing Units |
| 3 | 4 | 3 | Yes, Three or More Trailing Units |
| 4 | 5 | 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 | 6 | 9 | Unknown |

## V14 Jackknife

**Definition:** Indicates if a jackknife occurred. Jackknife occurs when the trailer does not follow directly behind the power unit (tracking) and the driver did not initiate the non-tracking situation.

**Additional Information:** Jackknife is defined differently for V14 and A06, First Harmful Event. In A06 jackknife is defined as sufficient rotation between a vehicle/trailer that they contact each other. For V14, contact is not required

**SAS Name: JACKNIFE**

**Attribute Codes**

***1988-Later***

0 No Jackknife Noted on PAR
1 Jackknife Occurred

## V15 Rollover (discontinued)

**Definition:** Indicates if a rollover occurred (tripped or untripped). Rollover is defined as any vehicle rotation of 90 degrees or more about any true longitudinal or lateral axis.

**Additional Information:** The coding of this variable changed after 1991. See *V30 Rollover* (*V30 Rollover Type* from 1992-2009).

**SAS Name: ROLLOVER**

**Attribute Codes**

***1988-1991***

0 No Rollover Noted on PAR
1 Rollover Occurred

## V16 Fire Occurrence

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

**Additional Information:**

**SAS Name:** **FIRE** ***1988-2008***
**FIRE_EXP** ***2009-Later***

**Attribute Codes**

***1988-2008***

0 No Fire Noted on PAR
1 Fire Occurred in Vehicle

***2009-Later***

0 No or Not Reported
1 Yes

## V17 Maximum Damage Area (discontinued)

**Definition:** This element reports the most severe area of damage on the vehicle.

**Additional Information:** In 1990, this variable was replaced with *Initial Point of Impact* (V24) and *Damage Areas* (V25).

**SAS Name: DAM_AREA**

**Attribute Codes**

***1988-1989***

0 No Damage
1 Front
2 Right Side
3 Left Side
4 Back
5 Top
6 Undercarriage
8 Multiple Damage Areas
9 Damage Area Not Determinable or Unknown

## V17H Hot-Deck Imputed Damage Area (discontinued)

**Definition:** This imputed variable has the same definition and element values as Maximum Damage Area, excluding value 9 for damage area not determinable or unknown.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

In 1990, this variable was dropped from the Vehicle data set.

**SAS Name: DAM_AR_H**

## V18 Extent of Damage

**Definition:** This element indicates the amount of damage sustained by the vehicle in this crash as indicated in the case materials based on an operational damage scale.

**Additional Information:** Prior to 2009 this variable was called Damage Severity.

**SAS Name:** **VEH_SEV** ***1988-2008***
**DEFORMED** ***2009-Later***

**Attribute Codes**

| ***1988-2008*** | ***2009*** | ***2010-Later*** | |
|---|---|---|---|
| 0 | 0 | 0 | No Damage |
| 1 | 2 | 2 | Minor Damage |
| 2 | -- | -- | Functional *(Moderate)* |
| -- | 4 | 4 | Functional Damage |
| 3 | -- | -- | Disabling *(Severe)* |
| -- | 6 | 6 | Disabling Damage |
| -- | -- | 7 | Not Reported |
| 9 | 9 | 9 | Unknown |

## V19 Vehicle Removal

**Definition:** This element describes the mode in which the vehicle left the scene of the crash.

**Additional Information:** Prior to 2009 only the power unit of an articulated combination was considered, i.e. if only the trailing unit was towed then TOWED=Driven. Starting in 2009 the disposal status of the trailing unit is also considered. Prior to 2009 the variable name was '*Manner of Leaving Screen*'.

**SAS Name: TOWED**

**Attribute Codes**

| *1988-1989* | *1999-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|
| 1 | 1 | 1 | 1 | Driven Away |
| 2 | -- | -- | -- | Towed Away |
| -- | 2 | -- | -- | Towed Due to Damage |
| -- | -- | 2 | 2 | Towed Due to Disabling Damage |
| -- | 3 | -- | -- | Towed Not Due to Damage |
| -- | -- | 3 | 3 | Towed Not Due to Disabling Damage |
| 3 | 4 | -- | -- | Abandoned |
| -- | -- | 4 | 4 | Abandoned/ Left at Scene |
| -- | -- | -- | 7 | Not Reported |
| 4 | 9 | 9 | 9 | Unknown |

## V20 Most Harmful Event

**Definition:** Indicates the most severe property damage or injury producing event for the vehicle.

**Additional Information:**

**SAS Name:** **V_EVENT**

**Attribute Codes**

| *1988-1991* | *1992-1998* | *1999-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|---|
| *NONCOLLISION* | | | | | |
| 1 | 1 | 1 | 1 | 1 | Rollover/Overturn |
| 2 | 2 | 2 | 2 | 2 | Fire/Explosion |
| 3 | 3 | 3 | 3 | 3 | Immersion |
| 4 | -- | 4 | 4 | 4 | Gas Inhalation |
| 5 | 5 | 5 | 5 | -- | Jackknife |
| -- | -- | -- | -- | 5 | Jackknife *(Harmful to This Vehicle)* |
| 6 | 6 | 6 | 6 | -- | Noncollision Injury *(Injured In Vehicle Or Fell From Vehicle)* |
| -- | 50 | 7 | 7 | 7 | Pavement Surface Irregularity *(Ruts, Potholes, Grates, etc.)* |
| 8 | 8 | 8 | 8 | 8 | Other Noncollision |
| 9 | 9 | 9 | 9 | -- | Noncollision-No Details |
| 10 | 10 | 10 | 10 | 10 | Thrown or Falling Object |
| -- | -- | -- | -- | 11 | Injured in Vehicle *(Non-Collision)* |
| -- | -- | -- | -- | 12 | Cargo/Equipment Loss or Shift *(Harmful to This Vehicle)* |
| -- | -- | -- | -- | 13 | Fell/Jumped from Vehicle |
| *COLLISION WITH OBJECT NOT FIXED* | | | | | |
| 21 | 21 | 21 | 21 | 21 | Pedestrian |
| 22 | 22 | 22 | 22 | -- | Cycle or Cyclist *(Pedalcyclist or Pedalcycle)* |
| -- | -- | -- | -- | 22 | Pedalcyclist |
| 23 | 23 | 23 | 23 | -- | Railway Train |
| -- | -- | -- | -- | 23 | Railway Vehicle |
| 24 | 24 | 24 | 24 | -- | Animal |
| -- | -- | -- | -- | 24 | Live Animal |
| -- | -- | -- | -- | 49 | Ridden Animal or Animal Drawn Conveyance |
| 25 | 25 | 25 | 25 | -- | Motor Vehicle in Transport |
| 26 | 26 | 26 | 26 | -- | Parked Motor Vehicle *(or Other M.V. Not in Transport)* |
| 27 | 27 | 27 | 27 | -- | Other Type Non-Motorist |
| -- | -- | -- | -- | 27 | Non-Motorist on Personal Conveyance |
| -- | -- | -- | 47 | -- | Vehicle Occupant |

## V20 Most Harmful Event *(continued)*

### Attribute Codes

| *1988-1991* | *1992-1998* | *1999-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|---|
| 28 | 28 | 28 | 28 | 28 | Other Object Not Fixed |
| 29 | 29 | 29 | 29 | -- | Object Not Fixed-No Details |
| -- | -- | -- | -- | 29 | Parked Motor Vehicle |
| -- | -- | -- | -- | 30 | Working Motor Vehicle |
| *COLLISION WITH FIXED OBJECT* | | | | | |
| 31 | 31 | 31 | 31 | 31 | Ground |
| 32 | 32 | 32 | 32 | 32 | Building |
| 33 | 33 | 33 | 33 | 33 | Impact Attenuator/Crash Cushion |
| 34 | 34 | 34 | 34 | -- | Bridge Structure *(Bridge Pier/Abutment/Parapet End/Rail)* |
| 35 | 35 | 35 | 35 | -- | Guardrail |
| 36 | 36 | 36 | 36 | -- | Concrete Traffic Barrier or Other Longitudinal Barrier Type |
| -- | -- | -- | -- | 36 | Concrete Traffic Barrier |
| 37 | 37 | 37 | 37 | -- | Post, Pole or Support *(Sign Post, Utility Post)* |
| 38 | 38 | 38 | 38 | -- | Culvert or Ditch |
| 39 | 39 | 39 | 39 | 39 | Curb |
| 40 | 40 | 40 | 40 | 40 | Embankment |
| 41 | 41 | 41 | 41 | 41 | Fence |
| 42 | 42 | 42 | 42 | 42 | Wall |
| 43 | 43 | 43 | 43 | 43 | Fire Hydrant |
| 44 | 44 | 44 | 44 | 44 | Shrubbery |
| 45 | 45 | 45 | 45 | -- | Tree |
| -- | -- | -- | -- | 45 | Tree *(Standing Only)* |
| 46 | 46 | 46 | 46 | 46 | Boulder |
| 48 | 59 | 58 | 58 | 58 | Other Fixed Object |
| 49 | 59 | 59 | 59 | -- | Fixed Object, No Details |
| -- | -- | -- | -- | 71 | Bridge Overhead Structure |
| -- | -- | -- | -- | 72 | Bridge Pier or Support |
| -- | -- | -- | -- | 73 | Bridge Rail *(Includes Parapet)* |
| -- | -- | -- | -- | 74 | Guardrail Face |
| -- | -- | -- | -- | 75 | Guardrail End |
| -- | -- | -- | -- | 76 | Cable Barrier |
| -- | -- | -- | -- | 77 | Other Traffic Barrier |
| -- | -- | -- | -- | 78 | Traffic Sign Support |
| -- | -- | -- | -- | 79 | Traffic Signal Support |
| -- | -- | -- | -- | 80 | Utility Pole/Light Support |
| -- | -- | -- | -- | 81 | Other Post, Other Pole or Other Supports |
| -- | -- | -- | -- | 82 | Culvert |
| -- | -- | -- | -- | 83 | Ditch |
| -- | -- | -- | -- | 84 | Snow Bank |
| -- | -- | -- | -- | 85 | Mail Box |

## V20 Most Harmful Event *(continued)*

**Attribute Codes**

| *1988-1991* | *1992-1998* | *1999-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|---|
| *COLLISION WITH MOTOR VEHICLE IN TRANSPORT* | | | | | |
| -- | -- | -- | -- | 90 | Motor Vehicle In-Transport |
| -- | -- | -- | -- | 91 | Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport |
| -- | -- | -- | -- | 92 | Motor Vehicle in Motion Outside the Trafficway |
| *NOT REPORTED AND UNKNOWN* | | | | | |
| 97 | -- | -- | -- | -- | Other – No Details *(*1988-1989 only)* |
| -- | -- | -- | -- | 97 | Not Reported |
| 99 | 99 | 99 | 99 | 99 | Unknown |

## V20I Imputed Most Harmful Event

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

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **V_EVNT_H** ***1988-2009***
**VEVENT_IM** ***2010-Later***

## V20A Most Harmful Event Number

**Definition:** Indicates the number of the event that caused the most severe property damage or injury for the vehicle.

**Additional Information:** This variable may be used to identify the specific event in the Event data set.

This variable was added to the Event data set in 1999.

**SAS Name:** **MHENUM**

**Attribute Codes**

***2000-Later***

1-xx Event Number

## V21 Movement Prior to Critical Event

**Definition:** Records the attribute which 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 to any evasive maneuvers.

**Additional Information:** In 1992, variables V21, V26-V29 were added to the Vehicle data set. These variables 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**

| *1992-1994* | *1995-1998* | *1999-Later* | |
|---|---|---|---|
| -- | 0 | 0 | No Driver Present |
| 1 | 1 | 1 | Going Straight |
| 2 | 2 | 2 | Decelerating in Traffic Lane |
| -- | 3 | 3 | Accelerating in Traffic Lane |
| 3 | 4 | 4 | Starting in Traffic Lane |
| 4 | 5 | 5 | Stopped in Traffic Lane |
| 5 | 6 | 6 | Passing or Overtaking Another Vehicle |
| 6 | 7 | 7 | Disabled or Parked in Travel Lane |
| 7 | 8 | 8 | Leaving a Parking Position |
| 8 | 9 | 9 | Entering a Parking Position |
| 10 | 10 | 10 | Turning Right |
| 11 | 11 | 11 | Turning Left |
| 12 | 12 | 12 | Making U-turn |
| 13 | 13 | 13 | Backing Up *(Other Than For Parking Position)* |
| 15 | 14 | 14 | Negotiating a Curve |
| 16 | 15 | 15 | Changing Lanes |
| 17 | 16 | 16 | Merging |
| 18 | 17 | 17 | Successful Corrective Action to a Previous Critical Event |
| 94 | -- | -- | More than Two Vehicles Involved |
| 98 | 97 | 97 | Other |
| 99 | 99 | 99 | Unknown |

## V21I Imputed Movement Prior to Critical Event

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

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **MANEUV_I** ***1988-2009***
**PCRASH1_IM** ***2010-Later***

## V21O Vehicle Maneuver (discontinued)

**Definition:** Reports the last action this vehicle's driver engaged in either just prior to the impact or just before the driver's realized the impending danger.

**Additional Information:** This variable changed in 1992, when NASS GES began to collect precrash information. V21, Vehicle Maneuver, was changed to Movement Prior to Critical Event. In addition to changing the definition, element values were added, modified, or deleted and the SAS name changed. See the next page for variable definition and coding for NASS GES years 1992 to current.

**SAS Name: MANEUVER**

**Attribute Codes**

***1988-1991***

1 Going Straight
2 Slowing or Stopping in Traffic Lane
3 Starting in Traffic Lane
4 Stopped in Traffic Lane
5 Passing or Overtaking Another Vehicle
6 Leaving a Parked Position
7 Parked
8 Entering a Parked Position
9 Maneuvering to Avoid an Animal, Pedestrian, Object or Vehicle
10 Turning Right
11 Turning Left
12 Making U-turn
13 Backing Up *(Other Than For Parking Purposes)*
14 Changing Lanes or Merging
15 Negotiating a Curve
98 Other
99 Unknown

## V21OI Imputed Vehicle Maneuver (discontinued)

**Definition:** This imputed variable, used in 1988-1991, has the same as definition and element values as Vehicle Maneuver, excluding value 99 for unknown vehicle maneuver.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name: MANEUV_I**

## V22 Vehicle Role (discontinued)

**Definition:** Indicates vehicle role in single or multi-vehicle crashes.

**Additional Information:** This variable was discontinued in 2010.

**SAS Name:** **VEH_ROLE**

**Attribute Codes**

***1988-2009***

0 Non-Collision
1 Striking
2 Struck
3 Both
9 Unknown

## V22I Imputed Vehicle Role (discontinued)

**Definition:** This imputed variable has the same definition and element values as *Vehicle Role*, excluding value 9 for unknown vehicle role.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

This variable was discontinued in 2010.

**SAS Name:** **VROLE_I**

## V23 Accident Type

**Definition:** Categorizes the precrash situation. For graphic descriptions of possible values see *Appendix B: Accident Type Diagram*.

**Additional Information:** Attribute Code 97, Untripped Rollover was added in 1992 and removed in 1999.

**SAS Name: ACC_TYPE**

**Attribute Codes**

***1988-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

## V23 Accident Type *(continued)*

### Attribute Codes

***1988-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

## V23 Accident Type *(continued)*

### Attribute Codes

***1988-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
97 Untripped Rollover *(1992 to 1998 only)*
98 Other Accident Type
99 Unknown Accident Type

## V24 Initial Point of Impact

**Definition:** The first impact point that produced property damage or personal injury (regardless of FIRST or MOST HARMFUL EVENT).

**Additional Information:** This variable was added to the Vehicle data set in 1990.

**SAS Name:** **IMPACT** ***1988-2009***
**IMPACT1** ***2010-Later***

**Attribute Codes**

| *1990-1991* | *1992-2006* | *2007-2009* | |
|---|---|---|---|
| 0 | -- | -- | No Damage/Non-Collision |
| -- | 0 | 0 | Non-Collision |
| 1 | 1 | 1 | Front |
| 2 | 2 | 2 | Right Side |
| 3 | 3 | 3 | Left Side |
| 4 | 4 | 4 | Back |
| 5 | 5 | 5 | Top |
| 6 | 6 | 6 | Undercarriage |
| 7 | -- | -- | Corner |
| -- | 11 | 11 | Front Right Corner |
| -- | 12 | 12 | Front Left Corner |
| -- | 13 | 13 | Back Right Corner |
| -- | 14 | 14 | Back Left Corner |
| -- | -- | 15 | Object Set in Motion |
| 99 | 99 | 99 | Point of Impact Unknown |

***2010-Later***

| | |
|---|---|
| 0 | Non-Collision |
| 21-32 | Clock Points |
| 33 | Top |
| 34 | Undercarriage |
| 38 | Set-In-Motion *(Not a Clock Point)* |
| 55 | Non-Harmful Event |
| 61 | Left |
| 62 | Left-Front Half |
| 63 | Left-Back Half |
| 81 | Right |
| 82 | Right-Front Half |
| 83 | Right-Back Half |
| 97 | Not Reported |
| 99 | Unknown |

## V24I Imputed Initial Point of Impact

**Definition:** This imputed variable has the same definition and element values as Initial Point of Impact, excluding value 99 for unknown initial point of impact and value 97 for not reported initial point of impact.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **IMPACT_H** ***1988-2009***
**IMPACT1_IM** ***2010-Later***

## V25 Damage Areas (discontinued)

**Definition:** This vehicle's specific areas damaged due to impact. The totality of the damage is used when determining the specific areas. Five digits are used to indicate up to five specific areas of damage on the vehicle.

**Additional Information:** This variable replaced Maximum Damage Area (V17) in 1990.

Five digits are used to indicate up to five specific areas of damage on the vehicle. If there are no records coded for the vehicle, then 99999 is assigned. If any of the records have SAS code 0 (no damage) coded, then 00000 is assigned. If there is a record with SAS code 7, and there is also a record with SAS code 9, then 99999 is assigned. Please note that "Unknowns" has priority over ALL, otherwise the value is set to 70000. If there is a record for all values 1 through 6, then the value is set to 70000 ("ALL" should have been coded instead). If none of the above conditions apply, then an ordered string of the SAS code values between 1 and 6, and the string is padded at the start with 9's if there is a record with SAS code 9, and padded with 0's if not. For example, if the records have SAS codes 3, 1,5, and 9, then the result would be 99135.

*Examples of complete codes are:*
*0 = No damage*
*12000 = Front and right damage only*
*12999 = Front and right damage and unknown if damaged in other areas*

This variable was discontinued in 2010.

**SAS Name: DAM_AREA**

**Attribute Codes**

***1990-2009***

0 No damage
1 Front
2 Right side
3 Left side
4 Back
5 Top
6 Undercarriage
7 All areas damaged
9 Unknown damage areas

## V26 Critical Event

**Definition:** Identifies the critical event which made the 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. From 1992 to 1993 coding distinguishes between events initiated by "this" vehicle, events initiated by the "other" vehicle, and events initiated by non-motorists. In 1994 coding changed to eliminate the concept of initiation, and to add factors. In 1999 there were extensive additions, deletions, and renumbering.

In 1992, variables V21, V26-V29 were added to the Vehicle data set. These variables 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**

***1992-1993***

0 Not Applicable/No Collision

**I. CRITICAL EVENT INITIATED BY THIS VEHICLE**

*LOSS OF CONTROL DUE TO:*

1 Blow Out or Flat Tire
2 Stalled Engine
3 Disabling Vehicle Failure *(e.g., Wheel Fell Off)*
4 Minor Vehicle Failure
5 Poor Road Conditions *(Puddle, Pothole, Ice, etc.)*
6 Excessive Speed
9 Other or Unknown Reason

*TRAVELING OVER EDGE OF ROADWAY:*

10 Over Left Edge of Roadway
11 Over Right Edge of Roadway
12 End Departure
19 Unknown Which Edge

*IN ANOTHER VEHICLE'S LANE:*

20 Stopped
21 Traveling In Same Direction With Lower Speed
22 Traveling In Same Direction With Higher Speed
23 Traveling In Opposite Direction

*ENCROACHING INTO ANOTHER VEHICLE'S LANE: AT NON-JUNCTION*

26 From Adjacent Lane *(Opposite Direction)*
30 From Adjacent Lane *(Same Direction)*-Over Left Lane Line
31 From Adjacent Lane *(Same Direction)*-Over Right Lane Line

## V26 Critical Event *(continued)*

*ENCROACHING INTO ANOTHER VEHICLE'S LANE: AT JUNCTION*

33 Entering Intersection-Turning Into Same Direction
34 Entering Intersection-Straight Across Path
35 Entering Intersection-Turning Into Opposite Direction
36 Entering Intersection-Intended Path Unknown
37 Entering Driveway, Alley Access, Etc.
38 From Driveway, Alley Access, Etc.-Turning Into Same Direction
39 From Driveway, Alley Access, Etc.-Straight Across Path
40 From Driveway, Alley Access, Etc.-Turning Into Opposite Direction
41 From Driveway, Alley Access, Etc.-Intended Path Unknown
42 Entering From "Yield" Entrance *(Ramp/Channel)*
48 Encroaching-Details Unknown
49 This Vehicle Initiated Critical Event-Details Unknown

**II. CRITICAL EVENT INITIATED BY THE OTHER VEHICLE**

*MOTOR VEHICLE ALREADY IN THIS VEHICLE'S LANE:*

50 Stopped
51 Traveling In Same Direction With Lower Speed
52 Traveling In Same Direction With Higher Speed
53 Traveling In Opposite Direction

*ANOTHER VEHICLE ENCROACHING INTO THIS VEHICLE'S LANE: AT NON-JUNCTION*

56 From Adjacent Lane *(Opposite Direction)*
60 From Adjacent Lane *(Same Direction)*-Over Left Lane Line
61 From Adjacent Lane *(Same Direction)*-Over Right Lane Line
64 From Parallel/Diagonal Parking Lane

*ANOTHER VEHICLE ENCROACHING INTO THIS VEHICLE'S LANE: AT JUNCTION*

65 Entering Intersection-Turning Into Same Direction
66 Entering Intersection-Straight Across Path
67 Entering Intersection-Turning Into Opposite Direction
68 Entering Intersection-Intended Path Unknown
69 Entering Driveway, Alley Access, Etc.
70 From Driveway, Alley Access, Etc.-Turning Into Same Direction
71 From Driveway, Alley Access, Etc.-Straight Across Path
72 From Driveway, Alley Access, Etc.-Turning Into Opposite Direction
73 From Driveway, Alley Access, Etc.-Intended Path Unknown
74 Entering From "Yield" Entrance *(Ramp/Channel)*
78 Encroaching-Details Unknown
79 Other Vehicle Initiated Critical Event-Details Unknown

**III. CRITICAL EVENT INITIATED BY PEDESTRIAN, PEDALCYCLIST, OTHER NON-MOTORIST, ANIMAL OR OBJECT**

80 Pedestrian In Roadway
81 Pedestrian Approaching Roadway
83 Pedalcyclist/Other Non-Motorist In Roadway
84 Pedalcyclist/Other Non-Motorist Approaching Roadway
86 Pedestrian/Pedalcyclist/Other Non-Motorist-Unknown Location
87 Animal In Roadway

## V26 Critical Event *(continued)*

88 Animal Approaching Roadway
90 Object In Roadway
93 Animal Or Object-Unknown Location

**IV. MISCELLANEOUS**

94 More Than Two Vehicles Involved
98 Other Event
99 Unknown

**Attribute Codes**

| ***1994-1998*** | ***1999-Later*** | *(exceptions indicated by "*")* |
|---|---|---|
| 0 | -- | Not Applicable/No Collision |
| *THIS VEHICLE LOSS OF CONTROL DUE TO:* | | |
| 10 | 1 | Blow Out or Flat Tire |
| 20 | 2 | Stalled Engine |
| 30 | 3 | Disabling Vehicle Failure *(e.g., Wheel Fell Off)* |
| 40 | 4 | Non-Disabling Vehicle Problem *(e.g., Hood Flew Up)* |
| 50 | 5 | Poor Road Conditions *(Puddle, Pothole, Ice, etc.)* |
| 60 | 6 | Traveling Too Fast For Conditions |
| 99 | -- | Other or Unknown Reason |
| -- | 8 | Other Cause of Control Loss |
| -- | 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 |
| 100 | 12 | Off The Edge of The Road on The Left Side |
| 101 | 13 | Off The Edge of The Road on The Right Side |
| 199 | -- | Unknown Which Edge |
| 102 | 14 | End Departure |
| -- | 15 | Turning Left At Intersection |
| -- | 16 | Turning Right At Intersection |
| -- | 17 | Crossing Over *(Passing Through)* Intersection |
| -- | 18 | This Vehicle Decelerating |
| -- | 19 | Unknown Travel Direction |
| *IN ANOTHER VEHICLE'S LANE:* | | |
| 200 | -- | Stopped |
| 210 | -- | Traveling In Same Direction With Lower/Steady Speed |
| 215 | -- | Traveling In Same Direction While Decelerating *(*Added In 1995)* |
| 220 | -- | Traveling In Same Direction With Higher Speed |
| 230 | -- | Traveling In Opposite Direction |
| *ENCROACHING INTO ANOTHER VEHICLE'S LANE: AT NON-JUNCTION* | | |
| 300 | -- | From Adjacent Lane *(Opposite Direction)* |
| 310 | -- | From Adjacent Lane *(Same Direction)*-Over Left Lane Line |
| 320 | -- | From Adjacent Lane *(Same Direction)*-Over Right Lane Line |
| 330 | -- | From Parallel/Diagonal Parking Lane |

## V26 Critical Event *(continued)*

*ENCROACHING INTO ANOTHER VEHICLE'S LANE: AT JUNCTION*

| | | |
|---|---|---|
| 410 | -- | Entering Intersection-Turning Into Same Direction |
| 411 | -- | Entering Intersection-Straight Across Path |
| 412 | -- | Entering Intersection-Turning Across Path |
| 413 | -- | Entering Intersection-Turning Into Opposite Direction |
| 429 | -- | Entering Intersection-Intended Path Unknown |
| 430 | -- | Entering Driveway, Alley Access, Etc. |
| 440 | -- | From Driveway, Alley Access, Etc.-Turning Into Same Direction |
| 441 | -- | From Driveway, Alley Access, Etc.-Straight Across Path |
| 442 | -- | From Driveway, Alley Access, Etc.-Turning Into Opposite Direction |
| 459 | -- | From Driveway, Alley Access, Etc.-Intended Path Unknown |
| 460 | -- | Entering From "Yield" Entrance *(Ramp/Channel)* |
| 497 | -- | Encroaching-Other |
| 498 | -- | Encroaching-Details Unknown |
| 499 | -- | This Vehicle Initiated Critical Event-Details Unknown |

*OTHER MOTOR VEHICLE IN LANE*

| | | |
|---|---|---|
| 500 | 50 | Other Vehicle Stopped |
| 510 | 51 | Traveling in Same Direction with Lower/Steady Speed |
| 515 | 52 | Traveling in Same Direction while Decelerating *(*Added In 1995)* |
| 520 | 53 | Traveling in Same Direction with Higher Speed |
| 530 | 54 | Traveling in Opposite Direction |
| -- | 55 | In Crossover |
| -- | 56 | Backing |
| -- | 59 | Unknown Travel Direction Of The Other Motor Vehicle in Lane |

*OTHER MOTOR VEHICLE ENCROACHING INTO LANE*

| | | |
|---|---|---|
| 600 | -- | From Adjacent Lane *(Opposite Direction)* |
| 610 | 60 | From Adjacent Lane *(Same Direction)*-Over Left Lane Line |
| 620 | 61 | From Adjacent Lane *(Same Direction)*-Over Right Lane Line |
| -- | 62 | From Opposite Direction Over Left Lane Line |
| -- | 63 | From Opposite Direction Over Right Lane Line |
| 630 | -- | From Parallel/Diagonal Parking Lane |
| -- | 64 | From Parking Lane, Median, Shoulder, Roadside |
| 710 | -- | Entering Intersection-Turning Into Same Direction |
| -- | 65 | From Crossing Street, Turning Into Same Direction |
| 711 | -- | Entering Intersection-Straight Across Path |
| -- | 66 | From Crossing Street, Across Path |
| 712 | -- | Entering Intersection-Turning Across Path |
| 713 | -- | Entering Intersection-Turning Into Opposite Direction |
| -- | 67 | From Crossing Street, Turning Into Opposite Direction |
| 729 | -- | Entering Intersection-Intended Path Unknown |
| -- | 68 | From Crossing Street, Intended Path Unknown |
| 730 | -- | Entering Driveway, Alley Access, Etc. |
| 740 | 70 | From Driveway, Turning Into Same Direction |
| 741 | 71 | From Driveway, Across Path |
| 742 | 72 | From Driveway, Turning Into Opposite Direction |
| 759 | 73 | From Driveway, Intended Path Not Known |

## V26 Critical Event *(continued)*

| | | |
|---|---|---|
| -- | 74 | From Entrance to Limited Access Highway |
| 760 | -- | Entering From "Yield" Entrance *(Ramp/Channel)* |
| 797 | -- | Encroaching-Other |
| 798 | 78 | Encroaching By Other Vehicle-Details Unknown |
| 799 | | Other Vehicle Initiated Critical Event-Details Unknown |
| *PEDESTRIAN, PEDACYLIST OR OTHER NON-MOTORIST* | | |
| 800 | 80 | Pedestrian in Roadway |
| 801 | 81 | Pedestrian Approaching Roadway |
| -- | 82 | Pedestrian Unknown Location |
| 810 | 83 | Pedalcyclist/Other Non-Motorist in Roadway |
| 811 | 84 | Pedalcyclist/Other Non-Motorist Approaching Roadway |
| -- | 85 | Pedalcyclist Or Other Non-Motorist Unknown Location |
| 829 | -- | Pedestrian/Pedalcyclist/Other Non-Motorist Unknown Location |
| *OBJECT OR ANIMAL* | | |
| 830 | 87 | Animal in Roadway |
| 831 | 88 | Animal Approaching Roadway |
| -- | 89 | Animal Unknown Location |
| 840 | 90 | Object in Roadway |
| 841 | 91 | Object Approaching Roadway |
| -- | 92 | Object Unknown Location |
| 859 | -- | Animal Or Object-Unknown Location |
| *OTHER* | | |
| 994 | -- | More Than Two Vehicles Involved |
| 998 | 98 | Other Critical Precrash Event |
| *UNKNOWN* | | |
| 999 | 99 | Unknown Critical Event |

## V27 Corrective Action Attempted

**Definition:** Describes the actions taken by the driver of the vehicle in response to the impending danger. Because this variable 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 Accident Type (V23).

**Additional Information:** In 1992, variables V21, V26-V29 were added to the Vehicle data set. These variables 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**

| ***1992-1998*** | ***1999-Later*** | |
|---|---|---|
| 0 | -- | Not Applicable/ No Corrective Action Attempted |
| 1 | -- | Braked/Slowed |
| 5 | -- | Backed |
| -- | 0 | No Driver Present |
| -- | 1 | No Avoidance Maneuver |
| -- | 2 | Braking *(No Lockup)* |
| -- | 3 | Braking *(Lockup)* |
| -- | 4 | Braking *(Lockup Unknown)* |
| -- | 5 | Releasing Brakes |
| 2 | 6 | Steering to Left |
| 3 | 7 | Steering to Right |
| 11 | 8 | Braking And Steering to Left |
| 12 | 9 | Braking And Steering to Right |
| 4 | 10 | Accelerated |
| 13 | 11 | Accelerating And Steering to Left |
| 14 | 12 | Accelerating And Steering to Right |
| 15 | -- | Steered in Both Directions |
| 94 | -- | More than Two Vehicles Involved |
| 97 | -- | Corrective Action Attempted-No Details |
| 98 | -- | Other Single or Multiple Corrective Action |
| -- | 98 | Other Actions |
| 99 | 99 | Unknown if Driver Attempted Any Corrective Action |

## V28 Precrash Vehicle Control

**Definition:** Assesses the stability of the vehicle during the period immediately prior to this vehicle's initial involvement in the crash sequence.

**Additional Information:** In 1992, variables V21, V26-V29 were added to the Vehicle data set. These variables 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.

In 1999 extensive additions and deletions were made.

**SAS Name:** **PCRASH4**

**Attribute Codes**

| ***1995-1998*** | ***1999-Later*** | |
|---|---|---|
| 0 | 0 | No Driver Present |
| 1 | -- | Vehicle Control Maintained |
| 2 | -- | Vehicle Rotated *(Yawed)* Clockwise |
| 3 | -- | Vehicle Rotated *(Yawed)* Counter-Clockwise |
| 4 | -- | Vehicle Slid/Skid Longitudinally-No Rotation |
| 9 | -- | Vehicle Rotated *(Yawed)* Unknown Direction |
| 20 | -- | Combination of 02-09 |
| 94 | -- | More Than Two Vehicles Involved |
| 98 | -- | Other or Unknown Type of Vehicle Control Was Lost |
| -- | 1 | Tracking |
| -- | 2 | Skidding Longitudinally-Rotation Less Than 30 Degrees |
| -- | 3 | Skidding Laterally-Clockwise Rotation |
| -- | 4 | Skidding Laterally-Counterclockwise Rotation |
| -- | 7 | Other Vehicle Loss of Control |
| -- | 9 | Precrash Stability Unknown |

## V28O Vehicle Control After Corrective Action (discontinued)

**Definition:** Assesses the stability of the vehicle during the period immediately after the attempted corrective action up to the initial impact in the crash sequence. The stability of the vehicle prior to a corrective action is not considered.

**Additional Information:** In 1992, variables V21, V26-V29 were added to the Vehicle data set. These variables 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.

In 1995, the name and definition of this variable changed to reflect the control of the vehicle at the time of the critical event and the first harmful event, not the control as a result of any corrective action.

**SAS Name: P_CRASH4**

**Attribute Codes**

***1992-1994***

| | |
|---|---|
| 0 | No Driver Present |
| 1 | Vehicle Control Maintained After Corrective Action |
| 2 | Vehicle Rotated *(Yawed)* Clockwise |
| 3 | Vehicle Rotated *(Yawed)* Counter-Clockwise |
| 4 | Vehicle Slid/Skid Longitudinally-No Rotation |
| 5 | Vehicle Slid/Skid Laterally-No Rotation |
| 9 | Vehicle Rotated *(Yawed)* Unknown Direction |
| 20 | Combination of 02-09 |
| 94 | More than Two Vehicles Involved |
| 98 | Other or Unknown Type of Vehicle Control Was Lost After Corrective Action |
| 99 | Unknown if Vehicle Control Was Lost After Corrective Action |

## V29 Precrash Location

**Definition:** Identifies the path of this vehicle prior to its first involvement in the crash sequence, and further reports the results of the vehicle's precrash stability coded in variable V28.

**Additional Information:** In 1992, variables V21, V26-V29 were added to the Vehicle data set. These variables 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**

| ***1995-1998*** | ***1999-Later*** | |
|---|---|---|
| 0 | 0 | No Driver Present |
| 1 | 1 | Vehicle Stayed In Original Travel Lane |
| 2 | 2 | Vehicle Stayed On Roadway But Left Original Travel Lane |
| 3 | 3 | Vehicle Stayed On Roadway, Not Known If Left Original Travel Lane |
| 4 | 4 | Vehicle Departed Roadway |
| 6 | 5 | Vehicle Remained Off Roadway |
| 7 | 6 | Vehicle Returned To Roadway |
| -- | 7 | Vehicle Entered Roadway |
| 94 | -- | More Than Two Vehicles Involved |
| 99 | 99 | Vehicle Path Unknown |

## V29O Vehicle Path After Corrective Action (discontinued)

**Definition:** Identifies the consequences of the corrective action identified in variable V27 and further reports the results of the vehicle's precrash stability coded in variable V28. The response for this variable must relate directly to the response coded for variable V27.

**Additional Information:** In 1995 the name and definition of this variable changed to reflect the control of the vehicle at the time of the critical event and the first harmful event, not the control as a result of any corrective action.

**SAS Name: P_CRASH5**

**Attribute Codes**

***1992-1994***

0 No Corrective Action
1 Vehicle Stayed in Travel Lane Where Corrective Action was Initiated
2 Vehicle Stayed on Roadway But Left Travel Lane Where Corrective Action was Initiated
3 Vehicle Stayed on Roadway, Not Known if Left Travel Lane Where Corrective Action was Initiated
4 Vehicle Departed Roadway
5 Corrective Action Initiated Off Roadway
94 More Than Two Vehicles Involved
99 Vehicle Path Unknown

## V30 Rollover

**Definition:** Indicates if a rollover occurred (tripped or untripped). 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:** Prior to 1992, information pertaining to rollover is in the variable Rollover (V15). In 1992 V30 was added to the Vehicle data set to include more specific rollover information. Prior to 2009 the variable name was '*Rollover Type'*.

**SAS Name: ROLLOVER**

**Attribute Codes**

| *1992-2008* | *2009-Later* | |
|---|---|---|
| 0 | 0 | No Rollover |
| -- | 1 | Rollover, Tripped By Object/Vehicle |
| 20 | -- | Tripped Rollover-By Curb |
| 21 | -- | Tripped Rollover-By Guardrail |
| 22 | -- | Tripped Rollover-By Ditch |
| 23 | -- | Tripped Rollover-By Soft Soil |
| 28 | -- | Tripped Rollover-Other |
| 29 | -- | Tripped Rollover-Unknown Mechanism |
| 10 | 2 | Rollover, Untripped |
| 99 | 9 | Rollover, Unknown Type |

## V30A Location of Rollover

**Definition:** Identifies the location of the start, or trip point, of the vehicle's roll.

**Additional Information:**

**SAS Name: ROLINLOC**

**Attribute Codes**

| *2009-Later* | |
|---|---|
| 0 | No Rollover |
| 1 | On Roadway |
| 2 | On Shoulder |
| 3 | On Median/Separator |
| 4 | In Gore |
| 5 | On Roadside |
| 6 | Outside of Trafficway |
| 9 | Unknown |

## V31 Carrier's Identification Number

**Definition:** This ID number is found only on vehicles of interstate for-hire or private carriers in the transportation business. The Carrier's ID 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 (Bodytype (V5)= 60, 64, 66-79).

**Additional Information:** In 2002 the variable changed from numeric to character to preserve leading zeros. The SAS name changed from C_ID_NO to CARIDNUM. In 2003 the length was changed from 8 characters to 9 characters.

| **SAS Name:** | **C_ID_NO** | ***1992-2001*** |
|---|---|---|
| | **CARIDNUM** | ***2002-2009*** |
| | **MCARR_ID** | ***2010-Later*** |

**Attribute Codes**

***1992-2001***

| | |
|---|---|
| 0 | Not Applicable |
| xxxxxx | U.S. DOT or ICC MC Number |
| 999999 | Unknown |

| ***2002*** | ***2003-2009*** | ***2010-Later*** | |
|---|---|---|---|
| 00000000 | 000000000 | 000000000 | Not Applicable |
| xxxxxxx | xxxxxxxx | 1-999999996 | U.S. DOT or ICC MC Number |
| -- | -- | 999999997 | Not Reported |
| 99999999 | 999999999 | 999999999 | Unknown |

## V32 Number of Axles on Vehicle, Including Trailers (discontinued)

**Definition:** Coded only for buses and trucks over 4,500 kg GVWR (Bodytype (V5)= 60, 64, 66-79) The variable was discontinued in 2009.

**Additional Information:**

**SAS Name: AXLES**

**Attribute Codes**

***1992-2008***

| | |
|---|---|
| 0 | Not Applicable |
| 2-20 | Number Of Axles |
| 99 | Unknown |

## V33 Cargo Body Type

**Definition:** This element identifies the primary cargo carrying capability of this vehicle when applicable.

**Additional Information:** From 1992 to 2008 specific cargo body type was coded only for buses and trucks over 4,500 kg GVWR (Bodytype (V5)= 60, 64, 66-79). All other vehicles were coded "Not applicable." Starting in 2009 passenger vehicles and light trucks that display a hazardous cargo placard are coded "No Cargo Body Type," 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. Before 2009 "Unknown" was coded for both unknown cargo body type and unknown vehicle type. Starting in 2009 "Unknown" is coded only for unknown vehicle type. See the annual Coding and Editing Manuals for more information.

**SAS Name:** **CARG_TYP** ***1992-2008***
**CARGO_BT** ***2009-Later***

**Attribute Codes**

| *1992-2008* | *2009* | *2010-Later* | |
|---|---|---|---|
| 0 | 0 | 0 | Not Applicable |
| 1 | 22 | 22 | Bus |
| 2 | 1 | 1 | Van/Enclosed Box |
| 3 | 2 | 2 | Cargo Tank |
| 4 | 3 | 3 | Flatbed |
| 5 | 4 | 4 | Dump |
| 6 | 5 | 5 | Concrete Mixer |
| 7 | 6 | 6 | Auto Transporter |
| 8 | 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 |
| -- | -- | 28 | Not Reported |
| -- | 96 | 96 | No Cargo Body |
| 98 | 97 | 97 | Other |
| -- | 98 | 98 | Unknown Cargo Body Type |
| 99 | 99 | 99 | Unknown |

## V33A Hazardous Materials Involvement (HM1)

**Definition:** Indicates whether the vehicle was carrying hazardous materials.

**Additional Information:**

**SAS Name: HAZ_INV**

**Attribute Codes**

***2009-Later***

1 No
2 Yes

## V34 Hazardous Materials Placard (HM2)

**Definition:** Indicates the presence of hazardous materials and whether the vehicle displayed a hazardous materials placard.

**Additional Information:** Prior to 2009 Yes and No were coded only for buses and trucks over 4,500 kg GVWR (Bodytype (V5)= 60, 64, 66-79). Starting in 2009 body type was not a factor in coding this variable. See the annual Coding and Editing Manuals for more information. From 2005-2008 the variable name was "Hazardous Materials Placarded."

**SAS Name:** **HAZ_MAT** ***2005-2008***
**HAZ_PLAC** ***2009-Later***

**Attribute Codes**

| *2005-2008* | *2009-Later* | |
|---|---|---|
| 0 | 0 | Not Applicable |
| 2 | 1 | No |
| 1 | 2 | Yes |
| -- | 8 | Not Reported |
| 9 | -- | Unknown |

## V35 4-Digit Hazardous Material Identification Number (HM3)

**Definition:**

**Additional Information:** Prior to 2009 placard numbers were coded only for buses and trucks over 4,500 kg GVWR (Bodytype (V5)= 60, 64, 66-79). Other vehicles were coded "Not Applicable," or "Unknown" if body type was unknown. Starting in 2009 body type was not a factor in coding this variable. From 2005-2008 the variable name was "Hazardous Materials Placard Number." See the annual Coding and Editing Manuals for more information.

**SAS Name:** **HAZM_NO** ***1992-2008***
**HAZ_ID** ***2009-Later***

**Attribute Codes**

| ***1992-2008*** | ***2009-Later*** | |
|---|---|---|
| 0 | 0 | Not Applicable |
| xxxx | xxxx | Actual 4-Digit Number |
| -- | 8888 | Not Reported |
| 9999 | -- | Unknown |

## V35A 1-Digit Hazardous Material Class Number (HM4)

**Definition:** Indicates the single-digit hazardous material class number for the vehicle.

**Additional Information:** This variable was added in 2009 and is coded for all vehicles.

**SAS Name:** **HAZ_CNO**

**Attribute Codes**

***2009-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 |

## V36 Release of Hazardous Material from the Cargo Compartment (HM5)

**Definition:** Indicates whether or not any hazardous cargo was released from the cargo tank or compartment.

**Additional Information:** Prior to 2009 Yes and No were coded only for buses and trucks over 4,500 kg GVWR (Bodytype (V5)= 60, 64, 66-79). Other vehicles were coded Not Applicable, or Unknown if body type was unknown. Starting in 2009 body type is not a factor in coding this variable. Prior to 2009 the variable name was "Hazardous Materials Release."

**SAS Name:** **HAZ_MA_R** ***2005-2008***
**HAZ_REL** ***2009-Later***

| ***2005-2008*** | ***2009-Later*** | |
|---|---|---|
| 0 | 0 | Not Applicable |
| 2 | 1 | No |
| 1 | 2 | Yes |
| -- | 8 | Not Reported |
| 9 | -- | Unknown |

## V38 Area of Impact- Most Damaged

**Definition:** This element identifies the area on this vehicle that was most damaged during an event it underwent in the crash.

**Additional Information:** The striking vehicle, not the vehicle struck, determines the underride/override condition. After the crash, in the case of an override or underride one vehicle is over the other. If the striking vehicle is over the other, then the crash is an override. If the striking vehicle is under the other, the crash is an underride.

**SAS Name: IMPACT2**

**Attribute Codes**

***2010-Later***

| | |
|---|---|
| 0 | Non-Collision |
| 21-32 | Clock points |
| 33 | Top |
| 34 | Undercarriage |
| 38 | Set-in-Motion (Not a Clock Point) |
| 61 | Left |
| 62 | Left-Front Half |
| 63 | Left-Back Half |
| 81 | Right |
| 82 | Right-Front Half |
| 83 | Right-Back Half |
| 97 | Not Reported |
| 99 | Unknown |

## V39 Bus Use

**Definition:** This element describes the common type of bus service this vehicle was being used as at the time of the crash.

**Additional Information:**

**SAS Name: BUS_USE**

**Attribute Codes**

***2010-Later***

| | |
|---|---|
| 0 | Not a Bus |
| 1 | School |
| 4 | Transit/Commuter |
| 5 | Intercity |
| 6 | Charter/Tour |
| 7 | Shuttle |
| 8 | Modified for Personal/Private Use |
| 97 | Not Reported |
| 99 | Unknown |

## V40 Vehicle Configuration

**Definition:** This element identifies the general configuration of this vehicle when 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.

**SAS Name: V_CONFIG**

**Attribute Codes**

***2010-Later***

| | |
|---|---|
| 0 | Not Applicable |
| 1 | Single-Unit Truck *(2 axles and GVWR more than 10,000 lbs.)* |
| 2 | Single-Unit Truck *(3 or More axles)* |
| 4 | Truck Pulling Trailer(s) |
| 5 | Truck Tractor *(Bobtail, i.e., Tractor Only, No Trailer)* |
| 6 | Tractor/Semi-Trailer |
| 7 | Truck Tractor/Double |
| 8 | Truck Tractor/Triple |
| 10 | Vehicle 10,000 lbs or Less Placarded for Hazardous Materials |
| 19 | Truck More than 10,000 lbs, Cannot Classify |
| 20 | Bus/Large Van *(Seats for 9-15 Occupants, Including Driver*) |
| 21 | Bus *(Seats for More Than 15 Occupants, Including Driver)* |
| 97 | Not Reported |
| 99 | Unknown |

## V41/V_A11 Trafficway Description

**Definition:** This element identifies the value indicated in the case materials which best describes the trafficway flow just prior to this vehicle's critical precrash event.

**Additional Information:** This variable has been coded at the Accident level and included in Accident data set (SAS variable TRAF_WAY) since 1988. Starting in 2002 the trafficway flow for each vehicle in a crash is available in the Vehicle data set.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002.

From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

**SAS Name:** **VTRAFWAY**

**Attribute Codes**

| ***2002*** | ***2003-2009*** | |
|---|---|---|
| -- | 0 | Not Physically Divided- Center 2-way Left Turn Lane |
| 1 | 1 | Not Physically Divided- Two Way Trafficway |
| 2 | 2 | Divided Highway *(Median Strip, Barrier)* |
| 3 | 3 | One Way Trafficway |
| 9 | 9 | Unknown |

***2010-Later***

| | |
|---|---|
| 0 | Non-Trafficway Area |
| 1 | Two-Way, Not Divided |
| 5 | Two-Way, Not Divided With a Continuous Left-Turn Lane |
| 2 | Two-Way, Divided, Unprotected *(Painted > 4 Feet)* Median |
| 3 | Two-Way, Divided, Positive Median Barrier |
| 4 | One-Way Trafficway |
| 6 | Entrance/Exit Ramp |
| 8 | Not Reported |
| 9 | Unknown |

## V90 Maximum Injury Severity in Vehicle

**Definition:** Indicates the single most severe injury level reported for any occupant in this vehicle. This variable is derived by comparing the injury severity for each occupant record in this vehicle. The following order of severity codes has been used since 2001.

- 4-Fatal
- 3- Incapacitating
- 2-Non- incapacitating
- 1-Possible Injury
- 5-Injured, Unknown Severity
- 0-No Injury
- 6-Died Prior
- 9-Unknown if Injured
- 8-No Person in the Vehicle

**Additional Information:** From 1999 to 2000 the priority was different: Unknown if Injured had priority over No Injury.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name: MAX_VSEV**

**Attribute Codes**

| ***1988-2009*** | ***2010-Later*** | |
|---|---|---|
| 0 | 0 | No Injury |
| 1 | 1 | Possible Injury |
| 2 | 2 | Non-incapacitating |
| 3 | 3 | Incapacitating |
| 4 | 4 | Fatal |
| 5 | 5 | Injured, Unknown Injury Severity |
| 6 | 6 | Died Prior |
| 8 | 8 | No Person in Vehicle |
| 9 | -- | Unknown |
| -- | 9 | Unknown if Injured/Not Reported |

## V90I Imputed Maximum Injury Severity in Vehicle

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

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

The variable is derived from the Imputed Injury Severity (P09I) in the Person data set.

**SAS Name:** **MXVSEV_I** ***1988-2009***
**MXVSEV_IM** ***2010-Later***

## V91 Number Injured in Vehicle

**Definition:** Derived by counting all the persons with Injury Severity (P9) of (1, 2, 3, 4, 5, or 9) in a vehicle This count includes fatally injured occupants.

**Additional Information:** See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name: NUM INJV**

**Attribute Codes**

***1988-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 variable has the same definition and element values as Number Injured in Vehicle, excluding values 98 (No person in the Vehicle) and 99 (Unknown if Injured).

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

This variable is derived from the Imputed Injury Severity (P09I) variable.

**SAS Name:** **NUMINJ_I** ***1988-2009***
**NUMINJ_IM** ***2010-Later***

## V92 Driver Drinking in Vehicle

**Definition:** Reports alcohol use by driver of the vehicle. The variable is derived from the police-reported alcohol involvement variable in the Person data set.

**Additional Information:** In 1988, this variable reported alcohol use by any occupant in the vehicle, including the driver. In 1989, this variable was changed from Alcohol Involved in Vehicle to Driver Drinking in Vehicle to report alcohol use by the driver.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived.

**SAS Name: VEH ALCH**

**Attribute Codes**

***1988-Later***

1 Alcohol Involved
2 No Alcohol
8 No Driver Present
9 Unknown

## V92I Imputed Driver Drinking in Vehicle

**Definition:** This variable has the same definition and element values as Driver Drinking in Vehicle, excluding values 8 (No Driver Present) and 9 (Unknown).

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

This imputed variable is derived from Imputed Police Reported Alcohol Involvement (P11I) in the Person data set.

**SAS Name:** **V_ALCH_I** ***1988-2009***
**V_ALCH_IM** ***2010-Later***

## D01 Driver Presence

**Definition:** This variable indicates whether a driver was present for motor vehicles in transport.

**Additional Information:**

**SAS Name: DR_PRES**

**Attribute Codes**

***1988-2008***

0 Unattended Vehicle *(Driverless, Or No Driver Involved)*
1 Driver Operated Vehicle
2 Hit And Run
9 Unknown Driver Presence

***2009-Later***

0 No Driver Present / Not Applicable
1 Yes
9 Unknown

## D02 Violations Charged (discontinued)

**Definition:** Indicates which violations are charged to drivers.

**Additional Information:** Starting in 2002 multiple violations for a driver are available in the Violatn data set (SAS variable MVIOLATN).

From 1988 to 2009, if a driver has more than one violation the lowest of the attribute codes shown below is chosen. But the renumbering in 2009 causes the violation rolled up to the driver to be different than in 2008 in some cases when there are multiple charges selected.

Note that the priority used in the 2008 and prior, in SAS, is

- 1-- Alcohol or Drugs,
- 2-- Speeding,
- 3-- Alcohol or Drugs and Speeding,
- 4-- Reckless Driving,
- 5-- Driving With a Suspended or Revoked License,
- 6-- Failure to Yield Right-of-Way,
- 7-- Running a Traffic Signal or Stop Sign,
- 97-- Violation charged, no details (1990-2008),
- 98-- Other Violation (1990-2008),
- 50-- Hit & Run (and No Information) (1990-2008),
- 96-- Not Reported (1999-2008),
- 99-- Unknown if charged(1988-2008),
- 0-- None.
- 95-- no driver present (2000-2008),

And the order of 50, 96, 99, 0 and 95 makes no difference because no other violations are allowed when any of these was selected.

In 2009, the hierarchy is as follows, similar to what FARS chooses, but not the same.

In FARS, up to three violations are coded based on the following hierarchy: codes "01-09" (Serious Violations) are coded first, followed by "11-19," (Impairment Offenses), Racing, Pass Stopped School Bus, and Driving While License Withdrawn. Beyond this hierarchy, choose violations which are not reflected in other elements, such as Related Factors.

But in NASS GES, the attribute with the lowest SAS codes is chosen. If the codes 0-None or 95-no driver present are selected, then no other violation can be selected.

<u>Starting in 2010, this variable is only available in the Violatn data set.</u>

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived in 2009 and before.

**SAS Name: VIOLATN**

## D02 Violations Charged *(continued)*

### Attribute Codes

| *1988-1989* | *1990-1998* | *1999* | *2000-2008* | |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | None |
| 1 | 1 | 1 | 1 | Alcohol or Drugs |
| 2 | 2 | 2 | 2 | Speeding |
| 3 | 3 | 3 | 3 | Alcohol or Drugs and Speeding |
| 4 | 4 | 4 | 4 | Reckless Driving |
| 5 | 5 | 5 | 5 | Driving With a Suspended or Revoked License |
| 6 | 6 | 6 | 6 | Failure to Yield Right-of-Way |
| 7 | 7 | 7 | 7 | Running a Traffic Signal or Stop Sign |
| -- | 50 | 50 | 50 | Hit & Run *(and No Information)* |
| -- | -- | -- | 95 | No Driver Present |
| -- | -- | 96 | 96 | Not Reported |
| -- | 97 | 97 | 97 | Violation Charged-No Details |
| 8 | 98 | 98 | 98 | Other Violation |
| 9 | 99 | 99 | 99 | Unknown if Charged |

***2009***

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

*IMPAIRMENT OFFENSES*

11 Driving While Intoxicated *(Alcohol Or Drugs)* or BAC Above Limit
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

## D02 Violations Charged *(continued)*

*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

*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*

41 Turn in Violation of Traffic Control
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

## D02 Violations Charged *(continued)*

*NON-MOVING – LICENSE AND REGISTRATION VIOLATIONS*

71 Driving While License Withdrawn *(Including Violation of Provisions of Work Permit)*
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

*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 *(Added in 2010)*
98 Other Moving Violation *(Coasting, Backing, Opening Door)*
99 Unknown Violation

## D02I Imputed Violations Charged (discontinued)

**Definition:** From 1988 to 2008 this variable had the same definition and element values as Violations Charged, excluding value 99 for Unknown if charged. It also excluded value 96 (2004-2008) and value 97 (2010-on) for Not Reported.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name: VLTN_I *1988-2009***

This variable was discontinued in 2010.

## D03 Driver Physical/Mental Impairment (discontinued)

**Definition:** Identifies driver's physical or mental impairment that may have contributed to the cause of the accident. If two or more impairments apply, the lowest of the attribute codes is chosen.

**Additional Information:** In 1988 and 1989 a distinction was made between impairment for drivers and for non-motorists; the variable for driver impairment was in the Vehicle data set and the variable for non-motorist impairment was in the Person data set. In 1990 these variables were replaced by a single variable in the Person data set: *Person's Physical Impairment* (P18) was used for both driver and non-motorist impairment. See discussion of *Person's Physical Impairment* (P18) for further changes.

**SAS Name: DR_IMPMT**

**Attribute Codes**

***1988-1989***

| | |
|---|---|
| 0 | No Impairments |
| 1 | Drowsy, Sleepy, Asleep, Fatigued |
| 2 | Ill, Blackout |
| 3 | Emotional *(e.g., Depression, Angry, Disturbed)* |
| 4 | Drugs-Medication |
| 5 | Other Drugs *(Marijuana, Cocaine, etc.)* |
| 6 | Restricted to Wheelchair |
| 7 | Impaired Due to Previous Injury |
| 8 | Deaf |
| 50 | Hit-and Run Vehicle |
| 97 | Physical/Mental Impairment-No Details |
| 98 | Other Physical/Mental Impairment |
| 99 | Unknown Physical/Mental Condition |

## D04 Driver's Vision Obscured By (discontinued)

**Definition:** Identifies visual circumstances that may have contributed to the cause of the crash.

**Additional Information:** In 2004 the codes 93-Not on PAR and 94-Not Coded replaced 96-Not Reported. Not on PAR is coded if no block exists on the PAR for reporting obscured driver vision and no other information is available. Not Coded is used if there is a specific location on the police report for obscured driver vision but the investigating officer fails to make an assessment, and there is no other information available.

Starting in 2009 this type of unknown (Not on PAR, Not Coded) is coded 99. If a driver's vision is obscured by more than one item, the lowest of the attribute codes is chosen.

Starting in 2002 multiple obstructions for a driver are available in the Vision data set (SAS variable MVISOBSC). The Vehicle.VIS_OBSC is rolled up from the Vision data set. If there are no records, then the value 00 is assigned. If there is a single record, then the SAS code for that record is assigned. If there are multiple records, then the minimum SAS code of all the records is assigned.

Starting in 2010, this variable is only available in the Vision data set.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived in 2009 and before.

**SAS Name: VIS OBSC**

**Attribute Codes**

| *1988 1991* | *1992-1998* | *1999* | *2000-2003* | *2004-2008* | *2009* | |
|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | No Obstruction noted |
| 1 | -- | -- | -- | -- | 1 | Rain, Snow, Fog, Smoke, Sand, Dust |
| | 1 | 1 | 1 | 1 | -- | Rain, Snow, Smoke, Sand, Dust |
| 2 | 2 | 2 | 2 | 2 | 2 | Reflected Glare, Bright Sunlight, Headlights |
| 3 | 3 | 3 | 3 | 3 | -- | Curve or Hill |
| -- | -- | -- | -- | -- | 3 | Curve, Hill, or Other Roadway Design Feature |
| 4 | 4 | 4 | 4 | 4 | -- | Building, Billboard, or Other Design Features *(includes signs, Embankment)* |
| -- | -- | -- | -- | -- | 4 | Building, Billboard, or Other Structure |
| 5 | 5 | 5 | 5 | 5 | 5 | Trees, Crops, Vegetation |
| 6 | 6 | 6 | 6 | 6 | 6 | Moving In-Transport Motor Vehicle *(Including Load)* |
| 7 | 7 | 7 | 7 | 7 | -- | Parked Vehicle |
| -- | -- | -- | -- | -- | 7 | Not-in-Transport Motor Vehicle *(Parked, Working)* |
| 8 | 8 | 8 | 8 | 8 | 8 | Splash or Spray of Passing Vehicle |
| 9 | 9 | 9 | 9 | 9 | 9 | Inadequate Defrost or Defog System |
| 10 | 10 | 10 | 10 | 10 | 10 | Inadequate Vehicle Lighting System |
| 11 | 11 | 11 | 11 | 11 | 11 | Obstruction Interior to Vehicle |

## D04 Driver's Vision Obscured By *(continued)*

| | | | | | | |
|---|---|---|---|---|---|---|
| 12 | 12 | 12 | 12 | 12 | 12 | External Mirrors |
| 13 | 13 | 13 | 13 | 13 | | Head Restraints |
| 14 | 14 | 14 | 14 | 14 | 13 | Broken or Improperly Cleaned Windshield |
| -- | -- | -- | -- | -- | 14 | Obstructing Angles on Vehicle |
| 15 | 15 | 15 | 15 | 15 | -- | Fog |
| 50 | 50 | 50 | 50 | 50 | -- | Hit & Run Vehicle *(And No Information)* |
| -- | -- | -- | -- | 93 | -- | Not on PAR |
| -- | -- | -- | -- | 94 | -- | Not Coded |
| -- | -- | -- | 95 | 95 | -- | No Driver Present |
| -- | -- | -- | -- | -- | 95 | No Driver Present / Unknown if Driver Present |
| -- | -- | 96 | 96 | -- | -- | Not Reported |
| 97 | 97 | 97 | 97 | 97 | 97 | Vision Obscured-No Details |
| 98 | 98 | 98 | 98 | 98 | 98 | Other Visual Obstruction |
| 99 | 99 | 99 | 99 | 99 | 99 | Unknown Whether Vision was Obstructed |

## D05 Driver's Action (discontinued)

**Definition:** Indicates if the driver was avoiding, swerving, or sliding due to one of the following. If two or more actions were noted on the PAR, the lowest of the attribute codes was chosen.

**Additional Information:** In 1990 this variable was replaced with *Driver Maneuvered to Avoid* (D6).

**SAS Name : DR_ACT**

**Attribute Codes**

***1988-1989***

| | |
|---|---|
| 0 | Not Avoiding, Swerving, or Sliding |
| 1 | Severe Crosswind |
| 2 | Wind from Passing Truck |
| 3 | slippery or Loose Surface |
| 4 | Tire Blow-out or Flat |
| 5 | Debris or Objects in Road |
| 6 | Ruts, Holes, Bumps in Road |
| 7 | Animals in Road |
| 8 | Vehicle in Road |
| 9 | Phantom Vehicle |
| 10 | Pedestrian, Pedalcyclist, or Other Non-motorist in Road |
| 11 | Water, Snow, Oil slick in Road |
| 50 | Hit-and Run Vehicle |
| 97 | Avoiding, Swerving, or Sliding-No Details |
| 98 | Other Cause |
| 99 | Unknown Action |

## D06 Driver Maneuvered to Avoid (discontinued)

**Definition:** Identifies an action taken by the driver to avoid something or someone in the road. The maneuver may have subsequently contributed to the cause of the crash. If a driver made more than one avoidance maneuver, the lowest of the attribute codes shown below is chosen.

**Additional Information:** Starting in 2002 multiple maneuvers for a driver are available in the Maneuver data set (SAS variable MDRMANAV). The Vehicle.DRMAN_AV is rolled up from the Maneuver data set. If there are no records, then the value 00 is assigned. If there is a single record, then the SAS code for that record is assigned. If there are multiple records, then the minimum SAS code of all the records is assigned.

Starting in 2010, this variable is only available in the Maneuver data set.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived in 2009 and before.

**SAS Name: DRMAN_AV**

**Attribute Codes**

| ***1990-1998*** | ***1999*** | ***2000-2001*** | ***2002-2003*** | ***2004-2009*** | |
|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | Driver Did Not Maneuver To Avoid |
| 1 | 1 | 1 | 1 | 1 | Object In Road |
| 2 | 2 | 2 | 2 | 2 | Poor Road Conditions *(Puddle, Ice, Pot Hole, etc.)* |
| 3 | 3 | 3 | 3 | 3 | Animal In Road |
| 4 | 4 | 4 | 4 | 4 | Vehicle In Road |
| 5 | 5 | 5 | 5 | 5 | Pedestrian, Pedalcyclist, or Other Non-Motorist in the Road |
| 50 | 50 | 50 | 50 | 50 | Hit & Run *(And No Information)* |
| -- | -- | -- | -- | 92 | Phantom /Non-Contact Motor Vehicle |
| -- | -- | -- | 93 | 93 | Not on PAR |
| -- | -- | -- | 94 | 94 | Not Coded |
| -- | -- | 95 | 95 | 95 | No Driver Present |
| -- | 96 | 96 | -- | -- | Not Reported |
| 97 | 97 | 97 | 97 | 97 | Avoidance Maneuver-No details |
| 99 | 99 | 99 | 99 | 99 | Unknown If Driver Maneuvered To Avoid |

## D07 Driver Distracted By (discontinued)

**Definition:** Identifies a distraction which may have influenced driver performance and contributed to the cause of the crash. The distraction can be either inside the vehicle (internal) or outside the vehicle (external). If a driver had more than one distraction, the lowest of the attribute codes is chosen.

**Additional Information:** Starting in 2002 multiple distractions for a driver are available in the Distract data set (SAS variable MDRDSTRD). The Vehicle.DR_DSTRD is rolled up from the Distract data set. If there are no records, then the value 00 is assigned. If there is a single record, then the SAS code for that record is assigned. If there are multiple records, then the minimum SAS code of all the records is assigned with the exceptions that SAS code 98 has priority over SAS code 92, and all other values have priority over SAS code 0..

Starting in 2010, this variable is only available in the Distract data set.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived in 2009 and before.

**SAS Name: DR_DSTRD**

**Attribute Codes**

***1990-1998***

| | |
|---|---|
| 0 | Not Distracted |
| 1 | Passengers, Occupants |
| 2 | Vehicle Instrument Display *(Radio, CB, Heating)* |
| 3 | Phone |
| 4 | Other Internal Distractions |
| 5 | Other Crash *("Rubbernecking")* |
| 6 | Other External Distractions |
| 50 | Hit & Run *(And No Information)* |
| 97 | Distractions-No Details |
| 99 | Unknown if Distracted |

| ***1999*** | ***2000-2001*** | ***2002-2003*** | ***2004-2006*** | ***2007-2009*** | |
|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | Not Distracted |
| 1 | 1 | 1 | 1 | 1 | Looked But Did Not See |
| 3 | 3 | 3 | 3 | 3 | By Other Occupants |
| 4 | 4 | 4 | 4 | 4 | By Moving Object In Vehicle |
| 5 | 5 | 5 | 5 | 5 | While Talking Or Listening To Cellular Phone |
| 6 | 6 | 6 | 6 | 6 | While Dialing Cellular Phone |
| 7 | 7 | 7 | 7 | 7 | While Adjusting Climate Control |
| 8 | 8 | 8 | 8 | 8 | While Adjusting Radio, Cassette Or CD |
| 9 | 9 | 9 | 9 | 9 | While Using Other Devices Integral To Vehicle |
| 10 | 10 | 10 | 10 | 10 | While Using Or Reaching For Other Devices |
| 11 | 11 | 11 | 11 | 11 | Sleepy Or Fell Asleep |
| 12 | 12 | 12 | 12 | 12 | Distracted By Outside Person Or Object |
| 13 | 13 | 13 | 13 | 13 | Eating Or Drinking |
| 14 | 14 | 14 | 14 | 14 | Smoking Related |

## D07 Driver Distracted By *(continued)*

### Attribute Codes

| *1999* | *2000-2001* | *2002-2003* | *2004-2006* | *2007-2009* | |
|---|---|---|---|---|---|
| -- | -- | -- | -- | 15 | Other Cellular Phone Related |
| -- | -- | -- | -- | 50 | Hit & Run *(And No Information)* |
| -- | -- | -- | 92 | 92 | Distraction Or Inattention, Details Unknown |
| -- | -- | 93 | 93 | 93 | Not On PAR |
| -- | -- | 94 | 94 | 94 | Not Coded |
| -- | 95 | 95 | 95 | 95 | No Driver Present |
| 96 | 96 | -- | -- | -- | Not Reported |
| 97 | 97 | 97 | 97 | 97 | Inattentive Or Lost In Thought |
| 98 | 98 | 98 | -- | -- | Other Distraction Or Inattention |
| -- | -- | -- | 98 | 98 | Other Distraction |
| 99 | 99 | 99 | 99 | 99 | Unknown If Distracted |

## D08 Driver's Zip Code

**Definition:** The zip code of the driver's address as listed on the police accident report.

**Additional Information:** This variable was added to the Vehicle data set in 1992. It changed from numeric to character in 2002 and the SAS name changed from DR_ZIP_C to DZIPCODE.

**SAS Name:** **DR_ZIP_C** ***1992-2001*** *(numeric)*
**DZIPCODE** ***2002-Later*** *(character, length 5)*

**Attribute Codes**

| ***1992-1999*** | ***2000-2001*** | ***2002-Later*** | |
|---|---|---|---|
| 0 | -- | -- | Not Resident of U.S. or Territories or Driver Not Present |
| -- | 0 | 0 | Not Resident of U.S. or Territories |
| xxxxx | xxxxx | xxxxx | Actual Zip Code |
| | 99998 | 99998 | No Driver Present |
| 99999 | 99999 | 99999 | Unknown |

## D09 Speed Related

**Definition:** This variable indicates whether this vehicle's speed is a contributing factor to the cause of the crash.

**Additional Information:** This variable was added to the Vehicle data set in 1997.

**SAS Name:** **SPEEDREL**

**Attribute Codes**

| *1997-1999* | *2000-2009* | *2010-Later* | |
|---|---|---|---|
| 0 | 0 | 0 | No |
| 1 | 1 | 1 | Yes |
| -- | 8 | -- | No Driver Present |
| -- | -- | 8 | No Driver Present/Unknown if Driver Present |
| 9 | 9 | 9 | Unknown |

## V_A12 Total Lanes in Roadway

**Definition:** Indicates the number of lanes of travel on this vehicle's roadway. 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.

**Additional Information:** This variable has been coded at the Accident level and been on the Accident data set (SAS variable DNUM_LAN) since 1988. Starting in 2002 the number of lanes for each vehicle in a crash is available in the Vehicle data set.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002.

From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

**SAS Name: VNUM_LAN**

**Attribute Codes**

| ***2002-2009*** | ***2010-Later*** | |
|---|---|---|
| -- | 0 | Non-Trafficway Area |
| 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 | Not Reported |
| 9 | 9 | Unknown |

## V_A13 Roadway Alignment

**Definition:** Horizontal alignment of this vehicle's roadway in the immediate vicinity of the first harmful event.

**Additional Information:** This variable has been coded at the Accident level and included in Accident data set (SAS variable ALIGN) since 1988. Starting in 2002 the roadway alignment for each vehicle in a crash is available in the Vehicle data set.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002.

From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

**SAS Name: VALIGN**

**Attribute Codes**

| ***2002-2009*** | ***2010-Later*** | |
|---|---|---|
| -- | 0 | Non-Trafficway Area |
| 1 | 1 | Straight |
| 2 | -- | Curve |
| -- | 2 | Curve Right |
| -- | 3 | Curve Left |
| -- | 4 | Curve - Unknown Direction |
| -- | 8 | Not Reported |
| 9 | 9 | Unknown |

## V_A14 Roadway Profile

**Definition:** Vertical alignment of this vehicle's roadway in the immediate vicinity of the first harmful event.

**Additional Information:** This variable has been coded at the Accident level and included in Accident data set (SAS variable PROFILE) since 1988. Starting in 2002 the roadway profile for each vehicle in a crash is available in the Vehicle data set.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002.

From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

**SAS Name: VPROFILE**

**Attribute Codes**

| ***2002-2009*** | ***2010-Later*** | |
|---|---|---|
| -- | 0 | Non-Trafficway Area |
| 1 | 1 | Level |
| 2 | -- | Grade |
| -- | 2 | Grade, Unknown Slope |
| 3 | 3 | Hillcrest |
| -- | 4 | Sag *(Bottom)* |
| -- | 5 | Uphill |
| -- | 6 | Downhill |
| 8 | -- | Sag |
| -- | 8 | Not Reported |
| 9 | 9 | Unknown |

## V_A15 Roadway Surface Condition

**Definition:** Condition of this vehicle's road surface at the time of the crash.

**Additional Information:** This variable has been coded at the Accident level and included in Accident data set (SAS variable SUR_COND) since 1988. Starting in 2002 the roadway surface condition for each vehicle in a crash is available in the Vehicle data set.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002.

From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

**SAS Name: VSURCOND**

**Attribute Codes**

| ***2002-2009*** | ***2010-Later*** | |
|---|---|---|
| -- | 0 | Non-Trafficway Area |
| 1 | 1 | Dry |
| 2 | 2 | Wet |
| 3 | -- | Snow or Slush |
| -- | 3 | Snow |
| 4 | -- | Ice |
| -- | 4 | Ice/Frost |
| 5 | -- | Sand, Dirt, Oil |
| -- | 5 | Sand |
| -- | 6 | Water *(Standing or Moving)* |
| -- | 7 | Oil |
| 8 | 8 | Other |
| -- | 10 | Slush |
| -- | 11 | Mud, Dirt, Gravel |
| -- | 98 | Not Reported |
| 9 | 99 | Unknown |

## V_A16 Traffic Control Device - Vehicle

**Definition:** Indicates whether or not a traffic control device was present for the vehicle and the type of traffic control device.

**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.

This variable has been coded at the Accident level and has been included in the Accident data set (SAS variable TRAF_CON) since 1988.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002.

From 2002-2009, this information is also available on the Vehicle data set (Vehicle.VTRAFCON) to store a selected vehicle control device for each vehicle, the Biketraf data set (Biketraf.BTRAFCON) to store all traffic control devices for cyclists, and the Trafcon data set (Trafcon.MTRAFCON) to store all traffic control devices for a vehicle.

From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

Starting in 2010 this is a single-response question, so the Trafcon data set is discontinued, however, the Biketraf data set will still be available in 2010. From 2010 onward, this variable will be available only in the vehicle data set (Vehicle.VTRAFCON) and Accident data set (Accident.DTRAFCON).

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived prior to 2010.

**SAS Name: VTRAFCON**

**Attribute Codes**

| ***2002-2009*** | ***2010-Later*** | |
|---|---|---|
| 0 | 0 | No Controls |
| **NOT AT RAILROAD GRADE CROSSING** | | |
| *TRAFFICWAY TRAFFIC SIGNALS:* | | |
| 1 | -- | Traffic Control Signal *(On Colors)* |
| -- | 1 | Traffic Control Signal *(On Colors)* Without Pedestrian Signal |
| -- | 2 | Traffic Control *(On Colors)* With Pedestrian Signal |
| -- | 3 | Traffic Control Signal *(On Colors)* Not Known if Pedestrian Signal |
| 4 | -- | Flashing Traffic Control Signal or Flashing Beacon |
| -- | 4 | Flashing Traffic Control Signal |
| 8 | 8 | Other Highway Traffic Signal |
| 9 | 9 | Unknown Highway Traffic Signal |

## V_A16 Traffic Control Device - Vehicle *(continued)*

*REGULATORY, SCHOOL ZONE SIGNS:*

| | | |
|---|---|---|
| 21 | 21 | Stop Sign |
| 22 | 22 | Yield Sign |
| 23 | 23 | School Zone Sign/Device |
| 28 | 28 | Other Regulatory Sign |
| 29 | 29 | Unknown Regulatory Sign |
| -- | 5 | Lane Use Control Signal |

*WARNING SIGNS:*

| | | |
|---|---|---|
| 40 | -- | Advisory Speed Sign |
| 41 | -- | Warning Sign For Road Conditions *(Hill, Steep Grade, etc.)* |
| 42 | -- | Warning Sign For Road Construction |
| 43 | -- | Warning Sign For Environment/Traffic *(Fog Ahead, Wind, Crash Ahead, etc.)* |
| -- | 44 | Warning Sign |
| 49 | -- | Unknown Type Warning |

*MISCELLANEOUS, NOT AT RAILROAD CROSSING:*

| | | |
|---|---|---|
| 51 | -- | Officer, Crossing Guard, Flagman, etc |
| -- | 51 | Person |

**AT RAILROAD GRADE CROSSING:**

| | | |
|---|---|---|
| 61 | -- | Active Devices *(e.g., Gates, Flashing Lights, Traffic Signal)* |
| 62 | -- | Passive Devices *(e.g., Stop Sign, Cross Bucks)* |
| -- | 63 | Railway Crossing Device |

**OTHER:**

| | | |
|---|---|---|
| 97 | -- | Traffic Control Present-No Details |
| -- | 97 | Not Reported |
| 98 | -- | Other Traffic Control *(Whether or Not At RR Grade Crossing)* |
| -- | 98 | Other |
| 99 | 99 | Unknown |

## V_A17 Traffic Control Device Functioning

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

**Additional Information:** This variable was added to the file in 2010 to indicate whether or not the traffic control device was functioning.

The information for A17/V_A17 was collected at the vehicle level.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002.

From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

**SAS Name:** **VTCONT_F**

**Attribute Codes**

***2010-Later***

0 No Controls
1 Device Not Functioning
2 Device Functioning – Functioning Improperly
3 Device Functioning Properly
8 Not Reported
9 Unknown

## V_A18 Speed Limit

**Definition:** Posted speed limit in miles per hour.

**Additional Information:** This variable has been coded at the Accident level and included in Accident data set (SAS variable DSPD_LIM) since 1988. Starting in 2002 the speed limit for each vehicle in a crash is available in the Vehicle data set.

The information for variables A11/V41, A12/V_A12, A13/V_A13, A14/V_A14, A15/V_A15, A16/V_A16, A17/V_A17, A18/V_A18 was collected at the vehicle level starting in 1999. The vehicle level variables first appeared in the SAS files in 2002. From 1999 through 2003, the coding instructions were to code the value indicated on the PAR. In 2004, the coding instructions were modified to code the value indicated on the PAR which best represents the environment just prior to the vehicle's critical precrash event.

**SAS Name: VSPD_LIM**

**Attribute Codes**

| ***2002-2009*** | ***2010-Later*** | |
|---|---|---|
| 0 | -- | No Statutory Limit *(Parking Lot, Alley, etc.)* |
| -- | 0 | No Statutory Limit /Non-Trafficway Area |
| 5-75 | 5-75 | Actual Speed Limit |
| -- | 97 | Not Reported |
| 99 | 99 | Unknown |

## The PERSON Data Set

The Person data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, VEHNO, and PERNO. CASENUM, VEHNO and PERNO are the case identifiers. CASENUM and VEHNO should be used to merge the Person data set with the Vehicle data set.

In the Person data set, VEHNO equals 0 for non-motorists (PER_TYPE 3,4,5,6 or 8). The Person data set also contains:

## P03 Person Type

**Definition:** Indicates the role of the person in the vehicle.

**Additional Information:** From 1988 to 2004 a person in or on a working vehicle was coded Person Type=8 (Other or Unknown Non-Occupant). From 2005 to 2008 such a person was coded 7 (Person in or on a Working Vehicle). Starting in 2009 such a person is coded 3 (Occupant of a Motor Vehicle Not in Transport).

**SAS Name:** **PER_TYPE** ***1988-2008***
**PER_TYP** ***2009-Later***

**Attribute Codes**

| *1988-2004* | *2005-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|
| *MOTORISTS* | | | | |
| 1 | 1 | 1 | 1 | Driver of a Motor Vehicle in Transport |
| 2 | 2 | 2 | 2 | Passenger of a Motor Vehicle in Transport |
| 9 | 9 | 9 | 9 | Unknown Occupant Type in a Motor Vehicle in Transport |
| -- | -- | -- | 77 | Not Reported Occupant Type in a Motor Vehicle in Transport |
| *NON-MOTORISTS-OCCUPANT* | | | | |
| 3 | 3 | 3 | 3 | Occupant of a Motor Vehicle Not in Transport |
| 4 | 4 | 4 | 4 | Occupant of a Non-Motor Vehicle Transport Device |
| *NON-MOTORISTS-NON-OCCUPANT* | | | | |
| 5 | 5 | 5 | 5 | Pedestrian |
| 6 | 6 | -- | -- | Cyclist *(Pedalcyclist)* |
| -- | -- | 6 | 6 | Bicyclist |
| -- | -- | 7 | 7 | Other Cyclist |
| -- | -- | 8 | 8 | Persons on Personal Conveyances |
| -- | -- | 10 | 10 | Persons in or on Buildings |
| -- | 7 | -- | -- | Person in or on a Working Vehicle |
| 8 | 8 | -- | -- | Other or Unknown Non-Occupant |
| -- | -- | 19 | 19 | Unknown Type of Non-Motorist |
| -- | -- | -- | 78 | Not Reported Type of Non-Motorist |

## P04 Seating Position

**Definition:** Indicates the location of the occupants in the vehicle. 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.

**Additional Information:**

**SAS Name: SEAT_POS**

**Attribute Codes**

| *1988-1991-* | *1992-2002* | *2003-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | Non-Motorist |
| 11 | 11 | 11 | 11 | 11 | Front Seat-Left Side *(Driver's Side)* |
| 12 | 12 | 12 | 12 | 12 | Front Seat-Middle |
| 13 | 13 | 13 | 13 | 13 | Front Seat-Right Side |
| 18 | 18 | 18 | 18 | 18 | Front Seat-Other |
| 19 | 19 | 19 | 19 | 19 | Front Seat-Unknown |
| 21 | 21 | 21 | 21 | 21 | Second Seat-Left Side |
| 22 | 22 | 22 | 22 | 22 | Second Seat-Middle |
| 23 | 23 | 23 | 23 | 23 | Second Seat-Right Side |
| 28 | 28 | 28 | 28 | 28 | Second Seat-Other |
| 29 | 29 | 29 | 29 | 29 | Second Seat-Unknown |
| -- | 31 | 31 | 31 | 31 | Third Seat-Left Side |
| -- | 32 | 32 | 32 | 32 | Third Seat-Middle |
| -- | 33 | 33 | 33 | 33 | Third Seat-Right Side |
| -- | 38 | 38 | 38 | 38 | Third Seat-Other |
| -- | 39 | 39 | 39 | 39 | Third Seat-Unknown |
| -- | -- | 41 | 41 | 41 | Fourth Seat-Left Side |
| -- | -- | 42 | 42 | 42 | Fourth Seat-Middle |
| -- | -- | 43 | 43 | 43 | Fourth Seat-Right Side |
| -- | -- | 48 | 48 | 48 | Fourth Seat-Other |
| -- | -- | 49 | 49 | 49 | Fourth Seat-Unknown |
| 30 | 50 | 50 | 50 | 50 | Sleeper Section of Cab *(Truck)* |
| 40 | 51 | 51 | -- | -- | Other Passenger in Passenger or Cargo Area |
| -- | -- | -- | 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 |
| 50 | 52 | 52 | 54 | 54 | Trailing Unit |
| 60 | 53 | 53 | 55 | 55 | Riding on Vehicle Exterior |
| -- | -- | -- | -- | 97 | Not Reported |
| 99 | 99 | 99 | 99 | 99 | Unknown Seating Position |

## P04I Imputed Seating Position

**Definition:** This imputed variable has the same definition and element values as Seating Position, excluding values 18, 19, 28, 29, 38, 39, 48, 49 and 99 for unknown seating position and value 98 for not reported seating position.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

| | | |
|---|---|---|
| **SAS Name:** | **SEAT_H** | ***1988-2009*** |
| | **SEAT_IM** | ***2010-Later*** |

## P05 Safety Equipment Use (discontinued)

**Definition:** Indicates the occupant's use of available vehicle restraints. The presence of an air bag system does not mean that there are no active belts present.

**Additional Information:** This variable was dropped from the Person data set in 1990 and was replaced with Restraint System Use (P15).

**SAS Name: SAF_EQMT**

**Attribute Codes**

***1988-1989***

| | |
|---|---|
| 0 | Non-Motorist |
| 1 | Child Restraint Used |
| 2 | Manual Lap Belt Used |
| 3 | Manual Shoulder Belt Only Used |
| 4 | Manual Shoulder and Lap Belt Used |
| 5 | Automatic Belt Used |
| 6 | Deployed Air Bag |
| 7 | Motorcycle Helmet Used |
| 8 | Other Restraint / Safety Equipment Used |
| 9 | Restraint Used-Type Unknown |
| 10 | None Used |
| 11 | None Available |
| 99 | Unknown Use or Availability |

## P06 Ejection

**Definition:** Refers to occupants being totally or partially thrown from the vehicle as a result of an impact or rollover.

**Additional Information:**

**SAS Name:** **EJECT** ***1988-2008***
**EJECTION** ***2009-Later***

**Attribute Codes**

| *1988-1989* | *1990-1994* | *1995-1998* | *1999-2000* | *2001-2003* | *2004-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Not Ejected |
| 1 | -- | 1 | 1 | 1 | 1 | 1 | 1 | Totally Ejected |
| -- | 1 | -- | -- | -- | -- | -- | -- | Ejected *(Partial or Total)* |
| 2 | -- | 2 | 2 | 2 | 2 | 2 | 2 | Partially Ejected |
| -- | -- | -- | -- | -- | 5 | -- | -- | Not on PAR |
| -- | -- | -- | -- | -- | 6 | -- | -- | Not Coded |
| 7 | -- | 7 | -- | 7 | 7 | 3 | 3 | Ejected – Unknown Degree |
| -- | -- | -- | -- | -- | -- | -- | 4 | Not a Motor Vehicle Occupant |
| -- | -- | -- | -- | -- | -- | -- | 7 | Not Reported |
| -- | -- | -- | -- | 8 | 8 | 8 | 8 | Not Applicable |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | Unknown |

## P06I Imputed Ejection

**Definition:** From 2004 to 2008 this imputed variable had the same definition and element values as Ejection, excluding 9 "Unknown if Ejected," 5 "Not on PAR," and 6 "Not Coded." That is, it had the values (0,1,2,7, and 8). Prior to 2004, and in 2009, the only difference in the imputed variable is that 9, "Unknown if Ejected" was excluded. From 2010 onward, the excluded attributes are 9 for unknown ejection and 7 for not reported ejection.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **EJECT_I** ***1988-2009***
**EJECT_IM** ***2010-Later***

## P07 Age

**Definition:** Indicates the person's age at the time of the crash, with respect to the person's last birthday.

**Additional Information:**

**SAS Name:** **AGE**

**Attribute Codes**

| *1988-2000* | *2001-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | Less than One Year |
| 1-96 | 1-998 | 1-120 | 1-110 | Years of Age |
| 97 | -- | -- | -- | 97 Years or Older |
| -- | -- | -- | 997 | Not Reported |
| 99 | 999 | 999 | 999 | Unknown |

## P07I Imputed Age

**Definition:** This imputed variable has the same definition and element values as Age, excluding the values 99 or 999 for unknown age and 997 for not reported age.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **AGE_H** ***1988-2009***
**AGE_IM** ***2010-Later***

## P08 Sex

**Definition:** Indicates the police reported sex for this person

**Additional Information:**

**SAS Name:** SEX

**Attribute Codes**

| *1988-2009* | *2010-Later* | |
|---|---|---|
| 1 | 1 | Male |
| 2 | 2 | Female |
| -- | 7 | Not Reported |
| 9 | 9 | Unknown |

## P08I Imputed Sex

**Definition:** This imputed variable has the same definition and element values as Sex, excluding value 9 for unknown sex and value 7 for not reported sex.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** SEX_H *1988-2009*
SEX_IM *2010-Later*

## P09 Injury Severity

**Definition:** Indicates the police reported injury severity for this person.

**Additional Information:**

**SAS Name: INJ_SEV**

**Attribute Codes**

| *1988-2009* | *2010 Later* | |
|---|---|---|
| 0 | 0 | No Injury *(O)* |
| 1 | 1 | Possible Injury *(C)* |
| 2 | 2 | Non-incapacitating Evident Injury *(B)* |
| 3 | 3 | Incapacitating Injury *(A)* |
| 4 | 4 | Fatal Injury *(K)* |
| 5 | 5 | Injured, Severity Unknown *(U)* |
| 6 | 6 | Died Prior to Crash |
| -- | 7 | Not Reported |
| 9 | 9 | Unknown if Injured |

## P09I Imputed Injury Severity

**Definition:** This imputed variable has the same definition and element values as Injury Severity, excluding value 9 for unknown if injured and value 7 for not reported if injured.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

**SAS Name:** **INJSEV_H** ***1988-2009***
**INJSEV_IM** ***2010-Later***

## P10 Taken to Hospital or Treatment Facility

**Definition:** Indicates whether persons involved in the crash were transported to a hospital or treatment facility.

**Additional Information:**

**SAS Name: HOSPITAL**

**Attribute Codes**

| *1988-2009* | *2010-Later* | |
|---|---|---|
| 0 | -- | No |
| 1 | -- | Yes |
| 9 | -- | Unknown |
| -- | 4 | Not Transported |
| -- | 5 | EMS Ground |
| -- | 6 | EMS Air |
| -- | 7 | EMS Unknown Mode |
| -- | 8 | Law Enforcement |
| -- | 9 | Transported Unknown Source |
| -- | 97 | Not Reported |
| -- | 98 | Other |
| -- | 99 | Unknown |

## P11 Police-Reported Alcohol Involvement

**Definition:** Indicates that the person had consumed an alcoholic beverage.

**Additional Information:** From 1988 to 2008 alcohol involvement was reported only for drivers of in-transport motor vehicles and non-motorists. Other person types were coded 0 (Not Applicable or, for 1988-1989, Alcohol Not Involved). Starting in 2009 alcohol involvement is reported for all person types.

This variable does not indicate that alcohol was a cause of the crash. If a PAR indicates that opened or unopened alcohol bottles were found in the vehicle, then this information does not by itself constitute involvement.

**SAS Name: PER_ALCH**

**Attribute Codes**

| *1988-1989* | *1990-1998* | *1999-2001* | *2002-2008* | *2009-Later* | |
|---|---|---|---|---|---|
| 0 | -- | 1 | 1 | 0 | No *(Alcohol Not Involved)* |
| -- | 0 | -- | -- | -- | Alcohol Not Involved or N/A |
| -- | -- | 0 | 0 | -- | Not Applicable |
| 1 | 1 | 2 | 2 | 1 | Yes *(Alcohol Involved)* |
| -- | -- | -- | 6 | -- | Not on PAR |
| -- | -- | -- | 7 | -- | Not Coded |
| -- | 7 | -- | -- | -- | Alcohol and/or Drugs Involved |
| 8 | 8 | 8 | -- | 8 | Not Reported |
| 9 | 9 | 9 | 9 | 9 | Unknown *(Police-Reported)* |

## P11I Imputed Police-Reported Alcohol Involvement

**Definition:** The definition and element values are the same as Police-Reported Alcohol Involvement with the following exceptions: From 1988 to 1993 the imputed variable excludes the attribute code 9 (Unknown – Police Reported) and any person who was coded 8 (Not Reported) for PER_ALCH was coded No Alcohol Involved for ALCH_H. Beginning in 1994 the methodology changed for the attribute 8 – rather than converting it to No Alcohol Involved it was imputed. The SAS name for the imputed variable changed from ALCH_H to PERALC_H in 1994 to reflect this change. In 2002 the PER_ALCH code 8 was replaced by 6 and 7, so from 2002 to 2008 codes 6 and 7, as well as 9, are imputed. Starting in 2009 codes 8 and 9 are imputed for not reported and unknown alcohol involvement, respectively.

**Additional Information:** See *Understanding the NASS GES Imputation Process* section of this manual.

| | | |
|---|---|---|
| **SAS Name:** | **ALCH_H** | ***1988-1993*** |
| | **PERALC_H** | ***1994-2009*** |
| | **PERALCH_IM** | ***2010-Later*** |

## P11A Alcohol Test Status

**Definition:** Did the Police Report indicate an alcohol test was given?

**Additional Information:** From 2005 to 2008 this was reported only for drivers of in-transport motor vehicles and non-motorists. Other person types were coded 8 (Not Applicable). Starting in 2009 it is reported for all person types.

**SAS Name: ALCHTEST**

**Attribute Codes**

***2005-2008***

0 No
1 Yes
6 Not on Par
7 Not Coded
8 Not Applicable
9 Unknown

| ***2009*** | ***2010-Later*** | |
|---|---|---|
| 0 | 0 | Test Not Given |
| 1 | 1 | Test Refused |
| 2 | 2 | Test Given |
| -- | 7 | Not Reported |
| 9 | -- | Unknown if Tested/Not Reported |
| -- | 9 | Unknown if Tested |

## P11B Alcohol Test Type

**Definition:** Identifies the type of test administered to the person as indicated in the case materials.

**Additional Information:** If a valid blood test is administered along with another type of test then blood test is coded. This information is reported for all person types.

**SAS Name: ALTSTYPE**

**Attribute Codes**

| *2009* | *2010-Later* | |
|---|---|---|
| 0 | 0 | Test Not Given |
| 1 | 1 | Blood |
| 2 | 2 | Breath *(Breathalyzer "BAC")* |
| 3 | 3 | Urine |
| 8 | 8 | Other Test Type |
| 10 | 10 | Preliminary Breath Test *(PBT)* |
| -- | 97 | Not Reported |
| 98 | 98 | Unknown Test Type |
| 99 | -- | Unknown if Tested/Not Reported |
| -- | 99 | Unknown if Tested |

## P11C Alcohol Test Result

**Definition:** The actual value reported from a test performed on this person to detect the presence of alcohol.

**Additional Information:** This information is reported for all person types.

**SAS Name: ALTRSULT**

**Attribute Codes**

| *2009* | *2010-Later* | |
|---|---|---|
| 0-93 | 0-93 | Actual Value |
| 94 | 94 | .94 or Greater |
| -- | 95 | Not Reported |
| 96 | 96 | Test Not Given |
| 97 | 97 | Test Performed, Results Unknown |
| 98 | 98 | Positive Reading With No Actual Value |
| 99 | -- | Unknown if Tested/Not Reported |
| -- | 99 | Unknown if Tested |

## P12 Non-Motorist's Physical/Mental Condition (discontinued)

**Definition:** Indicates the physical/mental condition for non-motorists.

**Additional Information:** If the person is a driver or occupant of a motor vehicle in transport, they are coded as 0. When two or more circumstances apply, the attribute with the lowest numerical value is coded.

In 1990, this variable (P12) was dropped and replaced with Person's Physical Impairment (P18).

**SAS Name: PHY_COND**

**Attribute Codes**

***1988-1989***

0 No Physical/Mental Conditions, Non-motorist; or Not Applicable, Driver or Occupant of Motor Vehicle in Transport
1 Ill, Blackout
2 Emotional *(e.g. Depression, Angry, Disturbed)*
3 Drugs-Medication
4 Other Drugs *(e.g. Cocaine, Marijuana, etc.)*
5 Walking with Cane or Crutches
6 Paraplegic or Restricted to Wheelchair
7 Impaired Due to Previous Injury
8 Deaf
9 Blind
97 Physical/Mental Impairment-No Details
98 Other Physical/Mental Impairment
99 Unknown Physical/Mental Condition

## P13 Non-Motorist Location

**Definition:** Reports the location of non-motorists at the time of impact.

**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: LOCATN**

**Attribute Codes**

| *1988-2009* | *2010-Later* | |
|---|---|---|
| 0 | -- | Not Applicable-Driver or Occupant of M.V. in Transport |
| -- | 0 | Not a Motor Vehicle Occupant |
| 1 | -- | Intersection-In Crosswalk |
| 2 | -- | Intersection-On Roadway |
| 8 | -- | Intersection-Other |
| 9 | -- | Intersection-Unknown Location |
| 11 | -- | Non-Intersection-In Crosswalk |
| 12 | -- | Non-Intersection-On Roadway |
| 18 | -- | Non-Intersection-Other |
| 19 | -- | Non-Intersection-Unknown Location |
| 20 | -- | In Crosswalk-Unknown if Intersection |
| -- | 21 | Intersection-In Marked Crosswalk |
| -- | 22 | Intersection-Unmarked Crosswalk |
| -- | 23 | Intersection-Not in Crosswalk |
| -- | 24 | Intersection-Unknown Location |
| -- | 25 | Non-Intersection-In Marked Crosswalk |
| -- | 26 | Non-Intersection-On Roadway, Not in Marked Crosswalk |
| -- | 27 | Non-Intersection-On Roadway, Crosswalk Availability Unknown |
| -- | 28 | Bicycle Lane |
| -- | 29 | Shoulder/Roadside |
| -- | 30 | Sidewalk |
| -- | 31 | Median/Crossing Island |
| -- | 32 | Driveway Access |
| -- | 33 | Shared-Use Path/Trail |
| -- | 34 | Non-Trafficway Area |
| -- | 35 | Parking Lane/Zone |
| -- | 37 | Not Reported |
| 98 | 38 | Other Location |
| 99 | 39 | Unknown Location |

## P14 Person's Action (discontinued)

**Definition:** Person's actions are indicated for everyone involved in the crash except the driver of a motor vehicle in transport.

**Additional Information:** This variable (P14) was dropped from the Person data set in 1990 and was replaced with the variable *Non-motorist's Action* (P19).

**SAS Name: ACTION**

**Attribute Codes**

***1988-1989***

0 Not Applicable-Driver or, if non-driver, No Action

*NON-MOTORIST VEHICLE OPERATOR:*

1 Failing to have Lights on When Required
2 Operating without Required Equipment
3 Improper or Erratic Lane Changing
4 Failure to Keep in Proper Lane or Running Off Road
5 Making Improper Entry to or Exit from Trafficway
6 Operating the Vehicle in Erratic, Reckless, Negligent Manner
7 Failure of Yield Right of Way
8 Failure to Obey Traffic Signs/Control Devices/Officers, Failure to Observe Safety Zone
9 Making Other Improper Turns
10 Driving on Wrong Side of Road

*MOTOR VEHICLE OCCUPANT:*

20 Interfering with Driver

*OTHER NON-MOTORISTS:*

21 Darting or Running into Road
22 Improper Crossing of Roadway or Intersection *(Jaywalking)*
23 Walking/Riding with or Against Traffic, Playing, Working, Sitting, Lying, Standing in Roadway
24 Inattentive *(Talking, Eating, etc..)*
25 Jogger
26 Non-motorist Pushing Vehicle
98 Other Action
99 Unknown Action

## P15 Restraint System Use

**Definition:** Police reported occupant use of available vehicle restraints (i.e., belts child safety seat, helmet, or automatic restraints).

**Additional Information:** No distinction is made between manual or automatic restraint; to do so see Restraint Type (P16).

This variable replaced Safety Equipment Use (P5) in 1990. Starting in 1992 information on air bags is contained in the variable *Air Bag Availability/Function* (P21).

**SAS Name: REST_SYS**

**Attribute Codes**

| *1990-1991* | *1992-1994* | *1995-2009* | *2010-Later* | |
|---|---|---|---|---|
| 0 | 0 | 0 | -- | None Used or Not Applicable |
| 1 | 1 | 1 | -- | Lap/Shoulder Belt |
| 2 | 2 | 2 | -- | Lap Belt |
| 3 | 3 | 3 | -- | Shoulder Belt |
| 4 | -- | -- | -- | Air Bag Deployed |
| 5 | -- | -- | -- | Air Bag Deployed and Lap/Shoulder Belt |
| 6 | 6 | 6 | -- | Child Safety Seat |
| 7 | 7 | 5 | -- | Motorcycle Helmet |
| -- | -- | 7 | -- | None Available |
| 8 | 8 | 8 | -- | Restraint Used-Specifics Unknown or Other |
| 9 | 9 | 9 | -- | Unknown if Used |
| -- | -- | -- | 21 | Lap and Shoulder Belt Used |
| -- | -- | -- | 22 | Lap Belt Only Used |
| -- | -- | -- | 23 | Shoulder Belt Only Used |
| -- | -- | -- | 28 | Restraint Used - Type Unknown |
| -- | -- | -- | 30 | Not Applicable |
| -- | -- | -- | 31 | None Used – Motor Vehicle Occupant |
| -- | -- | -- | 37 | Child Restraint System - Forward Facing |
| -- | -- | -- | 38 | Child Restraint System - Rear Facing |
| -- | -- | -- | 39 | Booster Seat |
| -- | -- | -- | 40 | Child Restraint Type Unknown |
| -- | -- | -- | 41 | No Helmet |
| -- | -- | -- | 42 | DOT-Compliant Motorcycle Helmet |
| -- | -- | -- | 43 | Other Helmet |
| -- | -- | -- | 96 | Not a Motor Vehicle Occupant |
| -- | -- | -- | 97 | Not Reported |
| -- | -- | -- | 98 | Other |
| -- | -- | -- | 99 | Unknown |

## P16 Restraint Type (discontinued)

**Definition:** Provides additional information about the restraint system coded in the variable Restraint System Use (P15), distinguishing between automatic and manual type devices used.

**Additional Information:** This variable was added to the Person Data set in 1990 and deleted in 1999.

**SAS Name: REST_TYP**

**Attribute Codes**

***1990-1998***

0 None Available or Not Applicable
1 Automatic *(Passive)*
2 Manual *(Active)*
9 Unknown Type

## P17 Police-Reported Drug Involvement

**Definition:** Indicates that the person had taken drugs.

**Additional Information:** From 1990 to 2008 drug involvement was reported only for drivers of in-transport motor vehicles and non- motorists. Other person types were coded Not Applicable. Starting in 2009 drug involvement is reported for all person types.

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

This variable was added to the Person data set in 1990.

**SAS Name: PER_DRUG**

**Attribute Codes**

| *1990-1998* | *1999* | *2000-2001* | *2002-2008* | *2009-Later* | |
|---|---|---|---|---|---|
| 0 | -- | -- | -- | -- | Drugs Not Involved or Not Applicable |
| -- | 1 | 0 | 0 | -- | Not Applicable |
| -- | 0 | 1 | 1 | 0 | Drugs Not Involved |
| 1 | 2 | 2 | 2 | 1 | Drugs Involved |
| -- | -- | -- | 6 | -- | Not on PAR |
| -- | -- | -- | 7 | -- | Not Coded |
| 7 | -- | -- | -- | -- | Drugs and/or Alcohol Involved |
| 8 | 8 | 8 | -- | 8 | Not Reported |
| 9 | 9 | 9 | 9 | 9 | Unknown *(Police-Reported)* |

## P17A Drug Test Status

**Definition:** Did the Police Report indicate a drug test was given to the person?

**Additional Information:** From 2005 to 2008 this was reported only for drivers of in-transport motor vehicles and non-motorists. Other person types were coded 8 (Not Applicable). Starting in 2009 it is reported for all person types.

**SAS Name: DRUGTEST**

**Attribute Codes**

***2005-2008***

| | |
|---|---|
| 0 | No |
| 1 | Yes |
| 6 | Not on Par |
| 7 | Not Coded |
| 8 | Not Applicable |
| 9 | Unknown |

## P17A Drug Test Status *(continued)*

| *2009* | *2010-Later* | |
|---|---|---|
| 0 | 0 | Test Not Given |
| 1 | 1 | Test Refused |
| 2 | 2 | Test Given |
| -- | 7 | Not Reported |
| 9 | -- | Unknown if Tested/Not Reported |
| -- | 9 | Unknown if Tested |

## P17B Drug Test Type

**Definition:** Identifies the type of test administered to the person as indicated in the case materials.

**Additional Information:** This information is reported for all person types.

**SAS Name: DRTSTYPE**

**Attribute Codes**

| *2009* | *2010-Later* | |
|---|---|---|
| 0 | 0 | Test Not Given |
| 1 | 1 | Blood |
| 2 | 2 | Urine |
| 3 | 3 | Both Blood and Urine |
| 8 | 8 | Other Test Type |
| -- | 97 | Not Reported |
| 98 | 98 | Unknown Test Type |
| 99 | -- | Unknown if Tested/Not Reported |
| -- | 99 | Unknown if Tested |

## P17C Drug Test Result

**Definition:** The actual value reported from a test performed on this person to detect the presence of drugs. This information is reported for all person types.

**SAS Name: DRTRSULT**

**Attribute Codes**

| *2009* | *2010-Later* | |
|---|---|---|
| 0 | 0 | Test Not Given |
| 1 | -- | Negative |
| -- | 1 | Negative/No Drugs Reported |
| 2 | -- | Positive |
| -- | 2 | Positive/Tested for Drugs, Drugs Found, Type Unknown |
| -- | 5 | Not Reported |
| 7 | 7 | Tested for Drugs, Result Unknown |
| 9 | -- | Unknown if Tested/Not Reported |
| -- | 9 | Unknown if Tested |

## P18 Condition at Time of Crash (discontinued)

**Definition:** Identifies physical impairments for all drivers and non-motorists which may have contributed to the cause of the crash.

**Additional Information:** In 1990 this variable replaced *Non-Motorist's Physical / Mental Condition* (P12) in the Person data set and *Driver Physical/Mental Impairment* (D3) in the Vehicle data set.

If more than one impairment is noted on the Police Accident Report the lowest numbered code is selected. From 2002 on all impairments for a driver or non-motorist are available in the Impair data set (SAS variable MIMPAIR).

The Person.IMPAIRMT is rolled up from the Impair data set. If there are no records, then the value 00 is assigned. If there is a single record, then the SAS code for that record is assigned. If there are multiple records, then the minimum SAS code of all the records is assigned.

Starting in 2010, this variable will be available only in the Impair data set.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived prior in 2009 and before.

**SAS Name: IMPAIRMT**

**Attribute Codes**

| ***1990-2006*** | ***2007-2009*** | |
|---|---|---|
| 0 | 0 | None |
| 1 | 1 | Ill, Blackout |
| 2 | 2 | Drowsy, Sleepy, Fell Asleep, Fatigued |
| 3 | 3 | Walking with a Cane or Crutches |
| 4 | 4 | Paraplegic or Restricted to Wheelchair |
| 5 | 5 | Impaired Due to Previous Injury |
| 6 | 6 | Deaf |
| 7 | 7 | Blind |
| -- | 50 | Hit & Run *(And No Information)* |
| -- | 93 | Not on PAR |
| -- | 94 | Not Coded |
| 97 | 97 | Physical Impairment-No Details |
| 98 | 98 | Other Physical Impairment |
| 99 | 99 | Unknown if Physically Impaired |

## P19 Non-Motorist Action (discontinued)

**Definition:** Identifies circumstances (actions) that may have contributed to the cause of the crash. The actions coded pertain to non-motorists only.

**Additional Information:** For 1990-2008 that is Person Type (P03) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Pedalcyclist), 7 (Other Cyclist), or 8 (Other or Unknown). From 2009 on it is Person Type (P03)= 4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Bicyclist), 7 (Other Cyclist), 8 (Persons on Personal Conveyances), or 19 (Unknown Type of Non-Motorist).

If more than one action is noted on the Police Accident Report the lowest numbered code shown below is selected.

The Person.ACTION is rolled up from the Nmaction data set. If there are no records, then the value 00 is assigned. If there is a single record, then the SAS code for that record is assigned. If there are multiple records, then the minimum SAS code of all the records, with the exception that if the SAS Code 0 is one of the values, is assigned. The SAS code 0 is excluded from the calculation, all other values take precedence over 0 (zero).

From 2002 to 2009 all actions for a non-motorist are available in the Nmaction data set (SAS variable MACTION).

This variable was discontinued in 2010 and replaced with two variables: P25 Non-Motorist Action/Circumstances Prior to Crash and P26 Non-Motorist Action/Circumstances at Time of Crash. These variables are in the Nmprior and Nmcrash data sets, respectively.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived prior in 2009 and before.

**SAS Name: ACTION**

**Attribute Codes**

| ***1990-1991*** | ***1992-2009*** | |
|---|---|---|
| 0 | 0 | No Action |
| *NON-MOTORIST VEHICLE OPERATOR:* | | |
| 1 | 1 | Failing to Have Lights on When Required |
| 2 | 2 | Operating without Required Equipment |
| 3 | 3 | Improper or Erratic Lane Changing |
| 4 | 4 | Failure to Keep in Proper Lane or Running Off Road |
| 5 | 5 | Making Improper Entry to or Exit from Trafficway |
| 6 | 6 | Operating the Vehicle in Erratic, Reckless, Negligent Manner |
| 7 | 7 | Failure to Yield Right of Way |
| 8 | 8 | Failure to Obey Traffic Signs/Control Devices/Officers, Failure to Observe Safety Zone |
| 9 | 9 | Making Other Improper Turn |
| 10 | 10 | Driving on Wrong Side of Road |

## P19 Non-Motorist Action (discontinued) *(continued)*

**Attribute Codes**

| ***1990-1991*** | ***1992-2009*** | |
|---|---|---|
| *OTHER NON-MOTORIST:* | | |
| 21 | 21 | Darting or Running into Road |
| 22 | 22 | Improper Crossing of Roadway or Intersection *(Jaywalking)* |
| 23 | -- | Walking/Riding with or Against Traffic, Playing, Working, Sitting, Lying, Standing in Roadway |
| 24 | 24 | Inattentive *(Talking, Eating, etc.)* |
| 25 | 25 | Jogging |
| 26 | 26 | Non-Motorist Pushing Vehicle |
| -- | 27 | Walking with Traffic |
| -- | 28 | Walking Against Traffic |
| -- | 29 | Playing, Working, Sitting, Lying, Standing, Etc. In Roadway |
| 98 | 98 | Other Action |
| 99 | 99 | Unknown Action |

## P20 Non-Motorist Safety Equipment Use (discontinued)

**Definition:** Identifies safety equipment worn or carried by the non-motorist.

**Additional Information:** For 1990-2008 that is Person Type (P03) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Pedalcyclist), 7 (Other Cyclist), or 8 (Other or Unknown). From 2009 on it is Person Type (P03)= 4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Bicyclist), 7 (Other Cyclist), 8 (Persons on Personal Conveyances), or 19 (Unknown Type of Non-Motorist).

If more than one item is noted on the Police Accident Report the lowest numbered code shown below is selected. From 2002 on all items for a non-motorist are available in the Safetyeq data set (SAS variable MSAFEQMT).

The Person.SAF_EQMT is rolled up from the Safetyeq data set. In 2009 and before, if the person type is not 4,5,6,7,8, or 10 (SAS codes), then the value 0 is assigned. Also, If there are no records, then the value 00 is assigned. If there is a single record, then the SAS Code for that record is assigned. If there are multiple records, and there are both records with SAS codes 2 and 3, then the value is set to 4. If not, the records are prioritized by the following SAS Code order, where the earliest value on the list is used: 2,3,8,9,0, and 1.

Starting in 2010, this variable will be available only in the Safetyeq data set.

See *Appendix F: Rules for Derived Variables* for an expanded explanation of this variable and how it is derived prior in 2009 and before.

**SAS Name:** **SAF_EQMT**

**Attribute Codes**

| ***1990-1998*** | ***1999-2009*** | |
|---|---|---|
| 0 | -- | None Used or Not Applicable |
| -- | 0 | Not Applicable |
| -- | 1 | None Used |
| 1 | 2 | Bicycle Helmet |
| 2 | 3 | Reflective Equipment |
| 3 | 4 | Bicycle Helmet and Reflective Equipment |
| 8 | 8 | Other Safety Equipment |
| 9 | 9 | Unknown if Used |

## P21 Air Bag Deployed

**Definition:** Indicates whether the vehicle was equipped with an air bag in the seat position of this occupant, and if so, the deployment status.

**Additional Information:** This variable was added to the Person File in 1992

**SAS Name:** **AIRBAG** ***1988-2008***
**AIR_BAG** ***2009-Later***

**Attribute Codes**

| *1992-1999* | *2000-2008* | *2009* | *2010-Later* | |
|---|---|---|---|---|
| 0 | 0 | -- | -- | No Air Bag Available *(Includes Airbags That Are Switched Off)* |
| -- | -- | 0 | -- | Not Applicable *(Non-Motorist or Vehicle/Seat Not Equipped)* |
| -- | -- | -- | 0 | Not Applicable |
| 1 | 1 | -- | -- | Deployed |
| -- | -- | 1 | 1 | Deployed – Front |
| -- | -- | 2 | 2 | Deployed – Side *(Door, Seat Back)* |
| -- | -- | 3 | 3 | Deployed – Curtain *(Roof)* |
| -- | -- | 7 | 7 | Deployed – Other *(Knee, Air Belt, etc.)* |
| -- | -- | 8 | 8 | Deployed – Combination |
| -- | -- | 9 | 9 | Deployment – Unknown Location |
| 2 | 2 | 20 | 20 | Not Deployed |
| -- | -- | 28 | 28 | Switched Off |
| -- | 8 | -- | -- | Not Applicable *(Non-Motorist)* |
| -- | -- | -- | 96 | Not a Motor Vehicle Occupant |
| -- | -- | -- | 97 | Not Reported |
| 9 | 9 | 99 | -- | Unknown if Available or Deployed |
| -- | -- | -- | 99 | Deployment Unknown |

## P22 Non-Motorist Striking Vehicle Number

**Definition:** This variable identifies the vehicle which made contact with the non-motorist. The value entered must match the vehicle number of the striking vehicle.

**Additional Information:**

**SAS Name: STR_VEH**

**Attribute Codes**

***1994-Later***

| | |
|---|---|
| 0 | Not Applicable, Occupant of Vehicle |
| 1-30 | Vehicle Number |

## P23 Parked/Working Vehicle Number

**Definition:** The vehicle number of the not-in-transport vehicle this person is an occupant of, or the working vehicle this person is in or on.

**Additional Information:**

**SAS Name: PVEHNO**

**Attribute Codes**

***2005-Later***

| | |
|---|---|
| 0 | Not Applicable |
| 1-30 | Parked/Working Vehicle Number |

## P24 Indication of Misuse of Restraint System/Helmet

**Definition:** This element indicates any mis-use of the restraint system or helmet used by this person.

**Additional Information:**

**SAS Name: REST_MIS**

**Attribute Codes**

***2010-Later***

1 No
2 Yes
96 Not a Motor Vehicle Occupant

## The CEVENT Data Set

The Cevent data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, and PJ. CASENUM and EVENTNUM are the case identifiers. CASENUM may be used to merge with crashes in the Accident data set. It also contains:

## E02 Vehicle Number (This Vehicle)

**Definition:** Number assigned to an in transport motor vehicle involved in the event. This variable is the same as VEHNO in the Vehicle data set.

**Additional Information:**

**SAS Name: VEHNUM**

**Attribute Codes**

***2000-Later***

1-100 Vehicle Number

## E03 Area of Impact (This Vehicle)

**Definition:** Indicates the impact point that produced property damage or personal injury for this transport motor vehicle involved in the event.

**Additional Information:**

**SAS Name: GAD**

**Attribute Codes**

| *2000-2006* | *2007-2009* | |
|---|---|---|
| 0 | 0 | Non-Collision |
| 1 | 1 | Front |
| 2 | 2 | Right Side |
| 3 | 3 | Left Side |
| 4 | 4 | Back |
| 5 | 5 | Top |
| 6 | 6 | Undercarriage |
| 11 | 11 | Front Right Corner |
| 12 | 12 | Front Left Corner |
| 13 | 13 | Back Right Corner |
| 14 | 14 | Back Left Corner |
| -- | 15 | Object Set in Motion |
| 99 | 99 | Point of Impact Unknown |

***2010-Later***

| | |
|---|---|
| 0 | Non-Collision |
| 21-32 | Clock Points |
| 33 | Top |
| 34 | Undercarriage |
| 38 | Set-In-Motion *(Not a Clock Point)* |
| 55 | Non-Harmful Event |
| 61 | Left |
| 62 | Left-Front Half |
| 63 | Left-Back Half |
| 81 | Right |
| 82 | Right-Front Half |
| 83 | Right-Back Half |
| 97 | Not Reported |
| 99 | Unknown |

## E04 Non-Collision Category or Object Contacted

**Definition:** This element describes the non-harmful event, non-collision category, object contacted or vehicle number of other vehicle.

**Additional Information:**

**SAS Name: OBJCONT**

**Attribute Codes**

| *2000-2009* | *2010-Later* | |
|---|---|---|
| 1-100 | 1-100 | Vehicle Number of Other Vehicle |
| 101 | 101 | Rollover/Overturn |
| 102 | 102 | Fire/Explosion |
| 103 | 103 | Immersion |
| 104 | 104 | Gas Inhalation |
| 105 | -- | Jackknife |
| -- | 105 | Jackknife *(Harmful to This Vehicle)* |
| 106 | -- | Noncollision Injury *(Injured in Vehicle, or Fell From Veh.)* |
| 107 | 107 | Pavement Surface Irregularity *(Ruts, Potholes, Grates, etc.)* |
| 108 | 108 | Other Noncollision |
| 109 | -- | Noncollision-No Details |
| 110 | 110 | Thrown or Falling Object |
| -- | 111 | Injured in Vehicle *(Non-Collision)* |
| -- | 112 | Cargo/Equipment Loss or Shift *(Harmful to This Vehicle)* |
| -- | 113 | Fell/Jumped from Vehicle |
| 121 | 121 | Pedestrian |
| 122 | -- | Cycle or Cyclist *(Pedalcyclist or Pedalcycle)* |
| -- | 122 | Pedalcyclist |
| 123 | -- | Railway Train |
| -- | 123 | Railway Vehicle |
| 124 | -- | Animal |
| -- | 124 | Live Animal |
| 126 | -- | Parked Motor Vehicle *(or Other M.V. Not in Transport)* |
| 127 | -- | Other Type Non-Motorist |
| -- | 127 | Non-Motorist on Personal Conveyance |
| 128 | 128 | Other Object *(Not Fixed)* |
| 129 | -- | Object Not Fixed-No Details |
| -- | 129 | Parked Motor Vehicle |
| -- | 130 | Working Motor Vehicle |
| 131 | 131 | Ground |
| 132 | 132 | Building |
| 133 | 133 | Impact Attenuator/Crash Cushion |
| 134 | -- | Bridge Structure *(Bridge Pier/Abutment/Parapet End/Rail)* |
| 135 | -- | Guardrail |

## E04 Non-Collision Category or Object Contacted *(continued)*

### Attribute Codes

| *2000-2009* | *2010-Later* | |
|---|---|---|
| 136 | -- | Concrete Traffic Barrier or Other Longitudinal Barrier Type |
| -- | 136 | Concrete Traffic Barrier |
| 137 | -- | Post, Pole or Support *(Sign Post, Utility Post)* |
| 138 | -- | Culvert or Ditch |
| 139 | 139 | Curb |
| 140 | 140 | Embankment |
| 141 | 141 | Fence |
| 142 | 142 | Wall |
| 143 | 143 | Fire Hydrant |
| 144 | 144 | Shrubbery |
| 145 | -- | Tree |
| -- | 145 | Tree *(Standing Only)* |
| 146 | 146 | Boulder |
| 147 | -- | Vehicle Occupant *(2009 Only)* |
| -- | 149 | Ridden Animal or Animal-Drawn Conveyance |
| -- | 151 | Jackknife *(Non-Harmful)* |
| 158 | 158 | Other Fixed Object |
| 159 | -- | Fixed Object-No Details |
| -- | 160 | Cargo/Equipment Loss or Shift *(Non-Harmfu)* |
| -- | 161 | Equipment Failure *(Blown Tire, Brake Failure, etc.)* |
| -- | 162 | Separation of Units |
| -- | 163 | Ran Off Roadway - Right |
| -- | 164 | Ran Off Roadway - Left |
| -- | 165 | Cross Median |
| -- | 166 | Cross Centerline |
| -- | 167 | Downhill Runaway |
| -- | 168 | Vehicle Went Airborne |
| -- | 169 | Re-Entering Roadway |
| -- | 171 | Bridge Overhead Structure |
| -- | 172 | Bridge Pier or Support |
| -- | 173 | Bridge Rail *(Includes Parapet)* |
| -- | 174 | Guardrail Face |
| -- | 175 | Guardrail End |
| -- | 176 | Cable Barrier |
| -- | 177 | Other Traffic Barrier |
| -- | 178 | Traffic Sign Support |
| -- | 179 | Traffic Signal Support |
| -- | 180 | Utility Pole/Light Support |
| -- | 181 | Other Post, Other Pole or Other Supports |
| -- | 182 | Culvert |
| -- | 183 | Ditch |
| -- | 184 | Snow Bank |
| -- | 185 | Mail Box |

| | | |
|---|---|---|
| -- | 190 | Motor Vehicle In-Transport |
| -- | 191 | Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport |
| -- | 192 | Motor Vehicle in Motion Outside the Trafficway |
| -- | 197 | Not Reported |
| 999 | 999 | Unknown |

## E05 Area of Impact (Other Vehicle)

**Definition:** Indicates the impact point for the other in transport motor vehicle involved in the harmful event.

**Additional Information:**

**SAS Name: OBJGAD**

**Attribute Codes**

| *2000* | *2001-2009* | |
|---|---|---|
| 1 | 1 | Front |
| 2 | 2 | Right Side |
| 3 | 3 | Left Side |
| 4 | 4 | Back |
| 5 | 5 | Top |
| 6 | 6 | Undercarriage |
| 11 | 11 | Front Right Corner |
| 12 | 12 | Front Left Corner |
| 13 | 13 | Back Right Corner |
| 14 | 14 | Back Left Corner |
| -- | 98 | Not a Motor Vehicle in Transport |
| 99 | 99 | Point of Impact Unknown |

***2010-Later***

| | |
|---|---|
| 21-32 | Clock Points |
| 33 | Top |
| 34 | Undercarriage |
| 55 | Non-Harmful Event |
| 61 | Left |
| 62 | Left-Front Half |
| 63 | Left-Back Half |
| 81 | Right |
| 82 | Right-Front Half |
| 83 | Right-Back Half |
| 97 | Not Reported |
| 98 | Not A Motor Vehicle In-Transport |
| 99 | Unknown |

## E06 Vehicle's Action

**Definition:** Describes the action for the event for the vehicle identified by VEHNUM.

**Additional Information:**

**SAS Name:** **E_ACTION**

**Attribute Codes**

| *2002-2009* | *2010-Later* | |
|---|---|---|
| 1 | 1 | Non-Collision |
| 2 | 2 | Collision With Object Not Fixed |
| 3 | 3 | Collision With Fixed Object |
| 4 | -- | Strike Another In-Transport Motor Vehicle |
| 5 | -- | Struck By An In-Transport Motor Vehicle |
| -- | 6 | Non-Harmful Event |
| -- | 7 | Motor Vehicle In-Transport |
| -- | 8 | Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport |
| -- | 9 | Motor Vehicle In Motion Outside the Trafficway |
| -- | 97 | Not Reported |

## The VEVENT Data Set

The Vevent data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, VEHNUM, and EVENTNUM. CASENUM, VEHNUM and EVENTNUM are the case identifiers and may be used to merge with the Vehicle data set. It also contains:

## VE0 Vehicle Number

**Definition:** The vehicle number of the vehicle whose events are being listed.

**Additional Information:**

**SAS Name:** **VEHNO**

**Attribute Codes**

***2010-Later***

1-30 Vehicle Number

## VE2 Vehicle Number (This Vehicle)

**Definition:** Number assigned to an in transport motor vehicle involved in the event. This variable is the same as VEHNO in the Vehicle data set.

**Additional Information:**

**SAS Name:** **VEHNUM**

**Attribute Codes**

***2010-Later***

1-100 Vehicle Number

## VE3 Area of Impact (This Vehicle)

**Definition:** Indicates the impact point that produced property damage or personal injury for this transport motor vehicle involved in the event.

**Additional Information:**

**SAS Name: GAD**

**Attribute Codes**

***2010-Later***

| | |
|---|---|
| 20 | Non-Collision |
| 21-32 | Clock Points |
| 33 | Top |
| 34 | Undercarriage |
| 38 | Set-In-Motion (Not a Clock Point) |
| 61 | Left |
| 62 | Left-Front Half |
| 63 | Left-Back Half |
| 81 | Right |
| 82 | Right-Front Half |
| 83 | Right-Back Half |
| 97 | Not Reported |
| 99 | Unknown |

## VE4 Non-Collision Category or Object Contacted

**Definition:** This element describes the non-harmful event, non-collision category, object contacted or vehicle number of other vehicle.

**Additional Information:**

**SAS Name: OBJCONT**

**Attribute Codes**

***2010-Later***

| | |
|---|---|
| 1-100 | Vehicle Number of Other Vehicle |
| 101 | Rollover/Overturn |
| 102 | Fire/Explosion |
| 103 | Immersion |
| 104 | Gas Inhalation |
| 105 | Jackknife *(Harmful to This Vehicle)* |
| 107 | Pavement Surface Irregularity *(Ruts, Potholes, Grates, etc.)* |
| 108 | Other Noncollision |
| 110 | Cargo/Equipment Loss or Shift *(Harmful to This Vehicle)* |
| 111 | Injured in Vehicle *(Non-Collision)* |
| 112 | Thrown or Falling Object |
| 113 | Fell/Jumped from Vehicle |
| 121 | Pedestrian |
| 122 | Pedalcyclist |
| 123 | Railway Vehicle |
| 124 | Live Animal |
| 127 | Non-Motorist on Personal Conveyance |
| 128 | Other Object *(Not Fixed)* |
| 129 | Parked Motor Vehicle |
| 130 | Working Motor Vehicle |
| 131 | Ground |
| 132 | Building |
| 133 | Impact Attenuator/Crash Cushion |
| 136 | Concrete Traffic Barrier |
| 139 | Curb |
| 140 | Embankment |
| 141 | Fence |
| 142 | Wall |
| 143 | Fire Hydrant |
| 144 | Shrubbery |
| 145 | Tree *(Standing Only)* |
| 146 | Boulder |
| 149 | Ridden Animal or Animal-Drawn Conveyance |

## VE4 Non-Collision Category or Object Contacted *(continued)*

### Attribute Codes

***2010-Later***

| | |
|---|---|
| 158 | Other Fixed Object |
| 171 | Bridge Overhead Structure |
| 172 | Bridge Pier or Support |
| 173 | Bridge Rail *(Includes Parapet)* |
| 174 | Guardrail Face |
| 175 | Guardrail End |
| 176 | Cable Barrier |
| 177 | Other Traffic Barrier |
| 178 | Traffic Sign Support |
| 179 | Traffic Signal Support |
| 180 | Utility Pole/Light Support |
| 181 | Other Post, Other Pole or Other Supports |
| 182 | Culvert |
| 183 | Ditch |
| 184 | Snow Bank |
| 185 | Mail Box |
| 190 | Motor Vehicle In-Transport |
| 191 | Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport |
| 192 | Motor Vehicle in Motion Outside the Trafficway |
| 197 | Not Reported |
| 999 | Unknown |

## VE5 Area of Impact (Other Vehicle)

**Definition:** Indicates the impact point for the other in transport motor vehicle involved in the harmful event.

**Additional Information:**

**SAS Name: OBJGAD**

**Attribute Codes**

***2010-Later***

| | |
|---|---|
| 21-32 | Clock Points |
| 33 | Top |
| 34 | Undercarriage |
| 55 | Non-Harmful Event |
| 61 | Left |
| 62 | Left-Front Half |
| 63 | Left-Back Half |
| 81 | Right |
| 82 | Right-Front Half |
| 83 | Right-Back Half |
| 97 | Not Reported |
| 98 | Not A Motor Vehicle In-Transport |
| 99 | Unknown |

## VE6 Vehicle's Action

**Definition:** Describes the action for the event for the vehicle identified by VEHNUM.

**Additional Information:**

**SAS Name:** **E_ACTION**

**Attribute Codes**

***2010-Later***

1 Non-Collision
2 Collision With Object Not Fixed
3 Collision With Fixed Object
6 Non-Harmful Event
7 Motor Vehicle In-Transport
8 Motor Vehicle In-Transport Strikes or is Struck by Cargo, Persons or Objects Set-in-Motion from/by Another Motor Vehicle In-Transport
9 Motor Vehicle In Motion Outside the Trafficway
97 Not Reported

## VE7 Vehicle Number (Parked/Working Vehicle)

**Definition:**

**Additional Information:**

**SAS Name:** **PVEHNUM**

**Attribute Codes**

***2010-Later***

| | |
|---|---|
| 1-30 | Parked/Working Vehicle Number |
| 96 | Not a Parked/Working Vehicle |

## VE8 Area of Impact (Parked/Working Vehicle)

**Definition:**

**Additional Information:**

**SAS Name:** **PGAD**

**Attribute Codes**

***2010-Later***

| | |
|---|---|
| 20 | Non-Collision |
| 21-32 | Clock Points |
| 33 | Top |
| 34 | Undercarriage |
| 61 | Left |
| 62 | Left-Front Half |
| 63 | Left-Back Half |
| 81 | Right |
| 82 | Right-Front Half |
| 83 | Right-Back Half |
| 96 | Not a Parked/Working Vehicle |
| 97 | Not Reported |
| 99 | Unknown |

## The FACTOR Data Set

The Factor data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM, VEHNO and MFACTOR are the case identifiers. CASENUM and VEHNO should be used to merge the Factor data set with the Vehicle data set. MFACTOR identifies each vehicle factor (as a separate record) and is described below:

## M_V12 Vehicle Contributing Factors

**Definition:** This element describes the possible pre-existing motor vehicle defects or maintenance conditions that may have contributed to the crash.

**Additional Information:** This variable has been coded at the Vehicle level, and included in Vehicle/Driver data set (SAS variable FACTOR), since 1995. Starting in 2002 multiple factors for each vehicle are available in the Factor data set. It is important to determine the significance of pre-existing problems, including equipment and operation, in motor vehicles involved in a crash.

**SAS Name: MFACTOR**

**Attribute Codes**

| ***2002-2009*** | ***2010-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 | -- | Driver Seating and Control |
| -- | 13 | Windows/Windshield |
| 14 | 14 | Body, Doors |
| 15 | -- | Trailer Hitch |
| -- | 15 | Truck Coupling/Trailer Hitch/Safety Chains |
| -- | 16 | Safety Systems |
| 50 | -- | Hit-and-Run Vehicle |
| 97 | 17 | Vehicle Contributing Factors-No Details |
| -- | 97 | Other |
| 98 | -- | Other Vehicle Contributing Factors |
| -- | 98 | Not Reported |
| 99 | -- | Unknown if Vehicle Has Contributing Factors |
| -- | 99 | Unknown |

## The VIOLATN Data Set

The Violatn data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM, VEHNO and MVIOLATN are the case identifiers. CASENUM and VEHNO should be used to merge the Violatn data set with the Vehicle data set. MVIOLATN identifies each violation (as a separate record) and is described below:

## M_D02 Violations Charged

**Definition:** Indicates which violations are charged to drivers.

**Additional Information:** This variable has been coded at the Driver level and included in Vehicle/Driver data set (SAS variable VIOLATN) since 1988. Starting in 2002 all violations charged to a driver are available in the Violatn data set.

**SAS Name: MVIOLATN**

**Attribute Codes**

***2002-2008***

0 None
1 Alcohol
2 Drugs
3 Speeding
4 Reckless Driving
5 Driving With a Suspended or Revoked License
6 Failure to Yield Right-of-Way
7 Running a Traffic Signal or Stop Sign
50 Hit & Run *(And No Information)*
95 No Driver Present
96 Not Reported
97 Violation Charged-No Details
98 Other Violation
99 Unknown if Charged

***2009-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

*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

## M_D02 Violations Charged *(continued)*

*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

*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*

41 Turn in Violation of Traffic Control
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

## M_D02 Violations Charged *(continued)*

*NON-MOVING – LICENSE AND REGISTRATION VIOLATIONS*

71 Driving While License Withdrawn *(Including Violation of Provisions of Work Permit)*
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

*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 *(Added in 2010)*
98 Other Moving Violation *(Coasting, Backing, Opening Door)*
99 Unknown Violation

## The VISION Data Set

The Vision data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM, VEHNO and MVISOBSC are the case identifiers. CASENUM and VEHNO should be used to merge the Vision data set with the Vehicle data set. MVISOBSC identifies each visual obstruction (as a separate record) and is described below:

## M_D04 Driver's Vision Obscured By

**Definition:** Identifies visual circumstances that may have contributed to the cause of the crash.

**Additional Information:** In 2004 the codes 93-Not on PAR and 94-Not Coded replaced 96-Not Reported. Not on PAR is coded if no block exists on the PAR for reporting obscured driver vision and no other information is available. Not Coded is used if there is a specific location on the police report for obscured driver vision but the investigating officer fails to make an assessment, and there is no other information available.

This variable has been coded at the Driver level and included in Vehicle/Driver data set (SAS variable VIS_OBSC) since 1988. Starting in 2002 all visual obstructions for a driver are available in the Vision data set.

**SAS Name: MVISOBSC**

**Attribute Codes**

| *2002-2003* | *2004-2008* | *2009-Later* | |
|---|---|---|---|
| 0 | 0 | 0 | No Obstruction |
| -- | -- | 1 | Rain, Snow, Fog, Smoke, Sand, Dust |
| 1 | 1 | -- | Rain, Snow, Smoke, Sand, Dust |
| 2 | 2 | 2 | Reflected Glare, Bright Sunlight, Headlights |
| 3 | 3 | -- | Curve or Hill |
| -- | -- | 3 | Curve, Hill, or Other Roadway Design Feature |
| 4 | 4 | -- | Building, Billboard, or Other Design Features *(Includes Signs, Embankment)* |
| -- | -- | 4 | Building, Billboard, or Other Structure |
| 5 | 5 | 5 | Trees, Crops, Vegetation |
| 6 | 6 | 6 | In-Transport Motor Vehicle *(Including Load)* |
| 7 | 7 | -- | Parked Vehicle |
| -- | -- | 7 | Not-in-Transport Motor Vehicle *(Parked, Working)* |
| 8 | 8 | 8 | Splash or Spray of Passing Vehicle |
| 9 | 9 | 9 | Inadequate Defrost or Defog System |
| 10 | 10 | 10 | Inadequate Vehicle Lighting System |
| 11 | 11 | 11 | Obstruction Interior to Vehicle |
| 12 | 12 | 12 | External Mirrors |
| 13 | 13 | -- | Head Restraints |
| 14 | 14 | 13 | Broken or Improperly Cleaned Windshield |
| -- | -- | 14 | Obstructing Angles on Vehicle |
| 15 | 15 | -- | Fog |
| 50 | 50 | -- | Hit & Run Vehicle *(And No Information)* |
| -- | 93 | -- | Not on PAR |
| -- | 94 | -- | Not Coded |
| 95 | 95 | -- | No Driver Present |
| -- | -- | 95 | No Driver Present / Unknown if Driver Present |
| 96 | -- | -- | Not Reported |
| 97 | 97 | 97 | Vision Obscured-No Details |
| 98 | 98 | 98 | Other Visual Obstruction |
| 99 | 99 | 99 | Unknown Whether Vision was Obstructed |

## The MANEUVER Data Set

The Maneuver data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM, VEHNO and MDRMANAV are the case identifiers. CASENUM and VEHNO should be used to merge the Maneuver data set with the Vehicle data set. MDRMANAV identifies each avoidance attempt (as a separate record) and is described below:

## M_D06 Driver Maneuvered to Avoid

**Definition:** Identifies an action taken by the driver to avoid something or someone in the road. The maneuver may have subsequently contributed to the cause of the crash.

**Additional Information:** This variable has been coded at the Driver level and included in Vehicle/Driver data set (SAS variable DRMAN_AV) since 1990. Starting in 2002 multiple maneuvers made by each driver are available in the Maneuver data set.

**SAS Name: MDRMANAV**

**Attribute Codes**

| *2002-2003* | *2004-2009* | *2010-Later* | |
|---|---|---|---|
| 0 | 0 | 0 | Driver Did Not Maneuver To Avoid |
| 1 | 1 | 1 | Object In Road |
| 2 | 2 | 2 | Poor Road Conditions *(Puddle, Ice, Pot Hole, etc.)* |
| 3 | 3 | -- | Animal In Road |
| -- | -- | 3 | Live Animal |
| 4 | 4 | -- | Vehicle In Road |
| -- | -- | 4 | Motor Vehicle |
| 5 | 5 | 5 | Pedestrian, Pedalcyclist, or Other Non-Motorist in the Road |
| 50 | 50 | -- | Hit & Run *(And No Information)* |
| -- | 92 | 92 | Phantom /Non-Contact Motor Vehicle |
| 93 | 93 | -- | Not on PAR |
| 94 | 94 | -- | Not Coded |
| 95 | 95 | 95 | No Driver Present |
| 97 | 97 | -- | Avoidance Maneuver-No details |
| -- | -- | 98 | Not Reported |
| 99 | 99 | 99 | Unknown If Driver Maneuvered To Avoid |

## The DISTRACT Data Set

The Distract data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM, VEHNO and MDRDSTRD are the case identifiers. CASENUM and VEHNO should be used to merge the Distract data set with the Vehicle data set. MDRDSTRD identifies each distraction (as a separate record) and is described below:

## M_D07 Driver Distracted By

**Definition:** Identifies all distractions which may have influenced driver performance and contributed to the cause of the crash. The distraction can be either inside the vehicle (internal) or outside the vehicle (external).

**Additional Information:** This variable has been coded at the Driver level and included in Vehicle/Driver data set (SAS variable DR_DSTRD) since 1990. Starting in 2002 multiple distractions for each driver are available in the Distract data set.

**SAS Name: MDRDSTRD**

**Attribute Codes**

| *2002-2003* | *2004-2006* | *2007-2009* | *2010-Later* | |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | Not Distracted |
| 1 | 1 | 1 | 1 | Looked But Did Not See |
| 3 | 3 | 3 | 3 | By Other Occupants |
| 4 | 4 | 4 | 4 | By Moving Object In Vehicle |
| 5 | 5 | 5 | 5 | While Talking Or Listening To Cellular Phone |
| 6 | 6 | 6 | 6 | While Dialing Cellular Phone |
| 7 | 7 | 7 | -- | While Adjusting Climate Control |
| -- | -- | -- | 7 | While Adjusting Audio And/or Climate Controls |
| 8 | 8 | 8 | -- | While Adjusting Radio, Cassette Or CD |
| 9 | 9 | 9 | 9 | While Using Other Devices Integral To Vehicle |
| 10 | 10 | 10 | -- | While Using Or Reaching For Other Devices |
| -- | -- | -- | 10 | While Using Or Reaching For Device/Object Brought into Vehicle |
| 11 | 11 | 11 | -- | Sleepy Or Fell Asleep |
| 12 | 12 | 12 | -- | Distracted By Outside Person Or Object |
| -- | -- | -- | 12 | Distracted By Outside Person, Object Or Event |
| 13 | 13 | 13 | 13 | Eating Or Drinking |
| 14 | 14 | 14 | 14 | Smoking Related |
| -- | -- | 15 | 15 | Other Cellular Phone Related |
| -- | -- | 50 | -- | Hit & Run *(And No Information)* |
| -- | 92 | 92 | 92 | Distraction Or Inattention, Details Unknown |
| 93 | 93 | 93 | -- | Not On PAR |
| 94 | 94 | 94 | -- | Not Coded |
| 95 | 95 | 95 | 95 | No Driver Present |
| -- | -- | -- | 96 | Not Reported |
| 97 | 97 | 97 | 97 | Inattentive Or Lost In Thought |
| 98 | -- | -- | -- | Other Distraction Or Inattention |
| -- | 98 | 98 | 98 | Other Distraction |
| 99 | 99 | 99 | 99 | Unknown If Distracted |

## The IMPAIR Data Set

The Impair data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, VEHNO, PERNO, and MIMPAIR. CASENUM, VEHNO, PERNO and MIMPAIR are the case identifiers. CASENUM, VEHNO, and PERNO should be used to merge the Impair data set with the Person data set. MIMPAIR identifies each impairment (as a separate record) and is described below:

## M_P18 Condition at Time of Crash

**Definition:** Identifies all physical impairments for all drivers and non-motorists which may have contributed to the cause of the crash.

**Additional Information:** This variable has been coded at the person level and included in the Person data set (SAS variable IMPAIRMT) since 1990. Starting in 2002 all impairments for a driver or non-motorist are available in the Impair data set.

**SAS Name: MIMPAIR**

**Attribute Codes**

| *2002-2006* | *2007-2009* | *2010-Later* | |
|---|---|---|---|
| 0 | 0 | -- | None |
| -- | -- | 0 | None/Apparently Normal |
| 1 | 1 | 1 | Ill, Blackout |
| 2 | 2 | -- | Drowsy, Sleepy, Fell Asleep, Fatigued |
| -- | -- | 2 | Asleep or Fatigued |
| 3 | 3 | 3 | Walking with a Cane or Crutches |
| 4 | 4 | 4 | Paraplegic or Restricted to Wheelchair |
| 5 | 5 | 5 | Impaired Due to Previous Injury |
| 6 | 6 | 6 | Deaf |
| 7 | 7 | 7 | Blind |
| -- | -- | 8 | Emotional *(Depressed, Angry, Disturbed, etc.)* |
| -- | -- | 9 | Under the Influence of Alcohol, Drugs or Medication |
| -- | -- | 10 | Physical Impairment – No Details |
| -- | 50 | -- | Hit & Run *(And No Information)* |
| -- | 93 | -- | Not on PAR |
| -- | 94 | -- | Not Coded |
| 97 | 97 | -- | Physical Impairment-No Details |
| 98 | 98 | 96 | Other Physical Impairment |
| -- | -- | 98 | Not Reported |
| 99 | 99 | 99 | Unknown if Physically Impaired |

## The NMACTION Data Set

The Nmaction data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, PERNO, and MACTION. CASENUM, PERNO and MACTION are the case identifiers. CASENUM and PERNO should be used to merge the Impair data set with non-motorists from the Person data set.

This data set was discontinued in 2010 and replaced with two data sets: Nmprior and Nmcrash.

## M_P19 Non-Motorist Action (discontinued)

**Definition:** Identifies non-motorist actions that may have contributed to the cause of the crash.

**Additional Information:** For 2002-2008 it is coded for Person Type (P03) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Pedalcyclist), 7 (Other Cyclist), or 8 (Other or Unknown). From 2009 on it is coded for Person Type (P03)= 4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Bicyclist), 7 (Other Cyclist), 8 (Persons on Personal Conveyances), or 19 (Unknown Type of Non-Motorist).

This variable has been coded at the person level and included in Person data set (SAS variable ACTION) since 1990. Starting in 2002 all actions for a non-motorist are available in the Nmaction data set.

This variable was replaced in 2010 with *P25 Non-Motorist Action/Circumstances Prior to Crash* and *P26 Non-Motorist Action/Circumstances at Time of Crash*.

**SAS Name: MACTION**

**Attribute Codes**

***2002-2009***

0 No Action

*NON-MOTORIST VEHICLE OPERATOR:*

1 Failing to Have Lights on When Required
2 Operating without Required Equipment
3 Improper or Erratic Lane Changing
4 Failure to Keep in Proper Lane or Running Off Road
5 Making Improper Entry to or Exit from Trafficway
6 Operating the Vehicle in Erratic, Reckless, Negligent Manner
7 Failure to Yield Right of Way
8 Failure to Obey Traffic Signs/Control Devices/Officers, Failure to Observe Safety Zone
9 Making Other Improper Turn
10 Driving on Wrong Side of Road

*OTHER NON-MOTORIST:*

21 Darting or Running into Road
22 Improper Crossing of Roadway or Intersection *(Jaywalking)*
24 Inattentive *(Talking, Eating, etc.)*
25 Jogging
26 Non-Motorist Pushing Vehicle
27 Walking with Traffic
28 Walking Against Traffic
29 Playing, Working, Sitting, Lying, Standing, Etc. In Roadway
98 Other Action
99 Unknown Action

## The NMCRASH Data Set

The Nmcrash data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, PERNO, and MTM_CRSH. CASENUM, PERNO and MTM_CRSH are the case identifiers. CASENUM and PERNO should be used to merge the Nmcrash data set with non-motorists from the Person data set. MTM_CRSH identifies each action (as a separate record) and is described below:

## P26 Non-Motorist Action/Circumstances at Time of Crash

**Definition:** This element describes the action(s) and/or circumstances of the non-motorist that law enforcement indicated may have contributed to the crash.

**Additional Information:** It selects all that apply. This element is based on the judgment of the law enforcement officer investigating the crash.

**SAS Name: MTM_CRSH**

**Attribute Codes**

***2010-Later***

0 No Improper Action
1 Dart/Dash
2 Failure to Yield Right-Of-Way
3 Failure to Obey Traffic Signs, Signals or Officer
4 In Roadway Improperly *(Standing, Lying, Working, Playing)*
5 Entering/Exiting Vehicle
6 Inattentive *(Talking, Eating, etc.)*
7 Improper Turn/Merge
8 Improper Passing
9 Wrong-Way Riding or Walking
10 Driving on Wrong Side of Road
12 Improper Crossing of Roadway or Intersection *(Jaywalking)*
13 Failing to Have Lights on When Required
14 Operating Without Required Equipment
15 Improper or Erratic Lane Changing
16 Failure to Keep in Proper Lane or Running Off Road
17 Making Improper Entry to or Exit from Trafficway
18 Operating the Vehicle in Other Erratic, Reckless, Careless or Negligent Manner
19 Not Visible *(Dark Clothing, No Lighting, etc.)*
20 Passing with Insufficient Distance or Inadequate Visibility or Failing to Yield to Overtaking Vehicle
21 Other
98 Not Reported
99 Unknown

## The NMPRIOR Data Set

The Nmprior data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, PERNO, and MPR_ACT. CASENUM, PERNO and MPR_ACT are the case identifiers. CASENUM and PERNO should be used to merge the NMPrior data set with non-motorists from the Person data set. MPR_ACT identifies each action (as a separate record) and is described below:

## P25 Non-Motorist Action/Circumstances Prior to Crash

**Definition:** This element describes the action(s) of the non-motorist immediately prior to their involvement in the crash.

**Additional Information:** It selects all that apply. 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**

**Attribute Codes**

***2010-Later***

1 Going to or from School *(K-12)*
2 Waiting to Cross Roadway
3 Crossing Roadway
4 Jogging/Running
5 Movement Along Roadway with Traffic *(In or Adjacent to Travel Lane)*
6 Movement Along Roadway Against Traffic *(In or Adjacent to Travel Lane)*
7 Movement on Sidewalk
8 In Roadway-Other *(Working, Playing, etc.)*
9 Adjacent to Roadway *(e.g., Shoulder, Median)*
10 Working in Trafficway *(Incident Response)*
11 Entering/Exiting a Vehicle
12 Disabled Vehicle Related *(Working on, Pushing, Leaving/Approaching)*
15 None
98 Not Reported
99 Unknown

## The SAFETYEQ Data Set

The Safetyeq data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, PERNO, and MSAFEQMT. CASENUM, PERNO and MSAFEQMT are the case identifiers. CASENUM and PERNO should be used to merge the Safetyeq data set with non-motorists from the Person data set. MSAFEQMT identifies each item of safety equipment (as a separate record) and is described below:

## M_P20 Non-Motorist Safety Equipment Use

**Definition:** Identifies safety equipment worn or carried by the non-motorist.

**Additional Information:** For 2002-2008 it is coded for Person Type (P03) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Pedalcyclist), 7 (Other Cyclist), or 8 (Other or Unknown). From 2009 on it is coded for Person Type (P03)= 4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Bicyclist), 7 (Other Cyclist), 8 (Persons on Personal Conveyances), or 19 (Unknown Type of Non-Motorist).

This variable has been coded at the person level and included in Person data set (SAS variable SAF_EQMT) since 1990. Starting in 2002 all items for a non-motorist are available in the Safetyeq data set. There can be one or more safety equipment responses for each nonmotorist.

**SAS Name: MSAFEQMT**

**Attribute Codes**

| ***2002-2009*** | ***2010-Later*** | |
|---|---|---|
| 0 | -- | Not Applicable |
| 1 | 1 | None Used |
| 2 | -- | Bicycle Helmet |
| -- | 2 | Helmet |
| 3 | -- | Reflective Equipment |
| -- | 3 | Reflective Equipment/Clothing *(Jacket, Backpack, etc.)* |
| 4 | -- | Bicycle Helmet and Reflective Equipment |
| -- | 4 | Protective Pads Used *(Elbows, Knees, Shins, etc.)* |
| -- | 5 | Lighting |
| 8 | 7 | Other Safety Equipment |
| -- | 8 | Not Reported |
| 9 | 9 | Unknown if Used |

## The TRAFCON Data Set

The Trafcon data set includes the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM, VEHNO and MTRAFCON are the case identifiers. CASENUM and VEHNO should be used to merge the Trafcon data set with the Vehicle data set. MTRAFCON identifies each traffic control device for motor vehicles (as a separate record).

This data set was discontinued in 2010.

## M_A16 Traffic Control Device – Vehicles

**Definition:** Indicates whether or not traffic control devices were present for a motor vehicle and the type of traffic control device.

**Additional Information:** This variable has been coded at the Accident level and included in Accident data set (SAS variable TRAF_CON) since 1988. Starting in 2002 each traffic control device for a vehicle is in the Trafcon data set and each traffic control device for a cyclist is in the Biketraf data set. Also starting in 2002 a single, selected, traffic control device for a vehicle is available on the Vehicle data set (SAS variable VTRAFCON).

This data set was discontinued in 2010. The variable is still coded on the Vehicle level, and the information is available in the Accident, Vehicle, and Biketraf SAS data sets.

**SAS Name: MTRAFCON**

**Attribute Codes**

***2002-2009***

0 No Controls

**NOT AT RAILROAD GRADE CROSSING**

*TRAFFICWAY TRAFFIC SIGNALS:*

1 Traffic Control Signal *(On Colors)*
4 Flashing Traffic Control Signal or Flashing Beacon
8 Other Traffic Signal
9 Unknown Traffic Signal

*REGULATORY, SCHOOL ZONE SIGNS:*

21 Stop Sign
22 Yield Sign
23 School Zone Related Sign
28 Other Sign
29 Unknown Sign

*WARNING SIGNS:*

40 Advisory Speed Sign
41 Warning Sign For Road Conditions *(Hill, Steep Grade, etc.)*
42 Warning Sign For Road Construction
43 Warning Sign For Environment/Traffic *(Fog Ahead, Wind, Crash Ahead, etc.)*
49 Unknown Type Warning

*MISCELLANEOUS, NOT AT RAILROAD CROSSING:*

51 Officer, Crossing Guard, Flagman, etc

**AT RAILROAD GRADE CROSSING:**

61 Active Devices *(e.g., Gates, Flashing Lights, Traffic Signal)*
62 Passive Devices *(e.g., Stop Sign, Cross Bucks)*

**OTHER:**

97 Traffic Control Present-No Details
98 Other Traffic Control *(Whether Or Not At RR Grade Crossing)*
99 Unknown

## The BIKETRAF Data Set

The Biketraf data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and PERNO. CASENUM, PERNO and BTRAFCON are the case identifiers. CASENUM and PERNO should be used to merge the Biketraf data set with cyclists in the Person data set (PER_TYPE=6). BTRAFCON identifies each traffic control device for cyclists (as a separate record) and is described below:

## MB_A16 Traffic Control Device – Cyclist

**Definition:** Indicates whether or not traffic control devices were present for a cyclist and the types of traffic control device.

**Additional Information:** This variable has been coded at the Accident level and included in the Accident data set (SAS variable TRAF_CON) since 1988. Starting in 2002 each traffic control device for a vehicle is in the Trafcon data set and each traffic control device for a cyclist is in the Biketraf data set. Also starting in 2002 a single, selected, traffic control device for a vehicle is available on the Vehicle data set (SAS variable VTRAFCON).

**SAS Name: BTRAFCON**

**Attribute Codes**

| ***2002-2009*** | ***2010-Later*** | |
|---|---|---|
| 0 | 0 | No Controls |
| **NOT AT RAILROAD GRADE CROSSING** | | |
| *TRAFFICWAY TRAFFIC SIGNALS:* | | |
| 1 | -- | Traffic Control Signal *(On Colors)* |
| -- | 1 | Traffic Control Signal *(On Colors)* Without Pedestrian Signal |
| -- | 2 | Traffic Control *(On Colors)* With Pedestrian Signal |
| -- | 3 | Traffic Control Signal *(On Colors)* Not Known if Pedestrian Signal |
| 4 | -- | Flashing Traffic Control Signal or Flashing Beacon |
| -- | 4 | Flashing Traffic Control Signal |
| 8 | 8 | Other Highway Traffic Signal |
| 9 | 9 | Unknown Highway Traffic Signal |
| *REGULATORY, SCHOOL ZONE SIGNS:* | | |
| 21 | 21 | Stop Sign |
| 22 | 22 | Yield Sign |
| 23 | 23 | School Zone Sign/Device |
| 28 | 28 | Other Regulatory Sign |
| 29 | 29 | Unknown Regulatory Sign |
| -- | 5 | Land Use Control Signal |
| *WARNING SIGNS:* | | |
| 40 | -- | Advisory Speed Sign |
| 41 | -- | Warning Sign For Road Conditions *(Hill, Steep Grade, etc.)* |
| 42 | -- | Warning Sign For Road Construction |
| 43 | -- | Warning Sign For Environment/Traffic *(Fog Ahead, Wind, Crash Ahead, etc.)* |
| -- | 44 | Warning Sign |
| 49 | -- | Unknown Type Warning |
| *MISCELLANEOUS, NOT AT RAILROAD CROSSING:* | | |
| 51 | -- | Officer, Crossing Guard, Flagman, etc |
| -- | 51 | Person |

## MB_A16 Traffic Control Device - Cyclist *(continued)*

**AT RAILROAD GRADE CROSSING:**

| | | |
|---|---|---|
| 61 | -- | Active Devices *(e.g., Gates, Flashing Lights, Traffic Signal)* |
| 62 | -- | Passive Devices *(e.g., Stop Sign, Cross Bucks)* |
| -- | 63 | Railway Crossing Device |

**OTHER:**

| | | |
|---|---|---|
| 97 | -- | Traffic Control Present-No Details |
| -- | 97 | Not Reported |
| 98 | -- | Other Traffic Control *(Whether or Not At RR Grade Crossing)* |
| -- | 98 | Other |
| 99 | 99 | Unknown |

## The PARKED Data Set

The Parked data set includes Vehicle variables applicable to parked vehicles. The data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, and PJ. CASENUM and VEHNO are the case identifiers. It also contains:

## PV01 Parked/Working Vehicle Number

**Definition:** An identification number assigned to the parked/working vehicle. A parked vehicle is a motor vehicle which is stopped off the roadway, i.e., parked off the roadway.

**Additional Information:** From 2005 to 2008 working vehicles were defined as transport devices being used as equipment which would be classified under ANSI D16.1-1996 as motor vehicles, if not being used as equipment. In 2009 the definition changed to include only vehicles involved in trafficway maintenance, construction, or utility activities. Also, vehicles performing private maintenance, construction, or utility activities were excluded. Data users are strongly advised to consult the annual NASS GES Coding and Editing Manuals for a detailed discussion. There is one record per parked/working vehicle.

**SAS Name: PVEHNO**

**Attribute Codes**

***2005-Later***

1-30 Parked/Working Vehicle Number

## PV02 Parked/Working Vehicle Type

**Definition:** Indicates the type of parked/working vehicle. A parked vehicle is a motor vehicle which is stopped off the roadway, i.e., parked off the roadway.

**Additional Information:** From 2005 to 2008 working vehicles were defined as transport devices being used as equipment which would be classified under ANSI D16.1-1996 as motor vehicles, if not being used as equipment. In 2009 the definition changed to include only vehicles involved in trafficway maintenance, construction, or utility activities. Also, vehicles performing private maintenance, construction, or utility activities were excluded. For example, a tow truck using its winch for a stalled vehicle would be considered a working vehicle prior to 2009, but not after. Data users are strongly advised to consult the annual NASS GES Coding and Editing Manuals for a detailed discussion.

**SAS Name: PTYPE**

**Attribute Codes**

***2005-Later***

1 Parked Vehicle
2 Working Vehicle

## PV03 Parked/Working Vehicle Make

**Definition:** A numerical code indicating the make of the parked/working vehicle.

**Additional Information:**

**SAS Name: PMAKE**

**Attribute Codes**

***2005-Later***

See *Appendix A: Make/Model Designation* for make and model codes.

## PV04 Parked/Working Vehicle Model

**Definition:** A numerical code indicating the model of the parked/working vehicle.

**Additional Information:**

**SAS Name:** **PMODEL**

**Attribute Codes**

***2005-Later***

See *Appendix A: Make/Model Designation* for make and model codes.

## PV05 Parked/Working Vehicle Body Type

**Definition:** The body type of the make of the parked/working vehicle.

**Additional Information:**

**SAS Name: PBODYTYP**

**Attribute Codes**

| ***2005-2009*** | ***2010-Later*** | |
|---|---|---|
| *AUTOMOBILES* | | |
| 1 | 1 | Convertible *(Excludes Sun-Roof, T-Bar)* |
| 2 | 2 | 2-Door Sedan, Hardtop, Coupe |
| 3 | 3 | 3-Door/2-Door Hatchback |
| 4 | 4 | 4-Door Sedan, Hardtop |
| 5 | 5 | 5-Door/4-Door Hatchback |
| 6 | 6 | Station Wagon *(Excluding Van And Truck Based)* |
| 7 | 7 | Hatchback, Number Of Doors Unknown |
| 17 | 17 | 3-Door Coupe |
| 8 | -- | Other Automobile Type |
| -- | 8 | Sedan/Hardtop, Number of Doors Unknown |
| 9 | -- | Unknown Automobile Type |
| -- | 9 | Other or Unknown Automobile Type |
| *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)* |
| 12 | 12 | Large Limousine *(More Than Four Side Doors Or Stretched Chassis)* |
| 13 | 13 | Three Wheel Automobile Or Automobile Derivative |
| *UTILITY VEHICLES* | | |
| 14 | 14 | Compact Utility *(ANSI D-16 Utility Vehicle Categories "Small" and "Midsize")* |
| 15 | 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 (< 4,536 KG GVWR)* | | |
| 20 | 20 | Minivan |
| 21 | 21 | Large Van – Includes Van-Based Buses |
| 22 | 22 | Step Van Or Walk-In Van *(≤ 4,536 Kg GVWR)* |
| 23 | -- | Van-Based Motor-Home |
| 24 | -- | Van-Based School Bus |
| 25 | -- | Van-Based Other Bus |
| 28 | 28 | Other Van Type |
| 29 | 29 | Unknown Van Type |

## PV05 Parked/Working Vehicle Body Type *(continued)*

### Attribute Codes

| *2005-2009* | *2010-Later* | |
|---|---|---|
| *LIGHT CONVENTIONAL TRUCKS (PICKUP STYLE CAB, ≤4,536 KG GVWR)* | | |
| 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)* |
| 31 | 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 |
| 33 | 33 | Convertible Pickup |
| 39 | 39 | Unknown *(Pickup Style)* Light Conventional Truck |
| *OTHER LIGHT TRUCKS (≤4,536 KG GVWR)* | | |
| 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 | -- | Unknown Other Light Truck Type *(Utility, Van, Pickup, Or Other Light Truck)* |
| -- | 48 | Unknown Light Truck Type *(Not A Pickup)* |
| 49 | 49 | Unknown Light Vehicle Type *(Automobile, Utility, Van, Or Light Truck)* |
| *BUSES (EXCLUDES VAN BASED)* | | |
| 50 | 50 | School Bus *(Designed To Carry Students, Not Cross Country Or Transit)* |
| -- | 51 | Cross Country/Intercity Bus *(Motor Coach)* |
| -- | 52 | Transit Bus *(City Bus)* |
| 58 | 58 | Other Bus Type *(e.g., Transit, Intercity, Bus Based Motor Home)* |
| 59 | 59 | Unknown Bus Type |
| *MEDIUM/HEAVY TRUCKS (>4,536 KG GVWR)* | | |
| 60 | 60 | Step Van |
| -- | 61 | Single-Unit Straight Truck *(10,000 lbs<GVWR< or =19,500 lbs)* |
| -- | 62 | Single-Unit Straight Truck *(19,500 lbs<GVWR< or =26,000 lbs)* |
| -- | 63 | Single-Unit Straight Truck *(GVWR>26,000 lbs)* |
| 64 | -- | Single Unit Straight Truck |
| 66 | 66 | Truck-Tractor *(Cab Only, Or With Any Number Of Trailing Units; Any Weight)* |
| -- | 67 | Medium/Heavy Pickup *(GVWR > 10,000 lbs, Since 2001)* |
| -- | 68 | Single-Unit Straight Truck *(GVWR unknown)* |
| -- | 71 | Unknown if Single-Unit or Combination-Unit Medium Truck *(10,000 lbs < GVWR < 26,000 lbs)* |
| -- | 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)* |

## PV05 Parked/Working Vehicle Body Type *(continued)*

**Attribute Codes**

| ***2005-2009*** | ***2010-Later*** | |
|---|---|---|
| *MOTOR HOMES* | | |
| 42 | 42 | Light Truck Based Motor Home *(Chassis Mounted)* |
| 65 | 65 | Medium/Heavy Truck-Based Motor Home |
| -- | 73 | Camper or Motor Home, Unknown Truck Type |
| *MOTORED CYCLES, MOPEDS, ALL-TERRAIN VEHICLES* | | |
| 80 | 80 | Motorcycle |
| 81 | 81 | Moped *(Motorized Bicycle)* |
| 82 | 82 | Three Wheeled Motorcycle Or Moped |
| -- | 83 | Off-Road Motorcycle *(2-Wheel)* |
| 88 | 88 | Other Motored Cycle Type *(Minibike, Motor Scooter, Pocket Motorcycles, Pocket Bikes)* |
| 89 | 89 | Unknown Motored Cycle Type |
| 90 | 90 | ATV *(All-Terrain Vehicle; Includes 3 or 4 Wheels)* |
| *OTHER VEHICLES* | | |
| 91 | 91 | Snowmobile |
| 92 | 92 | Farm Equipment Other Than Trucks |
| 93 | 93 | Construction Equipment Other Than Trucks *(Includes Graders)* |
| 97 | 97 | Other Vehicle Type *(Includes Go-Cart, Fork-Lift, City Street Sweeper, Dune/Swamp Buggy, Golf Cart)* |
| -- | 98 | Not Reported |
| 99 | 99 | Unknown Body Type |

## PV06 Parked/Working Vehicle Model Year

**Definition:** The model year of the parked/working vehicle.

**Additional Information:**

**SAS Name: PMODELYR**

**Attribute Codes**

| ***2005-2009*** | ***2010-Later*** | |
|---|---|---|
| xxxx | xxxx | 4-Digit Model Year |
| -- | 7777 | Not Reported |
| 9999 | 9999 | Unknown |

## PV07 Parked/Working Vehicle Identification Number

**Definition:** The vehicle identification number 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:** If a character of the VIN is missing or undecipherable, that character is blank. From 1988-2008 the first 11 characters of the VIN are coded; from 2009 onward the first 12 are coded.

**SAS Name: PVIN**

**Attribute Codes**

***1988-2008*** *(character data type, length 11)*
***2009-Later*** *(character data type, length 12)*

| ***1988-2008*** | ***2009*** | ***2010-Later*** | |
|---|---|---|---|
| 00000000000 | 000000000000 | 000000000000 | No VIN |
| xxxxxxxxxxx | xxxxxxxxxxxxx | xxxxxxxxxxxxx | Actual VIN |
| -- | -- | 888888888888 | Not Reported |
| 99999999999 | 999999999999 | 999999999999 | Unknown VIN |

## PV08 Parked/Working Vehicle Special Use

**Definition:** Indicates whether the parked/working vehicle has a special use. Special use means "in use" and not necessarily emergency use.

**Additional Information:** All military vehicles are classified as "4" even if they are police, ambulance, or fire trucks. The Remarks and Attribute descriptions changed considerably in the 2009 Coding and Editing Manual. The analyst should compare the 2008 and 2009 NASS GES Coding and Editing Manuals for more detailed information.

**SAS Name: PSP_USE**

**Attribute Codes**

| *2005-2008* | *2009* | *2010-Later* | |
|---|---|---|---|
| 0 | 0 | 0 | No Special Use |
| 1 | 1 | 1 | Taxi |
| 2 | 2 | 2 | Vehicle Used as School Bus |
| 3 | 3 | 3 | Vehicle Used as Other Bus |
| 4 | 4 | 4 | Military |
| 5 | 5 | 5 | Police |
| 6 | 6 | 6 | Ambulance |
| 7 | -- | 7 | Fire truck |
| -- | 7 | -- | Fire Truck and Car |
| 8 | -- | -- | Other *(Farm or Construction Equip., etc.)* |
| -- | -- | 8 | Emergency Services Vehicle |
| -- | 10 | -- | Hearse |
| -- | 11 | -- | Farm Equipment |
| -- | 12 | -- | Construction Equipment |
| -- | -- | 77 | Not Reported |
| 9 | 99 | 99 | Unknown |

## PV09 Parked/Working Vehicle Emergency Use

**Definition:** Indicates whether a Special Use (PV08) parked/working vehicle is on an emergency run.

**Additional Information:** From 1988-2008 this includes military, police, ambulance, and fire vehicles. In 2009 it also includes emergency services vehicles. Value "0" is coded if the vehicle was not on an emergency run or it was not one of the applicable vehicles.

**SAS Name: PEM_USE**

**Attribute Codes**

| *2005-2009* | *2010-Later* | |
|---|---|---|
| 0 | -- | No Emergency Use or Not an Applicable Vehicle |
| -- | 0 | No |
| 1 | 1 | Yes |
| -- | 7 | Not Reported |
| 9 | 9 | Unknown |

## PV10 Parked/Working Vehicle Number of Occupants Coded

**Definition:** The number of occupants coded for this parked/working vehicle.

**Additional Information:** The number of persons coded and the number persons involved are not always the same because, for example, some PARs have information only for injured occupants.

**SAS Name: POCCINVL**

**Attribute Codes**

***2005-Later***

x Number of Occupants Coded

## PV10B Number of Occupants

**Definition:** The number of occupants of this parked/working vehicle.

**Additional Information:**

**SAS Name: PNUMOCCS**

**Attribute Codes**

| ***2005-2008*** | ***2009*** | ***2010-Later*** | |
|---|---|---|---|
| 0-998 | 0-95 | 0-95 | Number of Occupants Involved |
| -- | 96 | 96 | Ninety-six or More |
| -- | -- | 97 | Not Reported |
| 999 | 99 | 99 | Unknown |

## PV13 Parked/Working Vehicle Trailing

**Definition:** Indicates if the parked/working vehicle was pulling a trailing unit. A trailer unit can be a horse trailer, fifth wheel trailer, camper, boat, truck trailer, towed vehicle or any other trailer.

**Additional Information:** Prior to 2009 if linkage was non-fixed each unit was considered a separate vehicle, i.e. PTRAILER=no.

**SAS Name: PTRAILER**

**Attribute Codes**

| *2005-2008* | *2009* | *2010-Later* | |
|---|---|---|---|
| 1 | 0 | 0 | No Trailing Units |
| 2 | 1 | 1 | Yes, One Trailing Unit |
| 3 | 2 | 2 | Yes, Two Trailing Units |
| 4 | 3 | 3 | Yes, Three or More Trailing Units |
| 5 | 4 | 4 | Yes, Number of Trailing Units Unknown |
| -- | 7 | 5 | Vehicle Towing Another Motor Vehicle – Fixed Linkage |
| -- | 8 | 6 | Vehicle Towing Another Motor Vehicle – Non-fixed Linkage |
| 6 | 9 | 9 | Unknown |

## PV16 Parked/Working Vehicle Fire Occurrence

**Definition:** Indicates whether or not a parked/working vehicle sustained fire damage.

**SAS Name: PFIRE**

**Attribute Codes**

***2005-Later***

0 No Fire Noted on PAR
1 Fire Occurred in Parked/Working Vehicle

***2009-Later***

0 No or Not Reported
1 Yes

## PV18 Parked/Working Vehicle Damage Severity

**Definition:** Reports the severity of the parked/working vehicle damage.

**Additional Information:**

**SAS Name: PVEH_SEV**

**Attribute Codes**

***2005-2008***

| | |
|---|---|
| 0 | None |
| 1 | Minor *(And Not Towed Due To Damage)* |
| 2 | Moderate |
| 3 | Severe |
| 9 | Unknown |

| ***2009*** | ***2010-Later*** | |
|---|---|---|
| 0 | 0 | No Damage |
| 2 | 2 | Minor Damage |
| 4 | 4 | Functional Damage |
| 6 | 6 | Disabling Damage |
| -- | 7 | Not Reported |
| 9 | 9 | Unknown |

## PV19 Parked/Working Vehicle Removal

**Definition:** Indicates the disposition of the vehicle at the crash scene.

**Additional Information:** Prior to 2009 only the power unit of an articulated combination was considered, i.e. if only the trailing unit was towed then PTOWED=Driven. Starting in 2009 the disposal status of the trailing unit is also considered.

**SAS Name: PTOWED**

**Attribute Codes**

| *2005-2009* | *2010-Later* | |
|---|---|---|
| 1 | 1 | Driven Away |
| 2 | 2 | Towed Due to Disabling Damage |
| 3 | 3 | Towed Not Due to Disabling Damage |
| 4 | 4 | Abandoned/Left at Scene |
| -- | 7 | Not Reported |
| 9 | 9 | Unknown |

## PV24 Parked/Working Vehicle Initial Point of Impact

**Definition:** The first impact point for the parked/working vehicle that produced property damage or personal injury.

**Additional Information:**

**SAS Name:** **PIMPACT** **2005-2009**
**PIMPACT1** ***2010-Later***

**Attribute Codes**

***2005-2009***

| | |
|---|---|
| 1 | Front |
| 2 | Right Side |
| 3 | Left Side |
| 4 | Back |
| 5 | Top |
| 6 | Undercarriage |
| 11 | Front Right Corner |
| 12 | Front Left Corner |
| 13 | Back Right Corner |
| 14 | Back Left Corner |
| 99 | Initial Point of Impact Unknown |

***2010-Later***

| | |
|---|---|
| 21-32 | Clock Points |
| 33 | Top |
| 34 | Undercarriage |
| 61 | Left |
| 62 | Left-Front Half |
| 63 | Left-Back Half |
| 81 | Right |
| 82 | Right-Front Half |
| 83 | Right-Back Half |
| 96 | Not a Parked/Working Motor Vehicle |
| 97 | Not Reported |
| 99 | Unknown |

## PV30 Parked/Working Vehicle Rollover

**Definition:** Indicates if a rollover occurred (tripped or untripped) for the parked/working vehicle. 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:**

**SAS Name: PROLLOVR**

**Attribute Codes**

| *2005-2008* | *2009-Later* | |
|---|---|---|
| 0 | 0 | No Rollover |
| -- | 1 | Rollover, Tripped By Object/Vehicle |
| 20 | -- | Tripped Rollover-By Curb |
| 21 | -- | Tripped Rollover-By Guardrail |
| 22 | -- | Tripped Rollover-By Ditch |
| 23 | -- | Tripped Rollover-By Soft Soil |
| 28 | -- | Tripped Rollover-Other |
| 29 | -- | Tripped Rollover-Unknown Mechanism |
| 10 | 2 | Rollover, Untripped |
| 99 | 9 | Rollover, Unknown Type |

## PV30A Parked/Working Vehicle Location of Rollover

**Definition:** Identifies the location of the start, or trip point, of the vehicle's roll.

**Additional Information:**

**SAS Name: PROLINLOC**

**Attribute Codes**

| *2009-Later* | |
|---|---|
| 0 | No Rollover |
| 1 | On Roadway |
| 2 | On Shoulder |
| 3 | On Median/Separator |
| 4 | In Gore |
| 5 | On Roadside |
| 6 | Outside of Trafficway |
| 9 | Unknown |

## PV31 Carrier's Identification Number

**Definition:** The parked/working vehicle's Carrier's ID is the unique number assigned to the Carrier by the United States Department of Commerce Commission, or the State. This number will be found only on vehicles of interstate for-hire or private carriers in the transportation business. The number can be either a US DOT number (on interstate private carriers) or an ICC MC number (interstate for-hire carriers). Collected for PBODYTYP (PV5) 50-64, 66-79 only.

**Additional Information:**

**SAS Name:** **PCARIDNO**

**Attribute Codes**

| ***2005-2009*** | ***2010-Later*** | |
|---|---|---|
| 000000000 | 000000000 | Not Applicable |
| xxxxxxxx | 1-999999996 | U.S. DOT Number |
| -- | 999999997 | Not Reported |
| 999999999 | 999999999 | Unknown |

## PV32 Parked/Working Number of Axles, Including Trailers (discontinued)

**Definition:** Coded for parked/working buses and trucks over 4,500 kg GVWR Collected for PBODYTYP (V5) 50-64, 66-79 only.)

**Additional Information:** This variable was deleted in 2009.

**SAS Name: PAXLES**

**Attribute Codes**

***2005-2008***

| | |
|---|---|
| 0 | Not Applicable |
| 2-20 | Number of Axles |
| 99 | Unknown |

## PV33 Parked/Working Vehicle Cargo Body Type

**Definition:** This element identifies the primary cargo carrying capability of this parked/working vehicle when applicable.

**Additional Information:** From 1992 to 2008 specific cargo body type was coded only for buses and trucks over 4,500 kg GVWR (PBODYTYP (PV5)= 60, 64, 66-79). All other vehicles were coded "Not applicable." Starting in 2009 passenger vehicles and light trucks that display a hazardous cargo placard are coded "No Cargo Body Type," 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. Before 2009 "Unknown" was coded for both unknown cargo body type and unknown vehicle type. Starting in 2009 "Unknown" is coded only for unknown vehicle type. See the annual Coding and Editing Manuals for more information.

**SAS Name: PCARGTYP**

**Attribute Codes**

| *1992-2008* | *2009* | *2010-Later* | |
|---|---|---|---|
| 0 | 0 | 0 | Not Applicable |
| 1 | 22 | 1 | Bus |
| 2 | 1 | 2 | Van/Enclosed Box |
| 3 | 2 | 3 | Cargo Tank |
| 4 | 3 | 4 | Flatbed |
| 5 | 4 | 5 | Dump |
| 6 | 5 | 6 | Concrete Mixer |
| 7 | 6 | 7 | Auto Transporter |
| 8 | 7 | 8 | Garbage/Refuse |
| -- | 8 | 9 | Grain/Chips/Gravel |
| -- | 9 | 10 | Pole-Trailer |
| -- | 10 | 11 | Log |
| -- | 11 | 12 | Intermodal Container Chassis |
| -- | 12 | 22 | Vehicle Towing Another Vehicle |
| -- | -- | 28 | Not Reported |
| -- | 96 | 96 | No Cargo Body |
| 98 | 97 | 97 | Other |
| -- | 98 | 98 | Unknown Cargo Body Type |
| 99 | 99 | 99 | Unknown |

## PV33A Parked/Working Vehicle Hazardous Materials Involvement

**Definition:** Indicates whether the vehicle was carrying hazardous materials.

**Additional Information:**

**SAS Name:** **PHAZ_INV**

**Attribute Codes**

***2009-Later***

1 No
2 Yes

## PV34 Parked/Working Vehicle Hazardous Materials Placard

**Definition:** Indicates the presence of hazardous materials and whether the vehicle displayed a hazardous materials placard.

**Additional Information:** Prior to 2009 Yes and No were coded only for buses and trucks over 4,500 kg GVWR (PBODYTYP (PV5)= 60, 64, 66-79). Starting in 2009 body type was not a factor in coding this variable. See the annual Coding and Editing Manuals for more information. From 2005-2008 the variable name was "Parked/Working Vehicle Hazardous Materials Placarded."

**SAS Name:** **PHAZ_MAT** ***1992-2008***
**PHAZPLAC** ***2009-Later***

**Attribute Codes**

| *2005-2008* | *2009-Later* | |
|---|---|---|
| 0 | 0 | Not Applicable |
| 2 | 1 | No |
| 1 | 2 | Yes |
| -- | 8 | Not Reported |
| 9 | -- | Unknown |

## PV35 Parked/Working Vehicle 4-Digit Hazardous Material Identification Number

**Definition:**

**Additional Information:** Prior to 2009 placard numbers were coded only for buses and trucks over 4,500 kg GVWR (PBODYTYP (PV5)= 60, 64, 66-79). Other vehicles were coded "Not Applicable," or "Unknown" if body type was unknown. Starting in 2009 body type was not a factor in coding this variable. From 2005-2008 the variable name was "Parked/Working Vehicle Hazardous Materials Placard Number." See the annual Coding and Editing Manuals for more information.

**SAS Name:** **PHAZM_NO** ***1992-2008***
**PHAZ_ID** ***2009-Later***

**Attribute Codes**

| ***1992-2008*** | ***2009-Later*** | |
|---|---|---|
| 0 | 0 | Not Applicable |
| xxxx | xxxx | Actual 4-Digit Number |
| -- | 8888 | Not Reported |
| 9999 | -- | Unknown |

## PV35A Parked/Working Vehicle 1-Digit Hazardous Material Class Number

**Definition:** Indicates the single digit hazardous material class number for the vehicle.

**Additional Information:** This variable was added in 2009 and is coded for all vehicles.

**SAS Name: PHAZ_CNO**

**Attribute Codes**

***2009-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

## PV36 Parked/Working Vehicle Release of Hazardous Material from the Cargo Compartment

**Definition:** Indicates whether or not any hazardous cargo was released from the parked/working vehicle cargo tank or compartment.

**Additional Information:** Prior to 2009 Yes and No were coded only for buses and trucks over 4,500 kg GVWR (PBODYTYP (PV5)= 60, 64, 66-79 only). Other vehicles were coded Not Applicable, or Unknown if body type was unknown. Starting in 2009 body type is not a factor in coding this variable. Prior to 2009 the variable name was "*Parked/Working Vehicle Hazardous Materials Release*."

**SAS Name:** **PHAZMA_R** ***2005-2008***
**PHAZ_REL** ***2009-Later***

**Attribute Codes**

| ***2005-2008*** | ***2009-Later*** | |
|---|---|---|
| 0 | 0 | Not Applicable |
| 2 | 1 | No |
| 1 | 2 | Yes |
| -- | 8 | Not Reported |
| 9 | -- | Unknown |

## PV37 Parked/Working Vehicle Location

**Definition:** Indicates the location of the parked/working vehicle.

**Additional Information:**

**SAS Name:** **PREL_RWY**

**Attribute Codes**

| *2005-2009* | *2010-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 |
| 8 | 8 | Gore |
| 9 | 9 | Continuous Left Turn Lane |
| 10 | 10 | Separator |
| -- | 97 | Not Reported |
| 99 | 99 | Unknown |

## PV38 Parked/Working Vehicle Area of Impact- Most Damaged

**Definition:** This element identifies the area on the parked/working vehicle that was most damaged during an event it underwent in the crash.

**Additional Information:** The striking vehicle, not the vehicle struck, determines the underride/override condition. After the crash, in the case of an override or underride one vehicle is over the other. If the striking vehicle is over the other, then the crash is an override. If the striking vehicle is under the other, the crash is an underride.

**SAS Name: PIMPACT2**

**Attribute Codes**

***2010-Later***

| | |
|---|---|
| 21-32 | Clock Points |
| 33 | Top |
| 34 | Undercarriage |
| 61 | Left |
| 62 | Left-Front Half |
| 63 | Left-Back Half |
| 81 | Right |
| 82 | Right-Front Half |
| 83 | Right-Back Half |
| 97 | Not Reported |
| 99 | Unknown |

## PV40 Parked/Working Vehicle Configuration

**Definition:** This element identifies the general configuration of this parked/working vehicle when applicable.

**Additional Information:**

**SAS Name: PV_CONFIG**

**Attribute Codes**

| ***2010-Later*** | |
|---|---|
| 0 | Not Applicable |
| 1 | Single-Unit Truck *(2 axles and GVWR more than 10,000 lbs.)* |
| 2 | Single-Unit Truck *(3 or More axles)* |
| 4 | Truck Pulling Trailer(s) |
| 5 | Truck Tractor *(Bobtail, i.e., Tractor Only, No Trailer)* |
| 6 | Tractor/Semi-Trailer |
| 7 | Truck Tractor/Double |
| 8 | Truck Tractor/Triple |
| 10 | Vehicle 10,000 lbs or Less Placarded for Hazardous Materials |
| 19 | Truck More than 10,000 lbs, Cannot Classify |
| 20 | Bus/Large Van *(Seats for 9-15 Occupants, Including Driver*) |
| 21 | Bus *(Seats for More Than 15 Occupants, Including Driver)* |
| 97 | Not Reported |
| 99 | Unknown |

## The PARKEVNT Data Set

The Parkevnt data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, and PJ. It also contains the variables listed below. CASENUM is used to merge with crashes in the Accident data set. To merge with the Event data set, use CASENUM and EVENTNUM. To merge with the Person data set, use CASENUM and PVEHNO.

## PE01 Parked/Working Vehicle Number

**Definition:** The identification number assigned to the parked/working vehicle.

**Additional Information:**

**SAS Name:** **PVEHNO**

**Attribute Codes**

***2005-Later***

1-30 Parked/Working Vehicle Number

## PE02 Parked/Working Vehicle Event Number

**Definition:** The number of the event that the parked/working vehicle was involved in.

**Additional Information:** The Event and Parkevnt data sets can be merged by CASENUM and EVENTNUM to get a listing of all events in which parked/working vehicles were involved. This listing can identify the specific vehicles involved (in-transport and parked/working) along with the general area of damage for both types of vehicle.

**SAS Name:** **EVENTNUM**

**Attribute Codes**

***2005-Later***

x Event Number that the parked/working vehicle was involved in

## PE03 Parked/Working Vehicle Point of Impact

**Definition:** Indicates the impact point that produced property damage or personal injury for the parked/working vehicle involved in the event.

**Additional Information:**

**SAS Name: PGAD**

**Attribute Codes**

***2005-2009***

| | |
|---|---|
| 1 | Front |
| 2 | Right Side |
| 3 | Left Side |
| 4 | Back |
| 5 | Top |
| 6 | Undercarriage |
| 11 | Front Right Corner |
| 12 | Front Left Corner |
| 13 | Back Right Corner |
| 14 | Back Left Corner |
| 99 | Point of Impact Unknown |

***2010-Later***

| | |
|---|---|
| 21-32 | Clock Points |
| 33 | Top |
| 34 | Undercarriage |
| 61 | Left |
| 62 | Left-Front Half |
| 63 | Left-Back Half |
| 81 | Right |
| 82 | Right-Front Half |
| 83 | Right-Back Half |
| 97 | Not Reported |
| 99 | Unknown |

## The PBTYPE Data Set

The Pbtype data set describes, through a series of on-screen prompts, the sequence of events and precipitating actions leading to crashes between motor vehicles and pedestrians or bicyclists. It contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, VEHNO and PERNO. CASENUM, VEHNO and PERNO are the case identifiers. The data set also contains:

## PB01 Vehicle Number

**Definition:** This element identifies the number assigned to each vehicle in the case. This variable appears on each vehicle level data set and is used in conjunction with the CASENUM variable to merge information from vehicle level data sets.

**Additional Information:**

**SAS Name:** **VEHNO**

**Attribute Codes**

***2010-Later***

0 Non-Motorist

## PB02 Person Number

**Definition:** Assigned to each occupant, pedestrian, or non-motorists involved in the crash.

**Additional Information:** This variable is computer assigned.

**SAS Name:** **PERNO**

**Attribute Codes**

***2010-Later***

1-999 Assigned Person Number

## PB27/PB27B Marked Crosswalk Present – Pedestrian/Bicyclist

**Definition:** This element indicates if a marked crosswalk was present at the crash site.

**Additional Information:**

**SAS Name: PBCWALK**

**Attribute Codes**

***2010-Later***

0 No
1 Yes
9 Unknown

## PB28/PB28B Side Walk Present – Pedestrian/Bicyclist

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

**Additional Information:**

**SAS Name:** **PBSWALK**

**Attribute Codes**

***2010-Later***

0 No
1 Yes
9 Unknown

## PB29/PB29B School Zone – Pedestrian/Bicyclist

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

**Additional Information:**

**SAS Name:** **PBSZONE**

**Attribute Codes**

***2010-Later***

0 No
1 Yes
9 Unknown

## PB30 Crash Type – Pedestrian

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

**Additional Information:**

**SAS Name: PEDCTYPE**

**Attribute Codes**

***2010-Later***

| | |
|---|---|
| 0 | Not a Pedestrian |
| 110 | Assault with Vehicle |
| 120 | Dispute-Related |
| 130 | Pedestrian on Vehicle |
| 140 | Vehicle-Vehicle/Object |
| 150 | Motor Vehicle Loss of Control |
| 160 | Pedestrian Loss of Control |
| 190 | Other Unusual Circumstances |
| 211 | Backing Vehicle - Driveway |
| 212 | Backing Vehicle - Driveway/Sidewalk Intersection |
| 213 | Backing Vehicle - Roadway |
| 214 | Backing Vehicle - Parking Lot |
| 219 | Backing Vehicle - Other/Unknown |
| 220 | Driverless Vehicle |
| 230 | Disabled Vehicle-Related |
| 240 | Emergency Vehicle-Related |
| 250 | Play Vehicle-Related |
| 311 | Working in Roadway |
| 312 | Playing in Roadway |
| 313 | Lying in Roadway |
| 320 | Entering/Exiting Parked Vehicle |
| 330 | Mailbox-Related |
| 341 | Commercial Bus-Related |
| 342 | School Bus-Related |
| 360 | Ice Cream/Vendor Truck-Related |
| 410 | Walking Along Roadway With Traffic - From Behind |
| 420 | Walking Along Roadway With Traffic - From Front |
| 430 | Walking Along Roadway Against Traffic - From Behind |
| 440 | Walking Along Roadway Against Traffic - From Front |
| 459 | Walking Along Roadway - Direction/Position Unknown |
| 460 | Motorist Entering Driveway or Alley |
| 465 | Motorist Exiting Driveway or Alley |
| 469 | Driveway Crossing - Other/Unknown |
| 510 | Waiting to Cross - Vehicle Turning |
| 520 | Waiting to Cross - Vehicle Not Turning |
| 590 | Waiting to Cross - Vehicle Action Unknown |

## PB30 Crash Type – Pedestrian *(continued)*

### Attribute Codes

***2010-Later***

610 Standing in Roadway
620 Walking in Roadway
680 Non-Intersection - Other/Unknown
690 Intersection - Other/Unknown
710 Multiple Threat
730 Trapped
741 Dash
742 Dart-Out
760 Pedestrian Failed to Yield
770 Motorist Failed to Yield
781 Motorist Left Turn - Parallel Paths
782 Motorist Left Turn - Perpendicular Paths
791 Motorist Right Turn - Parallel Paths
792 Motorist Right Turn on Red - Parallel Paths
794 Motorist Right Turn on Red - Perpendicular Paths
795 Motorist Right Turn - Perpendicular Paths
799 Motorist Turn/Merge - Other/Unknown
830 Off Roadway - Parking Lot
890 Off Roadway - Other/Unknown
900 Other - Unknown Location
910 Crossing an Expressway

## PB30B Crash Type – Bicyclist

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

**Additional Information:**

**SAS Name:** **BIKECTYPE**

**Attribute Codes**

***2010-Later***

| | |
|---|---|
| 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 |
| 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 |

## PB30B Crash Type – Bicyclist *(continued)*

### Attribute Codes

***2010-Later***

215 Motorist Drive-in/out - Parking
216 Bus/Delivery Vehicle Pullover
217 Motorist Right Turn on Red - Same Direction
218 Motorist Right Turn on Red - Opposite Direction
219 Motorist Right Turn on Red - 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 Head-on - Bicyclist
255 Head-on - Motorist
259 Head-on - Unknown
280 Parallel Paths - Other/Unknown
311 Bicyclist Ride-out - Residential Driveway
312 Bicyclist Ride-out - Commercial Driveway/Alley
318 Bicyclist Ride-out - Other Midblock
319 Bicyclist Ride-out - Unknown
321 Motorist Drive-out - Residential Driveway
322 Motorist Drive-out - Commercial Driveway/Alley
328 Motorist Drive-out - Other Midblock
329 Motorist Drive-out - Midblock - Unknown
357 Multiple Threat - Midblock
380 Crossing Paths - Midblock - Other/Unknown
400 Bicycle Only
510 Motorist Intentionally Caused
520 Bicyclist Intentionally Caused
600 Backing Vehicle
700 Play Vehicle-Related
800 Unusual Circumstances
910 Non-Roadway
970 Unknown Approach Paths
980 Unknown Location

## PB31 Crash Type Location – Pedestrian

**Definition:** This element identifies the crash location of the pedestrian with respect to an intersection.

**Additional Information:** This element indicates where the pedestrian crash occurred.

**SAS Name: PEDLOC**

**Attribute Codes**

***2010-Later***

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

## PB31B Crash Type Location – Bicyclist

**Definition:** This element identifies the crash location of the bicyclist with respect to an intersection.

**Additional Information:** This element indicates where the bicyclist crash occurred.

**SAS Name: BIKELOC**

**Attribute Codes**

***2010-Later***

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

## PB32 Pedestrian Position

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

**Additional Information:**

**SAS Name: PEDPOS**

**Attribute Codes**

***2010-Later***

*INTERSECTION OR INTERSECTION RELATED*

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

## PB32B Bicyclist Position

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

**Additional Information:**

**SAS Name: BIKEPOS**

**Attribute Codes**

***2010-Later***

1 Travel Lane
2 Bike Lane/Paved Shoulder
3 Sidewalk/Crosswalk/Driveway Crossing
4 Multi-Use Path
5 Driveway/Alley
6 Non-Roadway
7 Not a Cyclist
8 Other
9 Unknown

## PB33 Pedestrian Initial Direction

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

**Additional Information:** This element indicates the initial travel direction of the pedestrian.

**SAS Name: PEDDIR**

**Attribute Codes**

***2010-Later***

1 North
2 East
3 South
4 West
7 Not a Pedestrian
8 Not Applicable/Unknown

## PB33B Bicyclist Direction

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

**Additional Information:** This element indicates the initial travel direction of the bicyclist.

**SAS Name: BIKEDIR**

**Attribute Codes**

***2010-Later***

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

## PB34 Motorist Initial Direction

**Definition:** This element identifies the compass direction of travel of the motorist prior to being involved in the crash.

**Additional Information:** This element indicates the initial travel direction of the motorist involved in a pedestrian crash.

**SAS Name: MOTDIR**

**Attribute Codes**

***2010-Later***

1 North
2 East
3 South
4 West
7 Not a Pedestrian
8 Not Applicable
9 Unknown

## PB35 Motorist Maneuver

**Definition:** This element identifies if the motorist was engaged in a turning maneuver at an intersection prior to being involved in a pedestrian/bicyclist crash.

**Additional Information:** The element indicates the maneuver being made by the motorist at the time of a pedestrian collision.

**SAS Name: MOTMAN**

**Attribute Codes**

***2010-Later***

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

## PB36 Intersection Leg

**Definition:** This element identifies on which leg of an intersection the crash occurred.

**Additional Information:** The element identifies the leg of the intersection where the pedestrian crash occurred.

**SAS Name: PEDLEG**

**Attribute Codes**

***2010-Later***

1 Near
2 Far
7 Not a Pedestrian
8 Not Applicable
9 Unknown

## PB37 Pedestrian Scenario

**Definition:** This element summarizes the movements of the pedestrian and motorist in an intersection area.

**Additional Information:** This element identifies the location and travel directions of the motorist and pedestrian for those crashes that occur at intersections.

**SAS Name: PEDSNR**

**Attribute Codes**

***2010-Later***

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

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

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

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

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

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

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

## PB37 Pedestrian Scenario *(continued)*

### Attribute Codes

***2010-Later***

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

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

**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 Pedestrian Within Crosswalk Area, Approach Direction Unknown.
12a Pedestrian Outside Crosswalk Area, Approach Direction Same as Motorist's.
12b Pedestrian Outside Crosswalk Area, Approach Direction Opposite Motorist's.
12c Pedestrian Outside Crosswalk Area, Approach Direction Unknown.
7 Not a Pedestrian
8 Not Applicable

## PB38 Pedestrian – Crash Group

**Definition:** This element provides general groupings of the more specific individual Pedestrian Crash Types.

**Additional Information:** The Pedestrian Crash Types (PB30) are divided into 16 homogeneous crash groups [pages 96-98 of the PBCAT manual]. Suggested countermeasures are available for 12 of these groups [**www.walkinginfo.org/pedsafe**, pages 75-76 of the PBCAT manual].

**SAS Name: PEDCGP**

**Attribute Codes**

***2010-Later***

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

## PB38B Bicycle – Crash Group

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

**Additional Information:** The Bicycle Crash Types (PB30B) are divided into 21 homogeneous crash groups [pages 96-98 of the PBCAT manual]. Suggested countermeasures are available for 13 of these groups [**www.bicyclinginfo.org/bikesafe**, pages 75-76 of the PBCAT manual].

**SAS Name: BIKECGP**

**Attribute Codes**

***2010-Later***

| | |
|---|---|
| 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 | Head-On |
| 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-Roadway |
| 990 | Other/Unknown - Insufficient Details |

# Appendices

# Appendix A:
# Vehicle Make/Model Designation

## 01 AMERICAN MOTORS

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 001 | Rambler/American | Rogue, Scrambler, 220, 440, | all |
| 002 | Rebel/Matador | Barcelona Classic Brougham, 550, 660, 770, Matador (-78), Marlin | all |
| 003 | Ambassador | Brougham, DPL, SST, DL, Limited, 880, 990 | all |
| 004 | Pacer | Limited, DL | 75-80 |
| 005 | AMX | (2 seater only) | 68-70 |
| 006 | Javelin | SST, AMX (71-74) | all |
| 007 | Hornet/Concord | Sportabout, Limited, DL, SC-360, SST, AMX (75-78) | all |
| 008 | Spirit/Gremlin | Limited, DL, Custom, X, GT (83-on), AMX (79-on) | all |
| 009 | Eagle | Concord based | 80-87 |
| 010 | Eagle SX-4 | Spirit Gremlin based | 81-84 |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

Note: Alliance, Encore, Premier- See Renault - Code "46"

## 02 JEEP (Includes KAISER-JEEP)

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 001 | Compass | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | CJ-2/CJ-3/CJ-4 | Military | -66 |
| 402 | CJ-5/CJ-6/CH-7/ CH-8 | Scrambler, Golden Eagle, Renegade, Laredo, Wrangler | 67-on |
| 403 | YJ-series | Wrangler | 86-on |
| 404 | Cherokee (84-on) | Limited, Laredo, Pioneer, Briarwood, Grand | 84-on |
| 405 | Liberty | | 2002 |
| 406 | Commander | | - |
| 407 | Patriot | | - |
| 421 | Cherokee (-83) | Wide Track, Chief, Commando, Jeepster | all |
| 431 | Grand Wagoneer | Custom, Brougham Limited, Wagoneer | 71-91 |
| 481 | Pickup | J-10, J-20, Honcho | all |
| 482 | Comanche | Chief | 86-92 |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 03 AM GENERAL

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 401 | Dispatcher | Post Office (Jeep) | all |
| 402 | Hummer H3 | | - |
| 421 | Hummer | | 93-on |
| 466 | Dispatcher | DJ-series-Post Office Van | all |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 884 | Medium/Heavy truck | Military off-road | - |
| 898 | Other medium-heavy truck | | - |
| 899 | Unknown medium/heavy truck | | - |
| 950 | Bus based Motorhome | | - |
| 983 | Bus flat front (rear engine) Transit | | - |
| 988 | Other bus | | - |
| 989 | Unknown bus | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 06 CHRYSLER

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 009 | Cordoba | Crown, 300, LS | 75-83 |
| 010 | New Yorker/Newport/ Fifth Avenue/Imperial | Custom, Royal, Brougham, Town and Country, 300 (-71) (excludes all FWD) | all |
| 013 | Rampage 2.2 (Car Based Pickup) | GT, Sport | - |
| 014 | New Yorker/E Class/ Imperial (90-93)/Fifth Avenue | FWD vehicles, Turbo | 83-on |
| 015 | Laser | Turbo, XE, XT | 84-86 |
| 016 | LeBaron | Medallion, Salon(RWD), Landau, LX, FWD except GTS or GTC Sport Coupe | 77-on |
| 017 | LeBaron GTS/GTC | GTS-Turbo<br>GTC-Sport Coupe | 85-on<br>87-on |
| 018 | Intrepid (Canadian made) | | - |
| 019 | Neon (export) | | - |
| 031 | TC (Maserati Sport) | Turbo Convertible | 88-91 |
| 035 | Conquest | TSi, Turbo | 87-89 |
| 041 | Concorde | | 93-on |
| 042 | LHS | New Yorker (94-on) | 94-on |
| 043 | Sebring | | 95-on |
| 044 | Cirrus | | 95-on |
| 051 | 300M | | - |
| 052 | PT Cruiser | | 2001-on |
| 053 | Prowler | | - |
| 054 | Pacifica | | - |
| 055 | Crossfire | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 421 | Aspen | | - |
| 441 | Town and Country | Minivan | 90-on |
| 442 | Voyager | | 2002 |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 07 DODGE

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 001 | Dart | Custom, Swinger, Sport, GT, Demon, Special, Special Edition, 170,270,340,360 | 62-76 |
| 002 | Coronet/Charger(-78)/ Magnum | Brougham, Custom, Superbee, Crestwood, Deluxe, XE, R/T, SE, 440, 500, Police | -79 |
| 003 | Polara/Monaco Royal Monaco | Custom, Special, Crestwood, Brougham, Police, Taxi | -78 |
| 004 | Viper | RT/10, GTS | 92-on |
| 005 | Challenger | R/T, T/A, Rallye | 70-74 |
| 006 | Aspen | Custom, Special Edition, Police, R/T, Sport | 76-80 |
| 007 | Diplomat | Medallion, Salon, S | 77-89 |
| 008 | Omni/Charger (83 on) | 024, DeTomaso Miser, GLH, GLHS, Shelby, Charger 2.2, America, Expo | 78-90 |
| 009 | Mirada | | 80-83 |
| 010 | St. Regis | Police, Taxi | 79-81 |
| 011 | Aries (K) | Custom, SE, LE | 81-89 |
| 012 | 400 | LS | 82-83 |
| 013 | Rampage (car based pickup) | 2.2, GT, Sport | 82-84 |
| 014 | 600 | ES, Turbo | 83-88 |
| 015 | Daytona | Turbo Z, Shelby Z Pacifica, C/S Competition, IROC R/T | 84-94 |
| 016 | Lancer | Pacifica, Turbo, ES, Shelby | 85-89 |
| 017 | Shadow | ES, Turbo | 87-on |
| 018 | Dynasty | | 88-on |
| 019 | Spirit | ES, Shelby, RT | 89-94 |
| 020 | Neon | Expresso | 94-on |
| 021 | Magnum | | - |
| 024 | Charger (2006+) | | - |
| 025 | Caliber | | - |
| 026 | Avenger | | - |
| 027 | Journey | SE, SXT, R/T | 2009-on |
| 028 | Challenger (2008+) | | 2008-on |
| 033 | Challenger | all imported | 78-83 |
| 034 | Colt (excludes Vista) | RS, Turbo, Custom, GTS, DL, E, Premier, Deluxe, Carousel, GT | 74-94 |
| 035 | Conquest | Turbo | 84-86 |

## 07 DODGE (continued)

| | | | |
|---|---|---|---|
| 039 | Stealth | | 91-on |
| 040 | Monaco | | 90-92 |
| 041 | Intrepid | | 93-on |
| 042 | Avenger | | 95-on |
| 043 | Stratus | | 95-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Raider | Sport | 86-on |
| 403 | Nitro | | - |
| 421 | Ramcharger | | all |
| 422 | Durango | | 98-00 |
| 441 | Vista | 4x4 | 84-91 |
| 442 | Caravan | Mini-Ram, SE, ES | 84-on |
| 461 | B-series vans | Sportsman, Royal, Maxiwagon, Ram B150-B350, Tradesman | all |
| 462 | Sprinter | | - |
| 470 | Van derivative | Kary Van | all |
| 471 | D50, Colt P/U, RAM50/RAM 100 | | all |
| 472 | Dakota | | 87-on |
| 481 | D, W-series pickup | Ram, Custom, Royal, Miser, D100-D350, W100-W350 | all<br>- |
| 482 | Ram | 1500/2500/3500 P/U | 94-on |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 850 | Truck based motorhome | | - |
| 881 | Medium/Heavy | CBE | all |
| 882 low entry | Medium/Heavy all | COE | |
| 883 high entry | Medium/Heavy all | COE | |
| 884 engine location | Medium/Heavy | - | unknown |
| 890 entry position unknown | Medium/Heavy | COE<br>- | |
| 898 | Other medium/heavy truck | | - |
| 899 | Unknown Medium/heavy truck | | - |
| 950 | Bus based motorhome | | - |
| 981 based) | Medium bus - | | (not van |

## *07 DODGE (continued)*

| | | |
|---|---|---|
| 988 | Other bus | - |
| 989 | Unknown bus | - |
| 998 | Other vehicle | - |
| 999 | Unknown vehicle | - |

## 08 IMPERIAL

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 010 | Imperial | Lebaron<br>Mark Cross, Frank Sinatra editions | -76<br>81-83 |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 09 PLYMOUTH

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 001 | Valiant/Duster (-76)/ Scamp | 100, 200, Brougham, Signet, Custom, Special 340/360, 340, 360, Twister | -76 |
| 002 | Satellite/Belvedere | Belvedere I/II, GTX, Roadrunner (-74), Sebring, Sebring Plus, Superbird, Brougham | -74 |
| 003 | Fury | I, II, III, Roadrunner (75), Salon, VIP, Sport, Suburban | -74<br>75-78 |
| 004 | Gran Fury | Sedan, Brougham, Custom Sport, Suburban | 75-89 |
| 005 | Barracuda | Formula, S, 340, AAR, Cuda, Gran Coupe | 65-74 |
| 006 | Volaré | Custom, Premier, Roadrunner (76-on), Police | 76-80 |
| 007 | Caravelle | Turbo, SE | 85-89 |
| 008 | Horizon | TC-3, Miser, Turismo 2.2, Custom, SE, Duster (85-on), America, Expo | 78-90 |
| 011 | Reliant (K) | SE, LE | 81-89 |
| 013 | Scamp (car based pickup) | GT, 2.2 | 82-84 |
| 017 | Sundance | Turbo | 87-on |
| 019 | Acclaim | LX, LE | 89-on |
| 020 | Neon | Expresso | 94-on |
| 031 | Cricket | | 71-72 |
| 032<br>GS, GT | 76-80 | Arrow | Fire Arrow, |
| 033<br>imported | 78-83 | Sapporo | all |
| 034 | Champ/Colt (excludes Vista) | Turbo, Custom-Station Wagon (84-on) | 79-94 |
| 035 | Conquest | TSi | 84-89 |
| 038 | Breeze | | 96-on |
| 039 | Prowler | | 96-on |
| 037 | Laser | RS, Turbo | 89-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 421 | Trailduster | | all |
| 441 | Vista | 4x4 | 87-on |
| 442 | Voyager (minivan) | SE, LX | 84-on |
| 461 | Van-fullsize (B-series) | Voyager, Sport, Premier | all |
| 471 | Arrow pickup (foreign) | | all |

## *09 PLYMOUTH (continued)*

| | | |
|---|---|---|
| 498 | Other light truck | - |
| 499 | Unknown light truck | - |
| 998 | Other vehicle | - |
| 999 | Unknown vehicle | - |

## 10 EAGLE

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 034 | Summit | DL, LX, ES | 89-on |
| 037 | Talon | TSI | 90-on |
| 040 | Premier | LX, ES | 88-92 |
| 041 | Vision | | 93-on |
| 044 | Medallion | DL, LX | 88-90 |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 441 | Summit Wagon | | 92-on |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 12 FORD

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 001 | Falcon | Sprint, GT, Futura | -70 |
| 002 | Fairlane | Torino thru 1970 | -70 |
| 003 | Mustang/Mustang II | Mach, Boss, Granada, Cobra, Ghia, SVO, GT, LX, Shelby | 65-on |
| 004 | Thunderbird (all sizes) | Landau, Heritage, Turbo coupe, Elan, Fila, Sport, LX, SC | 55-on |
| 005 | LTD II | S, Squire, Brougham | 77-79 |
| 006 | LTD/Custom/Galaxie (all sizes) | XL, Landau, Ranch Wagon, Country Squire, S, 500, Brougham, XL GT | 65-on |
| 007 | Ranchero | Falcon/Fairlane based<br>Torino/LTD II based | -71<br>72-79 |
| 008 | Maverick | Grabber | 70-78 |
| 009 | Pinto | Pony, MPG, ESS | 71-80 |
| 010 | Torino/Gran Torino/Elite | GT, Cobra, Sport, Squire, Brougham | 71-76 |
| 011 | Granada | ESS, Ghia | 75-82 |
| 012 | Fairmont | Futura, Sport Coupe | 78-83 |
| 013 | Escort/EXP | L, GL, GLX, SS, GT, LX, ZX2 | 81-on |
| 015 | Tempo | L, GL, GLX, Sport, 4x4 | 84-94 |
| 016 | Crown Victoria | | 81-on |
| 017 | Taurus/Taurus X | MT-5, L, GL, LX, SHO | 86-on |
| 018 | Probe | GL, LX, GT | 88-on |
| 021 | Five Hundred | | - |
| 022 | Freestyle | | - |
| 023 | Fusion | | - |
| 024 | Edge | | - |
| 025 | Flex | Includes SE, SEL, Limited | 2009-on |
| 031 | English Ford | Cortina | 60-on |
| 032 | Fiesta | Sport, Ghia | 78-80 |
| 033 | Festiva | | 88-93 |
| 034 | Laser | | 93-on |
| 035 | Contour | | 94-on |
| 036 | Aspire | | 94-on |
| 037 | Focus | | - |
| 038 | GT | | - |
| 398 | Other automobile | | all |
| 399 | Unknown automobile | | - |

## 12 FORD (continued)

| | | | |
|---|---|---|---|
| 401 | Bronco II/Bronco (-77) Explorer | Eddie Bauer, XL, XLT Explorer (90-on) | 83-on |
| 402 | Escape | | 2001 |
| 421 | Bronco-fullsize | Eddie Bauer, Custom, XL, XLT | 78-on |
| 422 | Expedition | | 97-on |
| 431 | Excursion | | 2000 |
| 441 | Aerostar | | XLT, |
| Cargo Van | 86-on | | |
| 442 | Windstar | | 94-on |
| 443 | Freestar | | - |
| 444 | Transit Connect | | 2010-on |
| 461 | E-series vans | Econoline, Clubwagon, Chateau, E150-E350 | all |
| 470 | Van derivative | i.e: parcel van | all |
| 471 | Ranger | Supercab, 4x4, STX, Splash | 82-on |
| 472 | Courier | Imported pickup | all |
| 473 | Sport Trac | | 2001 |
| 481 | F-series pickup | F-100 - F-350 | all |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 850 | Truck based motorhome | | - |
| 880 | F450/550 Pickup > 4,536 GVW | | - |
| 881 | Medium/Heavy | CBE | F-5 thru F- |
| 8 L-series, FT-series | | all | |
| 882 | Medium/Heavy | COE | C/CT |
| series, low entry | | all | |
| 883 | Medium/Heavy | COE | C/CLT |
| series, high entry | | all | |
| 884 | Medium/Heavy | unknown engine location | - |
| 890 | Medium/Heavy | COE | entry |
| position unknown | | - | |
| 898 | Other medium/heavy | | truck - |
| 899 | Unknown medium/heavy | truck | - |
| 950 | Bus based motorhome | | - |
| 981 | Medium bus | B-series (not van based) | all |
| 988 | Other bus | | all |
| 989 | Unknown bus | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 13 LINCOLN

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 001 | Continental/Town Car | Continental (-81), Town Car (82 on) | all<br>82-on |
| 002 | Mark | I, II, III, IV, V, VI, VII, LSC, VIII<br>All Signature/ Designer Series | all |
| 005 | Continental (82-on) | All Signature/Designer Series | - |
| 011 | Versailles | | 77-80 |
| 012 | LS | | 2000 |
| 013 | Zephyr/MKZ | | - |
| 014 | MKX | | - |
| 015 | MKS | | - |
| 016 | MKT | | 2009-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Aviator | | - |
| 421 | Navigator | | 97-on |
| 481 | Blackwood | | 2002 |
| 482 | Mark LT | | - |
| 498 | Other Light Truck | | 97-on |
| 499 | Unknown Light Truck | | 97-on |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 14 MERCURY (MERKUR: See 56)

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 002 | Cyclone | GT, CJ, Spoiler | -71 |
| 003 | Capri-domestic | RS, Turbo, GS, Black Magic | 79-86 |
| 004 | Cougar/XR7 | XR-7, RS, LS, GS, Eliminator, Brougham, Villager, (includes all body styles) | 67-on |
| 006 | Marquis/Monterey | Marauder, X-100, Parklane, S-55, Custom, Brougham, Montclair, Grand Marquis | 55-on |
| 008 | Comet | Caliente, GT, Voyager, 202, Capri (66-67) | 62-77 |
| 009 | Bobcat | Runabout, Villager | 75-80 |
| 010 | Montego | Comet (68-70), GT, MX, Villager, Brougham | 67-76 |
| 011 | Monarch | Ghia | 75-80 |
| 012 | Zephyr | GS, Z-7 | 78-83 |
| 013 | Lynx/LN-7 (82-83) | L, LS, GS, RS, XR-3 | 81-87 |
| 015 | Topaz | L, LS, GS, 4x4 | 84-on |
| 017 | Sable | LS, GS | 86-on |
| 020 | Montego (2005+) | | - |
| 021 | Milan | | - |
| 031 | Capri-foreign | Capri II, 2+2 | 70-77 |
| 033 | Pantera | de Tamaso | 72-74 |
| 036 | Tracer | L, GL | 88-on |
| 037 | Mystique | | 94-on |
| 038 | Cougar | | - |
| 039 | Marauder | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Mountaineer | | 96-on |
| 402 | Mariner | | - |
| 443 | Villager | LS, GS | 93-on |
| 444 | Monterey | | 2004-on |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 18 BUICK

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 001 | Special/Skylark | GS, GS-350, GS-400, GS-455, GS, California, Sport wagon, Custom | -72 |
| 002 | LeSabre/Centurion/ Wildcat | Estate Wagon, Luxus, Invicta, Custom, Limited T-Type | 55-on |
| 003 | Electra, Electra 225, Park Avenue (91-on) | Limited, Park Avenue, Ultra | 60-on |
| 004 | Roadmaster | Estate Wagon, Limited | 91-on |
| 005 | Riviera | S-Type,T-Type | 63-on |
| 007 | Century | Luxus, T-Type Luxus, T-Type, FWD (82-on), Custom, Regal (72-77) | 72-on |
| 008 | Apollo/Skylark | Skylark (75), S/R | 73-76 |
| 010 | Regal | Turbo, Luxus, Grand National, GNX, T-Type | 78-88 |
| 012 | Skyhawk | S-Type, Roadhawk, T-Type, GT | 75-89 |
| 015 | Skylark (76-85) | (except 75), S/R, S, Limited, Sport, T-Type | -85 |
| 018 | Somerset/Skylark | Skylark (86-on), Somerset GS, Regal, Custom, Limited, T-Type | 85-on |
| 020 | Regal (FWD) | Limited | 88-on |
| 021 | Reatta | | 88-91 |
| 022 | Lacrosse | | - |
| 023 | Lucerne | | - |
| 024 | Enclave | | - |
| 031 | Opel Kadett | | -75 |
| 032 | Opel Manta | 1900, Luxus, Rallye, Sports Coupe | -75 |
| 033 | Opel GT | | -75 |
| 034 | Opel lsuzu | Deluxe, Sport | 76-79 |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Rendezvous | | 2002 |
| 402 | Rainier | | - |
| 441 | Terraza | | - |
| 498 | Other Light Truck | | - |
| 499 | Unknown Light Truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 19 CADILLAC

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 003 | Deville/Fleetwood (except Limousine) | Coupe de Ville, Sedan de Ville, Fleetwood, Brougham, Fleetwood, 60 Special, etc. d'Elegance, Concourse | all |
| 004 | Limousine | Fleetwood 75, Formal de Ville based | all |
| 005 | Eldorado | Biarritz, El-doro, Touring Coupe | 67-on |
| 006 | Commercial Series | Ambulance/Hearse | all |
| 009 | Allanté | | 87-on |
| 014 | Seville | Elegante, STS | 76-on |
| 016 | Cimarron | D'oro | 82-88 |
| 017 | Catera | RWD | 97-on |
| 018 | CTS | | 2003 |
| 019 | XLR | | - |
| 020 | SRX | | - |
| 021 | STS | | - |
| 022 | DTS | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 421 | Escalade | | - |
| 431 | Ecalade ESV | | - |
| 480 | Escalade EXT (Data years 2005 and earlier) | | - |
| 481 | Escalade EXT (Data years 2006 and beyond) | | - |
| 498 | Other Light Truck | | - |
| 499 | Unknown Light Truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 20 CHEVROLET

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 001 | Chevelle/Malibu | Classic, Concours, S-3, Laguna, Nomad, 300, Greenbriar, Estate, Deluxe, SS 396/454 | 64-83 |
| 002 | Impala/Caprice | Biscayne, Belair, Super Sport, Classic, Classic Brougham, Townsman, Brookwood, Kingswood | 55-on |
| 004 | Corvette | Stingray | 53-on |
| 006 | Corvair | Corvair Monza, 500, Corvair Spyder, Corsa, Yenko | 60-69 |
| 007 | El Camino | Royal Knight, SS | 59-on |
| 008 | Nova (-79) | Chevy II, LN, LE, Concours SS-350/396, Rally | 62-79 |
| 009 | Camaro | SS, RS, LT, Berlinefta, IROC-Z, Z28 | 67-on |
| 010 | Monte Carlo (RWD) | LS, SS, Aerocoupe, Landau | 70-88 |
| 011 | Vega | GT, Cosworth | 71-77 |
| 012 | Monza | Spyder, 2+2, Towne Coupe | 75-80 |
| 013 | Chevette | S, Scooter, CS | 76-87 |
| 015 | Citation | X-11, Citation II | 80-85 |
| 016 | Cavalier | CS, RS, Z24, LS | 82-on |
| 017 | Celebrity | CS, Eurosport, VR | 82-on |
| 019 | Beretta/Corsica | GT | 87-on |
| 020 | Lumina | (GM-10 based), Z-34, Euro | 90-on |
| 022 | Cobalt | | - |
| 023 | HHR | | - |
| 024 | Traverse | LS, LT, LTZ | 2009-on |
| 025 | Cruze | Applicable Body Types: 02,04 | 2011-on |
| 026 | Volt | Body Type 5 | 2011-on |
| 031 | Spectrum | | 85-on |
| 032 | Nova/GEO Prizm | CL, NUMMI-built vehicles | 85-on |
| 033 | Sprint/GEO Sprint | | 85-on |
| 034 | GEO Metro | LSi, XFi | 89-on |
| 035 | GEO Storm | GSi | 85-on |
| 036 | Monte Carlo (FWD only) | Z34 | 95-on |
| 037 | Malibu | | 97-on |
| 038 | SSR | | - |
| 039 | Aveo | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |

## 20 CHEVROLET (continued)

| | | | |
|---|---|---|---|
| 401 | S-10 Blazer, Blazer | S-10 p/u based | 83-on |
| 402 | GEO Tracker | LSi | 89-on |
| 403 | Trailblazer | | 2002-on |
| 404 | Equinox | | |
| 421 | Fullsize Blazer, Tahoe | K-series, fullsized p/u based | 69-on |
| 431 | Suburban | All models | all |
| 441 | Astro Van | Minivan | 85-on |
| 442 | Lumina APV/Venture | | 90-on |
| 443 | Ventura | | 97-on |
| 444 | Uplander | | - |
| 461 | G-series van | Beauville, Chevy Van, Sport Van, G10-G30, Express | all |
| 466 | P-series van | | all |
| 470 | Van derivative | Hi-cube, Parcel Van | all |
| 471 | S-10/T-10 | 4x4 | 82-on |
| 472 | LUV | Imported pickup | all |
| 473 | Colorado | | - |
| 481 | C, K, R, V-series pickup | C10-C30, K10-K30, R10-R30, Vl0-V30, Silverado, C-Kl500, 2500, 3500 | all |
| 482 | Avalanche | | 2002 |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 850 | Truck based motorhome | | - |
| 881 | Medium/Heavy CBE | C50/60/65, M60/65, H70/80/90, J70/80/90, Bison 90, all other CBE | all |
| 882 | Medium/Heavy COE low entry | T60/65, all other COE low entry | all |
| 883 | Medium/Heavy COE high entry | Titan 90, all other COE high entry | all |
| 884 | Medium/Heavy | Unknown engine location | - |
| 890 | Medium/Heavy | Unknown engine location, MKIII, 1500 | - |
| 898 | Other medium/heavy truck | | - |
| 899 | Unknown medium/heavy truck | | - |
| 950 | Bus based motorhome | | - |
| 981 | Bus | S-60 series | all |
| 988 | Other bus | | - |
| 989 | Unknown bus | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 21 OLDSMOBILE

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 001 | Cutlass (RWD-only) | Supreme, S, LS, Salon Brougham, Vista Cruiser, F85 (thru 72), Rallye 350, Hurst Olds, 442, Calais, Classic (88) | 62-88 |
| 002 | Delta 88 | Royale, Custom, Delta, Jetstar 88, Delmont 88, Starfire (thru 66), Custom Cruiser | all |
| 003 | Ninety-Eight | Regency, Luxury | all |
| 005 | Toronado | XSR, Trofeo, Brougham Custom | 66-92 |
| 006 | Commercial Series | Ambulance/Hearse | all |
| 012 | Starfire | SX,GT | 75-80 |
| 015 | Omega | X body type FWD, RWD | 75-85 |
| 016 | Firenza | S, LS, SX, Cruiser, GT | 82-88 |
| 017 | Ciera | Cutlass Ciera, Brougham, ES | 82-on |
| 018 | Calais | GT, ES, 500 | 85-91 |
| 020 | Cutlass (FWD) | Supreme | 88-on |
| 021 | Achieva | SC | 92-on |
| 022 | Aurora | | 94-on |
| 023 | Intrigue | | - |
| 024 | Alero | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Bravada | | 91-on |
| 441 | Silhouette | | 90-on |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 22 PONTIAC

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 001 | Lemans Tempest (-79) | Safari, T-37, Luxury, Grand Sport, GTO (-73), GT-37, Sprint, Judge, Grand AM (73-75), Grand Lemans | 62-79 |
| 002 | Bonneville/Catalina/ Parisienne | Brougham, Grand Safari, Safari, Grandville, 2+2 Executive, Starchief SE, SSE, SSEi, Parisienne | all |
| 005 | Fiero | 2M4, 2M6, GT, SE | 84-88 |
| 008 | Ventura | II, SJ, Sprint, GTO (74-on), Custom | 71-77 |
| 009 | Firebird/Trans AM | Esprit, Formula, GTA, Redbird, Yellowbird, Skybird, SE | 67-on |
| 010 | Grand Prix (RWD) | J, LJ, SJ, Brougham, 2+2 | 63-87 |
| 011 | Astre | Safari, SJ, Custom | 75-77 |
| 012 | Sunbird (thru 80) | Safari, Sport, Formula | 76-80 |
| 013 | T-1000/1000 | | 81-87 |
| 015 | Phoenix | LJ, SJ | 77-84 |
| 016 | J2000/2000/Sunbird Sunfire | Sunbird (84-on), LE, SE, GT, Convertible, GT/SE | 82-on |
| 017 | 6000 | STE, SE, LE | 82-on |
| 018 | Grand AM | SE,LE | all |
| 019 | G5 | | - |
| 020 | Grand Prix (FWD) | SE, McLaren Turbo, GTP | 88-on |
| 022 | G6 | | - |
| 023 | Solstice | | - |
| 024 | G8 | Includes GT | 2008-on |
| 025 | G3 | | 2009-on |
| 031 | Lemans (88-on) | SE, Tempest (Canadian) | 88-on |
| 032 | Vibe | Includes GT, AWD | 2003-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Aztek | | 2001 |
| 403 | Torrent | | - |
| 441 | Trans Sport/Montana | | 90-on |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 23 GMC

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 007 | Caballero/Sprint | Sierra Madre del Sur, SP | 65-on |
| 008 | Acadia | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Jimmy/Typhoon/Envoy | S15 based | 83-on |
| 402 | Terrain | SLE, SLT | 2009-on |
| 421 | Fullsize Jimmy Yukon | fullsize pickup based | all |
| 431 | Suburban | all models | all |
| 441 | Safari (minivan) | | 86-on |
| 461 | G-series van | Rally Van, Vandura, G15-G35, Savana | all |
| 466 | P-series van | | all |
| 470 | Van derivative | Hicube, parcel van, Value Van, Magna Van | all |
| 471 | S15/Tl5/Sonoma | Includes 4x4, Cyclone | 82-on |
| 472 | Canyon | | - |
| 481 | C, K, R, V-series pickup | C15-35, K15-35, R15-35, VI5-35, Sierra | all |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 850 | Truck based motorhome | | - |
| 881 | Medium/Heavy CBE | W5000/6000/7000 series, Brigadier/General models | all |
| 882 | Medium/Heavy COE low entry | W60OO/W7000, all other COE, low entry | all |
| 883 | Medium/Heavy COE high entry | Astro 95, all other COE, high entry | all |
| 884 | Medium/Heavy | Unknown engine location | - |
| 890 | Medium/Heavy COE | entry position unknown | - |
| 898 | Other medium/heavy truck | | - |
| 899 | Unknown medium/heavy truck | | - |
| 950 | Bus based motorhome | | - |
| 981 | Bus | B6000 | all |
| 988 | Other Bus | | - |
| 989 | Unknown bus | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 24 SATURN

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 001 | SL | SL1, SL2, SL3 | 91-on |
| 002 | SC | SC1,SC2 | 91-on |
| 003 | SW | SW1, SW2 | 93-on |
| 004 | EV1 | (electric vehicle) | 97-on |
| 005 | LS/LS1/LS2/L100/L200/L300 | | 2000 |
| 006 | LW/LW1/LW2/LW200/LW300 | | 2000 |
| 007 | Ion | | - |
| 008 | Sky | | - |
| 009 | Aura | | - |
| 010 | Outlook | XE, XR (Body Type = S/W) | |
| 011 | Astra | XE, XR, Sport (Body Types: 03 & 05) | |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Vue | | 2002 |
| 441 | Relay | | - |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 25 GRUMMAN

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 441 | LLV | Postal vehicle | all |
| 442 | Step-in van | Multi-stop, step van | all |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 850 | Truck based motorhome | | - |
| 881 | Medium/Heavy CBE | | all |
| 882 | Medium/Heavy COE low entry | | all |
| 883 | Medium/Heavy COE high entry | | all |
| 884 | Medium/Heavy Unknown engine location | | - |
| 890 | Medium/Heavy COE entry position unknown | | - |
| 898 | Other medium/heavy truck | | - |
| 899 | Unknown medium/heavy truck | | - |
| 983 | Bus-flat front, rear engine | Transit | all |
| 988 | Other bus | | - |
| 989 | Unknown bus | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 29 OTHER DOMESTIC MANUFACTURER

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 001 | Studebaker/Avanti | Lark, Gran Turismo, Hawk, Cruiser, all associated subseries | -66 |
| 002 | Checker | Marathon, Superba, Taxi, Aerobus | -82 |
| 398 | Other make | Desoto, Excaliber, Stutz, Hudson, Packard, Consulier | all |
| 399 | Unknown make | | - |
| 498 | Other Light Truck | | - |
| 898 | Other Medium/Heavy Truck | | - |
| 988 | Other Bus | | - |
| 998 | Other vehicle | | - |

## 30 VOLKSWAGEN

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Karmann Ghia | | -74 |
| 032 | Beetle 1300/1500 | flat windshield | -77 |
| 033 | Super Beetle | distinguished by curved windshield | 71-80 |
| 034 | 411/412 | Squareback/Fastback | 71-74 |
| 035 | Squareback/Fastback | Type 3, 1600 | -74 |
| 036 | Rabbit | L, GTI, Sport, LS, Custom, DL, Deluxe | 75-84 |
| 037 | Dasher | | 74-81 |
| 038 | Scirocco | 16V | 75-88 |
| 040 | Jetta | GL, GLI | 80-92 |
| 041 | Quantum | Synco | 82-88 |
| 042 | Golf | Synco, GTI, Cabriolet, GT, GL | 85-92 |
| 043 | Rabbit pickup | car based pickup | 80-83 |
| 044 | Fox | GL | 87-on |
| 045 | Corrado | | 89-on |
| 046 | Passat | GL, GLS (1.8T, Synchro, V6), TDI, GLX (1.8T, 2.0T, W8, Synchro, V6), 4 Motion, 3.6 GL | 90-on |
| 047 | Jetta III | | 93-on |
| 048 | Golf III | | 93-on |
| 049 | New Beetle | | 1988 |
| 050 | Phaeton | | - |
| 051 | EOS | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | The Thing (181) | | 73-75 |
| 402 | Tiguan | | 2008-on |
| 421 | Touareg | | - |
| 441 | Vanagon/Camper | Bus, Kombi, Van | all |
| 442 | Eurovan | | 92-on |
| 443 | Routan | S, SE, SEL Premium/RSE | 2009-on |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 998 | Other Vehicle | | - |
| 999 | Unknown vehicle | | - |

## 31 ALFA ROMEO

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Spider | All roadsters, Veloce, 1750/2000 roadsters | all |
| 032 | Sports Sedan | All 4 door sedans Milano (86), Giulia, Super,Berlina, Alfetta, 1750/2000 sedans | all |
| 033 | Sprint Veloce | All 2-door coupes Alfetta GT, 1750/2000 GTV, Sprint GT | all |
| 034 | GTV-6 | | 81-on |
| 035 | 164 | | 89-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 32 AUDI

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Super 90 | | 70-72 |
| 032 | 100/A6 | S, LS, GL,<br>Quattro (89 on) | 70-77<br>89 on |
| 033 | Fox | | 74-79 |
| 034 | 4000 | Quattro, Coupe GT, CS, S | 80-88 |
| 035 | 5000 | Quattro, CS, S, Turbo | 78-88 |
| 036 | 80/90 | Quattro | 88-95 |
| 037 | 200 | Quattro | 88-92 |
| 038 | V-8 Quattro | | 90-94 |
| 039 | Coupe Quattro | | 90-93 |
| 040 | S4/S6 | | 93-on |
| 041 | Cabriolet | | 94-on |
| 042 | A4 | | 96-on |
| 043 | A3 | | 96-on |
| 044 | A8 | | 96-on |
| 045 | TT | | 2000 |
| 046 | S8 | | 2001 |
| 047 | Allroad | | 2001 |
| 049 | A5 | | - |
| 050 | R8 | | 2008-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Q7 | | - |
| 402 | Q5 | | |
| 498 | Other Light Truck | | |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 33 AUSTIN/AUSTIN HEALEY

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Marina | GT | all |
| 032 | America | | all |
| 033 | Healey Sprite | | all |
| 034 | Healy 3000 | Healy 100 | all |
| 035 | Mini | | all |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 34 BMW

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | 1600, 2000 | Tii, 1800, 2000S | -76 |
| 032 | Coupe | 2800CS, 3.0CS | 69-76 |
| 033 | Bavaria Sedan | 2500, 2800 | 69-74 |
| 034 | 3-series | 318i, 318ti, 320i, 325e, 325es, 325I, 328, M3 | 77-on |
| 035 | 5-series | 524i, 528i, 530i, 533i, 535i, TD<br>525i (wagon), M5, 54OiA, 540I | 75-on<br>77-on |
| 036 | 6-series | 630, 633, 635, csi, M6 | - |
| 037 | 7-series | 733i, 735i, L7, 740i, 750iL | 78-on |
| 038 | 8-series | 850, 840ic | 90-on |
| 039 | Z3 | M Coupe (Brickland) | 96-on |
| 040 | Z8 | | - |
| 041 | V5 | | - |
| 042 | Z4 | | - |
| 043 | 1 Series | 128i, 135i | 2008-on |
| 044 | X6 | | 2008-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | X5 | 4WD | 2000 |
| 402 | X3 | | - |
| 498 | Other Light Truck | | - |
| 499 | Unknown Light Truck | | - |

### *Motorcycles*

| CODE | MODEL | |
|---|---|---|
| 701 | 0-50cc | - |
| 702 | 51-124cc | - |
| 703 | 125-349cc | - |
| 704 | 350-449cc | - |
| 705 | 450-749cc | - |
| 706 | 750cc-over | - |
| 709 | Unknown cc | - |
| 799 | Unknown motored cycle | - |
| 998 | Other Vehicle | - |
| 999 | Unknown vehicle | - |

## 35 NISSAN/DATSUN

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | F10 | | 77-78 |
| 032 | 200/240 SX | | 78-on |
| 033 | 1200/210/B210 | Honeybee | 71-82 |
| 034 | Z-car, ZX | 240/260/280Z, 300 ZX,Turbo, 2+2 | 70-on |
| 035 | 310 | | 79-82 |
| 036 | 510 | PL | 68-73<br>78-81 |
| 037 | 610 | PL | 73-76 |
| 038 | 710 | PL | 74-77 |
| 039 | 810/Maxima | | 77-on |
| 040 | Roadster | SPL 311, SRL 311, 1600, 2000, convertible | -70 |
| 041 | PL 411, RL 411 | | -67 |
| 042 | Stanza | XE | 82-92 |
| 043 | Sentra | | 83-on |
| 044 | Pulsar | NX, EXA (86-on) | 83-90 |
| 045 | Micra | | 87-on |
| 046 | NX1600/2000 | | 92-on |
| 047 | Altima | | 93-on |
| 048 | 350Z/370Z | | - |
| 049 | Murano | | - |
| 050 | Versa | | |
| 051 | Rogue | Includes S, SL | 2008-on |
| 052 | Cube | | 2010-on |
| 053 | GT-R | | 2009-on |
| 055 | Leaf | | 2011-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Pathfinder | MPV, 4 x 4 | 86-on |
| 402 | Xterra | | 2000 |
| 403 | Juke | | 2011-on |
| 421 | Armada | | - |
| 441 | Van | XE, GXE | 87-on |
| 442 | Axxess | | 89-90 |
| 443 | Quest | | 93-on |
| 444 | Altra EV | Electric vehicle | 1998-2005 |
| 445 | NV | Body Types 21 & 22 | 2011-on |

## 35 NISSAN/DATSUN (continued)

| | | | |
|---|---|---|---|
| 471 | Datsun/Nissan Pickup/Frontier | PL620, King Cab, Hardbody | 73-on |
| 473 | Titan<br>(Data years 2005 and earlier) | | - |
| 481 | Titan<br>(Data years 2006 and beyond) | | - |
| 498 | Other light truck | Patrol | (1960) |
| 499 | Unknown light truck | | - |
| 883 | Medium/Heavy COE | high entry | all |
| 898 | Other medium/heavy truck | | all |
| 899 | Unknown medium/heavy truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 36 FIAT

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | 124 (Coupe/Sedan) | Sport | 67-75 |
| 032 | 124 Spider/Racer | Spider 2000/1500 | 68-83 |
| 033 | Brava - 131 | | 75-82 |
| 034 | 850 (Coupe/Spyder) | | 67-73 |
| 035 | 128 | | 72-79 |
| 036 | X-1/9 | | 75-83 |
| 037 | Strada | | 79-83 |
| 398 | Other automobile | 600, 1100 | all |
| 399 | Unknown automobile | | - |
| 882 | Medium/Heavy COE | low entry | all |
| 883 | Medium/Heavy COE | high entry | all |
| 890 | Medium/Heavy COE | entry position unknown | - |
| 898 | Other medium/heavy truck | | all |
| 899 | Unknown medium/heavy truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 37 HONDA (ACURA: See 54)

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Civic/CRX | 1300, 1500, CVCC, DX, EX, VX, S, Si, HF, 4WD Wagon, del Sol | 73-on |
| 032 | Accord | LX, CVCC, SE-i, LX-i, EX, EX Wagon | 76-on |
| 033 | Prelude | Si | 80-on |
| 034 | 600 | Coupe, Sedan | all |
| 035 | S2000 | | - |
| 037 | Insight | | - |
| 038 | FCX | | 2004-on |
| 039 | Fit | | - |
| 398 | Other automobile | all Hondas not listed above | - |
| 399 | Unknown automobile | | - |
| 401 | Passport | | 94-on |
| 402 | CR-V | | - |
| 403 | Element | | - |
| 421 | Pilot | | - |
| 441 | Odyssey | | 95-on |
| 471 | Ridgeline | | - |
| 498 | Other Light Truck | | 94-on |
| 499 | Unknown Light Truck | | 94-on |

### *Motorcycles*

| CODE | MODEL | |
|---|---|---|
| 701 | 0-50cc | - |
| 702 | 51-124cc | - |
| 703 | 125-349cc | - |
| 704 | 350-449cc | - |
| 705 | 450-749cc | - |
| 706 | 750cc-over | - |
| 709 | Unknown cc | - |

## *37 HONDA (continued)*

### *All Terrain Cycles/Vehicles*
### *(Model codes 731–739 are designed solely for off-road use)*

| CODE | MODEL | |
|---|---|---|
| 731 | 0-50cc | - |
| 732 | 51-124 cc | - |
| 733 | 125-349 cc | - |
| 734 | 350cc or greater | - |
| 739 | Unknown cc | - |
| | | |
| 798 | Other Motorcycle | - |
| 799 | Unknown motored cycle | - |
| 998 | Other vehicle | - |
| 999 | Unknown vehicle | - |

## 38 ISUZU

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | I-Mark | S, RS, Turbo | 85-89 |
| 032 | Impulse | Turbo, RS | 84-on |
| 033 | Stylus | | 90-an |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Trooper/Trooper II | Deluxe, LS | 84-on |
| 402 | Rodeo | | 91-on |
| 403 | Amigo | | 89-94 |
| 404 | Vehicross | | 1999 |
| 405 | Axiom | | 2000 |
| 421 | Ascender | | - |
| 441 | Oasis | | 96-on |
| 471 | P'up (pickup) Hombre | 4 x 4 | all |
| 473 | i-280/i-290 | S, LS, Luxury | 2006-on |
| 474 | i-350/i-370 | LS, Limited, S | 2006-on |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | all |
| 881 | Medium/Heavy CBE | | all |
| 882 | Medium/Heavy COE | low entry | all |
| 883 | Medium/Heavy COE | high entry | all |
| 884 | Medium/Heavy | unknown engine location | - |
| 890 | Medium/Heavy COE | entry position unknown | - |
| 898 | Other medium/heavy truck | | - |
| 899 | Unknown medium/heavy truck | | - |
| 950 | Bus based motorhome | | - |
| 981 | Bus Conventional front engine | | - |
| 982 | Bus Front engine/flat front | | - |
| 983 | Bus Rear engine/flat front | | - |
| 988 | Other bus | | - |
| 989 | Unknown bus | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 39 JAGUAR

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | XJ-S Coupe | | 76-on |
| 032 | Vander Plas/XJ6/12 Sedan/Coupe/XJ8 | L, XJ, C, 340/420 Sedan | all |
| 033 | XKE V12, Roadster, 120, 2 + 2 | | all |
| 034 | X100/S-Type | | 97-on |
| 035 | X-Type | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 40 LANCIA

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Beta Sedan - HPE | | 80 |
| 032 | Beta Coupe - Zagato | | 82 |
| 033 | Scorpion | | 78 |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 41 MAZDA

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | RX2 | | 72-74 |
| 032 | RX3 | | 72-78 |
| 033 | RX4 | | 74-78 |
| 034 | RX7 | S, GS, GSL, SE | 79-on |
| 035 | 323/GLC/Protege | DX, Protege (90-on) | 77-on |
| 036 | Cosmo | | 76-78 |
| 037 | 626 | GT, GS, GSL, SE | 79-on |
| 038 | 808 | | 72-77 |
| 039 | Mizer | | 76 |
| 040 | R-100 | | -72 |
| 041 | 616/618 | | -72 |
| 042 | 1800 | | -72 |
| 043 | 929 | | 88-on |
| 044 | MX-6 | Turbo | 88-on |
| 045 | Miata | | 90-on |
| 046 | MX-3 | GS | 92-on |
| 047 | Millenia | | 95-on |
| 048 | MP3 | | - |
| 049 | RX-8 | | - |
| 050 | Mazda 6 | | - |
| 051 | Mazda 3 | | - |
| 052 | Mazda 5 | | - |
| 053 | CX-7 | | - |
| 054 | CX-9 | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Navajo | | 91-on |
| 402 | Tribute | | - |
| 441 | MPV | | 89-on |
| 471 | Mazda pickup | B-2000, B-2200, B-2600, B-4000, Cab Plus, SE-5, LX | all |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 42 MERCEDES BENZ

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | 200/220/230/240/250/ 260/280/300/320/420 | Sedan and 5 passenger C only, SE, CD, D, SD, TD, CE, E. **DOES NOT** include **280 SE** (75 on), **300 SD -** see code 037 | all |
| 032 | 230/280 SL | 2 seater only | all |
| 033 | 300/350/380/450/500 SL, 560 SL | 2 seater only, 300/500 SL (90-on) | all |
| 034 | 350/380/420/450/560 | SLC | all |
| 035 | 280/300 SEL | TD, TD-T, CDT | all |
| 036 | 380/420/450/500/560 SEL and 500/560 SEC/ 350 SDL/300 SDL | | all |
| 037 | 300 SE/380/450 SE | 280 S, 280 SE (75 on), 300 SD Sedan, 350 SD | all |
| 038 | 600, 6.9 Sedan | Pullman | all |
| 039 | 190 | D, E, 2.3, 2.5 | all |
| 040 | 300 | CE Cabriolet | 93-on |
| 041 | 400/500E | | 92-on |
| 042 | C Class | 220/280C (Kompressor)/C240/ C280/C320/C300/C350/C36/C43/ C32/55/63 AMG | 94-on |
| 043 | S Class | | - |
| 044 | SL Class | | - |
| 045 | SLK | | - |
| 046 | CL | | - |
| 047 | CLK | | - |
| 048 | E | | - |
| 049 | SLR Mclaren | | - |
| 050 | R-Class | | - |
| 051 | CLS-Class | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | M | | - |
| 402 | G Class | | - |
| 470 | Van derivative | Kurbstar | 82-on |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |

## 42 MERCEDES BENZ (continued)

| | | | |
|---|---|---|---|
| 881 | Medium/Heavy CBE | | all |
| 882 | Medium/Heavy COE | low entry | all |
| 883 | Medium/Heavy COE | high entry | all |
| 884 | Medium/Heavy | Unknown engine location | - |
| 890 | Medium/Heavy COE | entry position unknown | - |
| 898 | Other medium/heavy truck | | - |
| 899 | Unknown medium/heavy truck | | - |
| 950 | Bus based motorhome | | - |
| 981 | Medium bus | | all |
| 988 | Other bus | | - |
| 989 | Unknown bus | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 43 MG

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Midget | MKIII, 1500 | -79 |
| 032 | MGB | | 76-79 |
| 033 | MGB | GT | 67-75 |
| 034 | MGA | | all |
| 035 | TA/TC/TD/TF | | all |
| 036 | MGC | GT | -69 |
| 398 | Other automobile | Sport Sedan | - |
| 399 | Unknown automobile | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 44 PEUGEOT

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | 304 | | 71-73 |
| 032 | 403 | | -67 |
| 033 | 404 | | -70 |
| 034 | 504/505 | STI, STX, Turbo, S, GL, GLS, Liberte, Station Wagon | 70-91 |
| 035 | 604 | SL, D | 77-84 |
| 036 | 405 | Mi-16 | 89-91 |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |

### *Motorcycles*

| CODE | MODEL | |
|---|---|---|
| 701 | 0-50cc | - |
| 702 | 51-124cc | - |
| 709 | Unknown cc | - |
| 799 | Unknown motored cycle | - |
| 998 | Other vehicle | - |
| 999 | Unknown vehicle | - |

## 45 PORSCHE

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | 911 | L, S, E, T, SC, Carrera, Slopenose, Speedster, Panorama | all |
| 032 | 912 | E, T | -69 |
| 033 | 914 | S, 1.8, 2.0, 914/6 | 70-76 |
| 034 | 924 | Turbo, S | 77-88 |
| 035 | 928 | S | 78-on |
| 036 | 930 | Turbo | 79 |
| 037 | 944 | Turbo, S | 83-91 |
| 038 | 959 | | 89-94 |
| 039 | 968 | | 92-95 |
| 040 | 986 Boxter | | - |
| 041 | Cayman | | - |
| 398 | Other automobile | Spyder, Speedster, 356 | - |
| 399 | Unknown automobile | | - |
| 421 | Cayenne | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 46 RENAULT/AMC

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | LeCar | 5 | 76-83 |
| 032 | Dauphine/l0/R-8/ Caravelle | all models | -71 |
| 033 | 12 | R12L, R12TL | 72-77 |
| 034 | 15 | R15, R15TL | 73-76 |
| 035 | 16 | R16 | 69-72 |
| 036 | 17 | R17, Gordini Coupe, R17TL | 73-80 |
| 037 | RI 8i | Sportwagon | 81-on |
| 038 | Fuego | TL, TS, GTL, GTS, Turbo | 82-85 |
| 039 | Alliance/Encore, GTA,Convertible | L, DL, Limited, X-37 | 83-on |
| 041 | Alpine | GT | 87-on |
| 044 | Medallion | DL, LX | 87 only |
| 045 | Premier | | 87 only |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 47 SAAB

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | 99/99E/900 | S, Turbo, Cabriolet | all |
| 032 | Sonnett | II, III, V-4 | 68-74 |
| 033 | 95/96/97 | | -73 |
| 034 | 9000 | S, Turbo, CS (93-on) | 85-on |
| 035 | 9-3 | | - |
| 036 | 9-5 | | - |
| 037 | 9-2X | | - |
| 398 | Other automobile | Monte Carlo 850 | all |
| 399 | Unknown autmobile | | - |
| 401 | 9-7X | | - |
| 498 | Other Light Truck | | - |
| 499 | Unknown light truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 48 SUBARU

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | DL/FE/G/GF/GL/GLF/ STD/Loyale | 4 wheel drive, Turbo | 72-94 |
| 032 | Star | | 70-71 |
| 033 | 360 | | 69-70 |
| 034 | Legacy | Brighton, Outback, Outback II | 89-on |
| 035 | XT, XT6 | 4WD Turbo, convertible, DL | 86-on |
| 036 | Justy | DL, GL | 87-94 |
| 037 | SVX | | 92-on |
| 038 | Impreza | | 93-on |
| 043 | Brat | DL, GL | 78-on |
| 044 | Baja | | - |
| 045 | Outback | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Forester | | - |
| 402 | B9 Tribeca | | - |
| 498 | Other Light Truck | | - |
| 499 | Unknown Light Truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 49 TOYOTA

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Corona | Mark 11, Custom, 1900, 2000, Deluxe | -82 |
| 032 | Corolla | 1100, 1200, 1600, SR-5, LE, Deluxe, Custom, FX16 | 69-85<br>86-on |
| 033 | Celica | 1900, 2000, GT, ST, GTS | 71-on |
| 034 | Supra | Celica Supra, Soarer | 79-92 |
| 035 | Cressida | | 78-92 |
| 036 | Crown | 2300, 2600 | -71 |
| 037 | Carina | 2000 | 72-73 |
| 038 | Tercel | Corolla Tercel, 4WD Wagon | 80-on |
| 039 | Starlet | | 81-84 |
| 040 | Camry | LE, Deluxe, XLE, Coupe | 83-on |
| 041 | MR-2 | | 85-95 |
| 042 | Paseo | | 92-on |
| 043 | Avalon | | 95-on |
| 044 | Solara | | - |
| 045 | Echo | | - |
| 046 | Prius | | - |
| 048 | Scion XA | | - |
| 049 | Scion XB | | - |
| 050 | Scion TC | | - |
| 051 | Yaris | | - |
| 052 | Scion XD | 4-door hatchback | 2008-on |
| 053 | Venza | | 2009-on |
| 398 | Other automobile | 2000 GT Coupe (1960s) | all |
| 399 | Unknown automobile | | - |
| 401 | 4-Runner | | 85-on |
| 402 | RAV-4 | | 96-on |
| 403 | Highlander | | - |
| 404 | Matrix | | - |
| 405 | FJ Cruiser | | - |
| 421 | Landcruiser | | 76-on |
| 422 | Sequoia | | - |
| 441 | Minivan/Previa | LE, Cargo | 84-on |
| 442 | Sienna | | - |

## *49 TOYOTA (continued)*

| | | | |
|---|---|---|---|
| 471 | Pickup | SR-5, Extra Cab, Sport, LN44, Chinook, Wonder Wagon | 74-on |
| 472 | Tacoma | | 95-on |
| 481 | T-100 | | 93-on |
| 482 | Tundra | | |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 50 TRIUMPH

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Spitfire | I, II, III, IV, 1500 | -81 |
| 032 | GT-6 | MK3 | 67-73 |
| 033 | TR4 | TR2, TR3, TR4A | -68 |
| 034 | TR6 | | 69-76 |
| 035 | TR7/8 | | 75-81 |
| 036 | Herald | Vitesse | 60-74 |
| 037 | Stag | | 60-74 |
| 398 | Other automobile | 2000, 1200 series | - |
| 399 | Unknown automobile | | - |

### *Motorcycles*

| CODE | MODEL | |
|---|---|---|
| 701 | 0-50cc | - |
| 702 | 51-124cc | - |
| 703 | 125-349cc | - |
| 704 | 350-449cc | - |
| 705 | 450-749cc | - |
| 706 | 750cc-over | - |
| 709 | Unknown cc | - |
| 799 | Unknown motored cycle | - |
| 998 | Other vehicle | - |
| 999 | Unknown vehicle | - |

## 51 VOLVO (includes Volvo/White and Volvo/GM Heavy Trucks)

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | 122 | S | 58-68 |
| 032 | 142/144/145 | S, E, GL, GLS, Deluxe | 67-74 |
| 033 | 164 | S, E | 69-75 |
| 034 | 240/242/244/245 | DL, GL, GLE, GLT, Deluxe | 75-on |
| 035 | 262/264/265 | GL | 76-82 |
| 036 | 1800 | E, S, ES | 60-73 |
| 037 | P-544 | | 47-65 |
| 038 | 760<br>780 | Turbo, GLE | 83-90<br>87-92 |
| 039 | 740 | GLE, GT, Turbo, GL | 85-92 |
| 040 | 940 | GLE, Turbo, SE | 91-on |
| 041 | 960 | | 92-on |
| 042 | 850 | GLT, Wagon | 93-on |
| 043 | 70 Series | C70 (LT, HT, T5), S70 (GLT, T5, AWD), V70 (R, SC Cross Country, GLT, T-5, XC-70, M, 2.4T, 2.4, 2.5T, T-6, R, 3.2) LPT, HPT | - |
| 044 | 90 Series | | - |
| 045 | 80 Series | S80 | - |
| 046 | 40 Series | S40,V40 | - |
| 047 | 60 Series | S60 (2.4T, 2.4, 2.5 AWD, T5) 2.4M, 2.5T, R, T5, 2.4i, R-Design | - |
| 048 | V50 | | - |
| 049 | C30 | 1.0, 2.0, TS, R-Design | 2008-on |
| 050 | XC60 | | 2008-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | XC90 | | - |
| 881 | Medium/Heavy CBE | | all |
| 882 | Medium/Heavy COE | low entry | all |
| 883 | Medium/Heavy COE | high entry | all |
| 884 | Medium/Heavy | unknown engine location | - |
| 890 | Medium/Heavy COE | entry position unknown | - |
| 898 | Other medium/heavy truck | | all |
| 899 | Unknown medium/heavy truck | | - |
| 950 | Bus based motorhome | | - |

## *51 VOLVO (continued)*

| | | |
|---|---|---|
| 981 | Medium bus | all |
| 988 | Other bus | all |
| 989 | Unknown bus | - |
| 998 | Other vehicle | - |
| 999 | Unknown vehicle | - |

## 52 MITSUBISHI

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Starion | 2+2, LE, Turbo | 83-90 |
| 032 | Tredia | L, LS, Turbo | 83-88 |
| 033 | Cordia | L, Turbo | 83-88 |
| 034 | Galant | ECS, Sigma (thru-88) | 85-on |
| 035 | Mirage | L, Turbo | 85-on |
| 036 | Precis | | 90-on |
| 037 | Eclipse | | 90-on |
| 038 | Sigma | | 89-90 |
| 039 | 3000 GT | Spyder, VR-4 | 91-on |
| 040 | Diamante | | 92-on |
| 046 | Lancer | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Montero | Sport | 85-on |
| 402 | Outlander | | - |
| 403 | Endeavor | | - |
| 441 | Minivan | LS | 87-on |
| 442 | Expo | LRV, Sport | 92-95 |
| 471 | Pickup | Mighty Max, SPX, 4x4 | all |
| 472 | Raider/Durocross | | - |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 882 | Medium/Heavy COE | low entry, FUSO FE | all |
| 898 | Other medium/heavy truck | | - |
| 899 | Unknown medium/heavy truck | | - |
| 950 | Bus based motorhome | | - |
| 981 | Bus Conventional front engine | | all |
| 982 | Bus Front engine/flat front | | all |
| 983 | Bus Rear engine/flat front | | all |
| 988 | Other bus | | - |
| 989 | Unknown bus | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 53 SUZUKI

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | SA310 | GLX | 86-on |
| 034 | Swift | GTi,GTX | 89-on |
| 035 | Esteem | | - |
| 036 | Aerio | | - |
| 037 | Forenza | | - |
| 038 | Verona | | - |
| 039 | Reno | | - |
| 040 | SX4 | | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Samurai | Standard, Deluxe | 85-95 |
| 402 | Sidekick/Grand Vitara | | 89-on |
| 403 | X-90/Vitara | | 96-on |
| 404 | Grand Vitara | | - |
| 405 | XL7 | | - |
| 481 | Equator | | 2009-on |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |

### *Motorcycles*

| CODE | MODEL | |
|---|---|---|
| 701 | 0-50cc | - |
| 702 | 51-124cc | - |
| 703 | 125-349cc | - |
| 704 | 350-449cc | - |
| 705 | 450-749cc | - |
| 706 | 750cc-over | - |
| 709 | Unknown cc | - |

## 53 SUZUKI (continued)

### All Terrain Cycles/Vehicles

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 731 | 0-50cc | includes all ATCs/ATVs | - |
| 732 | 51-124 | designed soley for off-road use. | - |
| 733 | 125-349cc | | - |
| 734 | 350cc or greater | | - |
| 739 | Unknown cc | | - |
| 798 | Other Motored Cycle | | - |
| 799 | Unknown motored cycle | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 54 ACURA

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Integra | RS, LS, GS | 86-on |
| 032 | Legend/RL | | 86-on |
| 033 | NSX | NSX -T | 91-on |
| 034 | Vigor | TL2.5/TL3.2 | 92-on |
| 035 | CL/TL | Coupe | 96-on |
| 038 | RSX | | - |
| 039 | TSX | | - |
| 040 | ZDX | Body Type = 05/5-door/4-door hatchback | 2010-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | SLX | | 96-on |
| 402 | RDX | | - |
| 421 | MDX | | - |
| 498 | Other Light Truck | | - |
| 499 | Unknown Light Truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 55 HYUNDAI

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Pony | | 84-88 |
| 032 | Excel | GL, GLS | 84-94 |
| 033 | Sonata | | 89-on |
| 034 | Scoupe | | 91-95 |
| 035 | Elantra | | 92-on |
| 036 | Accent | | 95-on |
| 037 | Tiburon | | - |
| 038 | XG300/350 | | - |
| 039 | Azera | | - |
| 040 | Equus | | 2008-on |
| 041 | Genesis | 3.8, 4.6 | 2009-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Santa Fe | | - |
| 402 | Tuscon | | - |
| 403 | Veracruz | | - |
| 441 | Entourage | | - |
| 498 | Other Light Truck | | - |
| 499 | Unknown Light Truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 56 MERKUR

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | XR4Ti | Turbo | 85-89 |
| 032 | Scorpio | Tu rbo | 87-90 |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 57 YUGO

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | GV | GVX, Cabriolet | 86-92 |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 58 INFINITI

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | M30 | | 90-92 |
| 032 | Q45 | | 90-on |
| 033 | G20 | | 91-96 |
| 034 | J30 | | 93-on |
| 035 | I30 | | 96-on |
| 036 | I35 | | - |
| 037 | G35/G37 | | - |
| 038 | M35/M37/M45/M56 | | - |
| 039 | FX35/45/50 | | - |
| 040 | EX35 | Includes Journey | 2008-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | T30/QX4 (2010 and later) | | 97-on |
| 421 | QX56 | | - |
| 498 | Other Light Truck | | 97-on |
| 499 | Unknown Light Truck | | 97-on |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 59 LEXUS

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | ES-250/300/330/350 | | 90-on |
| 032 | LS | 400/430/460/L/600h/L | 90-on |
| 033 | SC-300/SC-400 | 2 door Coupe | 92-on |
| 034 | GS-300/350/400/430/450h | | 94-on |
| 035 | IS-250/300/350/500 | | - |
| 036 | SC 430 | | 2002 |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | RX300 | | - |
| 402 | GX470 | | - |
| 403 | RX330/350/400h | Hybrid, Thundercloud, Mark Levinson Package | 2004-on |
| 421 | LX-450/470 | | 96-on |
| 498 | Other light Truck | | 96-on |
| 499 | Unknown Light Truck | | 96-on |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 60 DAIHATSU

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Charade | | 90-92 |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Rocky | | 90-92 |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 61 STERLING

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | 827S | Li | 86-91 |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 62 LAND ROVER

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 401 | Discovery (LR) | | 94-on |
| 402 | Defender 90 (LR) | | 94-98 |
| 421 | County LWB (RR)/County Classis (RR) | | all |
| 422 | Defender 90 (LR), 4.0 SE (RR), and Freelander | | 1999-2010 |
| 423 | LR3 | | - |
| 424 | LR2 | | - |
| 498 | Other Light Truck | | all |
| 499 | Unknown Light Truck | | all |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 63 KIA

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Sephia | | all |
| 032 | Spectra | | - |
| 033 | Rio/Rio5 | | - |
| 034 | Optima | | - |
| 035 | Amanti | | - |
| 036 | Rondo | | - |
| 037 | Soul | | 2009-on |
| 038 | Forte | | 2010-on |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |
| 401 | Sportage | | 96-on |
| 402 | Sorrento | | - |
| 421 | Borrego | EX, LX (Body Type = 15/Large Utility) | 2009-on |
| 441 | Sedona | | - |
| 498 | Other Light Truck | | - |
| 499 | Unknown Light Truck | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## 64 DAEWOO

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Lanos | | - |
| 032 | Nubira | | - |
| 033 | Leganza | | - |
| 398 | Other Automobile | | - |
| 399 | Unknown Automobile | | - |
| 999 | Unknown Vehicle | | - |

## 65 SMART

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | ForTwo | Pure & Passion | - |
| 398 | Other automobile | | - |
| 399 | Unknown automobile | | - |

## 69 OTHER FOREIGN

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 031 | Aston Martin | Lagonda, Vantage, Volante, Saloon | all |
| 032 | Bricklin | | all |
| 033 | Citreon | | all |
| 034 | Delorean | | all |
| 035 | Ferrari | | all |
| 036 | Hillman | | all |
| 037 | Jensen | Healy | all |
| 038 | Lamborghini | Countach 5000S, Jalpa | all |
| 039 | Lotus | Europe, Esprit | all |
| 040 | Maserati | Biturbo | all |
| 041 | Morris | Minor | all |
| 042 | Rolls Royce/Bentley | Cloud/shadow series | all |
| 044 | Simca | | all |
| 045 | Sunbeam | | all |
| 046 | TVR | | all |
| 048 | Desta | | all |
| 049 | Reliant | | all |
| 052 | Bertone | X/19 | all |
| 053 | Lada | | all |
| 054 | Mini Cooper | | |
| 398 | Other make | Morgan, Singer | all |
| 399 | Unknown make | | - |
| 498 | Other light truck | | - |

*MAKES 70 to 79: See "Classification of Motored Cycles and All Terrain Vehicles / Cycles".*

## 81 DIAMOND REO / REO

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 850 | Medium/Heavy Truck Based Motorhome | | - |
| 881 | Medium Heavy - CBE | | all |
| 882 | Medium/Heavy – COE/Low entry | | - |
| 883 | Medium/Heavy – COE/High entry | | - |
| 884 | Medium/Heavy – Unknown Engine Location | | - |
| 890 | Medium/Heavy – COE/Entry Position Unknown | | - |
| 898 | Medium/Heavy – Other | | - |
| 899 | Unknown Medium/Heavy Truck | | - |

## 82 FREIGHTLINER/WHITE

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 461 | Sprinter/Advantage | | - |
| 470 | M-Line Walk-in Van | | - |
| 498 | Other Light Truck | | - |
| 499 | Unknown Light Truck | | - |
| 850 | Truck based motorhome | | - |
| 881 | Medium Heavy - CBE | | all |
| 882 | Medium/Heavy COE low entry | | all |
| 883 | Medium/Heavy COE high entry | | all |
| 884 | Medium/Heavy unknown engine location | | - |
| 890 | Medium/Heavy COE entry position unknown | | - |
| 898 | Other medium/heavy truck | | all |
| 899 | Unknown medium/heavy truck | | - |
| 981 | Conventional bus | | all |
| 982 | Bus-flat front, front engine | | all |
| 983 | Bus-flat front, rear engine | | all |
| 988 | Other bus | | - |
| 989 | Unknown bus | | - |
| 999 | Unknown vehicle | | - |

## 84 INTERNATIONAL HARVESTER

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 421 | Scout | Scout II, Utility pickup, SS-2, Roadstar, 800 series, Traveler, Terra Traveltop | all |
| 431 | Travelall | 1010-1210, 100-200 | all |
| 466 | Multistop Van | Metro RM, 120-160, MS 1210, MS 1510 | all |
| 481 | Pickup | R-100-500, 900A-1 500C/D, 1010-1510 | all |
| 498 | Other light truck | | - |
| 499 | Unknown light truck | | - |
| 850 | Truck based motorhome | | - |
| 881 | Medium Heavy - CBE | Loadstar/Fleetstar, Paystar, CBE Transtar, 4200, S-series Mixer | all |
| 882 | Medium/Heavy COE low entry | CO, VCO, DCO, 190-1950, Cargostar, LFM, 5370 | all |
| 883 | Medium/Heavy COE high entry | DCO, DCOT, UCO, VCOT, 405-series, COE Transtar, Unistar, Conco 707B, 9600 | all |
| 884 | Medium/Heavy | unknown engine location | - |
| 890 | Medium/Heavy COE | entry position unknown | - |
| 898 | Other medium/heavy truck | firetruck-Rl4O-R301, C08190 | all |
| 899 | Unknown medium/heavy truck | | - |
| 950 | Bus based Motorhome | | all |
| 981 | Conventional bus | Rl53-1853 - Loadstar, 1603-1853 | all |
| 982 | Bus-flat front, front engine | 173FC,183FC | all |
| 983 | Bus-flat front, rear engine | 183RE, 193RE-transit | all |
| 988 | Other bus | | - |
| 989 | Unknown bus | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

*MAKES 85 to 98: See "Classification for Medium/Heavy Trucks and Buses".*

## 99 UNKNOWN MAKE

| CODE | MODEL | INCLUDES | YEAR |
|---|---|---|---|
| 399 | Unknown automobile | | - |
| 499 | Unknown light truck | | - |
| 799 | Unknown motored cycle | | - |
| 899 | Unknown medium/heavy truck | | - |
| 988 | Other bus | | - |
| 989 | Unknown bus | | - |
| 998 | Other vehicle | | - |
| 999 | Unknown vehicle | | - |

## *Classification for Motored Cycles and All Terrain Vehicles / Cycles*

| Vehicle Make | MC | ATC | ATV | Make Code |
|---|---|---|---|---|
| BMW | x | | | 34 |
| Honda | x | x | x | 37 |
| Peugeot | x | | | 44 |
| Triumph | x | | | 50 |
| Suzuki | x | x | x | 53 |
| BSA | x | | | 70 |
| Ducati | x | | | 71 |
| Harley-Davidson | x | | | 72 |
| Kawasaki | x | x | x | 73 |
| Moto-Guzzi | x | | x | 74 |
| Norton | x | | | 75 |
| Yamaha | x | x | x | 76 |
| Other make moped | x | | | 78 |
| Other make motorized cycle | x | x | x | 79 |
| Unknown make | | | | 99 |

The following model codes are used for all manufacturers of motored cycles and all terrain vehicles/cycles:

| Motored Cycles: | | All Terrain Vehicles/Cycles: | |
|---|---|---|---|
| 0-50cc | 701 | 0-50cc | 731 |
| 51-124cc | 702 | 51-124cc | 732 |
| 125-349cc | 703 | 125-349cc | 733 |
| 350-449cc | 704 | 350cc or greater | 734 |
| 450-749cc | 705 | Unknown cc | 739 |
| 750cc-or greater | 706 | | |
| Unknown cc | 709 | | |

| All Cycles: | |
|---|---|
| Other motored cycle | 798 |
| Unknown motored cycle | 799 |
| Other vehicle | 998 |

## *Classification for Medium/Heavy Trucks and Buses*

| Vehicle Make | Truck | Bus | Make Code |
|---|---|---|---|
| AM General | x | x | 03 |
| Dodge | x | x | 07 |
| Ford | x | x | 12 |
| Chevrolet | x | x | 20 |
| GMC | x | x | 23 |
| Grumman | x | x | 25 |
| Nissan/Datsun | x | | 35 |
| Fiat | x | | 36 |
| Isuzu | x | x | 38 |
| Mercedes Benz | x | x | 42 |
| Volvo | x | x | 51 |
| Mitsubishi | x | | 52 |
| Brockway | x | | 80 |
| Diamond Reo/Reo | x | | 81 |
| Freightliner/White | x | | 82 |
| FWD | x | | 83 |
| International Harvester/ | x | x | 84 |
| Navistar Kenworth | x | | 85 |
| Mack | x | | 86 |
| Peterbilt | x | | 87 |
| lveco/Magirus | x | | 88 |
| Other Make | | | 98 |

## *Classification for Medium/Heavy Trucks and Buses (continued)*

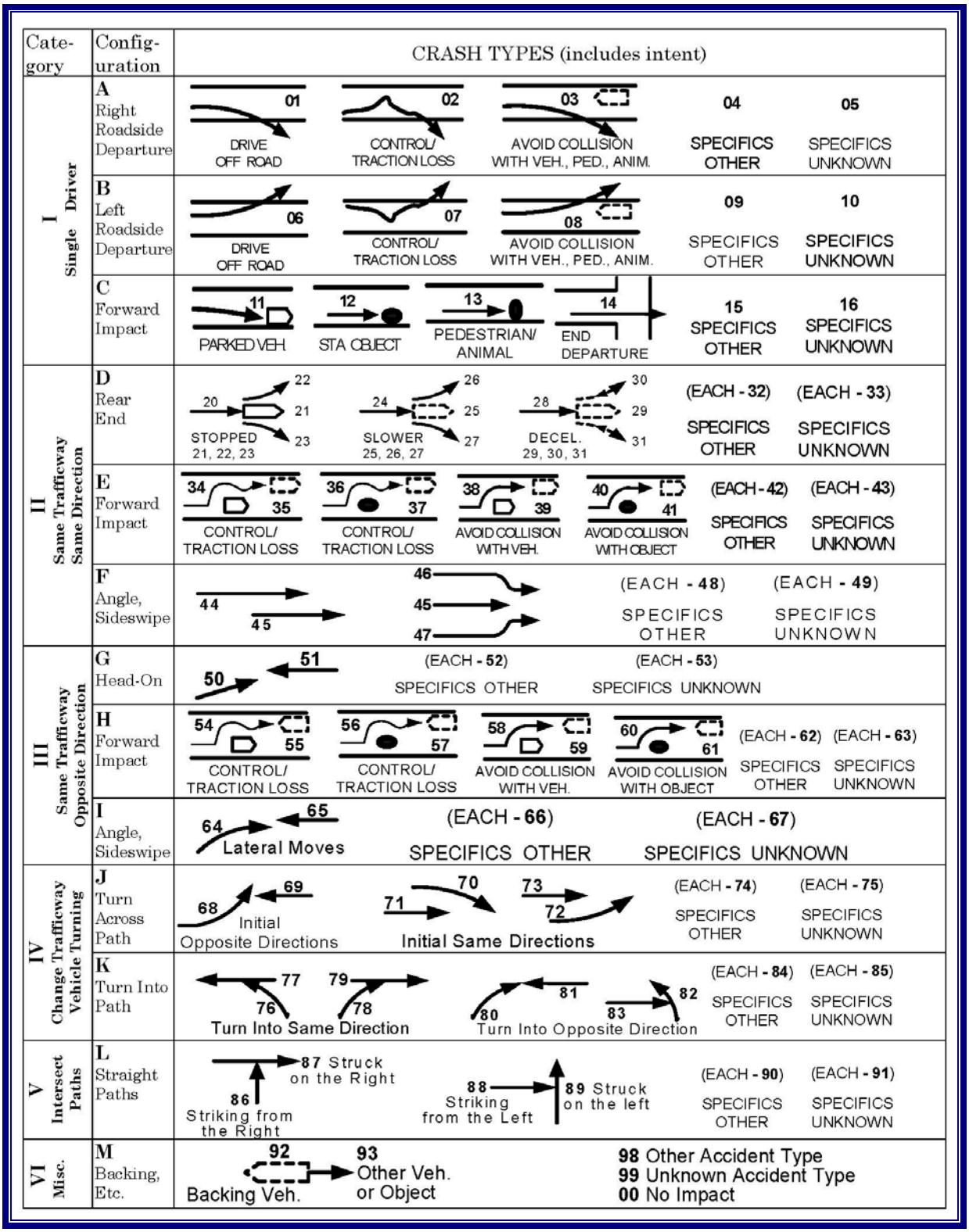
For Make=98 (Other Medium/Heavy Trucks/ Buses, and Other Vehicle Makes), the following Model codes represent other truck and bus makes or types:

| Other Truck and Bus Makes: | |
|---|---|
| Autocar | 801 |
| Auto-Union-DKW | 802 |
| Divco | 803 |
| Western Star | 804 |
| Oshkosh | 805 |
| Hino | 806 |
| Scania | 807 |
| Sterling Trucks | 808 |
| Neoplan (bus) | 902 |

Codes for medium and heavy truck models and bus models are shown below. These codes are used for all manufacturers of medium/heavy trucks and buses:

| Truck and Bus Models: | |
|---|---|
| Light truck based motorhome | 498 |
| Unknown type light motorhome | 499 |
| Truck based motorhome | 850 |
| Medium/Heavy CBE | 881 |
| Medium/Heavy COE-low entry | 882 |
| Medium/Heavy COE-high entry | 883 |
| Medium/Heavy Unknown engine location | 884 |
| Medium/Heavy COE-entry position unknown | 890 |
| Medium/Heavy - Other | 898 |
| Unknown light/medium/heavy truck | 899 |
| Bus based motorhome | 950 |
| Bus-conventional front engine | 981 |
| Bus - front engine/flat front | 982 |
| Bus - rear engine/flat front | 983 |
| Other Bus (e.g. Blue Bird, Chance Coach) | 988 |
| Unknown Bus | 989 |
| Other vehicle (e.g. farm vehicle, go-cart) | 998 |
| Unknown Vehicle | 999 |

# Appendix B:
# V23 Accident Type Diagram



# Appendix C:
# Summary Statistics

The following two tables provide a summary of descriptive statistics from the NASS GES data sets. Table 1 represents the actual number of records or unweighted sample and Table 2 represents the national estimates or weighted sample for years 1988 - 2010. These statistics provide the analyst a benchmark to compare against numbers obtained from the analytical data sets.

***Table 1: Unweighted Sample***

| Year | Crashes | Vehicles | People | Drivers | Occupants | Pedestrians | Pedalcyclists |
|---|---|---|---|---|---|---|---|
| **1988** | 48,831 | 83,633 | 122,738 | 82,708 | 119,914 | 1,554 | 1,021 |
| **1989** | 44,105 | 74,778 | 110,896 | 74,354 | 107,447 | 1,880 | 1,315 |
| **1990** | 46,290 | 80,154 | 117,141 | 79,716 | 113,439 | 1,995 | 1,468 |
| **1991** | 42,600 | 73,833 | 108,955 | 73,481 | 105,580 | 1,723 | 1,348 |
| **1992** | 46,197 | 80,566 | 118,933 | 80,152 | 115,346 | 1,891 | 1,415 |
| **1993** | 55,644 | 96,544 | 143,525 | 96,209 | 138,759 | 2,589 | 1,845 |
| **1994** | 55,759 | 97,441 | 143,743 | 97,109 | 139,221 | 2,442 | 1,715 |
| **1995** | 53,749 | 95,803 | 140,512 | 95,477 | 136,890 | 1,909 | 1,336 |
| **1996** | 56,030 | 100,861 | 147,903 | 100,500 | 144,332 | 1,820 | 1,305 |
| **1997** | 55,562 | 100,032 | 145,890 | 99,688 | 142,366 | 1,838 | 1,266 |
| **1998** | 54,006 | 97,362 | 141,372 | 97,074 | 138,545 | 1,593 | 1,165 |
| **1999** | 52,913 | 94,846 | 137,048 | 94,549 | 134,095 | 1,736 | 1,108 |
| **2000** | 57,382 | 102,551 | 146,596 | 102,268 | 143,530 | 1,703 | 1,128 |
| **2001** | 55,964 | 100,161 | 143,281 | 99,893 | 140,147 | 1,732 | 1,005 |
| **2002** | 54,291 | 96,424 | 139,614 | 96,070 | 136,362 | 1,734 | 1,154 |
| **2003** | 59,156 | 105,295 | 151,167 | 104,951 | 147,730 | 1,895 | 1,122 |
| **2004** | 60,974 | 108,413 | 156,143 | 108,119 | 152,428 | 2,014 | 1,280 |
| **2005** | 54,597 | 96,340 | 137,884 | 96,059 | 134,523 | 1,778 | 1,207 |
| **2006** | 56,055 | 98,929 | 141,412 | 98,689 | 137,731 | 2,007 | 1,220 |
| **2007** | 61,282 | 107,202 | 152,727 | 106,935 | 148,370 | 2,356 | 1,446 |
| **2008** | 55,946 | 96,546 | 137,303 | 96,268 | 133,042 | 2,160 | 1,599 |
| **2009** | 44,645 | 77,594 | 110,990 | 77,389 | 107,469 | 1,778 | 1,305 |
| **2010** | 46,391 | 81,406 | 116,020 | 81,200 | 112,329 | 1,874 | 1,301 |

Drivers: PERSON TYPE = 1
Occupants: PERSON TYPE IN (1,2,9)
Pedestrians: PERSON TYPE = 5
Pedalcyclists: PERSON TYPE = 6 (6 or 7 in 2009 and Later)

***Table 2: Weighted Sample***

| Year | Crashes | Vehicles | People | Drivers | Occupants | Pedestrians | Pedalcyclists |
|---|---|---|---|---|---|---|---|
| **1988** | 6,876,780 | 12,007,970 | 17,247,886 | 11,851,683 | 17,005,088 | 121,474 | 82,535 |
| **1989** | 6,644,549 | 11,556,267 | 16,612,033 | 11,485,928 | 16,361,647 | 121,403 | 85,193 |
| **1990** | 6,462,126 | 11,315,087 | 16,298,795 | 11,252,874 | 16,061,886 | 116,405 | 86,059 |
| **1991** | 6,109,931 | 10,711,298 | 15,593,416 | 10,658,830 | 15,368,100 | 98,849 | 77,045 |
| **1992** | 5,992,938 | 10,535,596 | 15,339,372 | 10,485,244 | 15,136,291 | 94,646 | 71,084 |
| **1993** | 6,094,772 | 10,725,032 | 15,767,005 | 10,688,211 | 15,546,338 | 102,261 | 78,438 |
| **1994** | 6,489,122 | 11,487,378 | 16,836,682 | 11,451,723 | 16,617,814 | 101,781 | 70,862 |
| **1995** | 6,690,061 | 11,979,882 | 17,517,709 | 11,937,794 | 17,309,929 | 92,350 | 74,751 |
| **1996** | 6,761,051 | 12,082,760 | 17,704,717 | 12,043,981 | 17,490,909 | 89,992 | 67,892 |
| **1997** | 6,611,906 | 11,834,167 | 17,280,356 | 11,798,756 | 17,083,876 | 83,174 | 64,599 |
| **1998** | 6,325,242 | 11,386,502 | 16,521,887 | 11,354,181 | 16,338,158 | 73,829 | 59,581 |
| **1999** | 6,271,524 | 11,220,598 | 16,068,665 | 11,182,321 | 15,910,909 | 90,768 | 56,668 |
| **2000** | 6,389,310 | 11,346,184 | 16,113,394 | 11,317,668 | 15,952,464 | 83,156 | 56,350 |
| **2001** | 6,314,117 | 11,187,914 | 15,914,491 | 11,159,551 | 15,732,540 | 83,129 | 50,730 |
| **2002** | 6,304,493 | 11,168,656 | 15,737,226 | 11,129,037 | 15,569,434 | 74,491 | 51,684 |
| **2003** | 6,317,752 | 11,175,816 | 15,756,262 | 11,142,663 | 15,588,774 | 74,335 | 51,028 |
| **2004** | 6,169,998 | 10,945,334 | 15,341,895 | 10,916,913 | 15,183,714 | 73,478 | 44,436 |
| **2005** | 6,146,907 | 10,838,878 | 15,160,503 | 10,813,148 | 15,003,907 | 68,193 | 50,232 |
| **2006** | 5,964,194 | 10,571,511 | 14,695,390 | 10,545,598 | 14,532,697 | 65,404 | 48,524 |
| **2007** | 6,015,938 | 10,539,204 | 14,595,063 | 10,511,751 | 14,407,390 | 77,149 | 51,008 |
| **2008** | 5,801,228 | 10,096,536 | 13,914,399 | 10,066,779 | 13,729,518 | 73,417 | 57,439 |
| **2009** | 5,497,506 | 9,630,224 | 13,384,796 | 9,604,259 | 13,215,739 | 62,094 | 54,448 |
| **2010** | 5,408,612 | 9,551,084 | 13,216,589 | 9,526,827 | 13,029,817 | 74,649 | 55,513 |

Drivers: PERSON TYPE = 1
Occupants: PERSON TYPE IN (1,2,9)
Pedestrians: PERSON TYPE = 5
Pedalcyclists: PERSON TYPE = 6 (6 or 7 in 2009 and Later)

# Appendix D:
# Statistical Methods

## National Estimates:

The national estimates produced from the NASS GES data may differ from the true population values because they are based on a probability sample of police-reported crashes that involve injury or major property damage, rather than a census of these types of crashes. The size of these differences may vary depending on the makeup of the sample which is selected. The standard error of an estimate is a measure of the precision or reliability with which an estimate from this particular NASS GES sample approximates the result of a census.

## Generalized Estimated Sampling Errors

It is impractical to compute and provide a standard error for each national estimate. Instead, generalized standard errors for estimates of totals are presented in the following tables for 1988 to the current NASS GES year. The following steps produced the generalized standard errors:

1. The standard errors for selected estimates were calculated using Taylor series approximations. Generalized standard errors were calculated separately for crash, vehicle, and person characteristics.
2. Using regression techniques, three equations were found that best fit the separate standard errors for crash, vehicle, and person estimates.
3. The equations were used to generate approximate standard errors for the three types of estimates.

The NASS GES estimates and an estimate of one standard error are given in the following tables. By adding and subtracting the standard error to the associated estimate, a 95 percent confidence interval for an estimate can be created.

For example, if the estimated number of injured or killed pedestrians in 1995 was 90,000 (rounded to the nearest 1,000). To calculate one standard error for this person estimate, use the table on page 238. Look under the Person Estimate column for the value of 90,000. Look under the Person Standard Error column to the right for the corresponding person error value. For the person estimate of 90,000 the person standard error value is 7,100. The 95 percent confidence interval for this estimate would be approximately 90,000 + or - 1.96 * (7,100) or 76,000 to 104,000.

If the person estimate falls between the values shown on the table linear interpolation will be required. For example, had the person estimate been 92,000 instead of 90,000 the person standard error would need to be calculated. Use linear interpolation from the standard error values for 90,000 and 100,000. One approximate standard error would be 7,100 + 120 = 7,220. The 95 percent confidence interval for this estimate would be approximately 92,000 + or - 1.96 * (7,220) or 78,000 to 106,000.

More information on standard error estimates can be obtained from the National Center for Statistics and Analysis.

## 1988 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 600 | 1,000 | 500 | 1,000 | 500 |
| 5,000 | 1,400 | 5,000 | 1,200 | 5,000 | 1,200 |
| 10,000 | 2,100 | 10,000 | 1,800 | 10,000 | 1,800 |
| 20,000 | 3,200 | 20,000 | 2,900 | 20,000 | 2,9000 |
| 30,000 | 4,200 | 30,000 | 3,800 | 30,000 | 3,800 |
| 40,000 | 5,200 | 40,000 | 4,700 | 40,000 | 4,700 |
| 50,000 | 6,100 | 50,000 | 5,500 | 50,000 | 5,600 |
| 60,000 | 6,900 | 60,000 | 6,300 | 60,000 | 6,400 |
| 70,000 | 7,800 | 70,000 | 7,100 | 70,000 | 7,200 |
| 80,000 | 8,600 | 80,000 | 7,900 | 80,000 | 8,000 |
| 90,000 | 9,400 | 90,000 | 8,600 | 90,000 | 8,800 |
| 100,000 | 10,200 | 100,000 | 9,400 | 100,000 | 9,500 |
| 200,000 | 17,600 | 200,000 | 16,500 | 200,000 | 17,000 |
| 300,000 | 24,600 | 300,000 | 23,400 | 300,000 | 24,200 |
| 400,000 | 31,400 | 400,000 | 30,100 | 400,000 | 31,300 |
| 500,000 | 38,100 | 500,000 | 36,700 | 500,000 | 38,300 |
| 600,000 | 44,800 | 600,000 | 43,400 | 600,000 | 45,400 |
| 700,000 | 51,300 | 700,000 | 50,000 | 700,000 | 52,500 |
| 800,000 | 57,900 | 800,000 | 56,600 | 800,000 | 59,500 |
| 900,000 | 64,400 | 900,000 | 63,200 | 900,000 | 66,600 |
| 1,000,000 | 71,000 | 1,000,000 | 69,900 | 1,000,000 | 73,800 |
| 1,500,000 | 103,700 | 2,000,000 | 137,400 | 2,000,000 | 146,800 |
| 2,000,000 | 136,500 | 3,000,000 | 207,300 | 3,000,000 | 223,000 |
| 2,500,000 | 169,600 | 4,000,000 | 279,300 | 4,000,000 | 302,200 |
| 3,000,000 | 203,100 | 5,000,000 | 353,400 | 5,000,000 | 384,000 |
| 3,500,000 | 236,900 | 6,000,000 | 429,500 | 6,000,000 | 468,200 |
| 4,000,000 | 271,000 | 7,000,000 | 507,300 | 7,000,000 | 554,700 |
| 4,500,000 | 305,400 | 8,000,000 | 586,800 | 8,000,000 | 643,300 |
| 5,000,000 | 340,200 | 9,000,000 | 667,900 | 9,000,000 | 733,900 |
| 5,500,000 | 375,400 | 10,000,000 | 750,500 | 10,000,000 | 826,300 |
| 6,000,000 | 410,800 | 11,000,000 | 834,500 | 11,000,000 | 920,600 |
| 7,000,000 | 482,600 | 12,000,000 | 919,900 | 12,000,000 | 1,016,600 |

| | | |
|---|---|---|
| $* SE = e^{a/2+b/2(\ln X)**2}$, *where* | $**SE = e^{a/2+b/2(\ln X)**2}$, *where* | $*** SE = e^{a/2+b/2(\ln X)**2}$, *where* |
| $a = 9.63$ | $a = 9.16$ | $a = 9.04$ |
| $b = .067$ | $b = .069$ | $b = .070$ |

## 1989 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 600 | 1,000 | 500 | 1,000 | 500 |
| 5,000 | 1,400 | 5,000 | 1,200 | 5,000 | 1,200 |
| 10,000 | 2,100 | 10,000 | 1,800 | 10,000 | 1,800 |
| 20,000 | 3,200 | 20,000 | 2,900 | 20,000 | 2,900 |
| 30,000 | 4,200 | 30,000 | 3,800 | 30,000 | 3,800 |
| 40,000 | 5,200 | 40,000 | 4,700 | 40,000 | 4,700 |
| 50,000 | 6,100 | 50,000 | 5,500 | 50,000 | 5,600 |
| 60,000 | 6,900 | 60,000 | 6,300 | 60,000 | 6,400 |
| 70,000 | 7,800 | 70,000 | 7,100 | 70,000 | 7,200 |
| 80,000 | 8,600 | 80,000 | 7,900 | 80,000 | 8,000 |
| 90,000 | 9,400 | 90,000 | 8,600 | 90,000 | 8,800 |
| 100,000 | 10,200 | 100,000 | 9,400 | 100,000 | 9,500 |
| 200,000 | 17,600 | 200,000 | 16,500 | 200,000 | 17,000 |
| 300,000 | 24,600 | 300,000 | 23,400 | 300,000 | 24,200 |
| 400,000 | 31,400 | 400,000 | 30,100 | 400,000 | 31,300 |
| 500,000 | 38,100 | 500,000 | 36,700 | 500,000 | 38,300 |
| 600,000 | 44,800 | 600,000 | 43,400 | 600,000 | 45,400 |
| 700,000 | 51,300 | 700,000 | 50,000 | 700,000 | 52,500 |
| 800,000 | 57,900 | 800,000 | 56,600 | 800,000 | 59,500 |
| 900,000 | 64,400 | 900,000 | 63,200 | 900,000 | 66,600 |
| 1,000,000 | 71,000 | 1,000,000 | 69,900 | 1,000,000 | 73,800 |
| 1,500,000 | 103,700 | 2,000,000 | 137,400 | 2,000,000 | 146,800 |
| 2,000,000 | 136,500 | 3,000,000 | 207,300 | 3,000,000 | 223,000 |
| 2,500,000 | 169,600 | 4,000,000 | 279,300 | 4,000,000 | 302,200 |
| 3,000,000 | 203,100 | 5,000,000 | 353,400 | 5,000,000 | 384,000 |
| 3,500,000 | 236,900 | 6,000,000 | 429,500 | 6,000,000 | 468,200 |
| 4,000,000 | 271,000 | 7,000,000 | 507,300 | 7,000,000 | 554,700 |
| 4,500,000 | 305,400 | 8,000,000 | 586,800 | 8,000,000 | 643,300 |
| 5,000,000 | 340,200 | 9,000,000 | 667,900 | 9,000,000 | 733,900 |
| 5,500,000 | 375,400 | 10,000,000 | 750,500 | 10,000,000 | 826,300 |
| 6,000,000 | 410,800 | 11,000,000 | 834,500 | 11,000,000 | 920,600 |
| 7,000,000 | 482,600 | 12,000,000 | 919,900 | 12,000,000 | 1,016,600 |

| | | |
|---|---|---|
| $* SE = e^{a/2+b/2(\ln X)**2}$, *where* | $** SE = e^{a/2+b/2(\ln X)**2}$, *where* | $*** SE = e^{a/2+b/2(\ln X)**2}$, *where* |
| $a = 9.63$ | $a = 9.16$ | $a = 9.04$ |
| $b = .067$ | $b = .069$ | $b = .070$ |

## 1990 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 700 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,400 | 5,000 | 1,000 | 5,000 | 1,000 |
| 10,000 | 2,100 | 10,000 | 1,600 | 10,000 | 1,500 |
| 20,000 | 3,300 | 20,000 | 2,500 | 20,000 | 2,400 |
| 30,000 | 4,200 | 30,000 | 3,400 | 30,000 | 3,100 |
| 40,000 | 5,100 | 40,000 | 4,200 | 40,000 | 3,900 |
| 50,000 | 5,900 | 50,000 | 4,900 | 50,000 | 4,500 |
| 60,000 | 6,800 | 60,000 | 5,700 | 60,000 | 5,200 |
| 70,000 | 7,500 | 70,000 | 6,400 | 70,000 | 5,800 |
| 80,000 | 8,300 | 80,000 | 7,100 | 80,000 | 6,500 |
| 90,000 | 9,000 | 90,000 | 7,800 | 90,000 | 7,100 |
| 100,000 | 9,700 | 100,000 | 8,500 | 100,000 | 7,700 |
| 200,000 | 16,400 | 200,000 | 15,000 | 200,000 | 13,400 |
| 300,000 | 22,600 | 300,000 | 21,300 | 300,000 | 18,900 |
| 400,000 | 28,600 | 400,000 | 27,500 | 400,000 | 24,300 |
| 500,000 | 34,400 | 500,000 | 33,700 | 500,000 | 29,600 |
| 600,000 | 40,000 | 600,000 | 39,900 | 600,000 | 34,800 |
| 700,000 | 45,700 | 700,000 | 46,100 | 700,000 | 40,100 |
| 800,000 | 51,200 | 800,000 | 52,200 | 800,000 | 45,300 |
| 900,000 | 56,700 | 900,000 | 58,400 | 900,000 | 50,600 |
| 1,000,000 | 62,200 | 1,000,000 | 64,700 | 1,000,000 | 55,800 |
| 1,500,000 | 116,200 | 2,000,000 | 128,300 | 2,000,000 | 108,800 |
| 2,000,000 | 169,800 | 3,000,000 | 194,500 | 3,000,000 | 163,200 |
| 2,500,000 | 223,700 | 4,000,000 | 263,100 | 4,000,000 | 219,100 |
| 3,000,000 | 278,000 | 5,000,000 | 334,000 | 5,000,000 | 276,400 |
| 3,500,000 | 332,800 | 6,000,000 | 406,900 | 6,000,000 | 335,200 |
| 4,000,000 | 388,100 | 7,000,000 | 481,600 | 7,000,000 | 394,900 |
| 4,500,000 | 444,000 | 8,000,000 | 558,200 | 8,000,000 | 455,900 |
| 5,000,000 | 500,400 | 9,000,000 | 636,400 | 9,000,000 | 518,100 |
| 5,500,000 | 557,300 | 10,000,000 | 716,100 | 10,000,000 | 581,300 |
| 6,000,000 | 614,700 | 11,000,000 | 797,400 | 11,000,000 | 645,500 |
| 7,000,000 | 672,500 | 12,000,000 | 808,100 | 12,000,000 | 710,600 |

| | | |
|---|---|---|
| $* SE = e^{(a/2)+(b/2)(\ln(x))^2}$, *where* | $** SE = e^{(a/2)+(b/2)(\ln(x))^2}$, *where* | $*** SE = e^{(a/2)+(b/2)(\ln(x))^2}$, *where* |
| $a = 9.93401$ | $a = 8.83524$ | $a = 8.88000$ |
| $b = 0.06362$ | $b = 0.06977$ | $b = 0.06800$ |

## 1991 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 600 | 1,000 | 500 | 1,000 | 400 |
| 5,000 | 1,400 | 5,000 | 1,100 | 5,000 | 1,000 |
| 10,000 | 2,100 | 10,000 | 1,600 | 10,000 | 1,500 |
| 20,000 | 3,200 | 20,000 | 2,600 | 20,000 | 2,400 |
| 30,000 | 4,200 | 30,000 | 3,500 | 30,000 | 3,200 |
| 40,000 | 5,000 | 40,000 | 4,300 | 40,000 | 4,000 |
| 50,000 | 5,900 | 50,000 | 5,000 | 50,000 | 4,700 |
| 60,000 | 6,700 | 60,000 | 5,800 | 60,000 | 5,400 |
| 70,000 | 7,500 | 70,000 | 6,500 | 70,000 | 6,100 |
| 80,000 | 8,200 | 80,000 | 7,200 | 80,000 | 6,800 |
| 90,000 | 9,000 | 90,000 | 7,900 | 90,000 | 7,500 |
| 100,000 | 9,700 | 100,000 | 8,600 | 100,000 | 8,200 |
| 200,000 | 16,500 | 200,000 | 15,200 | 200,000 | 14,600 |
| 300,000 | 22,800 | 300,000 | 21,600 | 300,000 | 20,900 |
| 400,000 | 29,000 | 400,000 | 27,800 | 400,000 | 27,200 |
| 500,000 | 34,900 | 500,000 | 34,000 | 500,000 | 33,400 |
| 600,000 | 40,800 | 600,000 | 40,200 | 600,000 | 39,700 |
| 700,000 | 46,600 | 700,000 | 46,400 | 700,000 | 46,000 |
| 800,000 | 52,400 | 800,000 | 52,600 | 800,000 | 52,300 |
| 900,000 | 58,100 | 900,000 | 58,900 | 900,000 | 58,600 |
| 1,000,000 | 63,800 | 1,000,000 | 65,100 | 1,000,000 | 65,000 |
| 2,000,000 | 120,300 | 2,000,000 | 128,600 | 2,000,000 | 130,600 |
| 3,000,000 | 176,900 | 3,000,000 | 194,600 | 3,000,000 | 199,700 |
| 4,000,000 | 234,000 | 4,000,000 | 262,900 | 4,000,000 | 271,800 |
| 5,000,000 | 291,700 | 5,000,000 | 333,200 | 5,000,000 | 346,600 |
| 6,000,000 | 350,200 | 6,000,000 | 405,500 | 6,000,000 | 423,900 |
| 7,000,000 | 409,400 | 7,000,000 | 479,600 | 7,000,000 | 503,500 |
| 8,000,000 | 469,300 | 8,000,000 | 555,400 | 8,000,000 | 585,200 |
| 9,000,000 | 529,900 | 9,000,000 | 632,700 | 9,000,000 | 668,900 |
| 10,000,000 | 591,100 | 10,000,000 | 711,600 | 10,000,000 | 754,500 |
| 11,000,000 | 652,900 | 11,000,000 | 791,900 | 11,000,000 | 842,000 |
| 12,000,000 | 715,400 | 12,000,000 | 873,600 | 12,000,000 | 931,100 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $** SE = e^{a+b(\ln X)^2}$, *where* | $*** SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.900441$ | $a = 4.460186$ | $a = 4.291460$ |
| $b = 0.032292$ | $b = 0.034701$ | $b = 0.035576$ |

## 1992 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,100 | 5,000 | 1,000 | 5,000 | 900 |
| 6,000 | 1,200 | 10,000 | 1,500 | 10,000 | 1,400 |
| 7,000 | 1,300 | 20,000 | 2,500 | 20,000 | 2,200 |
| 8,000 | 1,400 | 30,000 | 3,300 | 30,000 | 3,000 |
| 9,000 | 1,600 | 40,000 | 4,100 | 40,000 | 3,700 |
| 10,000 | 1,700 | 50,000 | 4,800 | 50,000 | 4,400 |
| 20,000 | 2,700 | 60,000 | 5,600 | 60,000 | 5,100 |
| 30,000 | 3,600 | 70,000 | 6,300 | 70,000 | 5,800 |
| 40,000 | 4,400 | 80,000 | 7,000 | 80,000 | 6,500 |
| 50,000 | 5,200 | 90,000 | 7,700 | 90,000 | 7,200 |
| 60,000 | 6,000 | 100,000 | 8,400 | 100,000 | 7,800 |
| 70,000 | 6,800 | 200,000 | 15,200 | 200,000 | 14,200 |
| 80,000 | 7,600 | 300,000 | 21,800 | 300,000 | 20,600 |
| 90,000 | 8,300 | 400,000 | 28,300 | 400,000 | 26,900 |
| 100,000 | 9,100 | 500,000 | 34,900 | 500,000 | 33,200 |
| 200,000 | 16,200 | 600,000 | 41,500 | 600,000 | 39,600 |
| 300,000 | 23,200 | 700,000 | 48,100 | 700,000 | 46,000 |
| 400,000 | 30,100 | 800,000 | 54,700 | 800,000 | 52,400 |
| 500,000 | 36,900 | 900,000 | 61,400 | 900,000 | 59,000 |
| 600,000 | 43,800 | 1,000,000 | 68,100 | 1,000,000 | 65,500 |
| 700,000 | 50,700 | 2,000,000 | 137,500 | 2,000,000 | 134,100 |
| 800,000 | 57,600 | 3,000,000 | 210,800 | 3,000,000 | 207,100 |
| 900,000 | 64,600 | 4,000,000 | 287,500 | 4,000,000 | 284,000 |
| 1,000,000 | 71,600 | 5,000,000 | 367,200 | 5,000,000 | 364,400 |
| 2,000,000 | 143,600 | 6,000,000 | 449,700 | 6,000,000 | 447,900 |
| 3,000,000 | 219,200 | 7,000,000 | 534,700 | 7,000,000 | 534,200 |
| 4,000,000 | 298,000 | 8,000,000 | 622,100 | 8,000,000 | 623,200 |
| 5,000,000 | 379,700 | 9,000,000 | 711,700 | 9,000,000 | 714,700 |
| 6,000,000 | 464,000 | 10,000,000 | 803,400 | 10,000,000 | 808,500 |
| 6,500,000 | 507,100 | 11,000,000 | 897,100 | 11,000,000 | 904,600 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $** SE = e^{a+b(\ln X)^2}$, *where* | $*** SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.413218$ | $a = 4.294210$ | $a = 4.132995$ |
| $b = 0.035447$ | $b = 0.035807$ | $b = 0.036452$ |

## 1993 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,000 | 5,000 | 1,000 | 5,000 | 900 |
| 6,000 | 1,200 | 10,000 | 1,500 | 10,000 | 1,400 |
| 7,000 | 1,300 | 20,000 | 2,400 | 20,000 | 2,200 |
| 8,000 | 1,400 | 30,000 | 3,200 | 30,000 | 3,000 |
| 9,000 | 1,500 | 40,000 | 4,000 | 40,000 | 3,700 |
| 10,000 | 1,600 | 50,000 | 4,700 | 50,000 | 4,400 |
| 20,000 | 2,600 | 60,000 | 5,400 | 60,000 | 5,100 |
| 30,000 | 3,500 | 70,000 | 6,100 | 70,000 | 5,700 |
| 40,000 | 4,300 | 80,000 | 6,800 | 80,000 | 6,400 |
| 50,000 | 5,100 | 90,000 | 7,500 | 90,000 | 7,000 |
| 60,000 | 5,800 | 100,000 | 8,100 | 100,000 | 7,600 |
| 70,000 | 6,600 | 200,000 | 14,600 | 200,000 | 13,700 |
| 80,000 | 7,300 | 300,000 | 20,900 | 300,000 | 19,600 |
| 90,000 | 8,000 | 400,000 | 27,100 | 400,000 | 25,400 |
| 100,000 | 8,700 | 500,000 | 33,300 | 500,000 | 31,300 |
| 200,000 | 15,600 | 600,000 | 39,500 | 600,000 | 37,100 |
| 300,000 | 22,300 | 700,000 | 45,800 | 700,000 | 43,000 |
| 400,000 | 29,000 | 800,000 | 52,100 | 800,000 | 48,900 |
| 500,000 | 35,600 | 900,000 | 58,400 | 900,000 | 54,800 |
| 600,000 | 42,200 | 1,000,000 | 64,700 | 1,000,000 | 60,800 |
| 700,000 | 48,800 | 2,000,000 | 130,200 | 2,000,000 | 122,200 |
| 800,000 | 55,400 | 3,000,000 | 199,100 | 3,000,000 | 186,900 |
| 900,000 | 62,100 | 4,000,000 | 271,000 | 4,000,000 | 254,400 |
| 1,000,000 | 68,800 | 5,000,000 | 345,600 | 5,000,000 | 324,400 |
| 2,000,000 | 137,800 | 6,000,000 | 422,700 | 6,000,000 | 396,800 |
| 3,000,000 | 210,100 | 7,000,000 | 502,000 | 7,000,000 | 471,300 |
| 4,000,000 | 285,500 | 8,000,000 | 583,500 | 8,000,000 | 547,800 |
| 5,000,000 | 363,600 | 9,000,000 | 667,000 | 9,000,000 | 626,200 |
| 6,000,000 | 444,100 | 10,000,000 | 752,400 | 10,000,000 | 706,300 |
| 6,500,000 | 485,200 | 11,000,000 | 839,600 | 11,000,000 | 788,200 |
| 7,000,000 | 526,900 | 12,000,000 | 928,600 | 12,000,000 | 871,700 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, where | $** SE = e^{a+b(\ln X)^2}$, where | $*** SE = e^{a+b(\ln X)^2}$, where |
| $a = 4.388598$ | $a = 4.285811$ | $a = 4.222608$ |
| $b = 0.035368$ | $b = 0.035587$ | $b = 0.035587$ |

## 1994 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,000 | 5,000 | 1,000 | 5,000 | 900 |
| 6,000 | 1,200 | 10,000 | 1,500 | 10,000 | 1,400 |
| 7,000 | 1,300 | 20,000 | 2,500 | 20,000 | 2,300 |
| 8,000 | 1,400 | 30,000 | 3,300 | 30,000 | 3,100 |
| 9,000 | 1,500 | 40,000 | 4,200 | 40,000 | 3,800 |
| 10,000 | 1,600 | 50,000 | 4,900 | 50,000 | 4,500 |
| 20,000 | 2,600 | 60,000 | 5,700 | 60,000 | 5,200 |
| 30,000 | 3,500 | 70,000 | 6,500 | 70,000 | 5,900 |
| 40,000 | 4,400 | 80,000 | 7,200 | 80,000 | 6,500 |
| 50,000 | 5,200 | 90,000 | 7,900 | 90,000 | 7,200 |
| 60,000 | 6,000 | 100,000 | 8,600 | 100,000 | 7,800 |
| 70,000 | 6,700 | 200,000 | 15,600 | 200,000 | 14,100 |
| 80,000 | 7,500 | 300,000 | 22,500 | 300,000 | 20,300 |
| 90,000 | 8,300 | 400,000 | 29,300 | 400,000 | 26,400 |
| 100,000 | 9,000 | 500,000 | 36,100 | 500,000 | 32,600 |
| 200,000 | 16,300 | 600,000 | 42,900 | 600,000 | 38,700 |
| 300,000 | 23,300 | 700,000 | 49,800 | 700,000 | 44,900 |
| 400,000 | 30,400 | 800,000 | 56,800 | 800,000 | 51,100 |
| 500,000 | 37,400 | 900,000 | 63,700 | 900,000 | 57,400 |
| 600,000 | 44,500 | 1,000,000 | 70,800 | 1,000,000 | 63,700 |
| 700,000 | 51,500 | 2,000,000 | 143,700 | 2,000,000 | 128,900 |
| 800,000 | 58,700 | 3,000,000 | 220,900 | 3,000,000 | 197,800 |
| 900,000 | 65,900 | 4,000,000 | 301,900 | 4,000,000 | 270,000 |
| 1,000,000 | 73,100 | 5,000,000 | 386,300 | 5,000,000 | 345,200 |
| 2,000,000 | 147,900 | 6,000,000 | 473,700 | 6,000,000 | 422,900 |
| 3,000,000 | 227,000 | 7,000,000 | 564,000 | 7,000,000 | 503,100 |
| 4,000,000 | 309,800 | 8,000,000 | 656,800 | 8,000,000 | 585,600 |
| 5,000,000 | 395,900 | 9,000,000 | 752,200 | 9,000,000 | 670,300 |
| 6,000,000 | 485,000 | 10,000,000 | 849,800 | 10,000,000 | 756,900 |
| 6,500,000 | 530,700 | 11,000,000 | 949,700 | 11,000,000 | 845,500 |
| 7,000,000 | 577,000 | 12,000,000 | 1,051,700 | 12,000,000 | 935,900 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $** SE = e^{a+b(\ln X)^2}$, *where* | $*** SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.347699$ | $a = 4.283883$ | $a = 4.206542$ |
| $b = 0.035898$ | $b = 0.036063$ | $b = 0.035915$ |

## 1995 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,000 | 5,000 | 1,000 | 5,000 | 900 |
| 6,000 | 1,200 | 10,000 | 1,600 | 10,000 | 1,400 |
| 7,000 | 1,300 | 20,000 | 2,500 | 20,000 | 2,300 |
| 8,000 | 1,400 | 30,000 | 3,300 | 30,000 | 3,100 |
| 9,000 | 1,500 | 40,000 | 4,200 | 40,000 | 3,800 |
| 10,000 | 1,600 | 50,000 | 4,900 | 50,000 | 4,500 |
| 20,000 | 2,600 | 60,000 | 5,700 | 60,000 | 5,100 |
| 30,000 | 3,500 | 70,000 | 6,400 | 70,000 | 5,800 |
| 40,000 | 4,300 | 80,000 | 7,100 | 80,000 | 6,400 |
| 50,000 | 5,100 | 90,000 | 7,800 | 90,000 | 7,100 |
| 60,000 | 5,900 | 100,000 | 8,500 | 100,000 | 7,700 |
| 70,000 | 6,600 | 200,000 | 15,300 | 200,000 | 13,700 |
| 80,000 | 7,400 | 300,000 | 22,000 | 300,000 | 19,600 |
| 90,000 | 8,100 | 400,000 | 28,500 | 400,000 | 25,300 |
| 100,000 | 8,800 | 500,000 | 35,100 | 500,000 | 31,000 |
| 200,000 | 15,800 | 600,000 | 41,700 | 600,000 | 36,800 |
| 300,000 | 22,700 | 700,000 | 48,200 | 700,000 | 42,500 |
| 400,000 | 29,400 | 800,000 | 54,900 | 800,000 | 48,300 |
| 500,000 | 36,200 | 900,000 | 61,500 | 900,000 | 54,000 |
| 600,000 | 43,000 | 1,000,000 | 68,200 | 1,000,000 | 59,800 |
| 700,000 | 49,800 | 2,000,000 | 137,300 | 2,000,000 | 119,300 |
| 800,000 | 56,600 | 3,000,000 | 210,100 | 3,000,000 | 181,500 |
| 900,000 | 63,500 | 4,000,000 | 286,100 | 4,000,000 | 246,100 |
| 1,000,000 | 70,400 | 5,000,000 | 365,000 | 5,000,000 | 313,000 |
| 2,000,000 | 141,700 | 6,000,000 | 446,500 | 6,000,000 | 381,900 |
| 3,000,000 | 216,800 | 7,000,000 | 530,400 | 7,000,000 | 452,600 |
| 4,000,000 | 295,200 | 8,000,000 | 616,700 | 8,000,000 | 525,100 |
| 5,000,000 | 376,500 | 9,000,000 | 705,000 | 9,000,000 | 599,300 |
| 6,000,000 | 460,600 | 10,000,000 | 795,400 | 10,000,000 | 675,100 |
| 6,500,000 | 503,600 | 11,000,000 | 887,700 | 11,000,000 | 752,300 |
| 7,000,000 | 547,200 | 12,000,000 | 981,900 | 12,000,000 | 831,000 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, where | $** SE = e^{a+b(\ln X)^2}$, where | $*** SE = e^{a+b(\ln X)^2}$, where |
| $a = 4.362086$ | $a = 4.329914$ | $a = 4.289002$ |
| $b = 0.035627$ | $b = 0.035631$ | $b = 0.035157$ |

## 1996 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 500 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,100 | 5,000 | 1,000 | 5,000 | 1,000 |
| 6,000 | 1,200 | 10,000 | 1,600 | 10,000 | 1,500 |
| 7,000 | 1,300 | 20,000 | 2,500 | 20,000 | 2,300 |
| 8,000 | 1,500 | 30,000 | 3,300 | 30,000 | 3,100 |
| 9,000 | 1,600 | 40,000 | 4,100 | 40,000 | 3,800 |
| 10,000 | 1,700 | 50,000 | 4,900 | 50,000 | 4,400 |
| 20,000 | 2,600 | 60,000 | 5,600 | 60,000 | 5,100 |
| 30,000 | 3,500 | 70,000 | 6,300 | 70,000 | 5,700 |
| 40,000 | 4,300 | 80,000 | 7,000 | 80,000 | 6,300 |
| 50,000 | 5,000 | 90,000 | 7,700 | 90,000 | 6,900 |
| 60,000 | 5,800 | 100,000 | 8,400 | 100,000 | 7,500 |
| 70,000 | 6,500 | 200,000 | 14,900 | 200,000 | 13,100 |
| 80,000 | 7,200 | 300,000 | 21,300 | 300,000 | 18,500 |
| 90,000 | 7,900 | 400,000 | 27,500 | 400,000 | 23,700 |
| 100,000 | 8,500 | 500,000 | 33,800 | 500,000 | 28,900 |
| 200,000 | 15,000 | 600,000 | 40,000 | 600,000 | 34,100 |
| 300,000 | 21,100 | 700,000 | 46,200 | 700,000 | 39,200 |
| 400,000 | 27,100 | 800,000 | 52,500 | 800,000 | 44,300 |
| 500,000 | 33,100 | 900,000 | 58,800 | 900,000 | 49,400 |
| 600,000 | 39,000 | 1,000,000 | 65,100 | 1,000,000 | 54,600 |
| 700,000 | 44,900 | 2,000,000 | 129,800 | 2,000,000 | 106,400 |
| 800,000 | 50,800 | 3,000,000 | 197,400 | 3,000,000 | 159,600 |
| 900,000 | 56,700 | 4,000,000 | 267,600 | 4,000,000 | 214,300 |
| 1,000,000 | 62,700 | 5,000,000 | 340,300 | 5,000,000 | 270,300 |
| 2,000,000 | 122,600 | 6,000,000 | 415,200 | 6,000,000 | 327,700 |
| 3,000,000 | 184,300 | 7,000,000 | 492,100 | 7,000,000 | 386,200 |
| 4,000,000 | 247,800 | 8,000,000 | 570,900 | 8,000,000 | 445,900 |
| 5,000,000 | 313,000 | 9,000,000 | 651,500 | 9,000,000 | 506,700 |
| 6,000,000 | 379,800 | 10,000,000 | 733,900 | 10,000,000 | 568,500 |
| 6,500,000 | 413,700 | 11,000,000 | 817,800 | 11,000,000 | 631,300 |
| 7,000,000 | 448,000 | 12,000,000 | 903,300 | 12,000,000 | 695,100 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $** SE = e^{a+b(\ln X)^2}$, *where* | $*** SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.521508$ | $a = 4.374631$ | $a = 4.417590$ |
| $b = 0.034180$ | $b = 0.035149$ | $b = 0.034001$ |

## 1997 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE) | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,100 | 5,000 | 1,000 | 5,000 | 1,000 |
| 6,000 | 1,200 | 10,000 | 1,600 | 10,000 | 1,600 |
| 7,000 | 1,300 | 20,000 | 2,500 | 20,000 | 2,500 |
| 8,000 | 1,400 | 30,000 | 3,300 | 30,000 | 3,300 |
| 9,000 | 1,500 | 40,000 | 4,100 | 40,000 | 4,100 |
| 10,000 | 1,600 | 50,000 | 4,900 | 50,000 | 4,800 |
| 20,000 | 2,600 | 60,000 | 5,600 | 60,000 | 5,600 |
| 30,000 | 3,500 | 70,000 | 6,400 | 70,000 | 6,300 |
| 40,000 | 4,300 | 80,000 | 7,100 | 80,000 | 7,000 |
| 50,000 | 5,100 | 90,000 | 7,800 | 90,000 | 7,700 |
| 60,000 | 5,900 | 100,000 | 8,500 | 100,000 | 8,300 |
| 70,000 | 6,600 | 200,000 | 15,200 | 200,000 | 14,800 |
| 80,000 | 7,400 | 300,000 | 21,800 | 300,000 | 21,000 |
| 90,000 | 8,100 | 400,000 | 28,300 | 400,000 | 27,200 |
| 100,000 | 8,800 | 500,000 | 34,800 | 500,000 | 33,300 |
| 200,000 | 15,700 | 600,000 | 41,300 | 600,000 | 39,400 |
| 300,000 | 22,400 | 700,000 | 47,800 | 700,000 | 45,600 |
| 400,000 | 29,000 | 800,000 | 54,400 | 800,000 | 51,700 |
| 500,000 | 35,500 | 900,000 | 60,900 | 900,000 | 57,800 |
| 600,000 | 42,100 | 1,000,000 | 67,600 | 1,000,000 | 64,000 |
| 700,000 | 48,600 | 2,000,000 | 135,900 | 2,000,000 | 127,200 |
| 800,000 | 55,200 | 3,000,000 | 207,700 | 3,000,000 | 193,100 |
| 900,000 | 61,800 | 4,000,000 | 282,600 | 4,000,000 | 261,400 |
| 1,000,000 | 68,500 | 5,000,000 | 360,400 | 5,000,000 | 332,000 |
| 2,000,000 | 136,500 | 6,000,000 | 440,800 | 6,000,000 | 404,700 |
| 3,000,000 | 207,600 | 7,000,000 | 523,500 | 7,000,000 | 479,300 |
| 4,000,000 | 281,500 | 8,000,000 | 608,400 | 8,000,000 | 555,700 |
| 5,000,000 | 358,000 | 9,000,000 | 695,500 | 9,000,000 | 633,700 |
| 6,000,000 | 436,800 | 10,000,000 | 784,500 | 10,000,000 | 713,400 |
| 6,500,000 | 477,000 | 11,000,000 | 875,300 | 11,000,000 | 794,600 |
| 7,000,000 | 517,000 | 12,000,000 | 968,000 | 12,000,000 | 877,200 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $** SE = e^{a+b(\ln X)^2}$, *where* | $*** SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.424135$ | $a = 4.331394$ | $a = 4.390740$ |
| $b = 0.035154$ | $b = 0.035572$ | $b = 0.034978$ |

## 1998 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE) | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 500 |
| 5,000 | 1,000 | 5,000 | 1,000 | 5,000 | 1,000 |
| 6,000 | 1,100 | 10,000 | 1,500 | 10,000 | 1,600 |
| 7,000 | 1,300 | 20,000 | 2,500 | 20,000 | 2,400 |
| 8,000 | 1,400 | 30,000 | 3,300 | 30,000 | 3,200 |
| 9,000 | 1,500 | 40,000 | 4,000 | 40,000 | 3,900 |
| 10,000 | 1,600 | 50,000 | 4,800 | 50,000 | 4,600 |
| 20,000 | 2,500 | 60,000 | 5,500 | 60,000 | 5,200 |
| 30,000 | 3,300 | 70,000 | 6,200 | 70,000 | 5,900 |
| 40,000 | 4,100 | 80,000 | 6,900 | 80,000 | 6,500 |
| 50,000 | 4,900 | 90,000 | 7,500 | 90,000 | 7,100 |
| 60,000 | 5,600 | 100,000 | 8,200 | 100,000 | 7,700 |
| 70,000 | 6,300 | 200,000 | 14,600 | 200,000 | 13,200 |
| 80,000 | 7,000 | 300,000 | 20,800 | 300,000 | 18,400 |
| 90,000 | 7,600 | 400,000 | 26,800 | 400,000 | 23,500 |
| 100,000 | 8,300 | 500,000 | 32,900 | 500,000 | 28,500 |
| 200,000 | 14,700 | 600,000 | 38,900 | 600,000 | 33,400 |
| 300,000 | 20,900 | 700,000 | 45,000 | 700,000 | 38,300 |
| 400,000 | 27,000 | 800,000 | 51,100 | 800,000 | 43,100 |
| 500,000 | 33,000 | 900,000 | 57,100 | 900,000 | 48,000 |
| 600,000 | 39,000 | 1,000,000 | 63,200 | 1,000,000 | 52,800 |
| 700,000 | 45,000 | 2,000,000 | 125,800 | 2,000,000 | 101,200 |
| 800,000 | 51,100 | 3,000,000 | 191,000 | 3,000,000 | 150,200 |
| 900,000 | 57,100 | 4,000,000 | 258,600 | 4,000,000 | 200,200 |
| 1,000,000 | 63,200 | 5,000,000 | 328,600 | 5,000,000 | 251,000 |
| 2,000,000 | 125,000 | 6,000,000 | 400,500 | 6,000,000 | 302,800 |
| 3,000,000 | 189,300 | 7,000,000 | 474,400 | 7,000,000 | 355,400 |
| 4,000,000 | 255,900 | 8,000,000 | 550,100 | 8,000,000 | 408,800 |
| 5,000,000 | 324,500 | 9,000,000 | 627,500 | 9,000,000 | 463,000 |
| 6,000,000 | 395,100 | 10,000,000 | 706,400 | 10,000,000 | 517,900 |
| 6,500,000 | 431,000 | 11,000,000 | 786,900 | 11,000,000 | 573,600 |
| 7,000,000 | 467,400 | 12,000,000 | 868,900 | 12,000,000 | 629,900 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.415376$ | $a = 4.371851$ | $a = 4.551937$ |
| $b = 0.034778$ | $b = 0.035013$ | $b = 0.033125$ |

## 1999 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE) | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,000 | 5,000 | 1,000 | 5,000 | 1,000 |
| 6,000 | 1,100 | 10,000 | 1,500 | 10,000 | 1,500 |
| 7,000 | 1,300 | 20,000 | 2,400 | 20,000 | 2,300 |
| 8,000 | 1,400 | 30,000 | 3,200 | 30,000 | 3,100 |
| 9,000 | 1,500 | 40,000 | 3,900 | 40,000 | 3,800 |
| 10,000 | 1,600 | 50,000 | 4,600 | 50,000 | 4,400 |
| 20,000 | 2,500 | 60,000 | 5,300 | 60,000 | 5,100 |
| 30,000 | 3,300 | 70,000 | 6,000 | 70,000 | 5,700 |
| 40,000 | 4,100 | 80,000 | 6,700 | 80,000 | 6,300 |
| 50,000 | 4,800 | 90,000 | 7,300 | 90,000 | 6,900 |
| 60,000 | 5,500 | 100,000 | 8,000 | 100,000 | 7,500 |
| 70,000 | 6,200 | 200,000 | 14,200 | 200,000 | 13,000 |
| 80,000 | 6,900 | 300,000 | 20,200 | 300,000 | 18,200 |
| 90,000 | 7,600 | 400,000 | 26,100 | 400,000 | 23,300 |
| 100,000 | 8,300 | 500,000 | 32,000 | 500,000 | 28,400 |
| 200,000 | 14,600 | 600,000 | 37,800 | 600,000 | 33,400 |
| 300,000 | 20,800 | 700,000 | 43,700 | 700,000 | 38,300 |
| 400,000 | 26,800 | 800,000 | 49,600 | 800,000 | 43,300 |
| 500,000 | 32,800 | 900,000 | 55,500 | 900,000 | 48,200 |
| 600,000 | 38,800 | 1,000,000 | 61,400 | 1,000,000 | 53,200 |
| 700,000 | 47,700 | 2,000,000 | 122,100 | 2,000,000 | 103,000 |
| 800,000 | 50,700 | 3,000,000 | 185,400 | 3,000,000 | 154,000 |
| 900,000 | 56,700 | 4,000,000 | 251,000 | 4,000,000 | 206,200 |
| 1,000,000 | 62,700 | 5,000,000 | 318,800 | 5,000,000 | 259,600 |
| 2,000,000 | 124,100 | 6,000,000 | 388,600 | 6,000,000 | 314,100 |
| 3,000,000 | 187,800 | 7,000,000 | 460,300 | 7,000,000 | 369,600 |
| 4,000,000 | 253,800 | 8,000,000 | 533,600 | 8,000,000 | 426,200 |
| 5,000,000 | 321,800 | 9,000,000 | 608,600 | 9,000,000 | 483,700 |
| 6,000,000 | 391,700 | 10,000,000 | 685,200 | 10,000,000 | 542,100 |
| 6,500,000 | 427,300 | 11,000,000 | 763,100 | 11,000,000 | 601,400 |
| 7,000,000 | 463,300 | 12,000,000 | 842,600 | 12,000,000 | 661,500 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.414534$ | $a = 4.348017$ | $a = 4.452860$ |
| $b = 0.034746$ | $b = 0.034987$ | $b = 0.033682$ |

## 2000 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE) | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,000 | 5,000 | 1,000 | 5,000 | 1,000 |
| 6,000 | 1,100 | 10,000 | 1,500 | 10,000 | 1,500 |
| 7,000 | 1,200 | 20,000 | 2,400 | 20,000 | 2,400 |
| 8,000 | 1,300 | 30,000 | 3,100 | 30,000 | 3,100 |
| 9,000 | 1,400 | 40,000 | 3,900 | 40,000 | 3,800 |
| 10,000 | 1,500 | 50,000 | 4,600 | 50,000 | 4,500 |
| 20,000 | 2,400 | 60,000 | 5,300 | 60,000 | 5,100 |
| 30,000 | 3,200 | 70,000 | 5,900 | 70,000 | 5,700 |
| 40,000 | 4,000 | 80,000 | 6,600 | 80,000 | 6,300 |
| 50,000 | 4,700 | 90,000 | 7,200 | 90,000 | 6,900 |
| 60,000 | 5,400 | 100,000 | 7,900 | 100,000 | 7,500 |
| 70,000 | 6,100 | 200,000 | 14,000 | 200,000 | 13,000 |
| 80,000 | 6,800 | 300,000 | 19,900 | 300,000 | 18,200 |
| 90,000 | 7,500 | 400,000 | 25,700 | 400,000 | 23,200 |
| 100,000 | 8,200 | 500,000 | 31,500 | 500,000 | 28,200 |
| 200,000 | 14,600 | 600,000 | 37,300 | 600,000 | 33,200 |
| 300,000 | 20,800 | 700,000 | 43,100 | 700,000 | 38,100 |
| 400,000 | 26,900 | 800,000 | 48,900 | 800,000 | 43,000 |
| 500,000 | 33,300 | 900,000 | 54,700 | 900,000 | 47,900 |
| 600,000 | 39,100 | 1,000,000 | 60,600 | 1,000,000 | 52,800 |
| 700,000 | 45,300 | 2,000,000 | 120,400 | 2,000,000 | 101,800 |
| 800,000 | 51,400 | 3,000,000 | 182,800 | 3,000,000 | 151,900 |
| 900,000 | 57,600 | 4,000,000 | 247,400 | 4,000,000 | 203,000 |
| 1,000,000 | 63,800 | 5,000,000 | 314,300 | 5,000,000 | 255,200 |
| 2,000,000 | 127,300 | 6,000,000 | 383,100 | 6,000,000 | 308,400 |
| 3,000,000 | 193,900 | 7,000,000 | 453,600 | 7,000,000 | 362,700 |
| 4,000,000 | 263,100 | 8,000,000 | 525,900 | 8,000,000 | 417,800 |
| 5,000,000 | 334,800 | 9,000,000 | 599,800 | 9,000,000 | 473,800 |
| 6,000,000 | 408,700 | 10,000,000 | 675,200 | 10,000,000 | 530,700 |
| 6,500,000 | 446,400 | 11,000,000 | 752,100 | 11,000,000 | 588,400 |
| 7,000,000 | 484,600 | 12,000,000 | 830,300 | 12,000,000 | 646,900 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.336620$ | $a = 4.335260$ | $a = 4.481530$ |
| $b = 0.035240$ | $b = 0.034980$ | $b = 0.033490$ |

## 2001 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE) | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,000 | 5,000 | 1,000 | 5,000 | 1,000 |
| 6,000 | 1,100 | 10,000 | 1,500 | 10,000 | 1,400 |
| 7,000 | 1,200 | 20,000 | 2,300 | 20,000 | 2,200 |
| 8,000 | 1,300 | 30,000 | 3,100 | 30,000 | 2,900 |
| 9,000 | 1,400 | 40,000 | 3,800 | 40,000 | 3,600 |
| 10,000 | 1,500 | 50,000 | 4,500 | 50,000 | 4,200 |
| 20,000 | 2,400 | 60,000 | 5,200 | 60,000 | 4,800 |
| 30,000 | 3,200 | 70,000 | 5,900 | 70,000 | 5,400 |
| 40,000 | 4,000 | 80,000 | 6,500 | 80,000 | 6,000 |
| 50,000 | 4,700 | 90,000 | 7,100 | 90,000 | 6,500 |
| 60,000 | 5,400 | 100,000 | 7,800 | 100,000 | 7,100 |
| 70,000 | 6,100 | 200,000 | 13,800 | 200,000 | 12,200 |
| 80,000 | 6,800 | 300,000 | 19,600 | 300,000 | 17,100 |
| 90,000 | 7,400 | 400,000 | 25,300 | 400,000 | 21,900 |
| 100,000 | 8,100 | 500,000 | 30,900 | 500,000 | 26,500 |
| 200,000 | 14,400 | 600,000 | 36,600 | 600,000 | 31,100 |
| 300,000 | 20,500 | 700,000 | 42,200 | 700,000 | 35,700 |
| 400,000 | 26,500 | 800,000 | 47,900 | 800,000 | 40,300 |
| 500,000 | 32,500 | 900,000 | 56.600 | 900,000 | 44,900 |
| 600,000 | 38,500 | 1,000,000 | 59,300 | 1,000,000 | 49,400 |
| 700,000 | 44,500 | 2,000,000 | 117,500 | 2,000,000 | 95,200 |
| 800,000 | 50,500 | 3,000,000 | 178,000 | 3,000,000 | 141,700 |
| 900,000 | 56,500 | 4,000,000 | 240,800 | 4,000,000 | 189,100 |
| 1,000,000 | 62,600 | 5,000,000 | 305,500 | 5,000,000 | 237,500 |
| 2,000,000 | 124,600 | 6,000,000 | 372,100 | 6,000,000 | 286,800 |
| 3,000,000 | 189,400 | 7,000,000 | 440,400 | 7,000,000 | 337,000 |
| 4,000,000 | 256,600 | 8,000,000 | 410,300 | 8,000,000 | 388,100 |
| 5,000,000 | 326,100 | 9,000,000 | 581,700 | 9,000,000 | 439,900 |
| 6,000,000 | 397,700 | 10,000,000 | 654,600 | 10,000,000 | 492,400 |
| 6,500,000 | 432,200 | 11,000,000 | 728,800 | 11,000,000 | 545,700 |
| 7,000,000 | 471,200 | 12,000,000 | 804,300 | 12,000,000 | 599,700 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}, where$ | $* SE = e^{a+b(\ln X)^2}, where$ | $* SE = e^{a+b(\ln X)^2}, where$ |
| $a = 4.350780$ | $a = 4.337980$ | $a = 4.443040$ |
| $b = 0.035070$ | $b = 0.034850$ | $b = 0.033350$ |

## 2002 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE) | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,000 | 5,000 | 1,000 | 5,000 | 1,000 |
| 6,000 | 1,100 | 10,000 | 1,600 | 10,000 | 1,500 |
| 7,000 | 1,200 | 20,000 | 2,500 | 20,000 | 2,300 |
| 8,000 | 1,300 | 30,000 | 3,300 | 30,000 | 3,100 |
| 9,000 | 1,400 | 40,000 | 4,100 | 40,000 | 3,700 |
| 10,000 | 1,500 | 50,000 | 4,800 | 50,000 | 4,400 |
| 20,000 | 2,500 | 60,000 | 5,500 | 60,000 | 5,000 |
| 30,000 | 3,300 | 70,000 | 6,200 | 70,000 | 5,600 |
| 40,000 | 4,100 | 80,000 | 6,900 | 80,000 | 6,200 |
| 50,000 | 4,800 | 90,000 | 7,500 | 90,000 | 6,800 |
| 60,000 | 5,500 | 100,000 | 8,200 | 100,000 | 7,300 |
| 70,000 | 6,300 | 200,000 | 14,500 | 200,000 | 12,600 |
| 80,000 | 6,900 | 300,000 | 20,600 | 300,000 | 17,600 |
| 90,000 | 7,600 | 400,000 | 26,500 | 400,000 | 22,500 |
| 100,000 | 8,300 | 500,000 | 32,500 | 500,000 | 27,300 |
| 200,000 | 14,800 | 600,000 | 38,400 | 600,000 | 32,200 |
| 300,000 | 21,100 | 700,000 | 44,300 | 700,000 | 36,700 |
| 400,000 | 27,400 | 800,000 | 50,200 | 800,000 | 41,400 |
| 500,000 | 33,600 | 900,000 | 56,100 | 900,000 | 46,000 |
| 600,000 | 39,800 | 1,000,000 | 62,000 | 1,000,000 | 50,700 |
| 700,000 | 46,100 | 2,000,000 | 122,600 | 2,000,000 | 95,200 |
| 800,000 | 52,300 | 3,000,000 | 185,400 | 3,000,000 | 144,500 |
| 900,000 | 58,600 | 4,000,000 | 250,500 | 4,000,000 | 192,600 |
| 1,000,000 | 64,900 | 5,000,000 | 317,500 | 5,000,000 | 241,600 |
| 2,000,000 | 129,600 | 6,000,000 | 386,300 | 6,000,000 | 291,600 |
| 3,000,000 | 197,200 | 7,000,000 | 456,900 | 7,000,000 | 342,300 |
| 4,000,000 | 267,700 | 8,000,000 | 529,000 | 8,000,000 | 393,900 |
| 5,000,000 | 340,500 | 9,000,000 | 602,700 | 9,000,000 | 446,200 |
| 6,000,000 | 415,600 | 10,000,000 | 677,800 | 10,000,000 | 499,300 |
| 6,500,000 | 454,000 | 11,000,000 | 754,300 | 11,000,000 | 553,000 |
| 7,000,000 | 492,800 | 12,000,000 | 832,000 | 12,000,000 | 607,500 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.355970$ | $a = 4.414370$ | $a = 4.498340$ |
| $b = 0.035230$ | $b = 0.034690$ | $b = 0.033190$ |

## 2003 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 900 | 5,000 | 900 | 5,000 | 900 |
| 6,000 | 1,000 | 10,000 | 1,500 | 10,000 | 1,400 |
| 7,000 | 1,100 | 20,000 | 2,300 | 20,000 | 2,200 |
| 8,000 | 1,200 | 30,000 | 3,100 | 30,000 | 2,900 |
| 9,000 | 1,300 | 40,000 | 3,900 | 40,000 | 3,500 |
| 10,000 | 1,400 | 50,000 | 4,600 | 50,000 | 4,200 |
| 20,000 | 2,300 | 60,000 | 5,300 | 60,000 | 4,800 |
| 30,000 | 3,100 | 70,000 | 6,000 | 70,000 | 5,400 |
| 40,000 | 3,900 | 80,000 | 6,600 | 80,000 | 5,900 |
| 50,000 | 4,600 | 90,000 | 7,300 | 90,000 | 6,500 |
| 60,000 | 5,300 | 100,000 | 8,000 | 100,000 | 7,100 |
| 70,000 | 6,000 | 200,000 | 14,300 | 200,000 | 12,300 |
| 80,000 | 6,700 | 300,000 | 20,400 | 300,000 | 17,400 |
| 90,000 | 7,400 | 400,000 | 26,500 | 400,000 | 22,300 |
| 100,000 | 8,000 | 500,000 | 32,600 | 500,000 | 27,200 |
| 200,000 | 14,500 | 600,000 | 38,600 | 600,000 | 32,000 |
| 300,000 | 20,900 | 700,000 | 44,700 | 700,000 | 36,800 |
| 400,000 | 27,200 | 800,000 | 50,900 | 800,000 | 41,600 |
| 500,000 | 33,500 | 900,000 | 57,000 | 900,000 | 46,500 |
| 600,000 | 39,900 | 1,000,000 | 63,200 | 1,000,000 | 51,300 |
| 700,000 | 46,300 | 2,000,000 | 126,900 | 2,000,000 | 99,900 |
| 800,000 | 52,700 | 3,000,000 | 194,000 | 3,000,000 | 149,900 |
| 900,000 | 59,200 | 4,000,000 | 263,900 | 4,000,000 | 201,200 |
| 1,000,000 | 65,700 | 5,000,000 | 336,400 | 5,000,000 | 253,800 |
| 2,000,000 | 133,500 | 6,000,000 | 411,300 | 6,000,000 | 307,600 |
| 3,000,000 | 205,200 | 7,000,000 | 488,400 | 7,000,000 | 362,600 |
| 4,000,000 | 280,500 | 8,000,000 | 567,500 | 8,000,000 | 418,600 |
| 5,000,000 | 359,000 | 9,000,000 | 648,600 | 9,000,000 | 475,700 |
| 6,000,000 | 440,200 | 10,000,000 | 731,500 | 10,000,000 | 533,700 |
| 6,500,000 | 481,900 | 11,000,000 | 816,100 | 11,000,000 | 592,600 |
| 7,000,000 | 524,100 | 12,000,000 | 902,400 | 12,000,000 | 652,400 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.208860$ | $a = 4.272400$ | $a = 4.357200$ |
| $b = 0.036070$ | $b = 0.035530$ | $b = 0.033990$ |

## 2004 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 900 | 5,000 | 900 | 5,000 | 900 |
| 6,000 | 1,000 | 10,000 | 1,400 | 10,000 | 1,400 |
| 7,000 | 1,100 | 20,000 | 2,300 | 20,000 | 2,100 |
| 8,000 | 1,200 | 30,000 | 3,100 | 30,000 | 2,800 |
| 9,000 | 1,300 | 40,000 | 3,800 | 40,000 | 3,500 |
| 10,000 | 1,400 | 50,000 | 4,500 | 50,000 | 4,100 |
| 20,000 | 2,300 | 60,000 | 5,200 | 60,000 | 4,700 |
| 30,000 | 3,100 | 70,000 | 5,900 | 70,000 | 5,300 |
| 40,000 | 3,800 | 80,000 | 6,600 | 80,000 | 5,800 |
| 50,000 | 4,600 | 90,000 | 7,200 | 90,000 | 6,400 |
| 60,000 | 5,300 | 100,000 | 7,900 | 100,000 | 6,900 |
| 70,000 | 6,000 | 200,000 | 14,200 | 200,000 | 12,200 |
| 80,000 | 6,700 | 300,000 | 20,300 | 300,000 | 17,200 |
| 90,000 | 7,300 | 400,000 | 26,300 | 400,000 | 22,200 |
| 100,000 | 8,000 | 500,000 | 32,400 | 500,000 | 27,100 |
| 200,000 | 14,600 | 600,000 | 38,500 | 600,000 | 31,900 |
| 300,000 | 21,000 | 700,000 | 44,600 | 700,000 | 36,800 |
| 400,000 | 27,400 | 800,000 | 50,700 | 800,000 | 41,600 |
| 500,000 | 33,800 | 900,000 | 56,900 | 900,000 | 46,500 |
| 600,000 | 40,300 | 1,000,000 | 63,100 | 1,000,000 | 51,400 |
| 700,000 | 46,900 | 2,000,000 | 127,200 | 2,000,000 | 100,700 |
| 800,000 | 53,400 | 3,000,000 | 194,700 | 3,000,000 | 151,700 |
| 900,000 | 60,100 | 4,000,000 | 265,200 | 4,000,000 | 204,200 |
| 1,000,000 | 66,700 | 5,000,000 | 338,500 | 5,000,000 | 258,100 |
| 2,000,000 | 136,300 | 6,000,000 | 414,200 | 6,000,000 | 313,400 |
| 3,000,000 | 210,300 | 7,000,000 | 492,200 | 7,000,000 | 370,000 |
| 4,000,000 | 288,100 | 8,000,000 | 572,400 | 8,000,000 | 427,800 |
| 5,000,000 | 369,400 | 9,000,000 | 654,500 | 9,000,000 | 486,600 |
| 6,000,000 | 453,800 | 10,000,000 | 738,600 | 10,000,000 | 546,600 |
| 6,500,000 | 497,100 | 11,000,000 | 824,400 | 11,000,000 | 607,500 |
| 7,000,000 | 541,000 | 12,000,000 | 912,000 | 12,000,000 | 669,400 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.168580$ | $a = 4.240450$ | $a = 4.297920$ |
| $b = 0.036360$ | $b = 0.035690$ | $b = 0.034310$ |

## 2005 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,000 | 5,000 | 1,000 | 5,000 | 900 |
| 6,000 | 1,100 | 10,000 | 1,500 | 10,000 | 1,400 |
| 7,000 | 1,200 | 20,000 | 2,400 | 20,000 | 2,300 |
| 8,000 | 1,300 | 30,000 | 3,200 | 30,000 | 3,000 |
| 9,000 | 1,400 | 40,000 | 4,000 | 40,000 | 3,700 |
| 10,000 | 1,500 | 50,000 | 4,700 | 50,000 | 4,300 |
| 20,000 | 2,400 | 60,000 | 5,400 | 60,000 | 5,000 |
| 30,000 | 3,200 | 70,000 | 6,100 | 70,000 | 5,600 |
| 40,000 | 4,000 | 80,000 | 6,800 | 80,000 | 6,200 |
| 50,000 | 4,700 | 90,000 | 7,500 | 90,000 | 6,800 |
| 60,000 | 5,400 | 100,000 | 8,200 | 100,000 | 7,400 |
| 70,000 | 6,200 | 200,000 | 14,700 | 200,000 | 12,900 |
| 80,000 | 6,900 | 300,000 | 21,000 | 300,000 | 18,200 |
| 90,000 | 7,500 | 400,000 | 27,300 | 400,000 | 23,400 |
| 100,000 | 8,200 | 500,000 | 33,600 | 500,000 | 28,500 |
| 200,000 | 14,900 | 600,000 | 39,800 | 600,000 | 33,600 |
| 300,000 | 21,300 | 700,000 | 46,200 | 700,000 | 38,700 |
| 400,000 | 27,800 | 800,000 | 52,500 | 800,000 | 43,800 |
| 500,000 | 34,200 | 900,000 | 58,900 | 900,000 | 48,900 |
| 600,000 | 40,700 | 1,000,000 | 65,300 | 1,000,000 | 54,000 |
| 700,000 | 47,200 | 2,000,000 | 131,600 | 2,000,000 | 105,700 |
| 800,000 | 53,700 | 3,000,000 | 201,300 | 3,000,000 | 158,800 |
| 900,000 | 60,300 | 4,000,000 | 274,200 | 4,000,000 | 213,600 |
| 1,000,000 | 66,900 | 5,000,000 | 350,000 | 5,000,000 | 269,800 |
| 2,000,000 | 135,400 | 6,000,000 | 428,200 | 6,000,000 | 327,300 |
| 3,000,000 | 207,800 | 7,000,000 | 508,800 | 7,000,000 | 386,200 |
| 4,000,000 | 283,700 | 8,000,000 | 591,600 | 8,000,000 | 446,200 |
| 5,000,000 | 362,600 | 9,000,000 | 676,500 | 9,000,000 | 507,400 |
| 6,000,000 | 444,400 | 10,000,000 | 763,300 | 10,000,000 | 596,600 |
| 6,500,000 | 486,200 | 11,000,000 | 852,000 | 11,000,000 | 362,900 |
| 7,000,000 | 528,700 | 12,000,000 | 942,500 | 12,000,000 | 697,100 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}, where$ | $* SE = e^{a+b(\ln X)^2}, where$ | $* SE = e^{a+b(\ln X)^2}, where$ |
| $a = 4.254750$ | $a = 4.278620$ | $a = 4.372960$ |
| $b = 0.035920$ | $b = 0.035670$ | $b = 0.034180$ |

## 2006 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,000 | 5,000 | 900 | 5,000 | 900 |
| 6,000 | 1,100 | 10,000 | 1,500 | 10,000 | 1,400 |
| 7,000 | 1,200 | 20,000 | 2,400 | 20,000 | 2,200 |
| 8,000 | 1,300 | 30,000 | 3,200 | 30,000 | 3,000 |
| 9,000 | 1,400 | 40,000 | 4,000 | 40,000 | 3,600 |
| 10,000 | 1,500 | 50,000 | 4,800 | 50,000 | 4,300 |
| 20,000 | 2,400 | 60,000 | 5,500 | 60,000 | 4,900 |
| 30,000 | 3,200 | 70,000 | 6,200 | 70,000 | 5,500 |
| 40,000 | 4,000 | 80,000 | 6,900 | 80,000 | 6,200 |
| 50,000 | 4,800 | 90,000 | 7,600 | 90,000 | 6,700 |
| 60,000 | 5,500 | 100,000 | 8,300 | 100,000 | 7,300 |
| 70,000 | 6,300 | 200,000 | 15,200 | 200,000 | 13,000 |
| 80,000 | 7,000 | 300,000 | 21,800 | 300,000 | 18,300 |
| 90,000 | 7,700 | 400,000 | 28,500 | 400,000 | 23,700 |
| 100,000 | 8,400 | 500,000 | 35,200 | 500,000 | 28,900 |
| 200,000 | 15,300 | 600,000 | 41,900 | 600,000 | 34,200 |
| 300,000 | 22,000 | 700,000 | 48,700 | 700,000 | 39,400 |
| 400,000 | 28,700 | 800,000 | 55,500 | 800,000 | 44,600 |
| 500,000 | 35,400 | 900,000 | 62,400 | 900,000 | 49,900 |
| 600,000 | 42,200 | 1,000,000 | 69,300 | 1,000,000 | 55,200 |
| 700,000 | 49,100 | 2,000,000 | 141,400 | 2,000,000 | 108,800 |
| 800,000 | 55,900 | 3,000,000 | 218,000 | 3,000,000 | 164,300 |
| 900,000 | 62,900 | 4,000,000 | 298,500 | 4,000,000 | 221,800 |
| 1,000,000 | 69,800 | 5,000,000 | 382,600 | 5,000,000 | 280,900 |
| 2,000,000 | 142,400 | 6,000,000 | 469,800 | 6,000,000 | 341,600 |
| 3,000,000 | 219,700 | 7,000,000 | 559,900 | 7,000,000 | 403,800 |
| 4,000,000 | 300,900 | 8,000,000 | 652,800 | 8,000,000 | 467,400 |
| 5,000,000 | 385,600 | 9,000,000 | 748,200 | 9,000,000 | 532,300 |
| 6,000,000 | 473,600 | 10,000,000 | 846,100 | 10,000,000 | 598,400 |
| 6,500,000 | 518,700 | 11,000,000 | 946,200 | 11,000,000 | 665,700 |
| 7,000,000 | 564,500 | 12,000,000 | 1,048,500 | 12,000,000 | 734,100 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.223400$ | $a = 4.217860$ | $a = 4.315770$ |
| $b = 0.036310$ | $b = 0.036300$ | $b = 0.034590$ |

## 2007 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 900 | 5,000 | 900 | 5,000 | 900 |
| 6,000 | 1000 | 10,000 | 1,400 | 10,000 | 1,400 |
| 7,000 | 1,100 | 20,000 | 2,300 | 20,000 | 2,200 |
| 8,000 | 1,200 | 30,000 | 3,200 | 30,000 | 3,000 |
| 9,000 | 1,400 | 40,000 | 3,900 | 40,000 | 3,700 |
| 10,000 | 1,500 | 50,000 | 4,700 | 50,000 | 4,400 |
| 20,000 | 2,400 | 60,000 | 5,500 | 60,000 | 5,000 |
| 30,000 | 3,200 | 70,000 | 6,200 | 70,000 | 5,700 |
| 40,000 | 4,000 | 80,000 | 6,900 | 80,000 | 6,300 |
| 50,000 | 4,800 | 90,000 | 7,600 | 90,000 | 7,000 |
| 60,000 | 5,600 | 100,000 | 8,300 | 100,000 | 7,600 |
| 70,000 | 6,300 | 200,000 | 15,300 | 200,000 | 13,600 |
| 80,000 | 7,100 | 300,000 | 22,200 | 300,000 | 19,500 |
| 90,000 | 7,800 | 400,000 | 29,100 | 400,000 | 25,300 |
| 100,000 | 8,500 | 500,000 | 36,100 | 500,000 | 31,100 |
| 200,000 | 15,700 | 600,000 | 43,200 | 600,000 | 36,900 |
| 300,000 | 22,800 | 700,000 | 50,300 | 700,000 | 42,700 |
| 400,000 | 29,900 | 800,000 | 57,500 | 800,000 | 48,600 |
| 500,000 | 37,100 | 900,000 | 64,700 | 900,000 | 54,500 |
| 600,000 | 44,400 | 1,000,000 | 72,000 | 1,000,000 | 60,400 |
| 700,000 | 51,700 | 2,000,000 | 148,800 | 2,000,000 | 121,400 |
| 800,000 | 59,200 | 3,000,000 | 231,300 | 3,000,000 | 185,600 |
| 900,000 | 66,700 | 4,000,000 | 318,700 | 4,000,000 | 252,700 |
| 1,000,000 | 74,200 | 5,000,000 | 410,300 | 5,000,000 | 322,200 |
| 2,000,000 | 153,800 | 6,000,000 | 505,800 | 6,000,000 | 394,000 |
| 3,000,000 | 239,400 | 7,000,000 | 604,800 | 7,000,000 | 468,000 |
| 4,000,000 | 330,200 | 8,000,000 | 707,000 | 8,000,000 | 544,000 |
| 5,000,000 | 425,500 | 9,000,000 | 812,400 | 9,000,000 | 621,800 |
| 6,000,000 | 524,800 | 10,000,000 | 920,800 | 10,000,000 | 701,400 |
| 6,500,000 | 575,900 | 11,000,000 | 1,031,900 | 11,000,000 | 782,700 |
| 7,000,000 | 628,000 | 12,000,000 | 1,145,600 | 12,000,000 | 865,600 |

| | | |
|---|---|---|
| $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* | $* SE = e^{a+b(\ln X)^2}$, *where* |
| $a = 4.133760$ | $a = 4.128400$ | $a = 4.217410$ |
| $b = 0.037100$ | $b = 0.036970$ | $b = 0.035580$ |

## 2008 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 900 | 5,000 | 1,000 | 5,000 | 900 |
| 6,000 | 1,000 | 10,000 | 1,500 | 10,000 | 1,400 |
| 7,000 | 1,100 | 20,000 | 2,400 | 20,000 | 2,300 |
| 8,000 | 1,300 | 30,000 | 3,300 | 30,000 | 3,000 |
| 9,000 | 1,400 | 40,000 | 4,100 | 40,000 | 3,800 |
| 10,000 | 1,500 | 50,000 | 4,800 | 50,000 | 4,400 |
| 20,000 | 2,400 | 60,000 | 5,600 | 60,000 | 5,100 |
| 30,000 | 3,200 | 70,000 | 6,300 | 70,000 | 5,800 |
| 40,000 | 4,000 | 80,000 | 7,100 | 80,000 | 6,400 |
| 50,000 | 4,800 | 90,000 | 7,800 | 90,000 | 7,000 |
| 60,000 | 5,500 | 100,000 | 8,500 | 100,000 | 7,700 |
| 70,000 | 6,300 | 200,000 | 15,400 | 200,000 | 13,700 |
| 80,000 | 7,000 | 300,000 | 22,200 | 300,000 | 19,400 |
| 90,000 | 7,700 | 400,000 | 29,000 | 400,000 | 25,200 |
| 100,000 | 8,400 | 500,000 | 35,800 | 500,000 | 30,900 |
| 200,000 | 15,500 | 600,000 | 42,600 | 600,000 | 36,600 |
| 300,000 | 22,400 | 700,000 | 49,500 | 700,000 | 42,300 |
| 400,000 | 29,400 | 800,000 | 56,500 | 800,000 | 48,000 |
| 500,000 | 36,400 | 900,000 | 63,500 | 900,000 | 53,700 |
| 600,000 | 43,500 | 1,000,000 | 70,500 | 1,000,000 | 59,500 |
| 700,000 | 50,600 | 2,000,000 | 143,700 | 2,000,000 | 118,700 |
| 800,000 | 57,800 | 3,000,000 | 221,600 | 3,000,000 | 180,500 |
| 900,000 | 65,100 | 4,000,000 | 303,400 | 4,000,000 | 244,800 |
| 1,000,000 | 72,400 | 5,000,000 | 388,800 | 5,000,000 | 311,300 |
| 2,000,000 | 149,300 | 6,000,000 | 477,300 | 6,000,000 | 379,900 |
| 3,000,000 | 231,700 | 7,000,000 | 568,900 | 7,000,000 | 450,300 |
| 4,000,000 | 318,800 | 8,000,000 | 663,200 | 8,000,000 | 522,400 |
| 5,000,000 | 410,000 | 9,000,000 | 760,000 | 9,000,000 | 596,200 |
| 6,000,000 | 505,100 | 10,000,000 | 859,400 | 10,000,000 | 671,600 |
| 6,500,000 | 553,900 | 11,000,000 | 961,000 | 11,000,000 | 748,400 |
| 7,000,000 | 603,600 | 12,000,000 | 1,064,900 | 12,000,000 | 826,700 |

| | | |
|---|---|---|
| $*SE = e^{a + b(\ln x)^2}$ , where<br>$a = 4.158710$<br>$b = 0.036840$ | $**SE = e^{a + b(\ln x)^2}$ , where<br>$a = 4.238660$<br>$b = 0.036280$ | $***SE = e^{a + b(\ln x)^2}$ , where<br>$a = 4.283070$<br>$b = 0.035160$ |

## 2009 NASS GES ESTIMATES AND STANDARD ERRORS

| Crash Estimate (x) | Crash Standard Error (SE)* | Vehicle Estimate (x) | Vehicle Standard Error (SE)** | Person Estimate (x) | Person Standard Error (SE)*** |
|---|---|---|---|---|---|
| 1,000 | 400 | 1,000 | 400 | 1,000 | 400 |
| 5,000 | 1,000 | 5,000 | 1,000 | 5,000 | 1,000 |
| 6,000 | 1,100 | 10,000 | 1,500 | 6,000 | 1,100 |
| 7,000 | 1,200 | 20,000 | 2,400 | 7,000 | 1,200 |
| 8,000 | 1,300 | 30,000 | 3,200 | 8,000 | 1,300 |
| 9,000 | 1,400 | 40,000 | 4,000 | 9,000 | 1,400 |
| 10,000 | 1,500 | 50,000 | 4,800 | 10,000 | 1,500 |
| 20,000 | 2,500 | 60,000 | 5,500 | 20,000 | 2,500 |
| 30,000 | 3,300 | 70,000 | 6,200 | 30,000 | 3,300 |
| 40,000 | 4,100 | 80,000 | 6,900 | 40,000 | 4,100 |
| 50,000 | 4,900 | 90,000 | 7,600 | 50,000 | 4,900 |
| 60,000 | 5,600 | 100,000 | 8,300 | 60,000 | 5,600 |
| 70,000 | 6,300 | 200,000 | 15,000 | 70,000 | 6,300 |
| 80,000 | 7,000 | 300,000 | 21,500 | 80,000 | 7,000 |
| 90,000 | 7,700 | 400,000 | 28,000 | 90,000 | 7,700 |
| 100,000 | 8,400 | 500,000 | 34,500 | 100,000 | 8,400 |
| 200,000 | 15,200 | 600,000 | 41,000 | 200,000 | 15,200 |
| 300,000 | 21,800 | 700,000 | 47,500 | 300,000 | 21,800 |
| 400,000 | 28,300 | 800,000 | 54,100 | 400,000 | 28,300 |
| 500,000 | 34,800 | 900,000 | 60,700 | 500,000 | 34,800 |
| 600,000 | 41,300 | 1,000,000 | 67,300 | 600,000 | 41,300 |
| 700,000 | 47,800 | 2,000,000 | 136,200 | 700,000 | 47,800 |
| 800,000 | 54,400 | 3,000,000 | 208,900 | 800,000 | 54,400 |
| 900,000 | 61,000 | 4,000,000 | 285,100 | 900,000 | 61,000 |
| 1,000,000 | 67,700 | 5,000,000 | 364,400 | 1,000,000 | 67,700 |
| 2,000,000 | 136,400 | 6,000,000 | 446,400 | 2,000,000 | 136,400 |
| 3,000,000 | 208,900 | 7,000,000 | 530,900 | 3,000,000 | 208,900 |
| 4,000,000 | 284,500 | 8,000,000 | 617,900 | 4,000,000 | 284,500 |
| 5,000,000 | 363,100 | 9,000,000 | 707,100 | 5,000,000 | 363,100 |
| 6,000,000 | 444,400 | 10,000,000 | 798,400 | 6,000,000 | 444,400 |
| 6,500,000 | 486,000 | 11,000,000 | 891,700 | 6,500,000 | 486,000 |
| 7,000,000 | 528,100 | 12,000,000 | 987,000 | 7,000,000 | 528,100 |

| | | |
|---|---|---|
| $*SE = e^{a + b(\ln x)^2}$, where<br>$a = 4.310860$<br>$b = 0.035690$ | $**SE = e^{a + b(\ln x)^2}$, where<br>$a = 4.310860$<br>$b = 0.035690$ | $***SE = e^{a + b(\ln x)^2}$, where<br>$a = 4.310860$<br>$b = 0.035690$ |

# Appendix E:
# Analytical Data Classification of Select NASS GES Variable

Several variables in the NASS GES are classified or collapsed according to analytical needs. In various NCSA's published reports and analysis, select NASS GES variables have been given a standard classification. This section will attempt to show how NASS GES variables are classified, assisting users in understanding and duplicating statistics presented in NCSA's published reports.

Earlier publications using only NASS GES data included the fatal crash data from the NASS GES, but this method is no longer in practice. For analytical purposes, fatal crashes and fatalities are extracted from the Fatality Analysis Reporting System (FARS), not NASS GES. 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 nonmotorist) 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 NASS GES.

It is important to note that these are NCSA's classifications and are subject to modification.

The following tables show the specific coding scheme of select NASS GES variables that are used in NCSA's publications and analysis:

### Univariate Maximum Injury Severity in Crash

| NASS GES Description | Data Year and Code | Crash Severity Class |
|---|---|---|
| | 1988 - Later | |
| No Injury | 0 | Property-Damage-Only Crash |
| Possible Injury | 1 | Injury Crash |
| Nonincapacitating | 2 | Injury Crash |
| Incapacitating | 3 | Injury Crash |
| Fatal* | 4 | Fatal Crash |
| Unknown Injury Severity | 5 | Injury Crash |
| Died Prior | 6 | Property-Damage-Only Crash |
| No Person Coded in the Crash | 8 | Property-Damage-Only Crash |

* Fatal counts from the FARS are used in NCSA's publications and analysis.

## Injury Severity

| NASS GES Description | Data Year and Code | Injury Severity Class |
|---|---|---|
| | 1988 - Later | |
| No Injury (O) | 0 | Not Injured |
| Possible Injury (C) | 1 | Injured |
| Nonincapacitating (B) | 2 | Injured |
| Incapacitating (A) | 3 | Injured |
| Fatal (K)* | 4 | Killed |
| Unknown Injury Severity (U) | 5 | Injured |
| Died Prior | 6 | Not Injured |

* Fatality counts from the FARS are used in NCSA's publications and analysis.

## Vehicle Body Type

| NASS GES Description | Data Year and Code | | | | |
|---|---|---|---|---|---|
| | 1988-1991 | 1992-1998 | 1999-2008 | 2009 | 2010 |
| | (BDYTYP_H, BDYTYP_IM, BODY_TYP) | | | | |
| Passenger Cars | 01-11, 17[1] | | | | |
| Light Trucks & Vans [6] | 14, 20-41, 47[8], 48 | 14, 15, 16, 19, 20, 21, 22[2], 24[3], 25[4], 28, 29, 30, 31, 32, 33, 39, 40, 41, 45, 48 | | | |
| Large Trucks | 60, 65, 68 | 60, 64, 66, 78 | | | 60-63, 66, 67, 68, 71, 72, 78 |
| Motorcycles | 70-79 | 80-89 | | | |
| Buses | 50-59 | | | | |
| Other/Unknown Vehicles | 12, 13, 42, 63, 80-89 | 12, 13, 23, 42, 65, 90-97, **98 (since 2010)** | | | |
| Passenger Vehicles | 01-11, 14, 15, 16, 17[1], 19, 20, 21, 22[2], 24[3], 25[4], 28, 29, 30, 31, 32, 33, 39, 40, 41, 45, 47[8], 48 | | | | |
| Utility Vehicles (a.k.a. On/Off Road) | 14 | 14-16, 19 | | | |
| Pickups | 30-39 | | | | |
| Vans | 20, 21, 22[2], 28, 29 | 20, 21, 22, 24[3], 25[4], 28, 29 | | | |
| Medium Trucks | (60, 68) and (Trailer=0 or 9) | (60, 64, 78) and (Trailer=0 or 9) | (60, 64, 78) and (Trailer[5]=1 or 6) | (60, 64, 78) and (Tow_veh[5] in 0,5,6,9) | (60-62, 68, 67,71) and (Tow_veh[5] in 0,5,6,9) |
| Heavy Trucks | ((60, 68) and (Trailer in 1-4)) or 65 | ((60, 64, 78) and (Trailer in 1-4)) or 66 | ((60, 64, 78) and (Trailer[5] in 2-5)) or 66 | ((60, 64, 78) and (Tow_veh [5] in 1-4)) or 66 | 63, 66, 72, 78 |
| Combination Trucks | ((60, 68) and (Trailer in 1-4)) or 65 | ((60, 64, 78) and (Trailer in 1-4)) or 66 | ((60, 64, 78) and (Trailer[5] in 2-5)) or 66 | ((60, 64, 78) and (Tow_veh [5] in 1-4)) or 66 | ((60-63, 68, 71, 72, 78) and (Tow_veh [5] in 1-4)) or 66 |
| Single Unit Trucks | (60, 68) and (Trailer=0 or 9) | (60, 64, 78) and (Trailer=0 or 9) | (60,64,78) and (Trailer[5]=1 or 6) | (60,64,78) and (Tow_veh [5] in 0,5,6,9) | (60-62, 63, 67,68,71,72,78) and (Tow_veh [5] in 0,5,6,9) |
| Unknown (not in imputed Body Type) | 99 | | | | 98, 99 |

## Vehicle Body Type *(continued)*

(1) Body type code 17 *(3-door coupe)* was added in 1999. There appears to be no occurrences of this vehicle on the 1999 file.

(2) Body type code 22 *(step van or walk-in van)* was added in 1990.

(3) Body type code 24 *(van-based school bus)* was added in 1993. When defining School Buses be sure to include body type code 24.

(4) Body type code 25 *(van-based transit bus)* was added in 1993. When defining Transit Buses be sure to include body type code 25.

(5) The attributes for the Vehicle Trailing (TRAILER) element were modified in 1999. In 2009, the variable name changed to TOW_VEH and attributes were revised for compatibility purposes with FARS.

(6) "Light Trucks & Vans" is frequently referred to as just "Light Trucks."

(7) There is no distinction between heavy trucks and combination trucks in GES.

(8) Body type code 47 (other light conventional truck type (not a pickup)) only exists in 1988 and 1989. It was dropped in 1990.

Body type codes 49, 69, and 99 are imputed in the 1988 through 1992 files. Body type codes 49, 79, and 99 are imputed in the 1993 through 1999 files. Therefore, these values do not exist within the BDYTYP_H (2009 and prior) or BDYTYP_IM (2010 and later).

## Person Type

| NASS GES Description | Data Year and Code | | Classification |
|---|---|---|---|
| | 1988-2008 | 2009-2010 | |
| | (PER_TYPE) | (PER_TYP) | |
| ***Occupants*** | | | |
| Driver of a motor vehicle in transport | 1 | 01 | Driver |
| Passenger of a motor vehicle in transport | 2 | 02 | Passenger |
| Unknown occupant type of a motor vehicle in transport (1) | 9 | 09 | Passenger |
| ***Nonoccupants*** | | | |
| Occupant of a motor vehicle not in transport (2) | 3 | 03 | Other nonoccupant |
| Occupant of a non-motor vehicle transport device (3) | 4 | 04 | Other nonoccupant |
| Pedestrian | 5 | 05 | Pedestrian |
| Cyclist | 6 | - | Pedalcyclist |
| Bicyclist | - | 06 | Pedalcyclist |
| Other Cyclist | - | 07 | Pedalcyclist |
| Person in or on working motor vehicle | 7 (new in 2005) (8) | - | Other nonoccupant |
| Persons on personal conveyances | - | 08 | Other nonoccupant |
| Persons in/on buildings | - | 10 | Other nonoccupant |
| Other or unknown nonoccupant | 8 | - | Other or unknown nonoccupant type |
| Unknown type of nonoccupant | - | 19 | Unknown nonoccupant type |

## Person Type *(continued)*

(1) Customarily, "Unknown Occupant" is placed in the "Passenger" category, unless they need to be distinguished from "Passengers".

(2) "Occupant of motor vehicle not in transport" refers to occupants of parked motor vehicles (any motor vehicle stopped off the roadway). In 2005, this definition was expanded to include parked/stopped off roadway/working motor vehicles and occupants of motor vehicles in motion outside the trafficway boundaries. Prior to 2005, occupants of working motor vehicles (working highway maintenance vehicles, cherry pickers, etc.) were coded "08." At that time, code "08" was labeled "Other Pedestrians."

(3) "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.

(4) The code for "other pedestrians (08)" was created in FARS in 1994. This code was the result of further detailing the previous coding of "other or unknown nonoccupant (8)" as 1) other pedestrians and 2) unknown nonoccupant. Since it is not possible to differentiate "other pedestrians" from "unknown nonoccupants" prior to 1994, we have kept them in the "other nonoccupant" category for consistency across data years. "Other pedestrians" is used for occupant of a transport device used as equipment (working highway maintenance trucks, cherry pickers, etc.), pedestrians using conveyances, and people in buildings. Examples of pedestrian conveyances are skateboard riders, people in wheelchairs, people on roller skates, and sled riders.

(5) Prior to 2005, code "08" was labeled "Other Pedestrians" and also included occupants of motor vehicles used as equipment (working highway maintenance vehicles, cherry pickers, etc.). For occupants of working motor vehicles, see code "03."

(6) Prior to 2007, code "08" included persons in buildings. For persons in buildings, see code "10 – Persons In/On Buildings."

(7) "Unknown person type" existed in data years 1995 and 1996 only. It was found that this attribute did not add any value to the element.

(8) A person in or on a working motor vehicle. Working motor vehicles are transport devices being used as equipment which would be classified under ANSI as motor vehicles, if not being used as equipment (e.g., a tow truck while using its winch, a pickup truck while being used to power a saw, a truck with cherry picker being used to repair or maintain a traffic signal or a concrete truck while discharging its load).

### FARS and NASS GES "Person Type" and Entry System/Manual Differences

In FARS before 2005 only vehicle records for motor vehicles in-transport were collected. Any person involved in the crash that was not in a motor vehicle in-transport had records, but only needed to be classified using the general grouping of "NON-MOTORIST". A non-motorist by definition is any person who is not an occupant of a motor vehicle in-transport.

In 2005, FARS began to include records for motor vehicles not in-transport. At that point people had to be classified as OCCUPANTS or NON-OCCUPANTS. This was done so that persons in motor vehicles not in-transport could be coded with the vehicle they occupied even though they are "non-motorists" by definition.

When Ped-Bike Typing and additional elements meant for non-occupants (e.g. Non-motorist Action at Time of Crash, Non-motorist Safety Equipment) were added to FARS for in 2010, separate Person Levels for people in motor vehicles and people not in motor vehicles were created. This is tied to the case organization and file structuring in MDE. FARS' split Person Type element (P7 and NM7) reflects this separation of Person Types. The Person Type, 03-Occupant of a Motor Vehicle Not In-Transport, has a special quality of being both a NON-MOTORIST by definition and a person in a motor vehicle.

The 2010 GES entry system follows a scheme of breaking out persons as motorists or non-motorists. The "Long Names" of their elements reflect this and the input system is structured around this. While the manual and entry systems reflect a difference in the organization of people in a case, FARS and GES both have the same Person Type attributes in total. It is because of the differences in the two entry systems and handling of persons in structuring of the case that the elements are presented differently.

This principally affects the Person Type of "03 – Occupant of a Motor Vehicle Not In-transport". So while the Person Type attribute list is the same in total, P03 (Occupant) in GES does not match exactly with FARS P7 because FARS includes "03 – Occupant of a Motor Vehicle Not In-transport". It is the same situation but in reverse for GES P03 (Non-motorist) and FARS NM7. This difference will go away because of the entry systems being the same in 2011.

This difference affects how persons are counted in a case by Person Number but not the selection of Person Type for the individuals. For example, if a motor vehicle in-transport with just one occupant departed the roadway and struck a pedestrian and then a parked motor vehicle with one occupant both FARS and GES would have Person Level information for all three people and would utilize the same Person Type attribute to identify them. However, FARS would count two MOTOR VEHICLE OCCUPANTS, one NON-OCCUPANT and GES would count two NON-MOTORISTS and one NON-MOTORIST.

**Restraint System Use**

| NASS GES Description | Data Year and Code | | | | | Classi-fication |
|---|---|---|---|---|---|---|
| | 1988-1989 | 1990-1991 | 1992-1994 | 1995-2009 | 2010 | |
| | (SAF_EQMT) | (REST_SYS) | | | | |
| Nonoccupant | 00 | - | - | - | - | Not Applicable |
| None used | 10 | - | - | - | - | Not Used |
| None available | 11 | - | - | 7 | | |
| None used or Not applicable | - | 0 | 0 | 0 | - | |
| Not applicable | - | - | - | - | 30 | |
| None used – motor vehicle occupant | - | - | - | - | 31 | |
| No helmet | - | - | - | - | 41 | |
| Manual shoulder and lap belt | 04 | - | - | - | - | Used |
| Lap/shoulder belt | - | 1 | 1 | 1 | - | |
| Manual lap belt | 02 | - | - | - | - | |
| Lap belt | - | 2 | 2 | 2 | - | |
| Manual shoulder belt only | 03 | - | - | - | - | |
| Shoulder belt | - | 3 | 3 | 3 | - | |
| Shoulder and lap belt used | - | - | - | - | 21 | |
| Shoulder belt only | - | - | - | - | 23 | |
| Lap belt only | - | - | - | - | 22 | |
| Automatic belt used | 05 | - | - | - | - | |

**Restraint System Use *(continued)***

| NASS GES Description | Data Year and Code | | | | | Classi-fication |
|---|---|---|---|---|---|---|
| | 1988-1989 | 1990-1991 | 1992-1994 | 1995-2009 | 2010 | |
| | (SAF_EQMT) | (REST_SYS) | | | | |
| Air bag deployed | 06 | 4 | - | - | - | |
| Air bag deployed and lap/shoulder belt | - | 5 | - | - | - | |
| Child safety seat | 01 | 6 | 6 | 6 | - | |
| Child restraint system – forward facing | - | - | - | - | 37 | |
| Child restraint system – rear facing | - | - | - | - | 38 | |
| Booster seat | - | - | - | - | 39 | |
| Child restraint – type unknown | - | - | - | - | 40 | |
| Motorcycle helmet | 07 | 7 | 7 | 5 | - | |
| DOT-compliant motorcycle helmet | - | - | - | - | 42 | |
| Other helmet | - | - | - | - | 43 | |
| Other restraint/ safety equipment used | 08 | - | - | - | 98 | |
| Restraint used – type unknown | 09 | - | - | - | 28 | |
| Restraint used – specifics unknown or other | - | 8 | 8 | 8 | - | |
| Not reported | - | - | - | - | 97 | Unknown |
| Unknown if used | 99 | 9 | 9 | 9 | 99 | |

## Univariate Traffic Control Device

| Control Device Class | Data Year and Code | |
|---|---|---|
| | 1988 - 1989 | 1990 - Later |
| None | 00 | |
| Traffic Signal | 01, 02, 03, 04, 08, 09 | 01, 04, 08, 09 |
| Stop Sign | 11 | 21 |
| Other | 12-14, 18,19,21,31,32,97,98 | 22,23,28,29, 40-43,49,51,61,62,97,98 |

# Appendix F:
# Rules for Derived Variables

## Trafficway Description

Accident.TRAF_WAY

| Attribute Labels | 2009 GES | 2010 GES |
|---|---|---|
| Non-Trafficway Area | | 0 |
| Not Physically Divided (Center 2-way Left Turn Lane) | 0 | |
| Not Physically Divided (Two Way Trafficway) | 1 | |
| Divided Highway (Median Strip, Barrier) | 2 | |
| Two-Way, Not Divided | | 1 |
| Two-Way, Not Divided with a continuous left turn lane | | 5 |
| Two-Way, Divided, Unprotected (painted >4feet) Median | | 2 |
| Two-Way, Divided, Positive Median Barrier | | 3 |
| One Way Trafficway | 3 | 4 |
| Entrance/Exit ramp | | 6 |
| Not Reported | | 8 |
| Unknown | 9 | 9 |

This information is coded on the vehicle level. The ACCIDENT level variable is derived by selecting one vehicle and using the coded values for that vehicle. The vehicle is chosen by the following process:

If there is only one vehicle, use that vehicle. If there is only one vehicle involved in the first event, then that vehicle is selected. If there are two vehicles in the first event, and the second vehicle has a larger number of travel lanes, and if that value is not 8, then the second vehicle is selected.

Starting in 2010, with the change to allow non-harmful events as the first event, the above derivation rule will change to use the first coded *harmful* event.

**Logic of Derivation:**

Follow the priority ranking of each attribute as follows:

- Two-Way, Divided, Positive Median Barrier
- Two-Way, Divided, Unprotected (Painted > 4 Feet) Median
- Two-Way, Not Divided With a Continuous Left-Turn Lane
- Two-Way, Not Divided
- One-Way Trafficway
- Entrance/Exit Ramp
- Non-Trafficway Area
- Not Reported
- Unknown

## Total Lanes in Roadway

Accident.NO_LANES

| Attribute Labels | 2009 GES | 2010 GES |
|---|---|---|
| Non-Trafficway Area | | 0 |
| One Lane | 1 | 1 |
| Two Lanes | 2 | 2 |
| Three Lanes | 3 | 3 |
| Four Lanes | 4 | 4 |
| Five Lanes | 5 | 5 |
| Six Lanes | 6 | 6 |
| Seven or More Lanes | 7 | 7 |
| Not Reported | | 8 |
| Unknown | 9 | 9 |

This information is coded on the vehicle level. The ACCIDENT level variable is derived by selecting one vehicle and using the coded values for that vehicle. The vehicle is chosen by the following process:

If there is only one vehicle, use that vehicle. If there is only one vehicle involved in the first event, then that vehicle is selected. If there are two vehicles in the first event, and the second vehicle has a larger number of travel lanes, and if that value is not 8, then the second vehicle is selected.

Starting in 2010, with the change to allow non-harmful events as the first event, the above derivation rule will change to use the first coded *harmful* event.

**Logic of Derivation:**

Follow the priority ranking of each attribute as follows:

- Seven or More Lanes
- Six Lanes
- Five Lanes
- Four Lanes
- Three Lanes
- Two Lanes
- One Lane
- Non-Trafficway Area
- Not Reported
- Unknown

## Roadway Alignment

Accident.ALIGNMNT

| Attribute Labels | 2009 GES | 2010 GES | 2010 GES Accident |
|---|---|---|---|
| Non-Trafficway Area | | 0 | |
| Straight | 1 | 1 | 1 |
| Curve | 2 | | 2 |
| Curve Right | | 2 | |
| Curve Left | | 3 | |
| Curve -Unknown Direction | | 4 | |
| Not Reported | | 8 | 8 |
| Unknown | 9 | 9 | 9 |

This information is coded on the vehicle level. The ACCIDENT level variable is derived by selecting one vehicle and using the coded values for that vehicle. The vehicle is chosen by the following process:

If there is only one vehicle, use that vehicle. If there is only one vehicle involved in the first event, then that vehicle is selected. If there are two vehicles in the first event, and the second vehicle has a larger number of travel lanes, and if that value is not 8, then the second vehicle is selected.

Starting in 2010, with the change to allow non-harmful events as the first event, the above derivation rule will change to use the first coded *harmful* event.

**Logic of Derivation:**

At crash level, combine the codes curve right, curve left and curve-unknown direction into one code, 'curve'. Then follow the priority ranking of 1, 'straight', 2 'curve', 8 'not reported', 9 'unknown'.

Follow the priority ranking of each attribute as follows:

- Curve
- Straight
- Non-Trafficway Area
- Not Reported
- Unknown

**Roadway Grade**

Accident.PROFILE

| Attribute Labels | 2009 GES | 2010 GES | 2010 GES Accident |
|---|---|---|---|
| Non-Trafficway Area | | 0 | 0 |
| Level | 1 | 1 | 1 |
| Grade | 2 | | 2 |
| Grade, Unknown slope | | 2 | |
| Hillcrest | 3 | 3 | 3 |
| Uphill | | 5 | |
| Downhill | | 6 | |
| Sag | 8 | | |
| Sag (Bottom) | | 4 | 4 |
| Not reported | | 8 | 8 |
| Unknown | 9 | 9 | 9 |

This information is coded on the vehicle level. The ACCIDENT level variable is derived by selecting one vehicle and using the coded values for that vehicle. The vehicle is chosen by the following process:

If there is only one vehicle, use that vehicle. If there is only one vehicle involved in the first event, then that vehicle is selected. If there are two vehicles in the first event, and the second vehicle has a larger number of travel lanes, and if that value is not 8, then the second vehicle is selected.

Starting in 2010, with the change to allow non-harmful events as the first event, the above derivation rule will change to use the first coded *harmful* event.

**Logic of Derivation:**

At the crash level the codes uphill, downhill, grade, unknown slope are combined into one code, 'grade'. Follow the priority ranking of Grade, Hillcrest, Sag (bottom), level, non-trafficway area, not reported, unknown.

Follow the priority ranking of each attribute as follows:

- Grade
- Hillcrest
- Sag (Bottom)
- Level
- Non-Trafficway Area
- Not Reported
- Unknown

**Roadway Surface Condition**

Accident.SUR_COND

| Attribute Labels | 2009 GES | 2010 GES |
|---|---|---|
| Non-Trafficway Area | | 0 |
| Dry | 1 | 1 |
| Wet | 2 | 2 |
| Snow or Slush | 3 | |
| Snow | | 3 |
| Slush | | 10 |
| Ice | 4 | |
| Ice/Frost | | 4 |
| Water (Standing, Moving) | | 6 |
| Sand, Dirt, Oil | 5 | |
| Sand | | 5 |
| Mud, dirt, gravel | | 11 |
| Oil | | 7 |
| Other | 8 | 8 |
| Not Reported | | 98 |
| Unknown | 9 | 99 |

This information is coded on the vehicle level. The ACCIDENT level variable is derived by selecting one vehicle and using the coded values for that vehicle. The vehicle is chosen by the following process:

If there is only one vehicle, use that vehicle. If there is only one vehicle involved in the first event, then that vehicle is selected. If there are two vehicles in the first event, and the second vehicle has a larger number of travel lanes, and if that value is not 8, then the second vehicle is selected.

Starting in 2010, with the change to allow non-harmful events as the first event, the above derivation rule will change to use the first coded *__harmful__* event.

**Logic of Derivation:**

Follow the priority ranking of each attribute as follows:

- Snow
- Slush
- Ice/Frost
- Water (Standing, Moving)
- Wet
- Sand

- Mud, Dirt, Gravel
- Oil
- Other
- Dry
- Non-Trafficway Area
- Not Reported
- Unknown

## Traffic Control Device

Accident.TRAF_CON

| Attribute Labels | 2009 GES | 2010 GES |
|---|---|---|
| Officer, Crossing Guard, Flagman, Etc. | 51 | |
| Person | | 51 |
| Traffic Control Signal (On Colors) | 1 | |
| Traffic control signal (on colors) without pedestrian signal | | 1 |
| Traffic control signal (on colors) with pedestrian signal | | 2 |
| Traffic control signal (on colors) not known if ped signal | | 3 |
| Flashing Traffic Control Signal Or Flashing Beacon | 4 | |
| Flashing Traffic Control Signal | | 4 |
| Lane Use Control Signal | | 5 |
| Other highway traffic signal | 8 | 8 |
| Unknown Highway Traffic Signal | 9 | 9 |
| Stop Sign | 21 | 21 |
| Yield Sign | 22 | 22 |
| School Zone sign/ Device | 23 | 23 |
| Other Regulatory Sign | 28 | 28 |
| Unknown Regulatory Sign | 29 | 29 |
| Advisory Speed Sign | 40 | |
| Warning Sign For Road Conditions (Hill, Steep Grade, etc.) | 41 | |
| Warning Sign For Road Construction | 42 | |
| Warning Sign For Environment/Traffic (Fog Ahead, Wind) | 43 | |
| Unknown Type Warning Sign | 49 | |
| Warning Sign | | 44 |
| Active Device At RR Crossing (e.g., Gates, Flashing Lights) | 61 | |
| Passive Device At RR Crossing (e.g., Stop Sign, Cross Bucks) | 62 | |
| Railway Crossing Device | | 63 |
| Other Traffic Control (Whether Or Not At RR Grade Crossing) | 98 | |
| Other Traffic Control | | 98 |
| Traffic Control Present - No Details | 97 | |
| Not Reported | | 97 |
| Unknown | 99 | 99 |
| No Controls | 0 | 0 |

**Logic of Derivation:**

In 2009 and before, all GES.Vehicle.VTRAFCON SAS Code values for vehicles linked to the case, as well as all GES.Biketraf.BTRAFCON values are used. If there are no values, then 00 is assigned. If there is a single record, then that SAS Code is assigned. If there are multiple records, then the minimum SAS Code is assigned, with the following exceptions. If there is a record with a 0 SAS Code, and any other record with a value other than 0, then the record with the 0 SAS Code record is ignored (all other values take precedence over 0). If there is a record with SAS Code value of 51, then 51 is assigned (51 takes precedence over all other values). SAS Code 98 takes precedence over SAS Code 97.

If the crash involves vehicles and cyclists subject to different traffic control devices, the device coded is based on the following priority:

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

Starting 2010, pick a single traffic control which best described in the vehicle's environment just prior to this vehicle's critical precrash event. The roadway used for coding this element is the one this vehicle departed if it is off the roadway just prior to its critical precrash event. If this vehicle is in a junction just prior to its critical precrash event, this element is coded based on the roadway this vehicle was on before entering the junction. Code the value indicated in the case materials if it directly matches.

If more than one device is present, code the highest device (lowest number on list) most related to the crash. There are two exceptions:

1. One exception is **Person** which includes a law enforcement officer, crossing guard, flagman, etc. **Person** takes precedence over the entire list.
2. The other exception is an **Other Regulatory Sign** which includes a Regulatory Speed Limit Sign.

## Speed Limit

Accident.SP_LIMIT

| Attribute Labels | 2009 GES | 2010 GES |
|---|---|---|
| No Statutory Limit | 0 | |
| No Statutory Limit/Non-Trafficway Area | | 0 |
| Actual speed Limit | | 05-75 |
| Actual speed Limit (MPH increments of 5) | 05-75 | |
| Not Reported | | 97 |
| Unknown | 99 | 99 |

**Logic of Derivation:**

Speed Limit is coded on the vehicle level. The derivation takes the largest non-unknown value for all the coded vehicles. If all the values are unknown, then the value is assigned 999.

Follow the priority ranking of each attribute as follows:

- Largest non-unknown values
- Not Reported
- Unknown
- No Limit

**Atmospheric Conditions**

Accident.WEATHER

| Attribute Labels | 2009 GES | 2010 GES |
|---|---|---|
| No Additional Atmospheric Conditions | 1 | 0 |
| Clear | | 1 |
| Cloudy | | 10 |
| Rain | 2 | 2 |
| Sleet, Hail (Freezing Rain or Drizzle) | 3 | 3 |
| Snow | 4 | 4 |
| Blowing Snow | 5 | 11 |
| Rain and Fog | 6 | |
| Sleet and Fog | 7 | |
| Fog, Smog, Smoke | | 5 |
| Severe Crosswinds | | 6 |
| Blowing Sand, Soil, Dirt | | 7 |
| Other | 8 | 8 |
| Not Reported | | 98 |
| Unknown | 9 | 99 |

**Logic of Derivation:**

Follow the priority ranking of each attribute as follows:

- Snow
- Blowing Snow
- Sleet, 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

## Injury Severity, Number Injured and Alcohol Involvement

### Maximum Injury Severity in Crash

Accident.MAX_SEV

| Attribute Labels | GES |
|---|---|
| No Injury | 0 |
| Possible Injury | 1 |
| Non-incapacitating | 2 |
| Incapacitating | 3 |
| Fatal | 4 |
| Injury, unknown injury severity | 5 |
| Died Prior | 6 |
| No person involved in the crash | 8 |
| Unknown if Injured/ Not Reported | 9 |

**Logic of Derivation:**

Note that this translation will need to be modified for 2010 to account for "Not Reported". All GES.Person records linked to the person are used. If there are no records, then the value is assigned 8. If there is a single record, then the SAS Code for Person.INJ_SEV is used. If multiple records, all SAS Codes are obtained and prioritized. The value earliest in the following list will be used: 4, 3, 2, 1, 5, 0, 6 and 9.

## Number Known Injured in Crash

Accident.NUM_INJ

| Attribute Labels | GES |
|---|---|
| No Person Injured/Property Damage Only Crash | 0 |
| Number of Known Injured | x |
| No Person involved in the Crash | 98 |
| All Persons in Crash are Unknown If Injured | 99 |

**Logic of Derivation:**

Note that this translation will need to be modified for 2010 to account for "Not Reported". All GES.Person records linked to the person are used. If there are no records, then the value is assigned 98. 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 of GES.Person records where the SAS Code for Person.INJ_SEV is between 1 and 5.

## Alcohol Involved in Crash

Accident.ALCOHOL

| Attribute Labels | GES |
|---|---|
| Alcohol Involved | 1 |
| No Alcohol involved | 2 |
| No applicable person | 8 |
| Unknown | 9 |

Alcohol Involvement is a derived variable based on police-reported alcohol involvement from the Person data set. This variable indicates alcohol use for drivers, pedestrians, cyclists and other type of non-motorists (except occupants of motor vehicles not in transport) involved in the crash.

The police reported alcohol involvement (Person.PER_ALCH) is as follows:

**Attribute Codes**

| 1988-1989 | 1990-1998 | 1999-2001 | 2002-2008 | 2009-Later | Label |
|---|---|---|---|---|---|
| 1 | | 1 | 1 | 0 | No (Alcohol Not Involved) |
| | 0 | | | | Alcohol Not Involved or N/A |
| | | 0 | 0 | | Not Applicable |
| 1 | 1 | 2 | 2 | 1 | Yes (Alcohol Involved) |
| | | | 6 | | Not on PAR |
| | | | 7 | | Not Coded |
| | 7 | | | | Alcohol and/or Drugs Involved |
| 8 | 8 | 8 | | 8 | Not Reported |
| 9 | 9 | 9 | 9 | 9 | Unknown (Police-Reported) |

**The following order of alcohol involvement has been used since 1999.**

We have Oracle data for NASS GES cases starting with 1999. From 1999 through 2001, the datasets were built from the Oracle cases using the 4 dataset format of previous years (ACCIDENT VEHICLE PERSON and VINVEH, with EVENT added for 2002). Alcohol Involvement was a calculated field based on all persons coded in the crash. Note that persons that had a role other than driver would have an Oracle POLICE_ALCOHOLID value of 26720 ('Not Applicable', SAS value '0').

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 (drivers or nonmotorists [except occupants of motor vehicles not in-transport]) in the crash then alcohol involvement in the crash should be "Yes".
2. No Alcohol Involved
   If NOT #1 (YES) and "Police Reported Alcohol Involvement" is 'No' for any of the involved active participants in the crash, then alcohol involvement in the crash should be "No".
9. Unknown
   If NOT #1 (YES) and NOT #2 (NO) and "Police Reported Alcohol Involvement" is 'Unknown' or 'Not Reported' for ANY of the involved active participants then alcohol involvement in the crash should be "Unknown".

8. No Person Coded
   Default value if no active participants coded for this case.

**From 2002 through 2008, the datasets were expanded to a 14 file format, but the translation remained the same, with 'Not Reported' being replaced by 'Not On PAR' and 'Not Coded' in 2002:**

1. Alcohol Involved
   If "Police Reported Alcohol Involvement " is 'Yes' for any of the involved active participants (drivers or nonmotorists [except occupants of motor vehicles not in-transport]) in the crash then alcohol involvement in the crash should be "Yes".
2. No Alcohol Involved
   If NOT #1 (Alcohol Involved) and "Police Reported Alcohol Involvement" is 'No' for any of the involved active participants in the crash, then alcohol involvement in the crash should be "No".
9. Unknown
   If NOT #1 (YES) and NOT #2 (NO) and "Police Reported Alcohol Involvement" is 'Unknown' or 'Not Reported' for ANY of the involved active participants then alcohol involvement in the crash should be "Unknown".
8. No Person Coded
   Default value if no active participants coded for this case.

**From 2009 and on, the priority is different; it will follow the logic below:**

1. YES
   If "Police Reported Alcohol Involvement " is 'Yes' for any of the involved active participants (drivers or nonmotorists [except occupants of motor vehicles not in-transport]) in the crash then alcohol involvement in the crash should be "Yes".
2. NO
   If "Police Reported Alcohol Involvement" is 'No' for ALL of the involved active participants in the crash then alcohol involvement in the crash should be "No".
3. UNKNOWN
   If NOT #1 (YES) and "Police Reported Alcohol Involvement" is 'Unknown' or 'Not Reported' for ANY of the involved active participants then alcohol involvement in the crash should be "Unknown".

**Examples:**

*Case 1:* *V1 Driver, alcohol is no, V2 Driver, alcohol is unknown, one nonmotorist, 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 involvement for the crash is 'Unknown'.

*Case 2:* *V1 driver, alcohol is unknown, one nonmotorist, alcohol is no,*
Alcohol involvement for the crash is 'Unknown'.

*Case 3:* *V1 driver, alcohol is no, one nonmotorist, alcohol is unknown,*
Alcohol involvement for the crash is 'Unknown'.

Note that 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 A92, alcohol involved in crash, equals unknown code '9' unless all the 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 A92, alcohol involved in crash, is 'no (alcohol not involved)'. In the case where all occupants are coded 'yes (alcohol involved)' then A92, alcohol involved in crash, is 'yes (alcohol involved)'. In the case where not all occupants are coded 'Yes' or 'No', then A92, alcohol involved in crash, equals 'Unknown', code '9'.

For the multi-vehicle crash or having nonmotorists involved in the crash, we will take the alcohol value for each vehicle in the case and each applicable nonmotorist and then takes the highest priority value among these values, as listed above.

**Maximum Injury Severity in Vehicle**

Accident.MAX_VSEV

| Attribute Labels | GES |
|---|---|
| No Injury | 0 |
| Possible Injury | 1 |
| Non-incapacitating | 2 |
| Incapacitating | 3 |
| Fatal | 4 |
| Injury, unknown injury severity | 5 |
| Died Prior | 6 |
| No person involved in the Vehicle | 8 |
| Unknown if Injured/ Not Reported | 9 |

**Logic of Derivation:**

Note that this translation will need to be modified for 2010 to account for "Not Reported". All GES.Person records linked to the vehicle are used. If there are no records, then the value is assigned 8. If there is a single record, then the SAS Code for Person.INJ_SEV is used. If multiple records, all SAS Codes are obtained and prioritized. The value earliest in the following list will be used: 4, 3, 2, 1, 5, 0, 6 and 9.

## Number Injured in Vehicle

Accident.NUM_INJV

| Attribute Labels | GES |
|---|---|
| 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:**

Note that this translation will need to be modified for 2010 to account for "Not Reported". All GES.Person records linked to the vehicle are used. If there are no records, then the value is assigned 98. 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 of GES.Person records where the SAS Code for Person.INJ_SEV is between 1 and 5.

## Driver Drinking in Vehicle

Accident.VEH_ALCH

| Attribute Labels | GES |
|---|---|
| Alcohol Involved | 1 |
| No Alcohol involved | 2 |
| No Driver Present | 8 |
| Unknown | 9 |

**Logic of Derivation:**

*See Alcohol Involved in Crash for details in calculation algorithm.*

If there is a person coded with the role of driver in the vehicle, then the SAS Code for Person.PER_ALCH for that person is used (exception, 2 is used for 'No'). If there is no such GES.Person record, and VEHICLE.DR_PRES does not indicate that there was a driver present in the vehicle, then the value is assigned 9. If VEHICLE.DR_PRES indicates that there was a driver present, and all values of Person.PER_ALCH are the same for all persons in the vehicle (automatically true when only one person), then that SAS Code is used (with the above exception for 'No' being 2). If not all values are the same, then the value 9 is assigned.

**Example:**

*V1 Driver, alcohol is no, V2 Driver, alcohol is unknown, one nonmotorist, 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.*

Alcohol involvement for V1 is 'No'; for V2 is 'Unknown' for V3 is 'Unknown'.
If an in-transport vehicle is listed as having a driver present, but no occupant is coded with the role of driver, then V92, driver drinking in vehicle, equals unknown code '9' unless all the 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 V92, driver drinking in vehicle, is 'no (alcohol not involved)'. In the case where all occupants are coded 'yes (alcohol involved)' then V92, driver drinking in vehicle, is 'yes (alcohol involved)'. For example, if there is a vehicle where there is a driver present and there are 2 occupants, both coded 'yes (alcohol involved)' but neither is coded as the driver; then V92, driver drinking in vehicle, equals 'yes (alcohol involved)', code '1'). Another example: if there is a vehicle where there is a driver present and there are 2 occupants (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 V92, driver drinking in vehicle, equals 'unknown', code '9').

## Contributing Circumstances

Vehicle.FACTOR (deleted in 2010 Vehicle data set)

| Attribute Labels | 2009 GES | 2010 SAS |
|---|---|---|
| None | 0 | 0 |
| Tires | 1 | 1 |
| Brake System | 2 | 2 |
| Steering | 3 | 3 |
| Suspension | 4 | 4 |
| Power Train | 5 | 5 |
| Exhaust System | 6 | 6 |
| Head lights | 7 | 7 |
| Signal lights | 8 | 8 |
| Other lights | 9 | 9 |
| Wipers | 10 | 10 |
| Wheels | 11 | 11 |
| Mirrors | 12 | 12 |
| Driver seating and control | 13 | |
| Windows/Windshield | | 13 |
| Body, doors | 14 | 14 |
| Trailer Hitch | 15 | |
| Truck Coupling/Trailer hitch/Safety chains | | 15 |
| Safety Systems | | 16 |
| Hit and Run Vehicle | 50 | |
| Vehicle Contributing Factors - No Details | 97 | 17 |
| Other | 98 | 97 |
| Not Reported | | 98 |
| Unknown | 99 | 99 |

### Logic of Derivation:

All records from GES.Factor are used. If there are no records, then the value 00 is assigned. If there is a single record, then the SAS Code for that record is assigned. If there are multiple records, then the minimum SAS Code of all the records is assigned.

## Violations Charged

Vehicle.VIOLATN (deleted in 2010 Vehicle data set)

| Attribute Labels | 2009-Later GES |
|---|---|
| None | 0 |
| **Reckless/Careless/Hit-and-Run Type Offenses** | |
| Manslaughter or homicide | 1 |
| Willful reckless driving; driving to endanger; negligent driving | 2 |
| Unsafe reckless (not willful, wanton reckless) driving | 3 |
| Inattentive, careless, improper driving | 4 |
| Fleeing or eluding police | 5 |
| Fail to obey police, fireman, authorized person directing traffic | 6 |
| Hit-and-run, fail to stop after crash | 7 |
| Fail to give aid, information, wait for police after crash | 8 |
| Serious violation resulting in death | 9 |
| **Impairment Offenses** | |
| Driving while intoxicated (alcohol or drugs) or BAC above limit (any detectable BAC for CDLs) | 11 |
| Driving while impaired | 12 |
| Driving under influence of substance not intended to intoxicate | 13 |
| Drinking while operating | 14 |
| Illegal possession of alcohol or drugs | 15 |
| Driving with detectable alcohol | 16 |
| Refusal to submit to chemical test | 18 |
| Alcohol, drug or impairment violations generally | 19 |
| **Speed-Related Offenses** | |
| Racing | 21 |
| Speeding (above the speed limit) | 22 |
| Speed greater than reasonable & prudent (not necessarily over the limit) | 23 |
| Exceeding special limit (e.g.: for trucks, buses, cycles, or on bridge, in school zone, etc.) | 24 |
| Energy speed (exceeding 55 mph, non-pointable) | 25 |
| Driving too slowly | 26 |
| Speed related violations, generally | 29 |

| Attribute Labels | 2009-Later GES |
|---|---|
| **Rules of the Road – Traffic Sign & Signals** | |
| Fail to stop for red signal | 31 |
| Fail to stop for flashing red | 32 |
| Violation of turn on red (fail to stop & yield, yield to pedestrians before turning) | 33 |
| Fail to obey flashing signal (yellow or red) | 34 |
| Fail to obey signal, generally | 35 |
| Violate RR grade crossing device/regulations | 36 |
| Fail to obey stop sign | 37 |
| Fail to obey yield sign | 38 |
| Fail to obey traffic control device | 39 |
| **Rules of the Road – Turning, Yielding, Signaling** | |
| Turn in violation of traffic control (disobey signs, turn arrow or pavement marking; not a right-on-red violation) | 41 |
| Improper method & position of turn (too wide, wrong lane) | 42 |
| Fail to signal for turn or stop | 43 |
| Fail to yield to emergency vehicle | 45 |
| Fail to yield, generally | 46 |
| Enter intersection when space insufficient | 48 |
| Turn, yield, signaling violations, generally | 49 |
| **Rules of the Road – Wrong Side, Passing & Following** | |
| Driving wrong way on one-way road | 51 |
| Driving on left, wrong side of road, generally | 52 |
| Improper, unsafe passing | 53 |
| Pass on right (drive off pavement to pass) | 54 |
| Pass stopped school bus | 55 |
| Fail to give way when overtaken | 56 |
| Following too closely | 58 |
| Wrong side, passing, following violations, generally | 59 |
| **Rules of the Road – Lane Usage** | |
| Unsafe or prohibited lane change | 61 |
| Improper use of lane (enter of 3-lane road, HOV designated lane) | 62 |
| Certain traffic to use right lane (trucks, slow-moving, etc.) | 63 |
| Motorcycle lane violations (more than two per lane, riding between lanes, etc.) | 66 |
| Motorcyclist attached to another vehicle | 67 |
| Lane violations, generally | 69 |

| Attribute Labels | 2009-Later GES |
|---|---|
| **Non-Moving – License and Registration Violations** | |
| Driving while license withdrawn (including violation of provisions of work permit) | 71 |
| Other driver license violations | 72 |
| Commercial driver violations (log book, hours, permits carried) | 73 |
| Vehicle registration violations | 74 |
| Fail to carry insurance card | 75 |
| Driving uninsured vehicle | 76 |
| Non-moving violations, generally | 79 |
| **Equipment** | |
| Lamp violations | 81 |
| Brake violations | 82 |
| Failure to require restraint use (by self or passengers) | 83 |
| Motorcycle equipment violations (helmet, special equipment) | 84 |
| Violation of hazardous cargo regulations | 85 |
| Size, weight, load violations | 86 |
| Equipment violations, generally | 89 |
| **License, Registration & Violations** | |
| Parking | 91 |
| Theft, unauthorized use of motor vehicle | 92 |
| Driving where prohibited (sidewalk, limited access, off truck route) | 93 |
| Not Reported | 97 |
| Other moving violation (coasting, backing, opening door) | 98 |
| Unknown Violation | 99 |

### Logic of Derivation 2009 and prior:

All GES.Violatn records linked to the vehicle are used. If there are no records, then 00 is assigned. If there is a single record, then the SAS Code for that record is used. If there are multiple records, then for 2009 and later, the minimum SAS Code is used. Prior to 2009, the value that appeared earliest in the following list was used :
('01','02','03','04','05','06','07','97','98','50','96','99','00')

## Driver's Vision Obscured By

Vehicle.VIS_OBSC (deleted in 2010 Vehicle data set)

| Attribute Labels | 2009 - Later GES |
|---|---|
| No Obstruction Noted | 0 |
| Rain, Snow, Fog, Smoke, Sand, Dust | 1 |
| Reflected Glare, Bright Sunlight, Headlights | 2 |
| Curve, Hill or Other Roadway Design Feature | 3 |
| Building, Billboard, Other Structure | 4 |
| Trees, Crops, Vegetation | 5 |
| In-Transport Motor Vehicle (including load) | 6 |
| Not In-Transport Motor Vehicle (parked, working) | 7 |
| Splash or Spray of Passing Vehicle | 8 |
| Inadequate Defrost or Defog System | 9 |
| Inadequate Vehicle Lighting System | 10 |
| Obstruction Interior to the Vehicle | 11 |
| External Mirrors | 12 |
| Broken or Improperly Cleaned Windshield | 13 |
| Obstructing Angles on Vehicle | 14 |
| No Driver Present | 95 |
| Vision Obscured – No Details | 97 |
| Other Visual Obstruction | 98 |
| Unknown | 99 |

### Logic of Derivation:

All records from GES.Vision are used. If there are no records, then the value 00 is assigned. If there is a single record, then the SAS Code for that record is assigned. If there are multiple records, then the minimum SAS Code of all the records is assigned.

## Driver Maneuvered To Avoid

Vehicle.DRMAN_AV (deleted in 2010 Vehicle data set)

| Attribute Labels | 2009 GES | 2010 SAS |
|---|---|---|
| Driver Did Not Maneuver To Avoid | 0 | 0 |
| Object | 1 | 1 |
| Poor Road Conditions (Puddle, Ice, Pothole, etc.) | 2 | 2 |
| Live Animal | 3 | 3 |
| Motor Vehicle | 4 | 4 |
| Pedestrian, Pedalcyclist or Other Non-Motorist | 5 | 5 |
| Phantom/Non-Contact Motor Vehicle | 92 | 92 |
| No Driver Present | 95 | 95 |
| Hit and Run and no information | 50 | |
| Avoidance maneuver--no details | 97 | |
| Not on PAR | 93 | |
| Not Coded | 94 | |
| Not Reported | | 98 |
| Unknown | 99 | 99 |

### Logic of Derivation:

All records from GES.Maneuver are used. If there are no records, then the value 00 is assigned. If there is a single record, then the SAS Code for that record is assigned. If there are multiple records, then the minimum SAS Code of all the records is assigned.

## Driver Distracted By

Vehicle.DR_DSTRD (deleted in 2010 Vehicle data set)

| Attribute Labels | 2009 GES | 2010 SAS |
|---|---|---|
| Not Distracted | 0 | 0 |
| Looked But Did Not See | 1 | 1 |
| By Other Occupant(s) | 3 | 3 |
| By Moving Object in Vehicle | 4 | 4 |
| While Talking or Listening to Cellular Phone | 5 | 5 |
| While Dialing Cellular Phone | 6 | 6 |
| Adjusting Audio And/or Climate Controls | | 7 |
| While adjusting climate controls | 7 | |
| While adjusting radio, cassette, CD | 8 | |
| While Using Other Device/Controls Integral to vehicle | 9 | 9 |
| While Using or Reaching For Device/Object Brought into Vehicle | 10 | 10 |
| Sleepy or fell asleep | 11 | |
| Distracted by Outside Person, Object or Event | 12 | 12 |
| Eating or Drinking | 13 | 13 |
| Smoking Related | 14 | 14 |
| Other Cellular Phone Related | 15 | 15 |
| Not on PAR | 93 | |
| Not coded | 94 | |
| Hit and Run and no information | 50 | |
| Inattentive or Lost in Thought | 97 | 97 |
| Other Distraction | 98 | 98 |
| Distraction/Inattention, Details Unknown | 92 | 92 |
| No Driver Present | 95 | 95 |
| Not Reported | | 96 |
| Unknown if Distracted | 99 | 99 |

### Logic of Derivation:

All records from GES.Distract are used. If there are no records, then the value 00 is assigned. If there is a single record, then the SAS Code for that record is assigned. If there are multiple records, then the minimum SAS Code of all the records is assigned, with the exceptions that SAS Code 98--other distraction has priority over SAS Code 92--distraction/inattention, details unknown, 92 has priority over 95, 95 has priority over 96, 96 has priority over 99, and all other values have priority over SAS Code 0.

## Condition (Impairment) At Time Of Crash

Person.MIMPAIR (deleted in 2010 Person data set)

| Attribute Labels | 2009 GES | 2010 SAS |
|---|---|---|
| None | 0 | |
| None/Apparently Normal | | 0 |
| Ill, Blackout | 1 | 1 |
| Drowsy, Sleepy, Fell Asleep, Fatigued | 2 | |
| Asleep or Fatigued | | 2 |
| Requires Cane Or Crutches | 3 | |
| Walking with a Cane or Crutches | | 3 |
| Paraplegic Or Restricted To Wheelchair | 4 | 4 |
| Impaired Due To Previous Injury | 5 | 5 |
| Deaf | 6 | 6 |
| Blind | 7 | 7 |
| Emotional (Depressed, Angry, Disturbed, etc) | | 8 |
| Under the Influence of Alcohol, Drugs or Medication | | 9 |
| Physical Impairment – No Details | 97 | 10 |
| Other Physical Impairment | 98 | |
| Other | | 96 |
| Not Reported | | 98 |
| Not on PAR | 93 | |
| Not Coded | 94 | |
| Hit and Run (and no information) | 50 | |
| Unknown If Physically Impaired | 99 | |
| Unknown | | 99 |

### Logic of Derivation:

All records linked to person in GES.IMPAIR table are used. If there are no records, then value 00 is assigned. If there is a single record, then the SAS Codes are used. If there are multiple records, then the minimum SAS Code for all records is used.

## Non-Motorist Safety Equipment

Person.SAF_EQMT (deleted in 2010 Person data set)

| Attribute Labels | 2009 GES | 2010 SAS |
|---|---|---|
| Not Applicable* | 0 | 0 |
| None Used | 1 | 1 |
| Bicycle Helmet | 2 | |
| Helmet | | 2 |
| Protective Pads Used (elbows, knees, shins, etc.) | | 4 |
| Bicycle Helmet and Reflective Equipment | 4 | |
| Reflective Equipment/Clothing (jacket, backpack, etc.) | 3 | 3 |
| Lighting | | 5 |
| Other Safety Equipment | 8 | 7 |
| Not Reported | | 8 |
| Unknown if Used | 9 | 9 |

**Logic of Derivation:**

*Note that the 2009 and prior translation will not work with the changes to attributes for 2010*. In 2010, if the person type (SAS Code) is not 3, 4, 5, 6, 7, 8, 10, 78, and 19 then this value is 0. The translation uses the records in GES.Safetyeq. If no records, then the value is 0. If a single record, then the SAS Code for that record is used. If there are multiple records, and there are prioritized by the following SAS Code order: 2, 3, 4, 5, 7, 8, 9, 0, and 1.

*Not Applicable is used when Person Type = 1, 2, 3, 9 or 77.

## Non-Motorist Action

Person.ACTION (deleted in 2010 Person data set)

**Logic of Derivation:**

It is retired and replaced by P25.Nmprior.MPR_ACT and P26.Nmcrash.MTM_CRSH in 2010.

In 2009 and before, all records linked to person in GES.NMACTION table used. If no records, then value is 0. If there is single record, then that SAS Code used. If multiple records, then the minimum SAS Code for all the records, with the exception that if SAS Code 0 is one of the values, it is excluded from the calculation (all other values take precedence over 0).

The GES.Nmaction is replaced by GES.Nmprior and GES.Nmcrash. There are not derived to person table in 2010.