

Highway Safety Research Center (HSRC) Bicyclist and Pedestrian Crash Data

Overview: General description of data source

The University of North Carolina (UNC) Highway Safety Research Center (HSRC) was established by the North Carolina General Assembly in 1965. HSRC researchers and staff work to figure out how to save lives and reduce injuries on North Carolina roadways. Their projects are designed to support transportation professionals across the globe as they work toward that same goal.

Data owner

Developed by UNC-HSRC analysts, the data are owned by the North Carolina Department of Transportation, Division of Bicycle & Pedestrian Transportation.

Data description and collection criteria

Data is curated data based on North Carolina Department of Motor Vehicles (DMV) crash records. North Carolina motor vehicle laws state that a reportable motor vehicle traffic crash must meet at least one of the following criteria:

- The crash resulted in a fatality, or
- The crash resulted in a non-fatal personal injury, or
- The crash resulted in total property damage amounting to \$1,000.00 or more, or
- The crash resulted in property damage of any amount to a vehicle seized, or
- The vehicle has been seized and is subject to forfeiture under G. S. 20-28.3.

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

Source: Source: DMV 349 Instruction Manual, revised June 3, 2018

Bicycle crash data:

These data represent all bicycle-motor vehicle crashes reported to the NC Division of Motor Vehicles by investigating officers for the relevant crash years. Falls or other events involving only bicyclists that might be documented in medical databases are rarely included. While past research indicates that bicycle-motor vehicle crashes represent approximately 20-30% of all injuries to bicyclists, most serious and fatal bicyclist injuries do involve motor vehicles. The UNC Highway Safety Research Center (HSRC) staff reviewed a copy of each bicycle (and pedestrian) crash report form, including diagrams and narratives, and coded every crash verified as involving at least one bicyclist to a specific crash type. HSRC staff also coded latitude and longitude of each crash. Other crash factors such as age, sex, alcohol indicators of the bicyclist and driver, and roadway and environmental factors were obtained from NCDOT's Crash Database, and added to the data.

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Pedestrian crash data:

These data represent all pedestrian-motor vehicle crashes reported to the NC Division of Motor Vehicles by investigating officers for the relevant crash years. Falls or other events involving only pedestrians that might be documented in medical databases are not included. While past research indicates that pedestrian-motor vehicle crashes represent approximately 30-40% of all injuries to pedestrians, it is clear that most serious and fatal pedestrian injuries do involve motor vehicles. The UNC Highway Safety Research Center (HSRC) staff reviewed a copy of each pedestrian (and bicycle) crash report form, including diagrams and narratives, and coded every crash verified as involving at least one pedestrian to a specific crash type. HSRC staff also coded latitude and longitude of each crash. Other crash factors such as age, sex, alcohol-indicators of the pedestrian and driver, and roadway and environmental factors were obtained from NCDOT's Crash Database and added to the data.

Type of data: source or compiled/abstracted

Both source and compiled/abstracted data

Is the data available to outside parties for analytical purposes?

Yes, to University of North Carolina system researchers.

Process to obtain the data for research

The data can be queried online here: http://www.pedbikeinfo.org/pbcat_nc/index.cfm

The data, in geo-spatial format, can be viewed online

here: <https://www.arcgis.com/home/webmap/viewer.html?webmap=b4fcfdc266d054a1ca075b60715f88aef>

The geospatial data are publicly available for download, and can be accessed online here:

<https://www.arcgis.com/home/item.html?id=b4fcfdc266d054a1ca075b60715f88aef>

The geo-spatial data exclude any cases that could not be mapped. The unique crash and person unit identifiers have been removed from these data.

For other data requests, contact:

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Websites

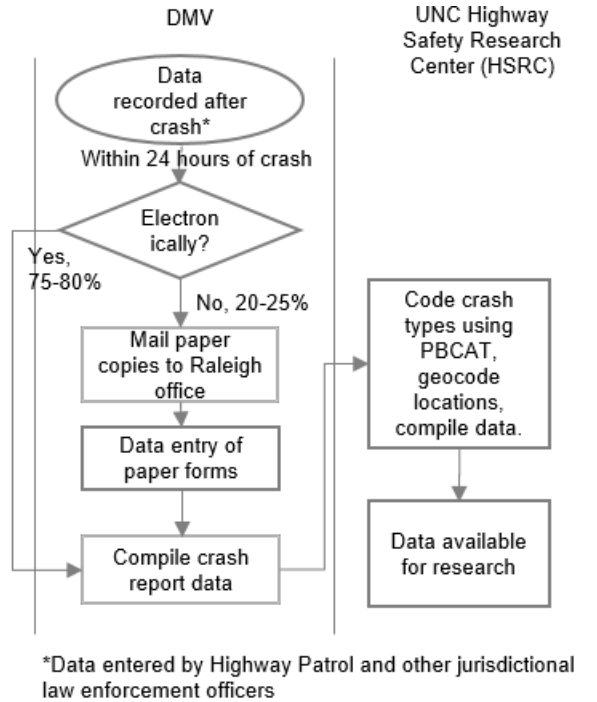
UNC-HSRC: <http://www.hsrb.unc.edu/>

NCDOT, Division of Bicycle and Pedestrian Transportation:
<https://www.ncdot.gov/divisions/bike-ped/Pages/default.aspx>

Contact

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Data Flowchart



Who enters the original data?

Highway Patrol and other jurisdictional law enforcement officers within 24 hours of event; approximately 75% submit PDF forms, 25% submit paper forms that are then data-entered by state office staff.

Injury classification: Injury classification method (ICD-10-CM, etc.)

KABCO (Source: DMV 349 Instruction Manual, revised June 3, 2018):

K: Killed; deaths (which must occur within 12 months after the crash) resulting from injuries sustained in a specific road vehicle crash.

A: Suspected Serious Injury (previously Severe Injury); a suspected serious injury is any injury other than fatal which results in one or more of the following:

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- Severe laceration resulting in exposure of underlying tissues/ muscle/ organs or resulting in significant loss of blood
- Broken or distorted extremity (arm or leg)
- Crush injuries
- Suspected skull, chest or abdominal injury other than bruises or minor lacerations
- Significant burns (second and third degree burns over 10% or more of the body)
- Unconsciousness when taken from the crash scene
- Paralysis

B: Suspected Minor Injury (previously Evident Injury); a minor injury is any injury that is evident at the scene of the crash, other than fatal or serious injuries. Examples include lump on the head, abrasions, bruises, minor lacerations (cuts on the skin surface with minimal bleeding and no exposure of deeper tissue/muscle).

C: Possible Injury; a possible injury is any injury reported or claimed which is not a fatal, suspected serious or suspected minor injury. Examples include momentary loss of consciousness, claim of injury, limping, or complaint of pain or nausea. Possible injuries are those which are reported by the person or indicated by his/her behavior, but no wounds or injuries are readily evident.

O: No Injury

Unknown injury - Unknown injury includes both Unknown as coded by the reporting officer, and when injury data were missing (unreported).

Collection timeframe: when the data were entered after original event

After the investigation of a crash is completed, North Carolina General Statute 20-166.1 requires that the investigating officer make a written report of the crash within 24 hours. The law enforcement agency must submit the report to the Division of Motor Vehicles (DMV) within 10 days after receiving it. If the officer writing the report is a member of the State Highway Patrol, the officer must forward the report to the Division of Motor Vehicle (DMV).

Years available: Description of timespan for which data are available

1997- approximately the previous crash year

Data History: Key changes in the data that would affect research use

Definitions of injury categories changed beginning May 27, 2016. For interest in tracking injuries over time, the data are compiled in the same variables, but analysts should understand that injury severity distributions for A type, B type, C type, and O type injury may change, in part, due to these changes in definitions. An earlier change occurred in 2009.

Is a data dictionary available?

Yes

Dictionary

Bike_Ped2012_2016_Dictionary.xlsx

DMV 349 Data Element Dictionary

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Field Mapping from Source Documentation

Source documentation field map

Report labels	Source labels (where available)
Table or category	
Field	Bike_Ped2012_2016_Dictionary
Field-Literal	
Description	From DMV 349 Data Element Dictionary
Source comments	From DMV 349 Data Element Dictionary
Format	
Length	
Required (Y/N)	
Sensitive (Y/N)	
Unique key (Y/N)	
Retired Field (Y/N)	
Retired Date	

Additional fields available in source documentation

None

Quality and Performance Measures

Known data quality issues

All crash data are subject to entry of errors at the time of reporting, data entry, and coding of additional variables.