

## Collection and Presentation of Crash Data

### Description

The purpose of this procedure is to provide a consistent methodology for gathering information about the status of vehicle crashes in the study area, and presenting that information for CTP studies.

### Responsibility

*The TPB Project Engineer (PE)* – To obtain crash data and create a standardized map in the Comprehensive Transportation Plan (CTP) Report.





































### Scheduling and Time Constraints

The collection of crash data should be completed before the deficiency analysis is conducted on the highway system as a whole, as part of the CTP study.

### Procedures

Step	Action
1	The PE uses the information from the high frequency crash data to identify deficiencies and to develop CTP project proposals. The high frequency crash data is documented in the appropriate section of the CTP Report (refer to CTP 4 - ' <u>CTP Document – Prepare and Distribute</u> ' and ' <u>CTP 2 - Development of Problem Statement</u> ' procedures).
2	From the Traffic Safety Unit webpage select <a href="#">Crash Data and Maps</a> . In the <i>Crash Maps, Shape Files and Metadata</i> section, select + <i>Crash Type: High Frequency</i> , and then download and save + <i>Crash Description : 2007-2011 Crash Shape File</i> which contains both <i>Intersections and Sections High Frequency Crash Locations Shapefiles</i> to the CTP project folder on your hard drive.  You should also download and save the pdf version of High Frequency Crash Location (HFCL) map for your county to use as a reference material. This map provides information about the time period for the collected crash data and an explanation of the criteria used. The + <i>2007-2011 High Frequency Crash Maps by county</i> located below the shapefile. Select the map for your county and save it to CTP project folder on your hard drive.
3	The downloaded shapefiles have statewide coverage and should be clipped to your planning area.
4	Open the Crash Map Template from the <u>S:\Shared\TPB Reference\Comprehensive Transportation Plan\CTP Map Templates</u> Add clipped layers for Crash Intersections and Crash Sections to create the <b>High Frequency Crash Locations Map</b> for your CTP study; add appropriate layers from your base map according to the HFCL map legend. Edit map legend to reflect your study area name, dates and provide time period for the crash data according to the pdf version of the map downloaded on step 2.
5	Select the <i>Crash Sections layer</i> , open Properties > Symbology > Categories > Unique Values and select field Category. Add all values and apply symbology using the most

	<p>current CTP Style File from the folder:  <u>S:\Shared\TPB Reference\Comprehensive Transportation Plan\CTP Map Templates</u>          (For the best representation of Crash Sections on the map use line width =1.5, for Study Roads use line width =2.00 and 40% Transparency (Study Roads &gt;Properties &gt;Display). See example of the map legend below.</p>
6	<p>Use the same approach for the Crash Intersections layer, open Properties &gt; Symbology &gt; Categories &gt; Unique Values and select field Category. Add all values and apply symbology using the most current CTP Style File. See example of the map legend below.</p>

<p style="text-align: center;"><b>HFCL Map Color and Shape Standards</b></p> <p><b>Colors In Order:</b></p> <ul style="list-style-type: none"> <li>- Electron Gold</li> <li>- Dark Amethyst</li> <li>- Poinsetta Red</li> <li>- Peacock Green</li> <li>- Ultra Blue</li> <li>- Light Apple</li> </ul> <p><b>Intersections - Shape Size = 12</b></p> <ul style="list-style-type: none"> <li> 50 and above</li> <li> 40 to 49</li> <li> 30 to 39</li> <li> 20 to 29</li> <li> 10 to 19</li> <li> 4 to 9</li> </ul> <p><b>Sections - Line Width = 1.5</b></p> <ul style="list-style-type: none"> <li> 50 and above</li> <li> 40 to 49</li> <li> 30 to 39</li> <li> 20 to 29</li> <li> 10 to 19</li> <li> 4 to 9</li> </ul>	<p style="text-align: center;"><b>Sample Legend for High Frequency Crash Locations</b></p> <div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;"><b>FIGURE X</b></p> <p style="text-align: center;"><b>Area Name</b></p> <p style="text-align: center;">Comprehensive Transportation Plan</p> <p style="text-align: center;"><b>HIGH FREQUENCY CRASH LOCATIONS</b></p> <p style="text-align: center;">January 1, 2006 to December 31, 2010</p> <p><b>Crash Intersections</b></p> <ul style="list-style-type: none"> <li> 50 and above</li> <li> 40 to 49</li> <li> 30 to 39</li> <li> 20 to 29</li> <li> 10 to 19</li> <li> 4 to 9</li> </ul> <p><b>Crash Sections</b></p> <ul style="list-style-type: none"> <li> 50 and above</li> <li> 40 to 49</li> <li> 30 to 39</li> <li> 20 to 29</li> <li> 10 to 19</li> <li> 4 to 9</li> </ul> <p><b>Other Features:</b></p> <ul style="list-style-type: none"> <li> Study Roads</li> <li> Roads</li> <li> Schools</li> <li> Ferry</li> <li> Airports</li> <li> Railroads</li> <li> Rivers and Streams</li> <li> Water Bodies</li> <li> Municipal Boundaries</li> <li> County Boundary</li> </ul> <p style="text-align: center;">   </p> <p style="font-size: small;">Resize map data:</p> </div>
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**Policy, Regulatory, and Legal Requirements**

No specific policy exists for the collection of crash data for CTP studies.

## Resources

- [Develop CTP Maps](#) procedure
- [S:\Shared\TPB Reference\Comprehensive Transportation Plan\CTP Map Templates](#)

## Background

Traffic crash data can reveal whether transportation improvements may increase safety. Some causes of crashes cannot be impacted by transportation improvements, such as those that result from driver or vehicle performance, or the weather. Types of crashes that may be reduced by transportation improvements include those due to traffic conditions or roadway characteristics. For example, traffic crashes may be an indicator of congestion problems that can be reduced by capacity adding projects or congestion management strategies. Crashes may also be a result of the physical characteristics of the roadway like substandard design, inadequate signing, ineffective parking, or poor sight distance. Some of these crashes may be prevented with physical design or traffic control changes such as the installation of stop signs or traffic signals. The type of crash data utilized in this procedure is high frequency crash locations. The Traffic Safety Unit of NCDOT's Transportation Mobility and Safety Division identifies high frequency crashes at intersections and along roadway sections. High frequency crash location data is available on the [NCDOT's Traffic Safety Unit website](#).

## Flowchart

None

## Record of Revision

*The information contained in this procedure is deemed accurate and complete when posted. Content may change at any time without notice. We cannot guarantee the accuracy or completeness of printed copies. Please refer to the online procedure for the most current version.*

Version	Section Affected	Description	Effective Date
2	Procedures	The threshold for the minimum number of crashes was changed from 5 to 10. Some additional links were activated.	07/24/09
	Background, Procedures	Added 'Requesting a Crash Analysis from NCDOT's Safety Planning Group' section to the Procedures and reference to it in the Background and other edits. Added map developing guidance in the map preparation procedure.	07/21/2010
3.1	Links	Updated broken links to Crash Data from NCDOT's Safety Planning Group	07/21/2011
4	Procedures	Whole procedure was changed to utilize HFCL Intersections and Sections data available from the Transportation Mobility and Safety Division website.	11/20/2012
4.1	Procedures	Procedure's template was modified based on the input from the CTP Procedures committee. Minor links updates.	1/29/2013