# HSIS

HIGHWAY SAFETY INFORMATION SYSTEM

# Guidebook for Data Files

# CHARLOTTE

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WWW.HSISinfo.org

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## Introduction to the Charlotte HSIS Guidebook

The Highway Safety Information System (HSIS) has partnered with Charlotte, NC, to obtain roadway, traffic, and crash data and make these data available in the HSIS database. Each year, Charlotte DOT provides the current files of the roadway network, traffic count locations, crash data, and other transportation network related inventories (e.g., sidewalks, transit locations, etc.).

The addition of Charlotte as a contributing agency for HSIS provides the opportunity to study safety issues specific to an urban setting. Charlotte has a population of approximately 800,000 and covers a 300-square mile area. The city is generally laid out in a hub-and-spokes configuration, with the downtown central business district serving as a focal point for business and commuting traffic and major arterials radiating out. Pedestrian activity is moderately high in the downtown district but much less so in most other areas of the city. Charlotte is bisected by two major interstates, Interstates 77 and 85, and encircled by Interstate 485. The University of North Carolina at Charlotte lies to the northeast side of the city and serves as a major source of activity for that area.

# Details of Major Files

## Crash Data

Charlotte provides data on crashes that occurred on all public roads in the city, regardless of road ownership - the crash data cover city-owned and state-owned roads. However, it is important to note that Charlotte does not maintain crash data for crashes occurring on interstates. Thus, crashes occurring on Interstates 77, 85, and 485 will not be contained in the HSIS Charlotte data. They will however be available in the NC HSIS data.

Crash data are provided by year beginning in 2004. Each year of crash data has a shapefile of the crashes (to be used in placing the crashes on the GIS map spatially) and an accompanying set of Excel files (Crashes, Units, and Parties) which contain the attribute data for the crashes. In earlier years (2004-2007) the attribute data for the crashes were kept in the shapefiles. Because this made for very large file sizes for the shapefiles, the later years (2008-2013) maintain only a skeleton list of attributes in the shapefile. If a user wishes to add attributes, such as crash type or time of day, to the crashes for these years in GIS, they will need to join the Excel file to the shapefile.

If the user desires to analyze crashes by spatial position, they must use the shapefiles. If the user is not interested in spatial position, they can forgo using the shapefiles and work only with the Excel files, for analysis such as crash type distribution or time of day.

The issue of intersection relation is important to many researchers. Charlotte does not have a reliable attribute in the crash data to indicate which crashes are intersection related. The determination of intersection relation can be done two ways:

1. Spatial position. The user can use a GIS platform, such as ArcGIS, to designate a spatial distance from intersections to use as the intersection influence area and select a subset of crashes in that manner. A suggested distance is 150 feet, which is the distance used by Charlotte DOT. In earlier years, most crashes were "snapped" to the intersection location if they occurred within 150 feet. In later years, crashes began to be placed more precisely.
2. Major and minor road designations. The HSIS processing of Charlotte data includes a step wherein the crash is assigned the location ID of the nearest road segment. For crashes that occur near intersections (within 110 feet), there is also an assignment of a minor road segment ID to the crash. Thus, crashes with non-blank values for both major and minor road assigned IDs could be considered to be intersection related. By looking at the two road segment identifiers, an analyst can determine which intersection the crash belongs to.

Special note about geocoding errors: Charlotte conducts their own geocoding process by mapping each crash spatially through a manual process. During some of the earlier years, there was an error in this process and many crashes were slightly mislocated. Users who look closely at the GIS data will see that some crashes lie off the road by a distance of 25 to 50 feet. Any spatial analysis must be done using buffer distances or snapping operations that account for this misplacement.

# Details of Major Files

## Roadway Data

The roadway data is provided as yearly shapefiles, with each shapefile representing a snapshot of the network during that year. The roadway shapefiles contain some road attributes, like number of lanes and divided vs. undivided, as provided by Charlotte DOT. It also contains traffic volume as provided by the HSIS process.

HSIS maintains a roadway shapefile for each year (i.e., annual files). Given that roads are added or changed through the years, this ability to provide annual snapshots of the roadway network allows a user to analyze road data or match crashes to roads accurate to the year of the data. The only special consideration is for 2005, 2006, and 2007; there was not a road network available for these years. Thus, HSIS uses the roadway shapefile from 2004 but uses the appropriate traffic volumes for the respective years.

There is no linear referencing (e.g., mileposting) used by Charlotte DOT in its roadway network. For HSIS purposes, a field was created, called "ONRDSEG_ID", as a unique identifier for each road segment. It is named as such because it is the combination of ROAD_ID (the number Charlotte uses for an entire route) and SEGMENT_ID (the number Charlotte uses for each segment along that route). Combined together, they serve as a unique identifier for each segment. This ONRDSEG_ID is also added to each crash record to denote which roadway segment it belongs to. NOTE: Although ONRDSEG_ID is intended to be a unique identifier for each road segment, there are a few instances of two road segments having the same ONRDSEG_ID. This is typically due to one road segment being split but retaining the same ROAD_ID and SEGMENT_ID . These cases must be handled manually through examination on the spatial data.

## Intersection Data

Charlotte provides an inventory file of all public road intersections. Like the roadway network, the intersection point data is provided as annual shapefiles, representing the "snapshot" of the intersections in that particular year. There has been no HSIS reprocessing of the intersection files. The data is provided as it was obtained from Charlotte DOT. Charlotte uses a field called ROAD_ID as the unique identifier for each intersection (this is different from the ROAD_ID used on the roadway file). Although this is a number, it is stored as text.

## Traffic Volume

Charlotte does not provide annual average daily traffic volume (AADT) as an attribute of the road segment file. Instead, they provide the original point-based count locations with dates and count values. HSIS staff conduct a process to assign and distribute traffic volumes on the network according to this point count data.

In this process, any segment of road on which traffic was counted is assigned the traffic volume according to that count. There are only a limited number of these segments with actual counts. Other segments of road must be assigned a traffic volume value by distributing the traffic volume along the

road from the count points. The HSIS process for distributing traffic volumes in Charlotte carries the volume value from the actual count point down the road on either side of the counted segment to the extent of the existing road limits (i.e., count values do not "turn corners" in this distribution process). The distribution of volumes on a road stops when the road begins a new identifier (ROAD_ID ).

If there are more than one count points on the same road, the HSIS process assigns traffic volumes to the road segments between the count points according to a stepping-up/stepping-down logic. Volume values step up or step down only at major intersections (i.e., intersections with non-local roads). The process determines how many change points (non-local intersections) there are between the current point and the upcoming one, which indicates how many steps to use. For example, if the current count point is 1000 and the upcoming one is 1200 and there are two change points (intersections with non-local roads) in between, then the step value will be 100. This process is illustrated in Figure 1.

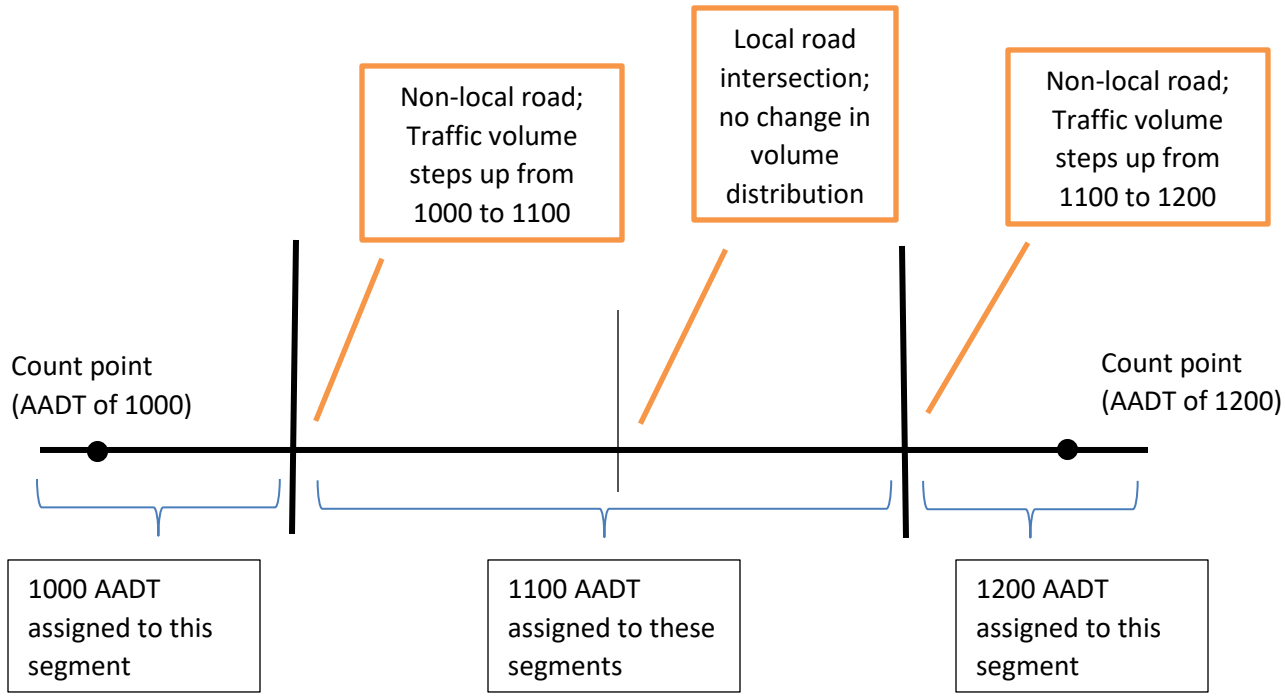


FIGURE 1. ILLUSTRATION OF TRAFFIC VOLUME DISTRIBUTION

## Issues Related to Merging Files

The City of Charlotte maintains a geospatial data center that contains data from many different city departments. Under this system, crash data in Charlotte are primarily located to the road network through geospatial positioning. Charlotte does not use a linear referencing system on its spatial road network. Given that HSIS has traditionally provided a linear reference for each crash (e.g. route and milepost) to allow users to analyze data in a tabular format, HSIS staff developed a method for assigning an "address" to each Charlotte crash. The crash location is indicated by assigning it to a specific roadway section, as defined by the combination of ROAD_ID (the route level ID) and SEGMENT_ID (the section level ID). While this only provides a rough crash location (specific only to a segment of road), the roughness is mitigated by the fact that Charlotte breaks their roadway into many small sections (average of 550 ft), so a moderate level of precision is maintained. Any further precision must be based on spatial coordinates.

The HSIS crash assignment process assigns crashes to specific roadway segments based on spatial proximity. The process assigns a crash to whichever roadway segment is closest to it, within a 110-foot radius. This radius is imposed to prevent situations where a crash could get assigned to a road that is very far away. The reason the radius is so large is that Charlotte has had a problem with some crashes (typically intersection crashes) being geolocated improperly (see image below), usually no more than 100 feet from the roadway. This large search radius enables the process to find the actual roadway segment to which the crash belongs. Intersection crashes, being placed at two roads, are assigned to the highest order route of the intersection.

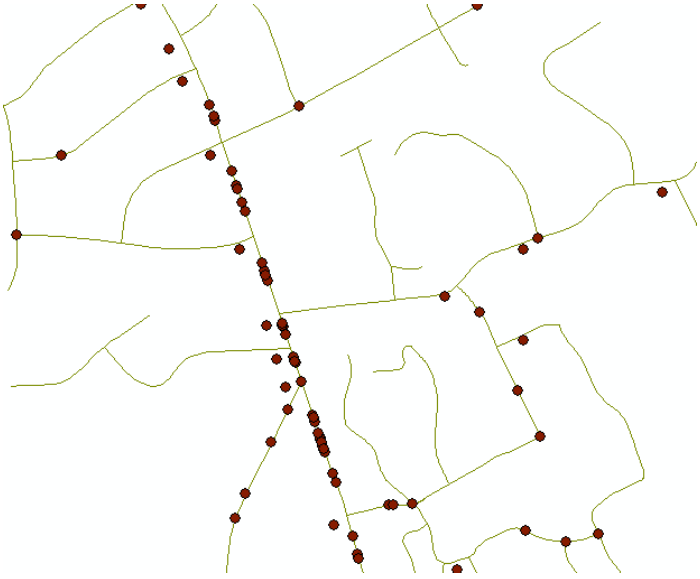

FIGURE 2. ILLUSTRATION OF ERROR IN CRASH GEOLOCATION

# Composite List of Elements

| SAS VARIABLE NAME | DESCRIPTION | SAS VARIABLE FILE | FORMAT TYPE | PAGE NO. |
|---|---|---|---|---|
| AADT | AVERAGE ANNUAL DAILY TRAFFIC | Roadway | CHAR | 44 |
| ACC_DATE | DATE TIME | Accident | NUM | 14 |
| ACCYR | YEAR | Accident | NUM | 14 |
| AGE | OCCUPANT AGE | Occupant | NUM | 29 |
| ALIGN | ALIGN | Accident | CHAR | 14 |
| ALIGN_CD | ALIGN CODE | Accident | NUM | 14 |
| BARRIER | BARRIER | Roadway | NUM | 44 |
| CASENO | CRASH ID | Occupant | NUM | 29 |
| CASENO | CRASH ID | Accident | NUM | 35 |
| CASENO | CRASH ID | Vehicle | NUM | 14 |
| CAUSE1 | PRIMARY CAUSE | Accident | CHAR | 15 |
| CAUSE1_CD | PRIMARY CAUSE CODE | Accident | NUM | 16 |
| CAUSE2 | SECONDARY CAUSE | Accident | CHAR | 16 |
| CAUSE2_CD | SECONDARY CAUSE CODE | Accident | NUM | 16 |
| CNST_ACT | CONSTRUCTION RELATED | Accident | CHAR | 16 |
| CNST_LANE_CLSD_IND | LANE CLOSED | Accident | NUM | 17 |
| CNST_TYPE | CONSTRUCTION TYPE | Accident | CHAR | 17 |
| CNST_TYPE_CD | CONSTRUCTION TYPE CODE | Accident | NUM | 17 |
| CONTRIB | HAZARDOUS ACTION | Occupant | CHAR | 30 |
| CONTRIB_CD | HAZARDOUS ACTION CODE | Occupant | NUM | 31 |
| CONTRIB1 | DRV CONTRIB CIRCUMS 1 | Vehicle | CHAR | 35 |
| CONTRIB2 | DRV CONTRIB CIRCUMS 2 | Vehicle | CHAR | 35 |
| CONTRIB3 | DRV CONTRIB CIRCUMS 3 | Vehicle | CHAR | 35 |
| CONTRIB1_CD | DRV CONTRIB CIRCUMS CD 1 | Vehicle | NUM | 36 |
| CONTRIB2_CD | DRV CONTRIB CIRCUMS CD 2 | Vehicle | CHAR | 36 |
| CONTRIB3_CD | DRV CONTRIB CIRCUMS CD 3 | Vehicle | CHAR | 36 |
| COUNTY | COUNTY | Accident | CHAR | 17 |
| COUNTY_CD | COUNTY CODE | Accident | NUM | 17 |
| CREATE_TIMESTAMP | CREATE TIMESTAMP | Accident | DATE | 17 |
| DAY | DATE VALUE DAY | Accident | DATE | 18 |
| DIR_TRVL | DIRECTION | Vehicle | CHAR | 36 |
| DIR_TRVL_CD | DIRECTION CODE | Vehicle | CHAR | 37 |
| DIVIDED | DIVIDED | Roadway | NUM | 44 |
| DRV_INJ | INJURY SEVERITY | Occupant | CHAR | 31 |
| DRV_INJ_CD | INJURY SEVERITY CODE | Occupant | NUM | 31 |
| EVENT1 | HARMFUL EVENT1 | Vehicle | CHAR | 37 |

# Composite List of Elements

| SAS VARIABLE NAME | DESCRIPTION | SAS VARIABLE FILE | FORMAT TYPE | PAGE NO. |
|---|---|---|---|---|
| EVENT2 | HARMFUL EVENT2 | Vehicle | CHAR | 37 |
| EVENT3 | HARMFUL EVENT3 | Vehicle | CHAR | 37 |
| EVENT4 | HARMFUL EVENT4 | Vehicle | CHAR | 37 |
| EVENT5 | HARMFUL EVENT5 | Vehicle | CHAR | 37 |
| HOVLANE | HOV LANE | Roadway | NUM | 44 |
| INTR_SRET | INTERSECTING STREET | Accident | CHAR | 18 |
| LATITUDE | LATITUDE | Accident | NUM | 18 |
| LENGTH | SEGMENT LENGTH | Roadway | NUM | 44 |
| LIGHT | LIGHT CONDITION | Accident | CHAR | 18 |
| LIGHT_CD | LIGHT CONDITION CODE | Accident | NUM | 18 |
| LL_ADD | LOWER LEFT ADDRESS | Roadway | NUM | 44 |
| LONGITUDE | LONGITUDE | Accident | NUM | 18 |
| LR_ADD | LOWER RIGHT ADDRESS | Roadway | NUM | 45 |
| MANEUVER | PRIMARY ACTION | Vehicle | CHAR | 39 |
| MANEUVER_CD | PRIMARY ACTION CODE | Vehicle | NUM | 39 |
| MEDIAN | MEDIAN | Roadway | NUM | 45 |
| MHARM_AC | CRASH TYPE | Accident | CHAR | 19 |
| MHARM_AC_CD | CRASH TYPE CODE | Accident | NUM | 20 |
| MILT_TIME | MILITARY TIME | Accident | NUM | 22 |
| MONTH | DATE VALUE MONTH | Accident | DATE | 22 |
| MONTH_DESC | DATE VALUE DESCRIPTION | Accident | CHAR | 22 |
| NARRATIVE | NARRATIVE | Accident | CHAR | 22 |
| NO_LANES | NUMBER OF LANES | Accident | NUM | 45 |
| NO_LANES | NUMBER OF LANES | Roadway | NUM | 22 |
| NUM _A | NUMBER OF A INJURIES | Accident | NUM | 22 |
| NUM_ B | NUMBER OF B INJURIES | Accident | NUM | 23 |
| NUM_ C | NUMBER OF C INJURIES | Accident | NUM | 23 |
| NUM_KILL | NUMBER OF FATALITIES | Accident | NUM | 23 |
| NUMINJ | NUMBER OF INJURIES | Accident | NUM | 23 |
| ONEWAY | ONE WAY | Roadway | NUM | 45 |
| ONRDSEG_ID | UNIQUE IDENTIFIER | Accident | CHAR | 23 |
| ONRDSEG_ID | UNIQUE IDENTIFIER | Roadway | CHAR | 45 |
| ORIG_DRTN_CD | ORIGINAL DIRECTION CODE | Accident | CHAR | 23 |
| PREFIXDIRE | PREFIX DIRECTION | Roadway | CHAR | 46 |
| PRMY_VEHC_USE | PRIMARY VEHICLE USE | Vehicle | CHAR | 40 |
| PRMY_VEHC_USE_CD | PRIMARY VEHICLE USE CODE | Vehicle | CHAR | 40 |

# Composite List of Elements

| SAS VARIABLE NAME | DESCRIPTION | SAS VARIABLE FILE | FORMAT TYPE | PAGE NO. |
|---|---|---|---|---|
| PRSN_TYP | PARTY TYPE | Occupant | CHAR | 31 |
| PRSN_TYP_DESC | PARTY TYPE DESCRIPTION | Occupant | CHAR | 32 |
| RD_COND | ROAD CONDITION | Accident | CHAR | 23 |
| RD_COND_CD | ROAD CONDITION CODE | Accident | NUM | 23 |
| RD_RLTN | ROAD RELATION | Accident | CHAR | 23 |
| RD_SURF | ROAD SURFACE | Accident | CHAR | 24 |
| RD_SURF_CD | ROAD SURFACE CODE | Accident | NUM | 24 |
| RDWY_AREA | ROADWAY AREA | Accident | CHAR | 24 |
| RDWY_AREA_CD | ROADWAY AREA CODE | Accident | NUM | 24 |
| REST1 | DRV/OCC RESTRAINT | Occupant | CHAR | 32 |
| REST1_CD | DRV/OCC RESTRAINT CODE | Occupant | NUM | 32 |
| ROAD_ID | ROAD ID | Roadway | NUM | 46 |
| ROADTYPE | ROAD TYPE (road or driveway) | Roadway | NUM | 46 |
| RUR_URB | URBAN RURAL | Accident | CHAR | 24 |
| RUR_URB_DESC | URBAN RURAL DESCRIPTION | Accident | CHAR | 25 |
| SEGMENT_ID | SEGMENT ID | Roadway | NUM | 46 |
| SEVERITY | CRASH LEVEL | Accident | NUM | 25 |
| SEX | DRIVER/OCCUPANT SEX | Occupant | CHAR | 33 |
| SPD_LIMT | SPEED LIMIT | Vehicle | NUM | 47 |
| SPD_LIMT | SPEED LIMIT | Roadway | NUM | 40 |
| SPEEDHUMP | SPEED HUMP | Roadway | NUM | 47 |
| STANDTYPE | STAND TYPE | Roadway | CHAR | 48 |
| STREETCLAS | STREET CLASSIFICATION | Roadway | CHAR | 48 |
| STREETNAME | STREET NAME | Roadway | CHAR | 48 |
| STUDY_LOCATION_ID | STUDY LOCATION ID | Accident | NUM | 25 |
| SUFFIX | SUFFIX DIRECTION | Roadway | CHAR | 49 |
| SURF_WID | PAVEMENT WIDTH | Roadway | NUM | 49 |
| SURFACETYP | SURFACE TYPE | Roadway | NUM | 49 |
| THOROUGHFA | THOROUGH FARE | Roadway | CHAR | 49 |
| TRF_CNTL | TRAFFIC CONTROL | Accident | CHAR | 25 |
| TRF_CNTL_CD | TRAFFIC CONTROL CODE | Accident | NUM | 26 |
| TRFC_CTRL | TYPE OF TRAFFIC CONTROL | Vehicle | CHAR | 40 |
| UL_ADD | UPPER LEFT ADDRESS | Roadway | NUM | 50 |
| UNIT_TYPE | UNIT TYPE | Vehicle | CHAR | 40 |
| UNIT_TYPE_CD | UNIT TYPE CODE | Vehicle | NUM | 40 |
| UR_ADD | UPPER RIGHT ADDRESS | Roadway | NUM | 50 |

# Composite List of Elements

| SAS VARIABLE NAME | DESCRIPTION | SAS VARIABLE FILE | FORMAT TYPE | PAGE NO. |
|---|---|---|---|---|
| VEH_DEF | VEHICLE DEFECT | Vehicle | CHAR | 40 |
| VEH_DEF_CD | VEHICLE DEFECT CODE | Vehicle | CHAR | 40 |
| VEHNO | VEHICLE NUMBER | Occupant | NUM | 33 |
| VEHNO | UNIT NUMBER | Vehicle | NUM | 41 |
| VEHTYPE | VEHICLE TYPE | Vehicle | CHAR | 41 |
| VEHTYPE_CD | VEHICLE TYPE CODE | Vehicle | NUM | 42 |
| VEHYR | VEHICLE YEAR | Vehicle | CHAR | 42 |
| WEATHER | WEATHER | Accident | CHAR | 26 |
| WEATHER_CD | WEATHER CODE | Accident | NUM | 26 |
| WEEKDAY | DAY OF WEEK | Accident | NUM | 26 |
| WEEKDAY_DESC | DAY OF WEEK DESCRIPTION | Accident | CHAR | 27 |
| WHOLESTNAM | STREETNAME + STREETTYPE | Roadway | CHAR | 50 |

# List of Elements for CH Accident Subfile

| SAS VARIABLE NAME | DESCRIPTION | SAS VARIABLE FILE | FORMAT TYPE | PAGE NO. |
|---|---|---|---|---|
| ACC_DATE | DATE TIME | Accident | NUM | 14 |
| ACCYR | YEAR | Accident | NUM | 14 |
| ALIGN | ALIGN | Accident | CHAR | 14 |
| ALIGN_CD | ALIGN CODE | Accident | NUM | 14 |
| CASENO | CRASH ID | Accident | NUM | 14 |
| CAUSE1 | PRIMARY CAUSE | Accident | CHAR | 15 |
| CAUSE1_CD | PRIMARY CAUSE CODE | Accident | NUM | 16 |
| CAUSE2 | SECONDARY CAUSE | Accident | CHAR | 16 |
| CAUSE2_CD | SECONDARY CAUSE CODE | Accident | NUM | 16 |
| CNST_ACT | CONSTRUCTION RELATED | Accident | CHAR | 16 |
| CNST_LANE_CLSD_IND | LANE CLOSED | Accident | NUM | 17 |
| CNST_TYPE | CONSTRUCTION TYPE | Accident | CHAR | 17 |
| CNST_TYPE_CD | CONSTRUCTION TYPE CODE | Accident | NUM | 17 |
| COUNTY | COUNTY | Accident | CHAR | 17 |
| COUNTY_CD | COUNTY CODE | Accident | NUM | 17 |
| CREATE_TIMESTAMP | CREATE TIMESTAMP | Accident | DATE | 17 |
| DAY | DATE VALUE DAY | Accident | DATE | 18 |
| INTR_SRET | INTERSECTING STREET | Accident | CHAR | 18 |
| LATITUDE | LATITUDE | Accident | NUM | 18 |
| LIGHT | LIGHT CONDITION | Accident | CHAR | 18 |
| LIGHT_CD | LIGHT CONDITION CODE | Accident | NUM | 18 |
| LONGITUDE | LONGITUDE | Accident | NUM | 18 |
| MHARM_AC | CRASH TYPE | Accident | CHAR | 20 |
| MHARM_AC_CD | CRASH TYPE CODE | Accident | NUM | 22 |
| MILT_TIME | MILITARY TIME | Accident | NUM | 22 |
| MONTH | DATE VALUE MONTH | Accident | DATE | 22 |
| MONTH_DESC | DATE VALUE DESCRIPTION | Accident | CHAR | 22 |
| NARRATIVE | NARRATIVE | Accident | CHAR | 22 |
| NO_LANES | NUMBER OF LANES | Accident | NUM | 22 |
| NUM _A | NUMBER OF A INJURIES | Accident | NUM | 22 |
| NUM_ B | NUMBER OF B INJURIES | Accident | NUM | 23 |
| NUM_ C | NUMBER OF C INJURIES | Accident | NUM | 23 |
| NUM_KILL | NUMBER OF FATALITIES | Accident | NUM | 23 |
| NUMINJ | NUMBER OF INJURIES | Accident | NUM | 23 |
| ONRDSEG_ID | UNIQUE IDENTIFIER | Accident | CHAR | 23 |
| ORIG_DRTN_CD | ORIGINAL DIRECTION CODE | Accident | CHAR | 23 |
| RD_COND | ROAD CONDITION | Accident | CHAR | 23 |
| RD_COND_CD | ROAD CONDITION CODE | Accident | NUM | 23 |

# List of Elements for CH Accident Subfile

| SAS VARIABLE NAME | DESCRIPTION | SAS VARIABLE FILE | FORMAT TYPE | PAGE NO. |
|---|---|---|---|---|
| RD_RLTN | ROAD RELATION | Accident | CHAR | 23 |
| RD_SURF | ROAD SURFACE | Accident | CHAR | 24 |
| RD_SURF_CD | ROAD SURFACE CODE | Accident | NUM | 24 |
| RDWY_AREA | ROADWAY AREA | Accident | CHAR | 24 |
| RDWY_AREA_CD | ROADWAY AREA CODE | Accident | NUM | 24 |
| RUR_URB | URBAN RURAL | Accident | CHAR | 24 |
| RUR_URB_DESC | URBAN RURAL DESCRIPTION | Accident | CHAR | 25 |
| SEVERITY | CRASH LEVEL | Accident | NUM | 25 |
| STUDY_LOCATION_ID | STUDY LOCATION ID | Accident | NUM | 25 |
| TRF_CNTL | TRAFFIC CONTROL | Accident | CHAR | 25 |
| TRF_CNTL_CD | TRAFFIC CONTROL CODE | Accident | NUM | 26 |
| WEATHER | WEATHER | Accident | CHAR | 26 |
| WEATHER_CD | WEATHER CODE | Accident | NUM | 26 |
| WEEKDAY | DAY OF WEEK | Accident | NUM | 26 |
| WEEKDAY_DESC | DAY OF WEEK DESCRIPTION | Accident | CHAR | 27 |

## Date Value

**SAS Name: ACC_DATE**

*Definition*: Date value

Date, Time

## Year of crash

**SAS Name: ACCYR**

*Definition*: Year of crash

## Alignment

**SAS Name: ALIGN**

*Definition*: Alignment

1. Straight, level
2. Straight, hillcrest
3. Straight, grade
4. Straight, bottom (sag)
5. Curve, level
6. Curve, hillcrest
7. Curve, grade
8. Curve, bottom (sag)
9. Other* (write in the narrative)

## Align Code

**SAS Name: ALIGN_CD**

*Definition*: Align Code.

1-9

## Case Number

**SAS Name: CASENO**

*Definition*: Crash id

## Primary Cause

**SAS Name: CAUSE1**

*Definition*: Primary cause description

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

37. Driver distracted by other inside the vehicle
38. Driver distracted by external distraction (outside the vehicle)

## Primary Cause Code

**SAS Name: CAUSE1_CD**

*Definition*: Primary cause code

0-37

## Secondary Cause

**SAS Name: CAUSE2**

*Definition*: Secondary cause description

| | |
|---|---|
| 0 | None (no unusual conditions) |
| 1 | Road surface condition |
| 2 | Debris |
| 3 | Rut, holes, bumps |
| 4 | Work zone (Construction, maintenance, utility) |
| 5 | Worn travel-polished surface |
| 6 | Obstruction in roadway |
| 7 | Traffic control device inoperative, not visible or missing |
| 8 | Shoulders low, soft or high |
| 9 | No shoulders |
| 10 | Non-highway work |
| 11 | Other* (write in the narrative) |
| 12 | Unknown |

## Secondary Cause Code

**SAS Name: CAUSE2_CD**

*Definition*: Secondary cause code

00-12

## Construction Activity

**SAS Name: CNST_ACT**

*Definition*: Construction activity.

0. Unreported
1. Ongoing
2. No apparent activity

## Lane closed

**SAS Name: CNST_LANE_CLSD_IND**

*Definition*: Construction lane closed.

True, false

## Construction Type

**SAS Name: CNST_TYPE**

*Definition*: Construction type

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

## Construction Type Code

**SAS Name: CNST_TYPE_CD**

*Definition*: Construction type code

1-5

## County

**SAS Name: COUNTY**

*Definition*: County name

Mecklenburg

## County Code

**SAS Name: COUNTY_CD**

*Definition*: County code

59

## Create Time Stamp

**SAS Name: CREATE_TIMESTAMP**

*Definition*: Non-Labeled variable

## Day of the crash

**SAS Name: DAY**

*Definition*: Day of the crash

1-31

## Intersecting Street

**SAS Name: INTR_SRET**

*Definition*: Non-Labeled variable

## Latitude

**SAS Name: LATITUDE**

*Definition*: Non-Labeled variable

## Light Condition

**SAS Name: LIGHT**

*Definition*: Light condition

1. Daylight
2. Dusk
3. Dawn
4. Dark-lighted roadway
5. Dark-roadway not lighted
6. Dark-unknown lighting
7. Other
8. Unknown

## Light Condition Code

**SAS Name: LIGHT_CD**

*Definition*: light condition code

1-8

## Longitude

**SAS Name: LONGITUDE**

*Definition*: Non-Labeled variable

## Crash Type

**SAS Name: MHARM_AC**

*Definition*: Crash type

0. Unknown

Non-Collision

1. Ran off Road Right
2. Ran off Road Left
3. Ran off Road straight ahead
4. Jackknife
5. Overturn/Rollover
6. Crossed centerline/Median
7. Downhill runaway
8. Cargo/Equipment loss or shift
9. Fire/explosion
10. Immersion
11. Equipment failure (tires, brakes, etc.)
12. Separation of units
13. Other Non-collision

Collision of Motor Vehicle with

14. Pedestrian
15. Pedal cyclist
16. RR train, Engine
17. Animal
18. Movable object
19. Fixed Object

Collision of Two or More Motor Vehicles

20. Parked motor vehicle
21. Rear end, slow or stop
22. Rear end, turn
23. Left turn, same roadways
24. Left turn, different roadways
25. Right turn, same roadways
26. Right turn, different roadways
27. Head on
28. Sideswipe, same direction
29. Sideswipe, opposite direction
30. Angle

31. Backing up
32. Other collision with vehicle
33. Tree
34. Utility Pole (with or without light)
35. Luminaire pole Non-Breakaway
36. Luminaire pole Breakaway
37. Official highway sign Non-breakaway
38. Official highway sign breakaway
39. Overhead sign support
40. Commercial sign
41. Guardrail end on shoulder
42. Guardrail face on shoulder
43. Guardrail end on median
44. Guardrail face on median
45. Shoulder barrier end (non - guardrail)
46. Shoulder barrier face (non - guardrail)
47. Median barrier end (non - guardrail)
48. Median barrier face (non - guardrail)
49. Bridge rail end
50. Bridge rail face
51. Overhead part underpass
52. Pier on shoulder of underpass
53. Pier in median of underpass
54. Abutment of underpass
55. Traffic island curb or median
56. Catch basin or culvert on shoulder
57. Cath basin or culvert on median
58. Ditch
59. Embankment
60. Mailbox
61. Fence or fence post
62. Construction barrier
63. Crash cushion
64. Other fixed object

## Crash Type Code

**SAS Name: MHARM_AC_CD**

*Definition*: Crash type code

1-64

## Military Time

**SAS Name: MILT_TIME**

*Definition*: Military time

## Month of crash

**SAS Name: MONTH**

*Definition*: Month of crash

1-12

## Month of Crash Desc

**SAS Name: MONTH_DESC**

*Definition*: Month of crash description

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

## Narrative

**SAS Name: NARRATIVE**

*Definition*: Narrative

## Number of Lanes

**SAS Name: NO_LANES**

*Definition*: Number of lanes

## Number of A injuries

**SAS Name: NUM_A**

*Definition*: Total number of A injuries

## Number of B injuries

**SAS Name: NUM_B**

*Definition*: Total number of B injuries

## Number of C injuries

**SAS Name: NUM _C**

*Definition*: Total number of C injuries

## Number of Fatalities

**SAS Name: NUM_KILL**

*Definition*: Number of fatalities

## Number of Injuries

**SAS Name: NUMINJ**

*Definition*: Total number of injuries

## On road segment id

**SAS Name: ONRDSEG_ID**

*Definition*: Used in linkage to other files.

## Original Direction Code

**SAS Name: ORIG_DRTN_CD**

*Definition*: Original direction code

| | |
|---|---|
| 'E' | East |
| 'N' | North |
| 'NE' | Northeast |
| 'NW' | Northwest |
| 'S' | South |
| 'SE' | Southeast |
| 'SW' | Southwest |
| 'W' | West |

## Road Condition

**SAS Name: RD_COND**

*Definition*: Road condition

1. Dry
2. Wet
3. Water (standing, moving)
4. Ice
5. Snow
6. Slush
7. Sand, mud, dirt, gravel
8. Fuel, oil
9. Other
10. Unknown

## Road Condition Code

**SAS Name: RD_COND_CD**

*Definition*: Road condition code

1-10

## Road Relation

**SAS Name: RD_RLTN**

*Definition*: Road relation

No special feature
Bridge
Bridge approach
Underpass
Driveway, public
Driveway, private
Alley intersection
Four-way intersection
T-intersection
Y-Intersection
Traffic circle/roundabout
Five-point, or more
Related to intersection
Non-intersection median crossing
End or beginning of divided highway

## Road Surface

**SAS Name: RD_SURF**

*Definition*: Road surface description

1. Concrete
2. Grooved concrete
3. Smooth asphalt
4. Coarse asphalt
5. Gravel
6. Sand
7. Soil
8. Other* (write in the narrative)

## Road Surface Code

**SAS Name: RD_SURF_CD**

*Definition*: Road surface code.

1-8

## Roadway Area

**SAS Name: RDWY_AREA**

*Definition*: Roadway area description

1. One-way, not divided
2. Two-way, not divided
3. Two-way, divided, unprotected median
4. Two-way, divided, positive median barrier
5. unknown

## Roadway Area Code

**SAS Name: RDWY_AREA_CD**

*Definition*: Roadway area code

1-5

## Urban Rural

**SAS Name: RUR_URB**

*Definition*: Urban Rural identification code

1-3

## Urban Rural Description

**SAS Name: RUR_URB_DESC**

*Definition*: Urban Rural description

1. Rural (<30% developed)
2. Mixed (30% to 70% developed)
3. Urban (>70% developed),(blanks)

## Crash Level

**SAS Name: SEVERITY**

*Definition*: Crash level

1-5

## Study Location Id

**SAS Name: STUDY_LOCATION_ID**

*Definition*: Study Location Id

## Traffic Control

**SAS Name: TRF_CNTL**

*Definition*: Traffic control device present at the crash location

0. No control Present
1. Stop sign
2. Yield sign
3. Stop and go signal
4. Flashing signal with stop sign
5. Flashing signal without stop sign
6. RR gate and flasher
7. RR flasher
8. RR cross bucks only
9. Human Control
10. Warning sign
11. School zone signs
12. Flashing stop and go signal
13. Double yellow line (no passing zone)
14. Other* (write in the narrative)

## Traffic Control Code

**SAS Name: TRF_CNTL_CD**

*Definition*: Traffic control device code

1-14

## Weather

**SAS Name: WEATHER**

*Definition*: Weather conditions when the crash occurred.

1. Clear
2. Cloudy
3. Rain
4. Snow
5. Fog, smog, smoke
6. Sleet, hail, freezing rain/drizzle
7. Severe crosswinds
8. Blowing sand, dirt, snow
9. Other

## Weather Code

**SAS Name: WEATHER_CD**

*Definition*: Weather code

1-9

## Day of week

**SAS Name: WEEKDAY**

*Definition*: Day of week

1-7

## Day of week Desc

**SAS Name: WEEKDAY_DESC**

*Definition*: Day of week description

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

# List of Elements for the CH Occupant Subfile

| SAS VARIABLE NAME | DESCRIPTION | SAS VARIABLE FILE | FORMAT TYPE | PAGE NO. |
|---|---|---|---|---|
| AGE | OCCUPANT AGE | Occupant | NUM | 29 |
| CASENO | CRASH ID | Occupant | NUM | 29 |
| CONTRIB | HAZARDOUS ACTION | Occupant | CHA (81) | 30 |
| CONTRIB_CD | HAZARDOUS ACTION CODE | Occupant | NUM | 31 |
| DRV_INJ | INJURY SEVERITY | Occupant | CHA (25) | 31 |
| DRV_INJ_CD | INJURY SEVERITY CODE | Occupant | NUM | 31 |
| PRSN_TYP | PARTY TYPE | Occupant | CHA (1) | 31 |
| PRSN_TYP_DESC | PARTY TYPE DESCRIPTION | Occupant | CHA (12) | 32 |
| REST1 | DRV/OCC RESTRAINT | Occupant | CHA (37) | 32 |
| REST1_CD | DRV/OCC RESTRAINT CODE | Occupant | NUM | 32 |
| SEX | DRIVER/OCCUPANT SEX | Occupant | CHA (1) | 33 |
| VEHNO | VEHICLE NUMBER | Occupant | NUM | 33 |

## Occupant Age

**SAS Name: AGE**

*Definition:* Age of occupant in the vehicle involved in the crash.

| | |
|---|---|
| 00 | Not Stated |
| 01 | Infant - 1 YR |
| 02-04 | 02-04 YRS |
| 05-10 | 05-10 YRS |
| 11-14 | 11-14 YRS |
| 15 | 15 YRS |
| 16 | 16 YRS |
| 17 | 17 YRS |
| 18 | 18 YRS |
| 19 | 19 YRS |
| 20 | 20 YRS |
| 21-25 | 21-25 YRS |
| 26-30 | 26-30 YRS |
| 31-35 | 31-35 YRS |
| 36-45 | 36-45 YRS |
| 46-55 | 46-55 YRS |
| 56-65 | 56-65 YRS |
| 66-89 | 66-89 YRS |
| 90-99 | 90+ YRS |

## Case Number

**SAS Name: CASENO**

*Definition*: Crash Id.

## Hazardous Action

**SAS Name: CONTRIB**

*Definition*: Hazardous action

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

37. Driver distracted by other inside the vehicle
38. Driver distracted by external distraction (outside the vehicle)

## Hazardous Action Code

**SAS Name: CONTRIB_CD**

*Definition*: Hazardous action code

1-38

## Injury Severity

**SAS Name: DRV_INJ**

*Definition*: The most severe injury in the crash.

1. Killed
2. A type injury (disabling)
3. B type injury (evident)
4. C type injury (possible)
5. No injury
6. Unknown.

## Injury Severity code

**SAS Name: DRV_INJ_CD**

*Definition*: Injury Severity Code.

1-6

## Party Type

**SAS Name: PRSN_TYP**

*Definition*: Type of occupant

D

2

3

4

5

6

7

## Part Type Description

**SAS Name: PRSN_TYP_DESC**

*Definition*: Type of occupant

D. Driver
2. Passenger

Non-Motorist

3. Pedestrian
4. Pedal cyclist
5. Roller skater/roller bladder
6. Other
7. Unknown

## DRV/OCC RESTRAINT

**SAS Name: REST1**

*Definition*: Restraint used description.

0. None used
1. Lap belt only
2. Shoulder and lap belt
3. Shoulder belt only
4. Child restraint
5. Helmet (motorcyclist or non-motorist)

Non-Motorist

6. Protective pads
7. Reflective clothing
8. Lighting
9. Other
10. Unable to determine

## DRV/OCC RESTRAINT CODE

**SAS Name: REST1_CD**

*Definition*: Restraint used code

0-10

## DRIVER/OCCUPANT SEX

**SAS Name: SEX**

*Definition*: Gender Code

| | |
|---|---|
| M | Male |
| F | Female |
| U | Unknown |

## VEHICLE NUMBER

**SAS Name: VEHNO**

*Definition*: Number assigned to vehicle/person involved

# List of Elements for the CH Vehicle Subfile

| SAS VARIABLE NAME | DESCRIPTION | SAS VARIABLE FILE | FORMAT TYPE | PAGE NO. |
|---|---|---|---|---|
| CASENO | CRASH ID | Vehicle | NUM | 35 |
| CONTRIB1 | DRV CONTRIB CIRCUMS 1 | Vehicle | CHAR | 35 |
| CONTRIB2 | DRV CONTRIB CIRCUMS 2 | Vehicle | CHAR | 35 |
| CONTRIB3 | DRV CONTRIB CIRCUMS 3 | Vehicle | CHAR | 35 |
| CONTRIB1_CD | DRV CONTRIB CIRCUMS CD 1 | Vehicle | NUM | 36 |
| CONTRIB2_CD | DRV CONTRIB CIRCUMS CD 2 | Vehicle | CHAR | 36 |
| CONTRIB3_CD | DRV CONTRIB CIRCUMS CD 3 | Vehicle | CHAR | 36 |
| DIR_TRVL | DIRECTION | Vehicle | CHAR | 36 |
| DIR_TRVL_CD | DIRECTION CODE | Vehicle | CHAR | 37 |
| EVENT1 | HARMFUL EVENT1 | Vehicle | CHAR | 37 |
| EVENT2 | HARMFUL EVENT2 | Vehicle | CHAR | 37 |
| EVENT3 | HARMFUL EVENT3 | Vehicle | CHAR | 37 |
| EVENT4 | HARMFUL EVENT4 | Vehicle | CHAR | 37 |
| EVENT5 | HARMFUL EVENT5 | Vehicle | CHAR | 37 |
| MANEUVER | PRIMARY ACTION | Vehicle | CHAR | 39 |
| MANEUVER_CD | PRIMARY ACTION CODE | Vehicle | NUM | 39 |
| PRMY_VEHC_USE | PRIMARY VEHICLE USE | Vehicle | CHAR | 40 |
| PRMY_VEHC_USE_CD | PRIMARY VEHICLE USE CODE | Vehicle | CHAR | 40 |
| SPD_LIMT | SPEED LIMIT | Vehicle | NUM | 40 |
| TRFC_CTRL | TYPE OF TRAFFIC CONTROL | Vehicle | CHAR | 40 |
| UNIT_TYPE | UNIT TYPE | Vehicle | CHAR | 40 |
| UNIT_TYPE_CD | UNIT TYPE CODE | Vehicle | NUM | 40 |
| VEH_DEF | VEHICLE DEFECT | Vehicle | CHAR | 40 |
| VEH_DEF_CD | VEHICLE DEFECT CODE | Vehicle | CHAR | 40 |
| VEHNO | UNIT NUMBER | Vehicle | NUM | 41 |
| VEHTYPE | VEHICLE TYPE | Vehicle | CHAR | 41 |
| VEHTYPE_CD | VEHICLE TYPE CODE | Vehicle | NUM | 42 |
| VEHYR | VEHICLE YEAR | Vehicle | CHAR | 42 |

## Case Number

SAS Name: CASENO

*Definition*: Crash Id.

## Contributing Factor1

SAS Name: CONTRIB1

## Contributing Factor2

SAS Name: CONTRIB2

## Contributing Factor3

SAS Name: CONTRIB3

*Definition*: Contributing factor description.

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

29. Operated defective equipment
30. Alcohol use
31. Drug use
32. Other * (write in the narrative)
33. Unable to determine
34. Unknown
35. Driver distracted by electronic communication device (Cellphone. Texting etc.)
36. Driver distracted by other electronic device (navigation device, DVD player, etc.)
37. Driver distracted by other inside the vehicle
38. Driver distracted by external distraction (outside the vehicle)

## Contributing Factor Code

SAS Name: CONTRIB1_CD

## Contributing Factor Code2

SAS Name: CONTRIB2_CD2

## Contributing Factor Code3

SAS Name: CONTRIB3_CD3

*Definition*: Contributing factor code

0-38

## Direction from Road

SAS Name: DIR_TRVL

*Definition*: Direction from road

| | |
|---|---|
| 'E' | East |
| 'N' | North |
| 'NE' | Northeast |
| 'NW' | Northwest |
| 'S' | South |
| 'SE' | Southeast |
| 'SW' | Southwest |
| 'W' | West |

## Direction from Road Code

SAS Name: DIR_TRVL_CD

*Definition*: Direction from road code

E
N
NE
NW
S
SE
SW
W

## Harmful Event1

SAS Name: EVENT1

## Harmful Event2

SAS Name: EVENT2

## Harmful Event3

SAS Name: EVENT3

## Harmful Event4

SAS Name: EVENT4

## Harmful Event5

SAS Name: EVENT5

*Definition*: Most harmful event in the crash sequence.

0. Unknown

Non-Collision

1. Ran off Road Right
2. Ran off Road Left
3. Ran off Road straight ahead
4. Jackknife
5. Overturn/Rollover
6. Crossed centerline/Median
7. Downhill runaway
8. Cargo/Equipment loss or shift
9. Fire/explosion
10. Immersion
11. Equipment failure (tires, brakes, etc.)
12. Separation of units
13. Other Non-collision

Collision of Motor Vehicle with

14. Pedestrian

15. Pedal cyclist
16. RR train, Engine
17. Animal
18. Movable object
19. Fixed Object

Collision of Two or More Motor Vehicles

20. Parked motor vehicle
21. Rear end, slow or stop
22. Rear end, turn
23. Left turn, same roadways
24. Left turn, different roadways
25. Right turn, same roadways
26. Right turn, different roadways
27. Head on
28. Sideswipe, same direction
29. Sideswipe, opposite direction
30. Angle
31. Backing up
32. Other collision with vehicle
33. Tree
34. Utility Pole (with or without light)
35. Luminaire pole Non-Breakaway
36. Luminaire pole Breakaway
37. Official highway sign Non-breakaway
38. Official highway sign breakaway
39. Overhead sign support
40. Commercial sign
41. Guardrail end on shoulder
42. Guardrail face on shoulder
43. Guardrail end on median
44. Guardrail face on median
45. Shoulder barrier end (non - guardrail)
46. Shoulder barrier face (non - guardrail)
47. Median barrier end (non - guardrail)
48. Median barrier face (non - guardrail)
49. Bridge rail end
50. Bridge rail face
51. Overhead part underpass
52. Pier on shoulder of underpass
53. Pier in median of underpass

54. Abutment of underpass
55. Traffic island curb or median
56. Catch basin or culvert on shoulder
57. Cath basin or culvert on median
58. Ditch
59. Embankment
60. Mailbox
61. Fence or fence post
62. Construction barrier
63. Crash cushion
64. Other fixed object

## Primary Action

**SAS Name: MANEUVER**

*Definition*: Primary action

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

## Primary Action Code

**SAS Name: MANEUVER_CD**

*Definition*: Primary action code

1-16

## Primary Vehicle Use

SAS Name: PRMY_VEHC_USE

*Definition*: Non-labeled variable

## Primary Vehicle Use Code

SAS Name: PRMY_VEHC_USE _CD

*Definition*: Non-labeled variable

## Speed Limit

SAS Name: SPD_LIMT

*Definition*: Posted Speed Limit

## Traffic Control

SAS Name: TRFC_CTRL

*Definition*: Non-labeled variable

## Unit Type

SAS Name: UNIT_TYPE

*Definition*: Unit type

1. Vehicle
2. Pedestrian
3. Hit & run
4. Commercial

## Unit Type Code

SAS Name: UNIT_TYPE_CD

*Definition*: Unit Type code

1-4

## Vehicle Defect

SAS Name: VEH_DEF

*Definition*: Non-labeled variable

## Vehicle Defect Code

SAS Name: VEH_DEF_CD

*Definition*: Non-labeled variable

## VEHICLE NUMBER

**SAS Name: VEHNO**

*Definition*: Number assigned to vehicle/person involved.

## Vehicle Type

**SAS Name: VEHTYPE**

*Definition*: Vehicle type

Passenger car
Pickup
Light truck (mini-van, Panel)
Sport utility
Van
Commercial bus
School bus
Activity bus
Other bus
Single unit truck (2-axle, 6-tire)
Single unit truck (3-axles or more)
Truck/trailer
Truck/tractor
Tractor/semi-trailer
Tractor/doubles
Unknown heavy truck
Taxicab
Farm equipment
Farm tractor
Motorcycle
Moped
Motor scooter or motor bike
Pedalcycle
Pedestrian
Motor home/recreational vehicle
Other
All-terrain vehicle (ATV)
Fire truck
EMS vehicle, ambulance, rescue squad
Military
Police
Unknown
Not stated

2,3 door sedan
Station Wagon (Passenger)
Station wagon (Truck)
Truck with four axles

## Vehicle Type Code

**SAS Name: VEHTYPE_CD**

*Definition*: Vehicle type code

1-37

## Vehicle year

**SAS Name: VEHYR**

*Definition*: Vehicle make year

# List of Elements for the CH Roadway file

| SAS VARIABLE NAME | DESCRIPTION | SAS VARIABLE FILE | FORMAT TYPE | PAGE NO. |
|---|---|---|---|---|
| AADT | AVERAGE ANNUAL DAILY TRAFFIC | Roadway | CHAR | 44 |
| BARRIER | BARRIER | Roadway | NUM | 44 |
| DIVIDED | DIVIDED | Roadway | NUM | 44 |
| HOVLANE | HOV LANE | Roadway | NUM | 44 |
| LENGTH | SEGMENT LENGTH | Roadway | NUM | 44 |
| LL_ADD | LOWER LEFT ADDRESS | Roadway | NUM | 44 |
| LR_ADD | LOWER RIGHT ADDRESS | Roadway | NUM | 45 |
| MEDIAN | MEDIAN | Roadway | NUM | 45 |
| NO_LANES | NUMBER OF LANES | Roadway | NUM | 45 |
| ONEWAY | ONE WAY | Roadway | NUM | 45 |
| ONRDSEG_ID | UNIQUE IDENTIFIER | Roadway | CHAR | 45 |
| PREFIXDIRE | PREFIX DIRECTION | Roadway | CHAR | 46 |
| ROAD_ID | ROAD ID | Roadway | NUM | 46 |
| ROADTYPE | ROAD TYPE (road or driveway) | Roadway | NUM | 46 |
| SEGMENT_ID | SEGMENT ID | Roadway | NUM | 46 |
| SPD_LIMT | SPEED LIMIT | Roadway | NUM | 47 |
| SPEEDHUMP | SPEED HUMP | Roadway | NUM | 47 |
| STANDTYPE | STAND TYPE | Roadway | CHAR | 48 |
| STREETCLAS | STREET CLASSIFICATION | Roadway | CHAR | 48 |
| STREETNAME | STREET NAME | Roadway | CHAR | 48 |
| SUFFIX | SUFFIX DIRECTION | Roadway | CHAR | 49 |
| SURF_WID | PAVEMENT WIDTH | Roadway | NUM | 49 |
| SURFACETYP | SURFACE TYPE | Roadway | NUM | 49 |
| THOROUGHFA | THOROUGH FARE | Roadway | CHAR | 49 |
| UL_ADD | UPPER LEFT ADDRESS | Roadway | NUM | 50 |
| UR_ADD | UPPER RIGHT ADDRESS | Roadway | NUM | 50 |
| WHOLESTNAM | STREETNAME + STREETTYPE | Roadway | CHAR | 50 |

## AVERAGE ANNUAL DAILY TRAFFIC

**SAS Name: AADT**

*Definition*: Average Annual Daily Traffic

## BARRIER

**SAS Name: BARRIER**

*Definition*: Barrier

| | |
|---|---|
| '0' | No barrier |
| '1' | Barrier |

## DIVIDED

**SAS Name: DIVIDED**

*Definition*: Divided (not always the same as "Median" (e.g. Independence Blvd, high barriers classify the road as divided but not as having a median)

| | |
|---|---|
| '0' | Undivided |
| '1' | Divided |

## HOVLANE

**SAS Name: HOVLANE**

*Definition*: HOV Lane

| | |
|---|---|
| '0' | Non-HOV lane |

## SEGMENT LENGTH

**SAS Name: LENGTH**

*Definition*: Segment length in feet.

## LOWER LEFT ADDRESS

**SAS Name: LL_ADD**

*Definition*: Lower address on left side of road.

## LOWER RIGHT ADDRESS

SAS Name: LR_ADD

*Definition*: Lower address on right side of road.

## MEDIAN

SAS Name: MEDIAN

*Definition*: Median

| | |
|---|---|
| '0' | No median |
| '1' | Median |

## NUMBER OF LANES

SAS Name: NO_LANES

*Definition*: Number of lanes

| | |
|---|---|
| '0' | Unknown |
| '1' | 1 Lane |
| '2' | 2 Lanes |
| '3' | 3 Lanes |
| '4' | 4 Lanes |
| '5' | 5 Lanes |
| '6' | 6 Lanes |
| '7' | 7Lanes |
| '8' | 8 Lanes |
| '9' | 9 or More Lanes |

## ONEWAY

SAS Name: ONEWAY

*Definition*: Whether or not this section of road carries traffic in both or only one direction.

*Additional Information*: New element added in 2009.

| | |
|---|---|
| 0 | Two-way |
| 1 | One-way toward uptown |
| 2 | One-way away from uptown |

## ONROAD SEGMENT ID

SAS Name: ONRDSEG_ID

*Definition*: Used in linkage to other files.

## PREFIX DIRECTION

SAS Name: PREFIXDIRE

*Definition*: Prefix direction.

| | |
|---|---|
| 'N' | North |
| 'E' | East |
| 'S' | South |
| 'W' | West |

## ROAD ID

SAS Name: ROAD_ID

*Definition*: Road Id.

## ROADTYPE

SAS Name: ROADTYPE

*Definition*: Road Type

| | |
|---|---|
| 1 | Road |
| 2 | Named Driveway (e.g. shopping center) |

## SEGMENT ID

SAS Name: SEGMENT_ID

*Definition*: Segment Id.

## Speed Limit

**SAS Name: SPEEDLIMIT**

*Definition*: Posted speed limit

| | |
|---|---|
| 10 | 10 Mph |
| 15 | 15 Mph |
| 20 | 20 Mph |
| 25 | 25 Mph |
| 30 | 30 Mph |
| 35 | 35 Mph |
| 40 | 40 Mph |
| 45 | 45 Mph |
| 50 | 50 Mph |
| 55 | 55 Mph |
| 60 | 60 Mph |
| 65 | 65 Mph |
| 70 | 70 Mph |

## Speed Hump

**SAS Name: SPEEDHUMP**

*Definition*: Speedhump

| | |
|---|---|
| 0 | No speed hump present |
| 1 | Speed hump present |

## Stand Type

SAS Name: STANDTYPE

*Definition*: Road type

| | |
|---|---|
| 'ALY' | Alley |
| 'AVE' | Avenue |
| 'BLVD' | Boulevard |
| 'BYWY' | Byway |
| 'CIR' | Circle |
| 'CT' | Court |
| 'CV' | Cove |
| 'DR' | Drive |
| 'FWY' | Freeway |
| 'HWY' | Highway |
| 'LN' | Lane |
| 'LOOP' | Loop |
| 'PKWY' | Parkway |
| 'PL' | Place |
| 'RAMP' | Ramp |
| 'RD' | Road |
| 'ROW' | Row |
| 'RUN' | Run |
| 'ST' | Street |
| 'TER' | Terrace |
| 'TRCE' | Trace |
| 'TRL' | Trail |
| 'WAY' | Way |

## Street Classification

SAS Name: STREETCLASS

*Definition*: Street class

| | |
|---|---|
| 'PUB' | Public |
| 'PVT' | Private |

## Street Name

SAS Name: STREETNAME

*Definition*: Street name

## Suffix Direction

**SAS Name: SUFFIX**

*Definition*: Suffix direction

| | |
|---|---|
| 'E' | East |
| 'EAST' | East |
| 'EXT' | Extension |
| 'N' | North |
| 'NB' | Northbound |
| 'NORTH' | North |
| 'S' | South |
| 'SB' | Southbound |
| 'SOUTH' | South |
| 'W' | West |
| 'WEST' | West |

## SURF_WID

**SAS Name: SURF_WID**

*Definition*: Surface Width.

## Thorough Fare

**SAS Name: THOROUGHFA**

*Definition*: Thoroughfare classification

| | |
|---|---|
| 'C2EX' | Class 2 expressway – access controlled but right in / right out driveways allowed |
| 'EXCOLLMJ' | Existing Major Collector |
| 'EXCOLLMN' | Existing Minor Collector |
| 'EXFRY' | Existing Freeway |
| 'EXMINTH' | Existing Minor Thoroughfare |
| 'EXMJTH' | Existing Major Thoroughfare |
| 'EXMJTHC3C' | Class 3 Commercial Arterial |
| 'LOCAL' | Local |
| 'PROPFRY' | Proposed freeway |
| 'PROPMINTH' | Proposed Minor Thoroughfare |
| 'PROPMJTH' | Proposed Major Thoroughfare |
| 'RAMP' | ramp |

## Upper Left Address

**SAS Name: UL_ADD**

*Definition*: Upper address on the left side of road

## Upper Right Address

**SAS Name: UR_ADD**

*Definition*: Upper address on right side of road

## Whole Street Name

**SAS Name: WHOLESTNAM**

*Definition*: STREETNAME + STREETTYPE