

Frequently Asked Questions (regarding crash data)

How do I get crash statistics for Florida, or for my District/County?

The first place that you should go for crash statistics for Florida is the Florida Department of Highway Safety and Motor Vehicles (DHSMV). DHSMV is the official custodian of the crash report data for Florida and the primary source of crash statistics. They publish an annual Traffic Crash Statistics book, and you can download the last several years of it from their Florida's Integrated Report Exchange System (FIRES) website: <https://firesportal.com/Pages/Public/DHSMVDocuments.aspx> .

If you have specific questions that are not answered in the Traffic Crash Statistics books, you can contact their Crash Statistics Section (850/617-3105). DHSMV's Crash Statistics office should be able to run queries based on any point of information that appears on the crash report form. (Sample crash report forms are appended to the Traffic Crash Statistics books.) That means that they can easily get area-wide (for the state or for a county) counts of crashes meeting specific criteria, as long as you can define the criteria based on data that appears on the crash report form. The limitation on their data retrieval is that they do NOT have any spatial- or linear-referenced crash location information, so they cannot help with queries for a location that is any more specific than county wide.

Another possible source of statistical information for traffic fatal crashes and traffic fatalities is the [National Highway Traffic Safety Administration's](http://www.nhtsa.gov/) (NHTSA: <http://www.nhtsa.gov/>) [Fatality Analysis and Reporting System](http://www-fars.nhtsa.dot.gov/Main/index.aspx) (FARS: <http://www-fars.nhtsa.dot.gov/Main/index.aspx>). The FARS website provides nationwide and statewide statistics on fatal crashes and traffic crash fatalities, and gives you the ability to generate custom tables and reports based on a broad set of criteria. DHSMV supplies the FARS data to NHTSA, and only certain data elements are included. The FARS site also lets you download fatal crash data for use in your own database.

Where do I get crash data for Florida, or for my District/County?

The Florida Department of Highway Safety and Motor Vehicles (DHSMV) is the official custodian of the crash report data for Florida and the primary source of crash statistics. You can view crash statistics and request crash reports from their website: <https://www.flhsmv.gov/contact-us/> , and you can contact their Crash Statistics Section by phone at (850) 617-3105.

DHSMV's Crash Statistics office should be able to provide crash data area-wide (for the state or for a county), and/or for specific crash types, as long as you can define the criteria based on data that appear on the crash report form. The limitation on their data retrieval is that they do NOT have any spatial- or linear-referenced crash location information, so they cannot help with queries for a location that is any more specific than county wide. If you need crash data with locations, or if you need crash data pulled for crashes on the State Highway System (SHS) only, then you should contact the DOT District Safety Engineer's Office for your District. If your District Safety Office cannot help you, you can contact the Transportation Safety Engineer's office (FDOT Safety Office, Central Office in Tallahassee) with your questions and we can let you know if what you are asking for is available and, if so, how to go about getting it.

Basic statistics, *Traffic Crash Facts*, and other information can be found on the Florida's Integrated Report Exchange System (FIRES) site: <https://firesportal.com/Pages/Public/QuickStats.aspx> .

What crash data does the Department of Transportation collect?

The Florida Department of Transportation Safety Office receives crash records from the Department of Highway Safety and Motor Vehicles (DHSMV) on an ongoing basis. We upload the long-form reported crashes to our Crash Analysis and Reporting (CAR) database and then add location coordinates to each crash that has occurred either (a) on the State Highway System (SHS) or (b) on local, public roadways, not on the SHS. Crashes on the SHS receive location coordinates on the DOT Office of Planning's linear-reference system for the Roadway Characteristics Inventory (RCI). Crashes on local, public roadways receive geospatial coordinates (latitude and longitude). Crashes in parking lots, on private property, or on forest roads or private roads (i.e. those not involving public roadways) do not undergo location processing. The DOT also does not process short-form reported crashes, at this time.

The long-form crash data uploaded to the CAR database includes most of the fields from the Florida Traffic Crash Report (FTCR) Long Form, with the particular exceptions of the narrative and diagram. The FTCR form, what fields we collect, and their data-element names in the CAR database are the subjects of the *Crash Data Reports User Manual for the Crash Analysis Reporting System*, Appendix F (pp 716-723). The manual is available over the [DOT Safety Office intranet site](http://infonet.dot.state.fl.us/safetyoffice/Eng_rept_pubs.htm) at: http://infonet.dot.state.fl.us/safetyoffice/Eng_rept_pubs.htm. You can also find a sample FTCR long form in the appendix of DHSMV's *Traffic Crash Statistics Report*, available from their [website](https://www.flhsmv.gov/resources/general-reports/) (<https://www.flhsmv.gov/resources/general-reports/>), follow the "Traffic Crash Facts" link.

The quality of the data collected for some of the fields may be poor or inconsistent, so while almost all of the fields on the crash report form are mirrored in the CAR database, they do not all contain usable data. An example of this is the Investigating Agency Report Number, sometimes called the "case number". There is no standard for data entered in this field, so each local Police Department, Sheriff's Office, or University Police Department uses a different format than the others. We collect the data, but it is difficult to use that particular element for queries due to the random formatting.

What is the typical distribution of crashes across the State Highway System (SHS) road network and local roadways?

Based on the record counts in the Safety Office's GIS shapefiles for the 2008 crashes, we have 313,429 long-form crash records in the CAR database of which 151,941 (48.5%) have locations on the SHS and 105,370 (33.6%) have locations on local roadways. The remaining 56,118 crashes (17.9%) were excluded due to occurrence on private property, in parking lots, on forest roads, or on private roads. The figures for 2005, 2006, and 2007 are in approximately the same proportion.

How do I determine the old critical rate/ratio for a location?

For several years now, the Safety Office has been using a different configuration of the Poisson equation for our rate analyses. We solve the equation for K, rather than plugging in a value. We use the actual crash rate at a site and the average crash rate (within District) for the category into which that intersection or segment falls. Using the value for K that we get from the equation, we look up the corresponding percent "confidence" for the calculated K value and report that percentage in our output. Detailed descriptions of the processes that we use for crash rate analysis are in the CAR user manual, Appendix H. Below is an excerpt that may be helpful in answering this question:

The program calculates the numeric confidence level for each of the analysis segments or intersections with a formula having these components:

- 1) MVM (Million Vehicle Miles) for segments or MEV (Millions of Entering Vehicles) for intersections.
 - a. MVM is $(\text{Average-Daily-Traffic} * \text{Miles-of-Road} * \text{Number-of-Days}) / 1,000,000$
 - b. MEV is $(\text{Average-Daily-Traffic} * \text{Number-of-Days}) / 1,000,000$
- 2) AVERAGE (Average crash rate: the numeric result of the total number of crashes on roadways or intersections of the same category within the area of analysis during the time period of the analysis divided by the total traffic volume (length-weighted for segment analysis) on all roadways or at all intersections of the same category within the area of analysis during the time period of the analysis)
- 3) ACTUAL (Actual crash rate: the numeric result of the total number of crashes on the roadway or at the intersection being analyzed during the time period of the analysis divided by the total traffic volume (times the total segment length for segment analysis) on the roadway or at the intersection during the time period of the analysis)
- 4) CONLV (Confidence Level: the numeric result of the equation that follows, compared to the table to determine the percent confidence for the analysis)

The programs calculate the confidence level using the following formula:

Segments:

$$\text{CONLV} = (\text{ACTUAL} - \text{AVERAGE} + (1 \div (2 \times \text{MVM}))) \div \sqrt{(\text{AVERAGE} \div \text{MVM})}$$

Intersections:

$$\text{CONLV} = (\text{ACTUAL} - \text{AVERAGE} + (1 \div (2 \times \text{MEV}))) \div \sqrt{(\text{AVERAGE} \div \text{MEV})}$$

The confidence level translates to a percentage for the outputs. The corresponding percent values are in the table below.

K = computed confidence factor for print value lookup

Confidence Level Print Values Lookup Table	
Computed Confidence Level (K)	Print Value Assigned
$K < 0.6740$	50%
$0.6740 \leq K < 0.8416$	75%
$0.8416 \leq K < 1.0360$	80%
$1.0360 \leq K < 1.2816$	85%
$1.2816 \leq K < 1.6449$	90%
$1.6449 \leq K < 1.9600$	95%
$1.9600 \leq K < 2.3263$	97.5%
$2.3263 \leq K < 2.5758$	99%
$2.5758 \leq K < 2.8070$	99.5%
$2.8070 \leq K < 3.0902$	99.75%
$3.0902 \leq K < 3.2905$	99.9%
$3.2905 \leq K < 3.7190$	99.95%
$3.7190 \leq K$	99.99%

How does the FDOT rank the high-crash locations? Is there any documentation?

The *Crash Data Reports User Manual for the Crash Analysis Reporting System*, section (pp 275-284) defines the ranking number and gives information about how it functions. The manual is available to users inside the [FDOT intranet](http://infor.net.dot.state.fl.us/safetyoffice/Eng_rept_pubs.htm) at http://infor.net.dot.state.fl.us/safetyoffice/Eng_rept_pubs.htm. In Appendix H, subsection 14.3, starting at page 739, it describes in detail the processes by which we determine the rankings for the crash rate analyses for the State Highway System (SHS).

For the ranking of the 5% intersections and segments for the segments and intersections that we have included in the Highway Safety Improvement Program (HSIP) documentation, in the *Transparency Report*, the method that we use to arrive at the 5% grouping is not the same as the programmatic rankings for the SHS crash rate analyses. For the 2008 HSIP report (submitted August 2009), we used two different processes to reach the 5% groupings: one for the SHS and one for the Local Roads analyses.

For the SHS:

- 1) We started with the High Crash listings for the each District, for the 3-year span from 2006-2008, from the CAR System.
- 2) We ordered the output, within each District, by number of crashes descending, then by number of fatalities plus the number of injuries descending within identical crash counts, then by

number of fatalities descending, then number of injuries descending, then number of property-damage-only crashes (PDO) descending.

- 3) With the output so ordered, we took the top 5% (numerically) from each District.
- 4) For the Segments, this was our final output.
- 5) For the Intersections, we mapped the 5% Segments and the 5% Intersections in ArcMap, buffered the Segments by 3 meters, and ran an intersect between the buffered segments and intersections. From the intersect, we produced a list of Intersections that touched or were overlapped by any of the 5% Segments.
- 6) We removed all of the Intersections on the list above (step (5)) from the 5% list produced in step (3) in order to get a final listing of Intersections for the SHS for each District.

For the Local Roads:

- 1) We started with the Reference listings (all results with 1 or more crashes) for the each District, for the 3-year span from 2006-2008, from our SAFETEA-LU Crash Rate Analyses for Local Roads programs.
- 2) We ordered the output, within each District, by number of crashes descending, then by number of fatalities plus the number of injuries descending within identical crash counts, then by number of fatalities descending, then number of injuries descending, then number of property-damage-only crashes (PDO) descending.
- 3) With the output so ordered, we deleted all the results with less than 8 crashes for the three-year span of the analysis.
- 4) Next, we took the top 5% (numerically) from each District from the results remaining in the listing.
- 5) For the Segments, this was our final output.
- 6) For the Intersections, just as we did with the SHS Intersections, we mapped the 5% Segments and the 5% Intersections in ArcMap, buffered the Segments by 3 meters, and ran an intersect between the buffered segments and intersections. From the intersect, we produced a list of Intersections that touched or were overlapped by any of the 5% Segments.
- 7) We removed all of the Intersections on the list above (step (6)) from the 5% list produced in step (4) in order to get a final listing of Intersections for the Local Roads for each District.

Can I run a query based on comparing values from the crash report?

E.g.: "We're conducting a review of the crashes along a roadway segment to identify speed related crashes. We performed a query of the crashes using contributing causes 12 and 17 that relate to 'EXCEEDED SAFE SPEED LIMIT' and 'EXCEEDED STATED SPEED LIMIT', respectively, but we only found a few crashes with these contributing causes to categorize them as speed related crashes. Can we also use the information on page 1 of the police report for each driver involved in the crash where the estimated speed and posted speeds are listed?"

The Crash Analysis Reporting System does NOT have any tools that allow us to screen crashes by comparing the variables in two fields. If you are looking at a specific corridor and you know the posted speed, you can enter that speed as a constant in the search criteria and screen for crashes on the corridor with a vehicle speed that is greater than the value that you enter. The other option is to have the Safety Office Central Office in Tallahassee run a special query to get the answers to your question. We can set up queries to run outside of the CAR System but against the CAR database, and this method allows us to screen crashes based on variable comparisons. If you need data for the entire state or

county, rather than limited to a specific corridor or location, then DHSMV can run the same type of query.

There does not appear to be a variable that would allow me to select a subset of crashes that occurred in an individual zip code of a county. Am I correct that I cannot drill down in the data to identify the location of crashes for areas within the county other than the coded municipalities?

There is not a zip code variable in the crash-level data. The officers do not give the zip codes for the crash locations – the Florida Traffic Crash Report (FTCR) long form does not call for it. The only zip code elements in our crash database (same as in DHSMV's crash database) are for the residence of the driver/pedestrian involved in the crash or for the commercial carrier/owner of a commercial vehicle, not for the location of the crash. The Safety Office does have shapefiles of crash locations (plotted in a Geographic Information Systems (GIS) platform/format). It is possible, therefore, to display the plotted crash points together with the zip code boundaries if you have access to a shapefile of zip code areas (polygons) in a compatible format.

We can share our road network and our shapefiles of plotted crash points with other governmental agencies. If you are an employee of such an agency, you can request the files from the DOT Safety Office in your District. If you are a contractor working for a governmental agency and need the data for that agency's project, you can have your project manager at the agency request the data. You would start with a call or e-mail to the District Safety Engineer's office (see <http://www.dot.state.fl.us/safety/TransSafEng/districtdirect.shtml>). It is also possible that the District office already has something like this available to them.